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**IMPACT OF OUTPUT MANAGEMENT WITHIN
MANAGEMENT CONTROL SYSTEMS ON PERFORMANCE IN
VICTORIAN GOVERNMENT DEPARTMENTS**

Submitted by

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LIST OF ACRONYMS AND ABBREVIATIONS

AA	Activity Analysis
ABC	Activity Based Costing
ABM	Activity Based Management
ABS	Australian Bureau of Statistics
ACA	Activity Cost Analysis
ACMH	Aged Care and Mental Health
ACS	Accounting Control System(s)
AIS	Accounting Information Systems
AM	Activity Management
AQC	Australian Quality Council
BERC	Budget Estimates and Review Committee
CAB	Comprehensive Accounting and Budgeting
CASES	Computer Assisted Environment in Schools
CEO	Chief Executive Officer
CFO	Chief Finance Officer
COA	Commonwealth of Australia
CSG	Corporate Services Group
CTC	Competitive Tendering and Contracting Out
DHS	Department of Human Services
DNRE	Department of Natural Resources and Environment
DOE	Department of Education
DOI	Department of Infrastructure
DPC	Department of Premier and Cabinet
DRG	Diagnosis Related Groups
DTF	Department of Treasury and Finance
EFT	Estimated Full Time
FMIP	Financial Management Improvement Program
GAAP	Generally Accepted Accounting Principles
GDP	Gross Domestic Product
GFS	Government Finance Statistics
GM	General Manager
GSP	Gross State Product
HRMS	Human Resources Management System
IPC	Information Processing Capacity
IPR	Information Processing Requirements
JIT	Just In Time
KPI	Key Performance Indicator(s)
LAP	Learning Assessment Project
MAS	Management Accounting System(s)
MBO	Management By Objectives
MCS	Management Control System(s)
MRP	Management Reform Program
NASA	National Aeronautics and Space Administration
NHS	National Health Service
NZ	New Zealand
OB	Output Budgeting
OM	Output Management

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

OM-MCS	Output Management within the broader Management Control System
OTFE	Office of Technical and Further Education
P	Proposition
PB	Program Budgeting
PEE	Perceived External Environment
PM	Performance Measure(s)
PPB	Planning and Program Budgeting
PPBS	Planning Programming Budgeting System
PPPB	Performance Planning Program Budgeting
PPS	Prospective Payment System
R&D	Research and Development
RAPM	Reliance on Accounting Performance Measures
ROGS	Report on Government Services
RQ	Research Questions
SAMS	Service Agreement Management System
SAP	Supported Accommodation Program
SCRSSP	Steering Committee for the Review of Commonwealth/State Service Provision
SOP	Standard Operating Procedures
SP	Strategic planning
TAFE	Technical and Further Education
TD	Task difficulty
TU	Task uncertainty
TV	Task variability
UK	United Kingdom
US	United States
US GAO	United States Government Accounting Office
USA	United States of America
VCE	Victorian Certificate of Education
WEIS	Weighted Equivalent Inlier Separations
WOG	Whole of Government
YAFS	Youth and Family Services
ZBB	Zero Based Budgeting

ABSTRACT

Despite radical change in public sector financial management over at least the past decade, little accounting research has been reported on the impact of these reforms. Major change has occurred in both Australia and overseas in the areas of external financial reporting, budgeting, and internal financial and people management of public sector organisations. This study investigates 'output management', part of the 'Management Reform Program' launched by the Victorian Department of Treasury and Finance in November 1997. Output management was expected by policy makers to contribute to superior management control systems within departments, compared to the substantially input based control systems inherent in government management control systems (MCS). Policy makers assert that use of output management will enhance performance by generating efficiency gains. Output management is more mechanistic/less organic than input control practices. The relationship between output management within the broader MCS (OM-MCS) in Victorian government departments and consequent organisational performance is the particular focus of this study.

The study adopts a theoretical framework based on institutional and contingency frameworks. These theoretical bases have each been used extensively in the accounting literature. However, there is a paucity of research that utilises these frameworks together. The independent use of these frameworks has been criticised as providing only partial explanations of organisational behaviour.

Drawing on the institutional literature, it is proposed that antecedent factors such as coercive and mimetic institutional forces led to the adoption of output management in Victorian government departments and that adoption led to improved departmental performance through legitimacy gains. Notwithstanding the institutional argument, drawing on the contingency literature, it is proposed that the relationship between output management within the broader MCS (OM-MCS) and MCS usefulness will be moderated by contextual factors and have positive effects on organisational performance where this relationship renders MCS more useful. Specifically, where there is a fit between organisational factors and emphasis on OM-MCS, MCS will be perceived as more useful to managers, with positive consequences for organisational performance. These contextual factors are: perceived external environment, structure, technology and culture.

Data are collected through semi-structured interviews conducted during site visits in three stages of a longitudinal research design. Archival evidence over three years is used to corroborate interviews. Respondents are a mix of middle and senior level managers in two of the eight Victorian government departments. Data are analysed qualitatively, using a NUD*IST database. The findings suggest overall support for the model. Specifically: institutional forces cause the adoption of output management; contextual factors moderate the relationship between OM-MCS and MCS usefulness; and, whilst there is positive change in departmental performance over time for one department, this is not attributable to efficiency gains arising from a high emphasis on output management as predicted by policy makers. A further analysis, building on the formal model, indicates that the apparent low emphasis on output management is explained by contextual factors (in addition to the moderating relationship formally modelled and supported).

STATEMENT OF AUTHORSHIP

I hereby certify that the work embodied in this thesis has not been submitted for the award of a higher degree or diploma at any other University or Institution. To the best of my knowledge, the thesis contains no material previously published or written by another person, except where due reference has been made in the text of the thesis. Sources of information are listed in the bibliography.

(Signed) 
Helen Rogemary Mignot

(Date) *20 March 2003*

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PART ONE INTRODUCTION, OUTPUT MANAGEMENT AND MCS

Part one contains an introduction (chapter one) and a discussion of output management and management control systems (MCS) (chapter two). Chapter one discusses the context of, and basis for, the study. Chapter one also provides the background for the research model and introduces the research questions and corresponding research model that underpin the study.

Chapter two introduces output management and MCS, clarifying the definitions of these terms in the context of this study. The theoretical framework for including output management and MCS in the research model is also detailed in chapter two.

CHAPTER ONE

INTRODUCTION TO THE STUDY AND THE RESEARCH MODEL

1.1 Introduction

Recently the public sector, in Australia and overseas, has experienced great change (Sedgwick 1994; Beazley 1995; Dowding 1995; Stewart 1995; Boston 1996; Kelsey 1996). In particular, senior government officials and standard setters claim that financial management initiatives have been instrumental in achieving enhanced performance in the public sector (Zifcak 1997; Lange 1998). Academics have questioned (Hyndman and Eden 2000) and refuted this claim (Considine 1990; Broadbent, Laughlin and Read 1991; Guthrie 1993; Jones and Puglisi 1997; Mellett 1997; Lapsley and Pallot 2000; Likierman 2000).

Perhaps one of the most important characteristics of introducing financial management initiatives is the focus upon techniques that have been regarded traditionally as private sector accounting and management techniques. These techniques largely reflect a drive for cost efficiency and are frequently classified under a rubric of 'new managerialism' or 'new public management' (Hood 1990, 1991, 1995; Robinson 1992; Lane 1997; Zifcak 1997; Johnston 1998; Kniss 1999; Hyndman and Eden 2000). Following Hood (1990), Jacobs (1998) remarks that new public management is a term now used by many to describe the replacement of traditional input focused forms of public administration (for example, line-item budgeting) with managerialist technologies and new management accounting practices that have an output focus, such as output management. Ansari and Euske (1987) comment that the question of whether new accounting systems can and have served to enhance efficiency in public sector organisations has not been addressed empirically. Lapsley (2000) notes that the area of management accounting in government is neglected and requires addressing.

1.2 Contemporary reform developments in the public sector

Public sector reforms have been introduced recently in Australia, at both federal and state levels, as well as internationally — in particular the United Kingdom (UK), the United States (US), Canada and New Zealand. Many of these reforms have related to the structure of government agencies (Vardon 1994; Gellatly 1994) and human resource issues (Sedgwick 1994; Hawkes 1995). These changes are critical to the culture and environment within which accounting developments have taken place and bear a relationship to the design and use of management control systems (MCS). MCS are defined by Macintosh (1994, 3) as:

Management accounting and control systems are sometimes referred to as *planning and control systems*; sometimes *management control systems*, and sometimes simply *control systems*. Management accounting is the process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information that assists executives in fulfilling organisational objectives. It is a formal mechanism for gathering and communicating data for the ends of *aiding* and *coordinating* collective decisions in light of the overall goals or objectives of an organisation. Management accounting is also about control in its broad sense. That is, other related administrative devices which organisations use to control their managers and employees. Strategic planning systems, standard operating rules and procedures, as well as informal controls such as charismatic leadership and the fostering of clan-like atmosphere are examples. This is control in the large. Management accounting systems are only part, albeit usually a very important part, of the entire spectrum of control mechanisms used to motivate, monitor, measure and sanction the actions of managers and employees in organisations.

MCS have been integral to management reforms in public sector organisations. In the UK, for example, the 'Financial Management Initiative' seeks to provide managers with clear objectives and means to measure related performance, a well defined responsibility for making the best use of resources and more sufficient cost information (Gray and Jenkins 1986). In the US the 'Government Performance and Results Act' seeks to hold US Federal government agencies accountable for program results (Ittner and Larcker 1998). Appendix 1e contains a review of international, Australian and Victorian government reform including output budgeting.

The focus of this study is on the adoption of, and level of emphasis on, output management, part of the budget sector¹ suite of financial initiatives in Victorian state

¹ There have been reforms undertaken in government business enterprises and statutory authorities also. The units under investigation here are government departments and these fall strictly under the heading 'budget sector'.

government departments, Australia. These financial initiatives form part of national and international public sector management reform. Whilst recognised as a financial initiative, output management includes the measurement of quantity, quality and timeliness as well as cost.

In Victorian government departments, managerialism has encompassed several reform elements both financial: accrual accounting, output budgeting, output management, forward estimates, competitive neutrality; and structural: purchaser-provider, competitive tendering, amalgamation and devolution of authority². These elements are based on a platform of market mechanisms and a generally 'business-like' approach to public sector management (Department of Premier and Cabinet 1993; Victorian Commission of Audit 1993a,b; Department of Treasury and Finance 1996a,b,c,d,e; 1997a,b,c,d). As noted, the focus of this study is on the MCS reform elements, specifically output management.

Output management is a management control practice that operates in conjunction with other control components within broader MCS³. Output management is defined as a "process of linking funding, reporting and monitoring of clearly defined outputs to government strategic priorities or outcomes" and is designed to provide public sector managers with better management information (Department of Treasury and Finance 1997b, 3). The main feature of output management is that it focuses upon outputs and output controls (such as quantity of services provided and unit costs). The budgeting system (a combination of line item and program budgeting)⁴ predominantly used in Victorian government departments at the time output management was introduced focused upon inputs and input controls (such as resources used in the process of providing services)⁵.

² A glossary of terms is provided in appendix 1a.

³ The importance of investigating control practices within broader MCS has been identified by Otley (1994, 1999). Consequently, output management — the control practice of interest in this study — is examined as part of the broader MCS.

⁴ See Peters (2001) and Chwastiak (2001) for contemporary program budgeting studies in the management accounting literature.

⁵ This is notwithstanding that program budgeting was supposed to be an output system. This contradiction is discussed at length in appendix 1b.

The entities that are the subject of this study are Victorian government departments⁶. These entities represent the largest proportion of the Victorian budget sector (ABS 1997b). The magnitude of the budgets for which these entities are responsible indicates that effective financial management by public sector managers is important. Particularly, decisions about the destination of funds can have a major impact on various sectors of the community. For example, a funding cut to the health and education sectors adversely affects those dependent on services provided by those sectors. Indeed, funding decisions can reasonably be expected to affect the community at large. Informed decisions can only be made by public sector managers if they are privy to sufficient, appropriate management information of both an accounting and non-accounting nature (Management Advisory Board 1997).

1.3 Importance of public sector financial management practices

This section includes first, a discussion of the importance of public sector management to the economy and second, a review of the contemporary public sector reform framework. The importance of public sector finances can be illustrated by Gross Domestic Product (GDP) and Gross State Product (GSP) figures. For the June quarter 1997, the Victorian government represented 19.4 per cent of Victorian consumption and 17.1 per cent of fixed capital expenditure in Victoria. These percentages equate to approximately seven thousand million dollars (ABS 1997b). A large proportion of this expenditure relates to 'general government', encompassing government entities that are in the budget sector. The budget sector includes public sector entities that rely mainly on parliamentary appropriations to finance their operations and are of a not-for-profit nature⁷.

Hopwood (1985, in Guthrie, Parker and Shand 1990) noted the link between economic viability and the adequacy of existing public sector accounts and management accounting practices. Appropriate management accounting practices are necessary for governmental efficiency. Pressures for governmental cost efficiency

⁶ A list of these entities is provided in appendix 1c, and their divisions in appendix 1d.

⁷ Budget sector entities can raise some revenue via fees and charges under a user pays system. Usually the revenue raised in this fashion is a partial contribution only to the full cost of providing the service.

are discussed in the following section. As noted, there is an expectation by government agencies, specifically the Department of Treasury and Finance, Victoria, that output management will assist in improving efficiency and effectiveness.

1.3.1 Pressures for governmental cost efficiency

Throughout Australia, governments face increased pressure to perform efficiently and effectively. Demand for services from growing populations in climates of budget tightening create stresses for the public sector (Clark 1996; Management Advisory Board 1997). In response, governments have sought internal improvements (Industry Commission 1996).

Abernethy (1988), in a Victorian government health care context, notes that one approach to cost containment as a strategy for improving efficiency and effectiveness is the adoption of internal management initiatives (see Smith, Fottler and Saxberg 1981, 397). This approach to cost containment has been adopted by the Victorian government, evident by the recent adoption of output budgeting as a funding mechanism. This has occurred subsequent to overall budget cuts in the early 1990s (Parliament of Victoria 1990–91 to 1996–97; Victorian Commission of Audit 1993). The introduction of the output management reform strategy, launched by Department of Treasury and Finance in November 1997 as part of the Management Reform Program (Industry Commission 1996) is an extension of this initiative. Output budgeting is a necessary precursor to output management and emphasises cost efficiency as well as other performance attributes (for example, quality achievement).

Output management was introduced together with competition in the form of competitive tendering and contracting out (CTC) (Department of Treasury and Finance 1997b) to increase cost awareness and ensure that all available prices are considered in a competitive service delivery environment. The output management mechanism is expected to further improve service delivery information to ensure that all costs are captured in terms of outputs produced and can be meaningfully measured. A distinguishing feature of output management is that cost management is

linked to specific desired government outcomes (Department of Treasury and Finance 1997b).

1.4 Purpose of the study

The purpose of this study is to ascertain whether changes to Victorian government departments' MCS as a result of the adoption of output management⁸ are ultimately instrumental in achieving the broad objectives of greater efficiency and effectiveness at the government departmental level. The importance to the community of efficient and effective government was previously discussed. Furthermore, the management accounting literature has identified the criticality of adopting appropriate MCS reforms. Results from this study may assist MCS developers to understand the circumstances in which output management is likely to provide benefits, averting the costly exercise of inappropriate MCS change.

In ascertaining whether output management is useful in achieving greater departmental performance, this study will examine conditions that provide the context for public sector management and organisations. Specifically, one set of conditions are identified as antecedent forces (coercive and mimetic isomorphism) that explain the adoption of output management. Another set of conditions are identified as contextual factors (perceived external environment, structure, technology and culture⁹) that moderate¹⁰ the relationship between OM–MCS and

⁸ Output management is part of a suite of contemporary financial management initiatives of the Victorian public sector, entitled the 'Management Reform Program' (MRP) which was officially launched in November 1997. The MRP is part of the Victorian government's 'Financial Management Improvement Program' (FMIP).

⁹ Two other contextual variables included in management accounting contingency literature were considered and subsequently excluded from the model. These variables are size and strategy. Size, albeit an organisational level variable, was excluded due to a lack of differentiation — both departments studied are huge. Strategy, albeit also an organisational level variable, was excluded because of its lack of relevance to the government inner budget sector. That is, 'strategy' studied in the contingency literature relates to 'competitive strategy' (see Porter 1980 for a description). This concept of competition is antithetical to the purpose and fundamental reason for the existence of inner budget sector governmental agencies. Culture is included in the framework of this study. Culture is a difficult variable that can be modelled in relationships that are antithetical to contingency relationships (which will be explored later in chapter one). In this study organisational culture is modelled as a contingency variable.

¹⁰ Luft and Shields (200, 11–12) describe a moderator as a variable which "exerts no independent influence on performance, but only affects the relationship between the independent and dependent (performance) variable". That is, if the independent (explanatory) variable did not affect the dependent variable in a model, the moderator variable would be irrelevant to the dependent variable.

MCS usefulness.

Institutional arguments provide a reference point for investigating antecedents to the adoption of output management, by providing a framework to explain why organisations might adopt alternative MCS attributes, notwithstanding efficiency explanations. Essentially, institutional arguments explain that the adoption of alternative MCS attributes (such as output management) may be rational, even where there are no efficiency gains, because of legitimacy gains (DiMaggio and Powell 1983).

Traditional contingency literature explains the fit between organisational factors and management accounting systems (MAS) (Waterhouse and Tiessen 1978; Otley 1980). Insights into the relationship between organisational context and MCS attributes can be obtained by employing a contingency framework to help explain the situation within which emphasis of 'superior' management models may or may not lead to improved performance. It was recognised two decades ago that there are organisational inhibitors and facilitators of accounting information systems emphasis (Ginzberg 1980). The contingency concept indicates that no universal system would be appropriate to ensure organisational effectiveness, bringing into question the universal appropriateness of centrally determined attributes of MCS such as output management¹¹.

¹¹ It is important to note that other approaches to explaining the success or failure of 'new' MCS exist. See for example the generic framework of Shields and Young (1989), and the empirical study of Shields and McEwan (1996). A generic approach to investigating new MCS attributes is beyond the scope of this study, which focuses upon contextual factors.

In overview, institutional theory enables an explanation of the adoption of MCS attributes such as output management. Contingency arguments provide a framework useful for analysing organisational contexts within which MCS attributes such as output management may be best suited. The importance of considering institutional and contingency arguments in designing appropriate MCS has been discussed in the management accounting literature (see for example Whitley 1999).

1.5 Motivation for, and contribution of, the study

The motivation for the study stems from a paucity of public sector management accounting research in a presently dynamic environment (Lapsley 1988; 2000). In the public sector environment there has been great emphasis on formal MCS attributes such as cost management initiatives (Geiger and Ittner 1996).

A study of formal MCS attributes such as output management, could be useful to understand why the *adoption* of these MCS attributes is rational, but there is a subsequent failure to *emphasise* the attributes (that is, the MCS attribute is not, or barely, used by managers) — resulting in the privation of intended efficiency gains to government and the community. Increased understanding of the importance of MCS selection and use, consistent with context, may assist government reformers to adopt more effective MCS solutions thereby enhancing organisational performance.

In a study of performance measurement in the US government, Ittner and Larcker (1998) identify two important areas in need of research. First they indicate that identification of determinants of 'new' governmental performance measurement practices would be a useful extension of extant management accounting research. This argument provides the basis for the first research question in this thesis that investigates determinants of recently implemented governmental MCS.

Second, they suggest that another research question worthy of evaluation is whether the new performance measurement systems employed within the US government will improve governmental performance. This provides a motivation for the second research question in this study, that concerns whether the 'new' MCS attribute fits well with the organisational context, subsequently resulting in improved MCS

usefulness, and then improved departmental performance through MCS usefulness. This question is especially pertinent given the "long history of unsuccessful management control initiatives in the US government, ranging from management-by-objectives to zero-based budgeting" (Ittner and Larcker 1998, 233). This statement typifies the Victorian government scene particularly during the 1980s (see appendix 1e for a history of public sector reforms).

As considered earlier, it has been claimed that there is a need for research that encompasses external conditions as identified within the domain of institutional theory (Scott 1987; Gupta, Dirsmith and Fogarty 1994; Geiger and Ittner 1996) (see section 1.6.1). Further, there is a need for holistic contingency research to provide a contingency framework to gain insight into organisational behaviour (Gresov 1989; Gupta et al. 1994; Otley 1994; Rimmer, Macneil, Chenhall, Langfield-Smith and Watts 1996) (see section 1.6.2).

The approach of this study will be, in the first instance, to develop a formal model to direct the investigation of the research questions using a traditional contingency approach. Next, the study aims to use qualitative data to build upon existing theories, and then to use these results as the basis for deeper analysis. This deeper analysis will reflect the main contribution of the study, focusing upon any nuances that become apparent in investigating the formally modelled contingency relationships and variables.

The approach adopted in this study is consistent with Ahrens and Dent's (1998, 11) suggestion that "theoretical constructs should be used to filter contextual information in field research". Ahrens and Dent (1998) identify that one approach to developing 'rich' accounts of relationships between variables is to start with precise and measureable constructs to "confirm, disconfirm or build on existing theories" but to then allow constructs to emerge from the data without the constraints of the formal model.

Consequently the formal model presented is based upon traditional relationships arising from the formal frameworks provided in the contingency literature. The deeper analysis presented indicates that the interaction of contingency variables with

OM-MCS is more complex. In essence, while the formulation and investigation of the structured model is important in contributing to the public sector budgeting and contingency literature the main contribution of the study is the use of qualitative data to understand emerging perspectives relating to the theoretical contingency constructs, where the formal propositions are found to be incomplete in explaining the relationships.

This work examines four elements of context that potentially affect MCS. The dimensions of the perceived external environment, technology and structure have been well defined within contingency frameworks. However, the affects of organisational culture are less clear. This follows as MCS has the potential to affect culture, in addition to the traditional contingency direction of the relationship, where culture affects MCS. The concept of performance has also been problematic in contingency research, with conceptual and measurement difficulties. This study recognises that these issues may cause complexities not able to be explained within the constraints of the formal propositions and attempts to address these by deeper analysis of qualitative data.

To summarise, this study aims to contribute to the public sector management accounting literature, the institutional literature and the contingency literature by using these frameworks to investigate the impact of output management on performance in Victorian government departments. Specifically, this study aims to improve understanding of formal MCS attributes in public sector environments, by showing how output management is adopted (for legitimacy reasons). Given the adoption of output management, the study examines the extent to which the emphasis on OM-MCS leads to MCS usefulness, which will depend on its appropriateness to the contextual setting (for contingency reasons). That is, the study aims to explain why adoption of output management may be rational due to legitimacy gains, irrespective of whether (or not) a high emphasis on OM-MCS results in efficiency gains. Finally, the study aims to show, in turn, that both adoption of output management and MCS usefulness (arising from emphasis on OM-MCS) have implications for departmental performance. The study uses a qualitative research approach to explore the complex relationships between contingency variables and OM-MCS to demonstrate the possibilities and problems of adopting

contingency frameworks. The remaining sections of this chapter outline the literature, context and background relevant to the study, provide an introduction to the research model and define the variables used.

1.6 Relevant literature

This section includes a brief introduction to both institutional and contingency literature. The discussion will provide a critical analysis of the theoretical framework and indicate the research path of the study. Whilst this literature is private sector dominated, a discussion of the relevance of the variables to the public sector is included to clarify the context of the study, together with the existing relevant public sector research. Subsequent chapters discuss institutional and contingency literature as they relate to the public (and private) sector in more detail.

1.6.1 Institutional literature

Gupta et al. (1994) assert that the contingency literature has focused on the impact of internal contingencies (for example, structure and task environment), whereas institutional theory has centred on external contingencies such as pressures from external constituents (for example, customers, competitors and government regulators). Institutional theorists argue that their paradigm provides a reference point for investigating antecedents to the existence of structures including MCS (see for example Rowan 1982; Zucker 1988).

Specifically, institutional theorists suggest that organisations sometimes adopt practices purely to appear rational to external parties (Gupta et al. 1994). This behaviour is particularly applicable to a government organisation because support from external parties is critical to their survival, notwithstanding performance (Meyer and Rowan 1977; DiMaggio and Powell 1983; Scott 1987; Warren 1993; Gupta et al. 1994; Haque 1998; Kirby, Sebastian and Hornberger 1998) and may help to explain why MCS components exist even where they are of minimal use to managers (Geiger and Ittner 1996).

An organisation may adopt a particular formal structure and set of management controls to demonstrate rational behaviour to its (usually) external constituents, as opposed to controlling organisational activities (Meyer and Rowan 1977; DiMaggio and Powell 1983). Past and recent management accounting literature has investigated the legitimating role of MCS (see for example, Berry, Capps, Cooper, Ferguson, Hopper and Lowe 1985; Lapsley 1994; Pettersen 1995, 1999; Euske and Riccaboni 1999; Malmi 1999; Seal 1999; Lapsley and Pallot 2000; Collier 2001; Modell 2001).

1.6.2 Contingency literature

MCS in government agencies can be investigated utilising a contingency framework. A contingency approach suggests that for an organisation to perform optimally, the components of the management systems, such as structure and MCS, must be consistent with each other and with organisational context (see for example, Otley 1980). This consistency is commonly referred to as 'fit' in contingency literature. A contingency approach is contrary to the universal approach adopted by early organisational theorists. A universal approach is characterised by the concept that there can be one optimal MCS that will suit all organisational types.

Drawing upon the early contingency work on organisational design, management accounting studies which adopted a contingency approach, focused upon identifying contextual variables that may have an impact on the design of MCS. In particular, this research has investigated the appropriateness of MCS (or attributes of MCS), dependent upon a variety of contextual factors such as: perceived external environment (Chapman 1997), size (Merchant 1984), structure (Gosselin 1997), strategy (Govindarajan and Gupta 1985), technology (Scott and Tiessen 1999) and organisational culture (Goddard 1997b).

While there are criticisms of the contingency literature¹², (which are discussed in and summarised following the contingency literature review), there is strong support for its use in organisational and management accounting research (Chenhall 2003). A

¹² See Otley and Wilkinson (1988), Otley (1994, 1999) and Chenhall (2003), for recent reviews.

contingency approach is considered particularly valuable here, to explain why output management may not universally contribute to MCS usefulness.

1.6.3 Joint frameworks

A combination of contingency and institutional theory is advocated by Scott (1987) to provide a comprehensive understanding of organisational control practices. Consistent with this claim, Dent (1986) from an organisational perspective, suggests that the traditional approach of contingency work has been too simplistic and that both social and political considerations may also be relevant. Geiger and Ittner (1996) use a combined theoretical approach for greater comprehensiveness, drawing upon contingency and institutional concepts to evaluate design and use of cost accounting systems in a US Federal government context. Malmi (1999)¹³ reports, from data collected in Finnish firms, that efficiency choice and mimetic behaviour both explain the adoption and diffusion of management accounting innovation (in Malmi's study, specifically activity-based costing).

The combined institutional and contingency approach, discussed above, is adopted in this study. Section 1.6 has briefly discussed the literature that provides theoretical links to the research model in this study. The remainder of this chapter will introduce the research model and research questions, defining the modelled variables.

1.7 Introducing the model and defining the modelled variables

Output management represents an innovative approach to management control in public sector organisations. The introduction of output management is expected to achieve enhanced organisational performance in government departments (Department of Treasury and Finance, Victoria 1996a). New management accounting techniques, however, while apparently quite logical and sound in themselves, have often failed to produce the required outcomes, such as efficiency gains (see for

¹³ Whilst Malmi (1999) is not explicitly a contingency study, it does argue that accounting innovations are adopted for both technical-efficiency reasons and institutional reasons and is therefore included here. Malmi (1997) suggests that ABC failures are related to contextual factors.

example, Ansari and Euske 1987). Many studies have descriptively researched the adoption of innovative management accounting practices, finding that the traditional management accounting practices are perceived as providing relatively greater benefits than many innovative practices (see Chenhall and Langfield-Smith 1998a for an empirical example and literature review) or that innovative practices are at least used alongside traditional practices (see for example Burns and Vaivio 2001).

In this study, institutional and contingency frameworks, respectively, are used to explain (1) why output management may be adopted; (2) the relationship between output management within the broader MCS (OM-MCS) and MCS usefulness, moderated by contextual factors; and (3) effects on performance arising from efficiency gains (through MCS usefulness) and/or legitimacy gains (through adoption of output management). From this point forward, throughout this study *output management within the broader MCS* will be referred to as *OM-MCS*. OM-MCS is defined in this study as output management within the broader MCS. OM-MCS reflects that output management is likely to co-exist with other MCS attributes (which will be specifically discussed in chapter two). Indeed unless this study shows that there is a high emphasis on output management, other MCS attributes will be dominant features of MCS. Regularly throughout this study reference will be made to a high or low emphasis on output management within the broader MCS. As noted, this will be referred to as a high/low emphasis on OM-MCS. This means that the high or low emphasis specifically relates to output management per se but that output management co-exists with other MCS attributes (irrespective of the level of emphasis placed upon these other attributes). Where this study relates to emphasis on other MCS attributes (which together with output management form OM-MCS as a whole) this will be specifically identified. In addition to OM-MCS, for the purpose of this study, sometimes MCS is referred to by itself, meaning the other (non-output management) MCS attributes and is termed *MCS* when this occurs. Similarly sometimes output management is referred to by itself and is termed *output management* when this occurs (see table 1.1). MCS usefulness means the usefulness of OM-MCS.

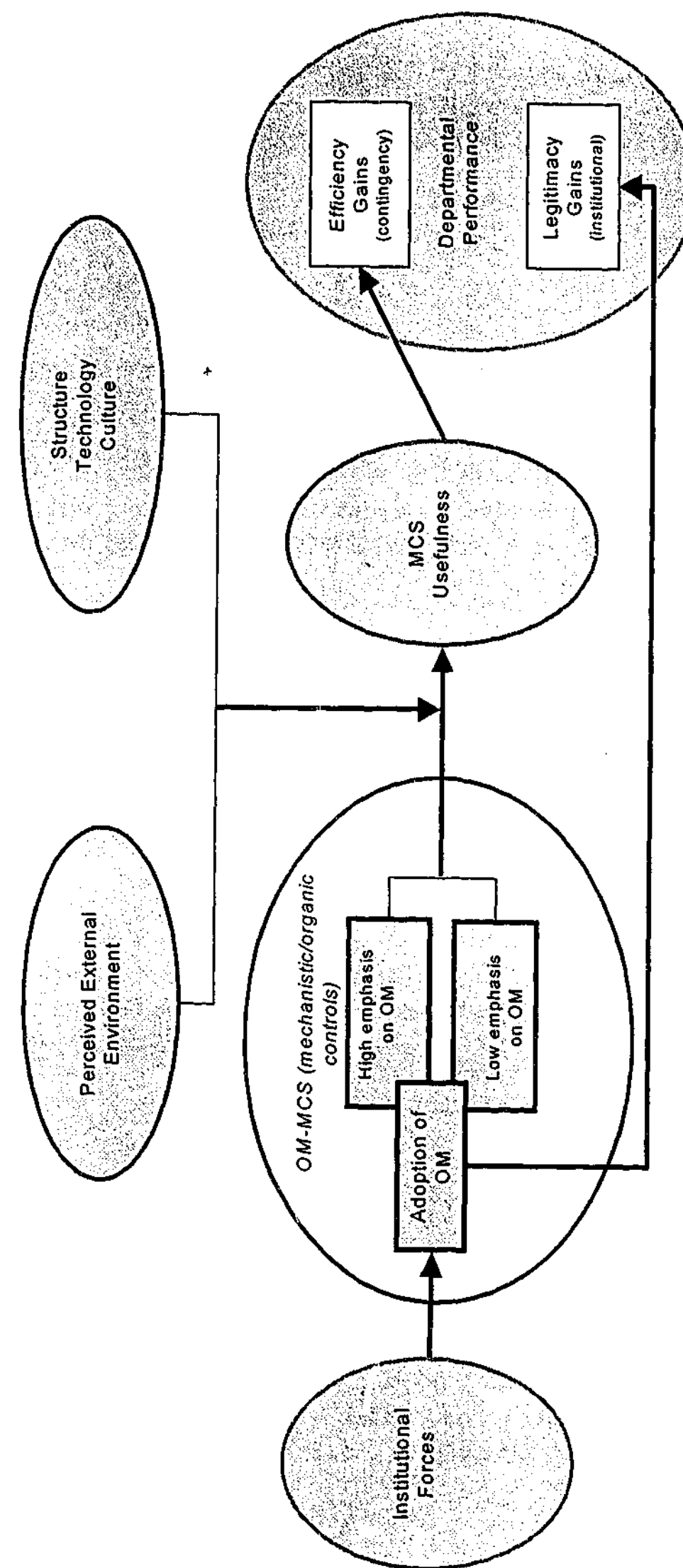
Table 1.1 Terms used relating to items within the independent variable

Term or acronym	Description
Output management	Output management by itself (even though it does exist within the broader MCS)
MCS	Management control system by itself (meaning a collective of a variety of MCS attributes excluding output management)
OM-MCS	Output management within the broader MCS (meaning output management as well as the other MCS attributes)
Emphasis on OM-MCS	High/low emphasis on output management within the broader MCS (irrespective of level of emphasis on these other MCS attributes)
Adoption of output management	Adoption of output management alone (accepting that output management is adopted into the broader, existing MCS)

Institutional theorists maintain that external forces shape organisational structure and control mechanisms (Gupta et al. 1994). Institutional theory maintains that external forces encourage the adoption of new MCS attributes for external reasons, that may not relate to efficiency reasons. Contingency theorists claim that for an organisation to perform optimally, the components of the organisation must be consistent with each other (that is, fit) and be appropriate for the contextual setting (Perrow 1967). Contextual variables can therefore provide an explanation for why innovative management accounting practices adopted for institutional reasons may fail to provide expected efficiency benefits (Anderson 1995; Innes and Mitchell 1995; Shields 1995; Foster and Swenson 1997; Gosselin 1997; Malmi 1997; McGowan and Klammer 1997; Krumwiede 1998; Anderson and Young 1999; Kalagnanam and Lindsay 1999).

The research model developed in this study is presented in figure 1.1. In overview, it is argued that the adoption of output management as part of government department's MCS is a result of institutional forces. That is, institutional forces are an antecedent to output management. Antecedents are conditions that lead to change — in this case, adoption of output management. Adoption of output management then leads to favourable departmental outcomes, defined as legitimacy gains. Further, the effects of a high/low emphasis on OM-MCS on the usefulness of MCS is moderated by contextual factors (perceived external environment, structure, technology and culture). If there is a fit (misfit) between contextual factors and OM-MCS, there will be a positive (negative) impact on MCS usefulness. Finally, MCS usefulness will have an impact upon departmental performance, defined as efficiency gains.

Figure 1.1 Institutional and contingency relationships modelled in this study



1.7.1 Details of the model

As indicated in figure 1.1, institutional forces (coercive and mimetic isomorphism) are modelled here as antecedents to the adoption of output management within government department MCS. As previously indicated, output management is a control practice that exists together with other controls that comprise an organisation's broader MCS (following Otley 1994; 1999), termed OM-MCS. It is argued that the adoption of output management will change departmental MCS (irrespective of whether or not output management is used), resulting in legitimacy gains that will in turn, have a positive impact on departmental performance (outcome variable) in the form of survival¹⁴. Legitimacy gains present unique issues relating to this study. Without legitimacy departments are highly unlikely to survive. Therefore, survival is indicative of baseline performance. That is, legitimacy leads to at least survival (through maintaining authority and current level of resources) and possibly an increase in resources. An increase in resources (other things being equal) enables more services to be delivered (but does not mean departments are necessarily more efficient). This relationship is predicted in addition to, and notwithstanding, any effects that lead to enhanced MCS usefulness (from a relationship between OM-MCS and MCS usefulness), which in turn, improves departmental performance through efficiency gains.

Figure 1.1 also indicates that contextual factors (perceived external environment, structure, technology and culture) moderate a relationship between OM-MCS and MCS usefulness. A fit between a high/low emphasis on OM-MCS and context results in MCS usefulness and, in turn, MCS usefulness leads to improved departmental performance through efficiency gains.

¹⁴ That is, the organisation continues to exist in substantially the same organisational form, or structure.

In overview, the model predicts that (1) a department will receive legitimacy gains from adopting output management¹⁵ irrespective of emphasis on output management; and (2) a fit between a high/low emphasis on OM-MCS and context leads to MCS usefulness and, in turn, MCS usefulness leads to improved departmental performance through efficiency gains.

In this study MCS usefulness is a dependent variable and departmental performance is an outcome variable. The model depicts two path relationships, that when considered in the context of the full model, explain why MCS usefulness is termed a dependent variable (and not an intervening variable) and departmental performance is termed an outcome variable (and not a dependent variable). Shields and Shields (1998, 51) distinguish between a dependent and an outcome variable, explaining that a dependent variable is caused by an independent variable and an outcome variable is caused by a dependent variable. Both of these relationships are modelled by Shields and Shields (1998) as unidirectional linear relationships (see Luft and Shields 2001).

One path in the model is the *institutional path*. The institutional path predicts that: institutional forces (antecedents) cause adoption of output management (independent) and that adoption of output management causes improved departmental performance through legitimacy gains (outcome). It is important to note that the institutional path is concerned only with output management, not OM-MCS. That is, the independent variable 'circle' in the model (see figure 1.1), contains output management with other MCS attributes, which together constitute OM-MCS. In the institutional path the independent variable relates only to the adoption of output management within the independent variable circle.

¹⁵ Adoption with subsequent low emphasis on output management means incorporating output management components into departmental MCS, with little to no use of these components in management control. Departmental production and availability of output reports, for example, without managerial use of those reports would indicate low emphasis.

The other path in the model is the *contingency path*. In the contingency path, the independent variable is high/low emphasis on OM-MCS. The output management part of OM-MCS can only exist post adoption. Therefore adoption is implicit in OM-MCS. That is, without adoption OM-MCS would be simply, MCS. The contingency path predicts that: the high/low emphasis on OM-MCS¹⁶ (independent) causes MCS usefulness (dependent), and this relationship is moderated by contextual factors (moderators). Then MCS usefulness causes departmental performance through efficiency gains (outcome)¹⁷.

Legitimacy gains and efficiency gains are different, although both have an impact on departmental performance. Legitimacy gains relate to the increase in legitimacy — for example, appealing institutional powers to achieve either greater resources or the authority to continue to exist in substantially the same organisational form. Efficiency gains relate to the increase in efficiency — for example, the use of fewer resources to achieve the same outcomes, or the use of the same resources to achieve more outcomes.

In summary, departmental outcomes involve efficiency gained indirectly (through MCS usefulness) by way of operating improvements (through a high emphasis on OM-MCS). If there is a low emphasis on output management, an increase in efficiency gains (through MCS usefulness) can only occur through other MCS attributes. As noted, if there is a low emphasis on output management, these other MCS attributes are likely to dominate MCS. Enhanced usefulness of MCS occurs only where there is a fit between OM-MCS and contextual variables.

¹⁶ Otley (1994, 1999) highlights the importance of studying specific control attributes within the context of the broader MCS, therefore, output management is considered in the broader MCS context.

¹⁷ It could be argued that the research model in this study employs both efficiency and legitimacy gains as intervening variables, however these are not variables per se, but part of departmental performance, and are included in the model for explanatory reasons. If efficiency and legitimacy gains were considered to be variables, the model would describe these relationships as intervening paths: for efficiency gains, from: MCS usefulness to efficiency gains to departmental performance; and for legitimacy gains, from MCS design to legitimacy gains to departmental performance.

Improved departmental performance achieved through legitimacy gains occurs from increased legitimacy as a result of adopting output management, irrespective of the degree of emphasis on output management. This outcome occurs because the institutional authorities reward the adopting action of the department by either providing additional resources or permitting survival in substantially the same organisational form.

Both the institutional and the contingency paths are important to the full model. In incorporating both the institutional and contingency paths in a single model, however, a difficulty arises that departmental performance could be considered a dependent variable instead of an outcome variable in the legitimacy path and MCS usefulness could be considered an intervening variable instead of a dependent variable in the contingency path. This difficulty was alluded to earlier in this section.

To avoid confusion in relation to the two paths modelled, MCS usefulness is termed a dependent variable and departmental performance is termed an outcome variable. The reasons for using these terms are briefly explained below (and fully described in part two, chapter nine, subsection 9.6). Specifically this study models a number of relationships incorporating institutional and contingency arguments. The full model can best be described, using Luft and Shields' (2001) terms, as a unidirectional linear interaction (in moderator — not independent — form), with unidirectional linear relationships joining onto either side of the model (that is, institutional forces and departmental performance shown in figure 1.1).

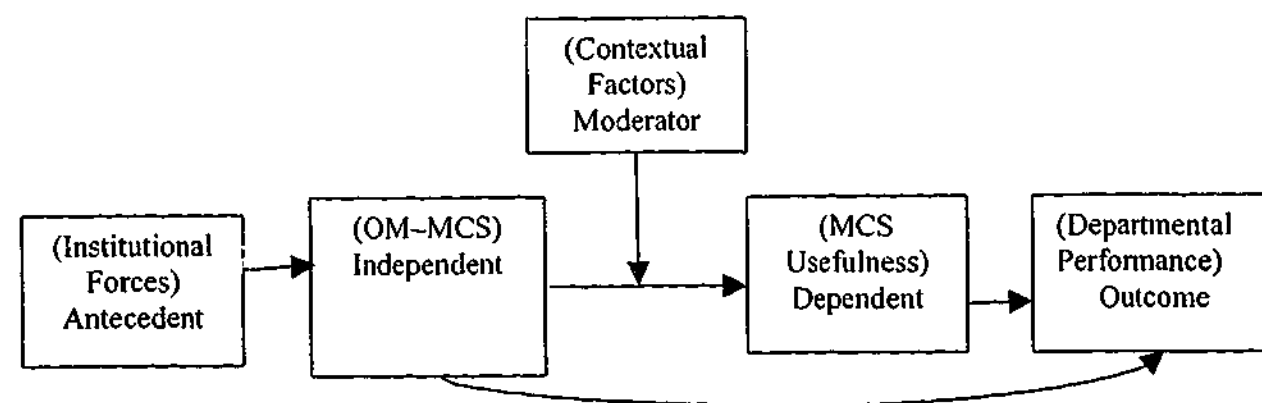
Whilst Luft and Shields (2001) depict models that describe simple relationships for explanatory reasons, they indicate that a number of these simple models can be used together to form more complex models. The model in this study closely resembles the holistic example provided by Shields and Shields (1998, 51)¹⁸, excepting two relationships. Shields and Shields' (1998) example model includes an intervening relationship, whereas this study does not (as previously explained). Furthermore,

¹⁸ Shields and Shields' (1998) model is consistent with Briers and Hirst (1990).

Shields and Shields (1998) do not depict a direct relationship between the independent and outcome variables, whereas this study does.

As noted, the direct relationship between the independent and outcome variables is modelled to avoid possible confusion within the full model if departmental performance (whether arising from efficiency gains or legitimacy gains) was termed a dependent variable in the institutional path and an outcome variable in the contingency path. If these two paths were in separate models, labeling variables would be less complicated. In generic form the model used in this study is explained in figure 1.2, for clarification.

Figure 1.2 Generic model form: variables used in this study



It is important to stress that the independent variable is OM-MCS. That is, while output management and other controls within MCS co-exist (forming OM-MCS), the primary focus of this study is the impact of output management as part of OM-MCS on departmental outcomes. Output management by itself, other attributes within MCS, and MCS as a whole (without output management), will be explicitly referred to when they are focused upon.

This study models institutional forces as having an effect on departmental performance arising through legitimacy gains, as a result of the adoption of output management. Notwithstanding any legitimacy effect occurring between the antecedent (institutional forces), independent (adoption of output management) and outcome variables (performance arising from legitimacy gains), moderating variables

are predicted to have a contingent effect on the relationship between the independent (emphasis on OM-MCS) and dependent variables (MCS usefulness). This study models organisational factors (perceived external environment, structure, technology and culture) as moderators between OM-MCS within government departments and the usefulness of information generated by these systems (MCS usefulness), with consequences for departmental performance arising from efficiency gains.

It should be noted at the outset, that this study crosses levels of analysis. Rousseau (1985) identifies four levels of analysis in organisational research: organisational, department, work-group and individual. These levels of analysis are somewhat consistent with those of Hopwood (1976) and Luft and Shields (2001). The levels of analysis in this study are both organisational and departmental. In this study, to avoid confusion, Rousseau's (1985) organisational level is termed departmental (because the organisations are departments) and Rousseau's (1985) departmental level is termed divisional level.

A focus on both departmental and divisional levels of analysis was necessary because the implications of output management adoption are pertinent at departmental level and emphasis on OM-MCS is pertinent to both departmental and divisional levels, with indirect (through MCS usefulness) effects on departmental performance. The issue of levels of analysis related to this study is further developed in chapter ten, where the research method is discussed.

1.7.2 Variable definitions and some contingency modelling complications

Definitions of the antecedent (coercive and mimetic institutional forces), independent (OM-MCS), dependent (MCS usefulness), moderator (perceived external environment, structure, technology and culture) and outcome (departmental performance) variables are provided in this section. Appendix 1f tabulates the definitions of all variables modelled in this study. In appendix 1f, the main construct is defined first, followed by definitions of each of the dimensions of the constructs, where applicable.

1.7.2.1 Institutional forces

The antecedent variables are defined according to the seminal institutional work of DiMaggio and Powell (1983), who developed the concepts of coercive and mimetic isomorphism. Isomorphism refers to a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions.

1.7.2.2 Contextual factors

Most of the moderating variables in appendix 1f are defined according to important works in the organisational design, or management accounting contingency literature, together with the independent, dependent, and outcome variables. The moderating variables in this study are perceived external environment, structure, technology and culture.

Perceived external environment attributes chosen in this study are based on the work of Khandwalla (1972a,b, 1977), Duncan (1972) and Miles and Snow (1978). These are chosen as a comprehensive set of external environmental variables, utilised in contemporary management accounting contingency research that operationalised one or more perceived external environment dimensions (see for example, Gordon and Narayanan 1984; Chenhall and Morris 1986).

The many dimensions relating to structure are defined from a variety of seminal works in the organisational design literature (Pugh, Hickson, Hinings and Turner 1968; Khandwalla 1972b, 1977; Gordon and Miller 1976). These structural dimensions (organic/mechanistic, centralisation/decentralisation, matrix, structural complexity, differentiation and contextual interdependence) have been used variously in the contemporary management accounting contingency literature (see for example, Gordon and Narayanan 1984).

The technology construct, task uncertainty, is based on Perrow's (1970) concepts of task difficulty and task variability. Perrow's (1967, 1970) work on technology is widely recognised as seminal, has (as noted in the subsequent literature review) been used more extensively in management accounting contingency frameworks than any other work and is consistent with other work on technology. Perrow's (1967, 1970)

task uncertainty construct has been used in both private, profit sector and public and private not-for-profit sector contexts.

The technology construct, interdependence, is based on the concepts of pooled, sequential, reciprocal (Thompson 1967) and team (Van de Ven, Delbecq and Koenig 1976) interdependence. These concepts have been commonly used as a basis for management accounting research into the relationship between MCS and interdependence.

Organizational culture is a less researched variable in management accounting contingency frameworks. Nevertheless, culture has been described as an important variable to MCS (Flamholtz 1983), particularly in a governmental context (Dewing and Jones 1996).

Further explanation of culture is necessary in the discussion of the contingency modelling because culture is a complicated variable in its relationship to MCS. Specifically, culture is not a traditional contingency variable like perceived external environment, structure and technology. The following subsections (1.7.2.2.1, 1.7.2.2.1.1 and 1.7.2.2.1.2) aim to clarify these complexities.

1.7.2.2.1 Complexities for contingency modelling of organisational culture

Organisational culture (hereafter referred to as 'culture') and MCS are heavily intertwined (Ouchi 1979; Dent 1991). Dent (1986) noted that accounting is a cultural artefact that is observable¹⁹. Dent (1986) therefore implied that accounting is part of culture, demonstrated by the significance placed on accounting in an organisation — yet he also considered that accounting can cause culture to change. This cause and effect relationship is well demonstrated by Dent (1991) (and discussed subsequently).

¹⁹ Other aspects of culture relate to relationships with individual level variables, for example organisational values and the personality of individual organisational members. This study is not concerned with individual level variables.

The impact of new forms of accounting control on culture within public sector organisational reform has been documented (Bourn and Ezzamel 1986; Dent 1991; Broadbent and Guthrie 1992; Humphrey 1994; Dewing and Jones 1996). As with the private sector, accounting has been used as an integral part of organisational change processes in the public sector (see for example, Boland and Pondy 1983; Berry et al. 1985; Ogden and Bougen 1985; Covalleski and Dirsmith 1986; Miller and O'Leary 1987; Ogden 1995).

In this study, the formal model includes culture as a contingency variable moderating the relationship between OM-MCS and usefulness. Culture is a complicated variable to apply in a contingency model because while it may be modelled as a moderating contingency variable, there is also evidence that MCS can influence culture (Dent 1991) and (Bourn and Ezzamel 1986).

1.7.2.2.1.1 Accounting affecting culture

Dent (1986) suggested that the level of importance placed on accounting within an organisation partially characterised its culture. Differences between organisations have been recognised in terms of the focus on accounting, although a paucity of research on organisational culture is apparent²⁰.

Accounting has been used as an integral part of organisational change processes (see for example, Dent 1986; Hopwood 1987; Llewellyn 1998; Loft 1988; Roberts 1990; Vámosi 2000)²¹. Flamholtz (1983, 160) states: "the very process of designing a core control system can itself be used as a vehicle of cultural change in an organisation". Dent (1986) provided examples of organisations that used accounting (a more mechanistic control) to change their corporate cultures to become more commercial.

²⁰ There is, however, much contingency literature relating to the relationship between national culture and MCS (see Chenhall 2003 for a discussion).

²¹ This study is of a private sector company, however, it had been government-owned prior to the research period (Vámosi, 2000).

Similarly, Llewellyn (1998) identified in her case study of UK social services departments that a change in accounting can ultimately affect cultural change. Specifically, over time, organisational boundaries shifted from a culture where expertise in social work practice ('caring') predominated over expertise in public sector accounting ('costing') and then as internal boundaries shifted, a cultural change was effected. In this situation costing conduits were established which required the establishment of caring discourses.

Consistent with Dent (1986) and Llewellyn (1998), Roberts (1990, 122–123) who studied strategy and control rather than culture, observed in his case study of a UK conglomerate that a change in accounting can ultimately affect cultural change:

The formal unities of accounting information were changed, but the practices of accountability remained unchanged. These practices still reflected the Board's desire to exercise direct control over operational matters. They also reflected and reproduced the dominance of what one might call a production culture over purely financial concerns...in the months immediately following acquisition, entirely different forces and concerns came into play. Conglom and the acquisition team had little dependence on the existing ELB management and carefully avoided developing it. Instead external consultants were used to audit the business to allow the rapid identification of areas of loss and cost and their equally rapid sale or closure. Thus at the level of meaning, the dominance of a production culture was instantly supplanted by the dominance of a purely financial logic (emphasis added).

Dent (1991) ethnographically investigated how accounting is implicated in changing organisational culture²². Specifically, in looking at organisational change longitudinally in a UK government railway enterprise, Dent (1991) found that once the culture changed from 'railway' (bureaucratic) to 'business' (managerialist), the importance of accounting information (a mechanistic control) increased and that the balance of power changed from operational sections to the business section. Following a government initiative to severely reduce costs, for survival, the railway organisation needed to make the shift from a culture that centred on engineering and production concerns to a culture that centred on economy and accounting.

Accounting was incidental to the engineering and production culture that existed prior to the study. Accounting occurred to manage revenues and ensure bills were paid but had no importance among senior management. In the economic and

²² Dent (1991) focuses on a variety of theoretical bases, including institutional theory.

accounting culture that emerged, accounting became important to senior management. The railway culture was consistent with the public sector goal of providing suitable transport infrastructure to the community. The business culture was consistent with the goal of profitability. Dent (1991) demonstrated the importance of accounting in affecting the business culture.

Similar concepts and findings to those of Dent (1991) apply in the case study reported by Vámosi (2000), who studied management accounting change in a Hungarian, once state-owned, chemical company as it evolved from a production focus under a command economy, to a financial survival focus, under a market economy.

Lowe and Doolin (1999) investigated the emphasis of a casemix accounting system within a large, New Zealand public teaching hospital. Their study would best be classified as of a social constructionist type, however it is included here due to insightful comments made regarding culture. They noted that:

The advent of change in the health sector has affected the most basic philosophy of the health service and its participants. The movement toward a market for health services, the associated commodification of health and the increasing insistence on the adoption of business practices and the profit motive, indicate particularly severe departures from the previous service culture (Lowe and Doolin 1999, 181).

It would seem that Lowe and Doolin's (1999) discussion of cultural change from a service culture to a business culture is akin to Dent's (1991) findings of transition from a railway culture to a business culture.

In conclusion, as well as use as a legitimising tool, and a cultural artifact, accounting has been used as an integral part of organisational change processes (see for example, Dent 1986, 1991; Hopwood 1987; Llewellyn 1998; Loft 1988; Roberts 1990; Vámosi 2000), by increasing the importance of accounting information. Specifically, accounting information has changed organisation cultures toward greater commercialism (Dent 1986); from predominantly 'caring' to a greater focus on 'costing' (Llewellyn 1998); from a 'production' culture to a purely 'financial' culture (Roberts 1990); from a 'railway' (bureaucratic) culture to a 'business' (managerialist) culture (Dent 1991); and from a 'service' culture to a culture

characterised by increasing insistence on the adoption of business practices and profit motives (Lowe and Doolin 1999).

1.7.2.2.1.2 Accounting as part of culture

Another issue that complicates the contingency modelling of organisational culture is that in addition to it affecting MCS, MCS can also be considered as a dimension of organisational culture.

Bourn and Ezzamel (1986) considered the role of corporate culture and clan controls during a management reform period in the UK's National Health Service. Drawing upon Ouchi (1980), Bourn and Ezzamel (1986, 203) noted:

Control in the NHS is seen in terms of a corporate, or clan, culture, which is subject to challenge by a competing culture derived essentially outside the NHS and which advocates an approach in terms of increased financial accountability which is more consistent with a hierarchic control system...in such a context the systems of management budgeting recommended by Griffiths (the NHS Management Inquiry, entitled The Griffiths Report 1983) may turn out to be more ritualistic than rationalistic as means of control and financial accountability.

The observations of Bourn and Ezzamel (1986) indicated that the imposed initiative to appoint general managers, to impose the introduction of management budgets (a mechanistic control) and to include clinicians (both cost effectiveness and efficiency focused), was contextually inappropriate, given a culture of clan control. It is noteworthy that Bourn and Ezzamel (1986) modelled clan control as a culture variable, when contingency research in management accounting generally considers clan control an element of MCS.

Another perspective on culture is that provided by Marginson (1999) who concluded from his longitudinal case study in a UK communications company, that size, strategy and technology were not important in the use (or non-use) of MCS in controlling subordinates, but that culture was important. He suggested that the informal, social control system (organic controls) was heavily used compared with the formal, administrative controls (mechanistic controls) in his case study. Marginson (1999) explicitly distinguished culture as an "internal issue", rather than a contingent factor, and it is not clear from his analysis and conclusions whether culture is a separate variable, or simply part of social control.

As noted, organisational culture is modelled as a contingency variable in this study. The importance of elaborating on the difficulties related to the treatment of culture as a contingency variable when MCS can be modelled alternatively, is that the deeper analysis that follows the investigation of the propositions reflects these nuances in the relationship between culture and MCS.

1.7.2.3 Output management and MCS

MCS has been described variously in the management accounting literature and was defined in section 1.2. Frequently, specific attributes of MCS are studied, rather than entire systems. Output management is one such attribute. Output management is an MCS attribute, defined as a process of linking funding, reporting and monitoring of clearly defined outputs to government strategic priorities or outcomes (Department of Treasury and Finance 1997b). While output management is the focal technical control practice examined, as noted it is important for a comprehensive analysis of the impact of output management, to consider the broader MCS within which output management is emphasised, that is OM-MCS.

This study adopts a broad, generic framework for analysing MCS. This framework is based upon the seminal work of Burns and Stalker (1961), that has been utilised in contemporary management accounting contingency literature (see for example Chenhall and Morris 1995; Gosselin 1997). Within the generic organic/mechanistic framework, the technical control practice — output management — is examined (see appendix 1f for definitions of MCS attributes based on a distinction between organic and mechanistic controls). MCS attributes in this study are sometimes referred to as mechanistic or organic controls. Mechanistic or organic controls are used as overarching terms in this study, reflecting mechanistic control practices and processes and organic control practices and processes, respectively.

In overview, output management is: (1) a technical control practice. More specifically, it is a mechanistic technical control practice; (2) output management operates within the broader MCS. That is, output management is an attribute of MCS. As noted, output management within the broader MCS (that is together with other mechanistic, organic or mixed MCS attributes) is termed OM-MCS; and

(3) while output management is a mechanistic technical control practice, it can be used either mechanistically or organically (output management as a process)²³.

A high emphasis on output management is defined as where output management is considered by managers as either *quite or very important*²⁴. A moderate emphasis (not expressly modelled but described here for conceptual clarity) is defined as *of some importance*. A low emphasis is defined as *of little or no importance*, following Hopwood (1972). The use of these definitions to describe degree of emphasis on MCS attributes such as output management is consistent with the reliance on accounting performance measures (RAPM) literature (see Otley and Fakiolas 2000, for a review). Output management is a mechanistic control practice regardless of the level of emphasis on it, however, when considered within the broader MCS, a low emphasis on output management may mean that OM-MCS is either more mechanistic or more organic depending on whether it is dominated by other mechanistic controls, or alternatively, dominated by organic controls (or a mixture of both).

High or low emphasis can relate to either, or both, the technical control practice (output management as an MCS attribute) and/or the output management processes (the way in which output management is used). The distinction between MCS attributes — that is, technical control practice(s) — and MCS processes has been identified by Chenhall and Morris (1995). Further, Simons (1995) provides an example of the difference between a technical control practice and a process, or system of use (such as diagnostic and interactive control systems). Specifically, Simons (1995, 96) indicates that an interactive system, for example, “is not a unique type of control system: many types of control systems can be *used* interactively” by managers (emphasis added). That is, diagnostic (mechanistic) and interactive (organic) systems are methods of using technical control practices.

²³ Other attributes of MCS, whether organic or mechanistic as practices, can also be used mechanistically or organically.

²⁴ A high emphasis on output management, therefore, indicates a more mechanistic MCS. An exception to this is where there is a high emphasis on output management as well as a high emphasis on more organic controls.

Table 1.2 describes the distinction between output management as a technical control practice and output management as a process. Table 1.2 explains that while output management is identified as a mechanistic technical control practice, it can be used in either an organic or a mechanistic way.

Table 1.2 Technical control practices and processes

	Mechanistic	Organic
Practices	Output management as an MCS attribute	
Processes	Output management used mechanistically	Output management used organically

That is, notwithstanding the argument that output management is a mechanistic control *practice*, it is argued that it is possible to use mechanistic control practices organically (*processes*). Using control practices organically means using them flexibly. Using control practices mechanistically means using them rigidly. That is, a high emphasis on output management used in a mechanistic way, is considered more mechanistic. A high emphasis on output management used in an organic way, is considered more organic.

To clarify the nature of OM-MCS it is necessary to consider the combined effects of the practice of output management and the way in which it operates in conjunction with other elements of the MCS. In relation to OM-MCS, organic/mechanistic combinations can be described (see figure 1.3).

Figure 1.3 Connection between technical control practices and the generic organic/mechanistic control framework

		Technical control practices and processes	
		High emphasis on OM	Low emphasis on OM
Generic organic/mechanistic control framework	Mechanistic	OM used mechanistically (and low emphasis on organic control practices)	OM used mechanistically or organically. (and high emphasis on other mechanistic control practices)
			OM used mechanistically or organically (and high emphasis on other mechanistic control practices)
	Organic	OM used organically (and low emphasis on organic control practices)	OM used mechanistically or organically (and high emphasis on organic control practices)
		OM used organically (and high emphasis on organic control practices)	
		OM used mechanistically (and high emphasis on organic control practices)	

Specifically, a high emphasis on output management used in a mechanistic manner and in the absence of a high emphasis on organic controls, is described as a mechanistic form of MCS²⁵. Other MCS combinations are considered organic. That is, a high emphasis on output management, used mechanistically, together with a high emphasis on organic controls — or a high emphasis on output management alone, used organically — can both be described as organic MCS. Where there is a low emphasis on output management (which is still a mechanistic control practice, regardless of emphasis level) MCS may still be mechanistic because it may be dominated by other mechanistic controls. Similarly, MCS may be organic where there is a low emphasis on output management, because output management may be dominated by organic control practices.

Where the emphasis on output management is low, the way in which output management is used is irrelevant, because low emphasis means managers consider it is of little to no importance. That is, a low emphasis on output management by itself cannot impact MCS usefulness (beyond a neutral impact where an alternative high

²⁵ Obviously a situation where there is low emphasis on output management, however used, and high emphasis on other mechanistic controls (for example, standard operating procedures and inflexible budgets) alone indicates a mechanistic MCS.

emphasis on output management, if inappropriate to context, could cause dysfunction). The implication of a low emphasis on output management for OM-MCS is that managers are likely to rely on other MCS attributes. Figure 1.3 provided a complete set of organic/mechanistic OM-MCS scenarios. These relationships of technical control practices and processes (output management and other technical controls practices and processes) to the generic organic/mechanistic MCS framework are explained in greater detail in chapter two.

1.7.2.4 MCS usefulness and departmental performance

MCS usefulness (dependent variable) and departmental performance (outcome variable) have often been researched in conjunction with contextual factors. This is endemic in the contingency research because a central proposition of contingency studies is that MCS usefulness occurs where there is a fit between context and MCS and that where there is a fit, improved subunit or organisational performance is implied²⁶.

Therefore a concept of generic MCS usefulness is not applicable in contingency studies. That is, no MCS is either useful or useless per se, but is context specific. Usefulness is often implied in management accounting contingency research as occurring if there is a fit between context and MCS and this is demonstrated by fit occurring in effective organisations. In this study, MCS usefulness is defined by whether OM-MCS is reported as useful to management for internal use. This approach is taken so that MCS usefulness is measured, not inferred via fit relationships.

Departmental performance is defined following suggestions by Chua (1986), Otley and Wilkinson (1988) and Otley (1999) as whether the performance targets set by the departments themselves are met, and whether government, ministerial and community expectations of the departments are fulfilled. This approach is adopted

²⁶ The link to performance, or effectiveness, is not well established empirically however, as discussed in chapter four.

because the conceptualisation and measurement of performance has been heavily criticised in contingency research (see for example, Otley and Wilkinson 1988).

1.8 Research questions

The research questions in this study seek to examine the issues surrounding adoption of output management and emphasis on OM-MCS in Victorian government departments, utilising a holistic institutional and contingency framework consistent with Gupta et al. (1994) and Geiger and Ittner (1996). Detailed discussion of the research questions (including comprehensive explanations of terminology used) can be found in the literature review, chapters three to nine. Specifically, these broad research questions (RQ) are:

RQ1 Do Victorian government departments adopt output management for institutional reasons?

RQ2 Where adoption of output management results from institutional forces, do positive effects on departmental performance arise (through legitimacy gains)?

RQ3 Do contextual factors moderate the relationship between OM-MCS and MCS usefulness?

RQ4 Where MCS usefulness results from a fit between OM-MCS and contextual factors, do positive effects on departmental performance arise (through efficiency gains)?

Specific propositions arising from, and refining/elaborating these broad research questions will be developed subsequently. This study is reported in four parts. Part one provided an introduction to the study and the model and will subsequently explain OM-MCS. Part two provides a literature review and related propositions proposed and to be investigated in this study. Part three explains the research design, method, analysis and results of the study. Part four provides concluding comments, explains limitations of the study and outlines further research possibilities.

This chapter has introduced the study and the research model and defined the variables. Chapter two in the remainder of this part, and chapters three to nine in part two further develop the background and theoretical framework underpinning the model.

Specifically in part two, chapter three examines the institutional literature relating to the antecedent variables and their relationship to the adoption of output management. Chapters four to nine introduce the moderating variables and discuss contingency theory, drawing on private and public sector literature. These chapters demonstrate the links between contextual variables, OM-MCS, MCS usefulness and departmental performance. Together with the relevant literature, chapters three to nine also introduce the specific propositions of this study (arising from the broad research questions outlined in this section). Chapter nine draws these propositions together, summarising how they underpin the research model.

In part three, chapter ten outlines the research design and method adopted to collect and analyse the data. Results from analysis of these data are discussed in chapters eleven to fourteen. In part four, chapter fifteen provides concluding comments and chapter sixteen indicates limitations and suggests future research possibilities relating to this study.

CHAPTER TWO OUTPUT MANAGEMENT AND MCS

2.1 Introduction

This chapter focuses upon OM-MCS, the control system to be investigated in this study. The discussion positions output management within the generic framework of mechanistic/organic MCS, identifying it as a mechanistic control practice, as introduced in chapter one. Once the chapter establishes OM-MCS within the organic/mechanistic framework, it elaborates on the organic/mechanistic framework and discusses the appropriateness of output management in a public sector context. Output management and MCS are revisited in chapters four to nine, where the implications of OM-MCS in a departmental context are developed and the propositions for this study are detailed. Specifically, chapters four to nine provide a comprehensive discussion of the relationship between mechanistic/organic OM-MCS and context.

2.2 Organic and mechanistic OM-MCS

In relation to OM-MCS, the theoretical framework employed in this study is based on Burns and Stalker's (1961) concept of organic and mechanistic organisational control designs. The generic organic/mechanistic MCS framework and its relationship to technical control practices, such as output management and other MCS attributes, was identified in chapter one. In this study, *mechanistic controls* are defined as controls that rely on formal rules, standardised operating procedures and routines. *Organic controls* are defined as controls that are flexible, responsive, rely little on rules and standardised procedures and are rich in data (Chenhall 2003).

Output management is a technical control practice characterised by output controls. Output controls are defined in this study as: records of departmental output that form the basis for departmental evaluations. This definition is adapted from Ouchi (1977, 1979) and Otley (1987). As previously explained, it is argued in this study that output management is a mechanistic technical control practice, although it can be

used either mechanistically or organically (process).

It is important to clarify that while this study is concerned with output management, it recognises that output management is part of the wider MCS (as recommended by Otley 1994, 1999 and discussed in chapter one). Therefore, throughout this study, where MCS is referred to it can be taken to include all management controls in a department. MCS may contain any mix of organic and mechanistic elements — a mixture of any of the controls identified in table 2.1. Where OM-MCS is referred to, it means the existence of a high/low emphasis on output management together with any mix of other mechanistic and/or organic controls. This is consistent with the idea that where output management is adopted, it co-exists with other MCS attributes. A comprehensive list of MCS attributes identified according to the organic/mechanistic typology is provided in Chenhall (2003) and repeated in table 2.1.

Table 2.1 Organic and mechanistic forms of MCS

<i>More organic</i>	<i>More mechanistic</i>
Clan controls (control cultures and norms)	Budget constrained performance evaluation style (high emphasis on cost budgets)
Social controls (self and group controls; input controls – social controls and budgets)	Budget control
Personnel controls (selection, training, culture, group rewards, resources, socialisation)	High reliance on accounting controls (use of accounting for performance evaluation)
Sophisticated integrative mechanisms (task forces, committees)	High budget use (importance, involvement, time consumption)
Prospect controls (focus on plans and future, infrequent and general reporting)	Narrow scope (financial, internal, historic)
Broad scope information, flexible aggregations, integrative information, timely information	Sophisticated capital budgeting (for example, discounted cash flow analysis)
Static/flexible budgets (flexibility of budgets to volume changes)	Sophisticated controls (standard costing, incremental costing, statistical quality control, inventory control)
Participative budgets (subordinate involvement)	Operating procedures, budgets and statistical reports
Low reliance on accounting controls (use of more profit oriented controls or non-accounting controls)	Administrative use of budgets (importance of meeting budget, formality of communications, systems sophistication and participation)
Budget slack (excess resources)	Interpersonal controls (lack of formal controls but centralisation, lack of autonomy, pressure inducing actions by superiors)
Competitor focused accounting (competitor cost assessment, position monitoring and appraisal, strategic costing and pricing)	Output and results controls (outcomes or effectiveness measurement)
Strategic interactive controls (use of performance evaluation for strategic control)	Behaviour controls (standardisation, rules, formalisation)
Product development information (levels of detail, frequency of updating and pattern of usage for information related to product cost and design, time related, customer related, resource inputs, profitability)	Patriarchal control (personal and informal, centralised control from top management)
	Action controls (process controls, manufacturing performance measures, direct measures of production processes)
	Diagnostic controls (use of control to provide feedback on operations)

Source: Chenhall (2003).

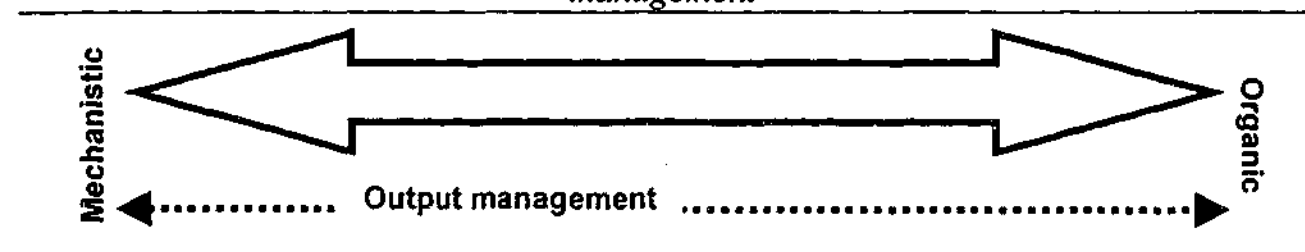
This mechanistic/organic framework for MCS has been used in MCS research, often with contextual variables to test contingency relationships. The following examples of literature employing organic/mechanistic MCS and contextual variables are ordered chronologically.

Gresov (1989) predicted and found that work units with high task uncertainty and high horizontal dependence performed best when using organic, not mechanistic

MCS. Chenhall and Morris (1995) found support for their hypothesis that the association between enhanced performance and organic processes, with extensive use of mechanistic budgets, would be greater in firms pursuing entrepreneurial strategies than firms pursuing conservative strategies. Selto, Renner and Young (1995) proposed fit relationships between structure (standardisation and worker authority), task uncertainty, vertical and horizontal dependence and organic/mechanistic control processes, finding mixed results. Gosselin (1997) argued that organisational structure influences emphasis capability. He predicted that among organisations adopting an activity management approach (ABC), a mechanistic structure is positively associated with organisations that adopt (implement) ABC. Gosselin found that organic organisations are more likely to implement activity analysis and activity cost analysis (simpler, less formal levels of activity management than ABC), while mechanistic organisations are more likely to succeed in implementing ABC because mechanistic organisations are suited to formal systems and find them easier to implement. Kalagnanam and Lindsay (1999) investigated the adoption of innovative manufacturing practices (JIT) arguing that mass production firms adopting JIT need to abandon mechanistic controls for organic controls and their results support this argument.

OM-MCS has been broadly defined in this study using the organic/mechanistic framework. Figure 2.1 is presented to further clarify the position of output management on an organic/mechanistic continuum.

Figure 2.1 Organic/mechanistic framework — technical control practice output management



Output management as a technical control practice is mechanistic. However, in terms of the way in which output management is used, it can be on the more mechanistic end of the continuum if used mechanistically (rigidly), or toward the more organic

end of the continuum if used organically (flexibly). This also applies to other MCS attributes. That is mechanistic controls and organic controls can be used mechanistically or organically. Throughout the study, where necessary to discuss the broader MCS within which output management is embedded, controls will be recognised as organic or mechanistic, representing two extremes on the above continuum.

2.2.1 Combined organic and mechanistic MCS attributes

While contextual factors are not discussed until the literature review (part two), several contingency based studies are reviewed in this section to explain further, the organic/mechanistic MCS framework. These studies explain the organic/mechanistic MCS framework in relation to organisational context, arguing that MCS usefulness depends on contextual factors²⁷. Therefore, some reference must be made to context prior to the literature review on contextual factors.

Contemporary MCS research, based on the seminal work by Burns and Stalker (1961), further develops the mechanistic/organic MCS framework. Specifically, the concept has evolved that organisations characterised by particular contexts need organic controls such as informal co-ordination mechanisms, as well as mechanistic controls. For example, Macintosh (1994, 135) indicates that:

Bureaucratic controls, so well suited to the certainty of closed-rational systems, tend to lose their potency when means are not well understood and when ends are ambiguous. Under these conditions, other types of control must be brought into play to supplement bureaucratic controls. These include charismatic, market, tradition, and collegial controls (emphasis added),

and Chenhall and Morris (1995, 488) argue that:

...it is important to recognise that organic processes may not, in the absence of formal systems such as MAS, be sufficient to promote effective performance...it is through MAS that management can maintain a focused view of organisational direction, capabilities and constraints (emphasis added).

Chenhall and Morris (1995) suggest that formal MAS is useful in innovative organisations because organic processes encourage innovation, but may not ensure

²⁷ Presumably, MCS usefulness demonstrates MCS effectiveness.

that innovative ideas develop into effective innovations, enhancing performance. Formal MAS can provide information for resource planning and integration to aid innovation development and ensure that innovative ideas are consistent with management strategies.

Similarly, Simons (1995) provides evidence that there are particular activities that must be analysed and understood in organisations for successful strategy emphasis. These activities are controlled by four different MCS, or "levers". These MCS are: belief systems, used to inspire and direct the search for new opportunities; boundary systems, used to set limits on opportunity-seeking behaviour; diagnostic control systems, used to motivate, monitor, and reward achievement of specified goals; and interactive control systems, used to stimulate organisational learning and the emergence of new ideas and strategies.

Simons (1995) contends that these systems all work simultaneously within an organisation and that senior managers use this combination of opposing forces variously, to create a dynamic tension for best organisational strategy emphasis, depending on context. Simons' (1995) concepts can be related to the contemporary development of the mechanistic/organic MCS framework in that a focus on particular levers means a focus on more mechanistic or more organic type controls, depending on need. Organisational needs will differ depending on context. Specifically, applying Simons' (1995) MCS types to the organic/mechanistic MCS framework, boundary and diagnostic systems could be classified as mechanistic controls and belief and interactive systems could be classified as organic controls.

In summary, because of context, some organisations are suited to mechanistic MCS; whereas, other organisations are suited to organic MCS. Organisations suited to organic MCS however, are often served best by co-existence of mechanistic and organic MCS properties. Therefore, mechanistic MCS is interpreted as characterised by mechanistic controls and organic MCS is interpreted as characterised by either organic controls alone, or a mix of both mechanistic and organic controls²⁸.

²⁸ Recall that the term 'controls' can relate to MCS technical control practices and/or processes.

Extending these arguments, this section also explained that where there are contextual factors that are best suited to mechanistic controls, together with contextual factors that are best suited to organic controls, MCS characterised by a high emphasis on both mechanistic and organic controls is appropriate.

2.3 Output management in the public sector

In chapter one, program budgeting was identified as an attempt by many governments to move from predominantly input based MCS (more organic controls, as discussed) to predominantly output based MCS (more mechanistic controls, as discussed). As noted, appendix 1b provides a comprehensive coverage of the history of program budgeting, that is relevant to a study of output management because both are proclaimed to be output control practices. This section considers the appropriateness of output control practices in a public sector context.

Wildavsky (1978, 82), discussing program budgeting in a US context, develops an explanation about why line-item budgets (input controls) are useful in public sector organisations and program budgets (output controls) are not:

The great complaint about bureaucracies is their rigidity. As things stand, the object of organizational affection is the bureau as serviced by the usual line-item categories from which people, money and facilities flow. Viewed from the standpoint of bureau interests, programs to some extent are negotiable; some can be increased and others decreased while keeping the agency on an even keel or, if necessary, adjusting it to less happy times, without calling into question its very existence. Line-item budgeting, precisely because its categories (personnel, maintenance, supplies) do not relate directly to programs, are easier to change. Budgeting by programs, precisely because money flows to objectives, makes it difficult to abandon objectives without abandoning simultaneously the organization that gets its money for them.

He further explains that:

At one time I knew only that the program budgeting data was not used; now, I believe I know why this superabundance of data was never converted into information: PPBS did not provide information relevant to the user at any level. At the bureau level the questions addressed had to do with whether its existing programs should be abolished or replaced by others. This, to be sure, was a question bureaus not only did not want to answer positively but could not even respond to negatively because it was beyond bureau jurisdiction. To take programs from one bureau and place them in another is reserved for high authorities – the Department, the President, and Congress. Since the advice was for "them" and not for "us", it was either doctored to appear impressive or ignored because nothing could be done about it. Secretaries needed information on how they might better allocate resources within their departments. Instead they got rationalizations of bureau enterprises (Wildavsky 1978, 83).

Hofstede (1981) provides a further, contingency based explanation of why it is reasonable to expect that a change to control practices characterised by outputs is unsuitable in a public sector context. Specifically, Hofstede (1981) argues that in public sector organisations, where outputs are ambiguous and difficult to measure, and the effects of management intervention are not well known, the adoption of mechanistic, rationalistic management systems (such as output management) may have unexpected, undesirable effects such as the inability to analyse, detect and correct errors (that would be possible with more organic control practices).

Recent management accounting literature continues to question the appropriateness of output controls, compared with input controls in public sector organisations. Likiernan (2000) discusses the UK central government resource accounting and budgeting reforms, that closely parallel Victorian government output budgeting and management. Specifically, both reform programs focus on the change from cash to accrual-based accounting and from a focus on inputs to a focus on outputs. He describes concerns as to whether the change is worthwhile for managers, whether dysfunction will arise from the misuse of output information and whether a high emphasis on output management will realise benefits.

Studying various Dutch government organisations, ter Bogt and van Helden (2000) investigated the gap between expectation and experience of reform that focuses on the replacement of input controls by output controls. Following Hopwood (1984) and Lapsley and Pettigrew (1994), ter Bogt and van Helden (2000) described that changing accounting instruments and financial management is technically simple; however, the extent to which such changes embed in organisations is complex. That is, accounting information system change and accounting information usage change are not necessarily perfectly positively correlated. As previously mentioned, they found that post adoption of output based systems, the organisations continued to base control on inputs and that only one government organisation showed an increase in efficiency, the others remained stable or decreased in performance. They note that:

Several managers interviewed argued that *the (newly) available tools were not really suitable for their environment and needs*. When a (basic) form of output budget was introduced into an organization, products were sometimes defined in vague or rather abstract terms. Politicians and managers hardly used the instruments and output information that were available. Control was still mainly input-oriented, i.e. aimed at not exceeding the available budgets...on the whole, the changes in

financial management did not equal the changes envisaged in the original plans at all (ter Bogt and van Helden 2000, 266-267) (emphasis added).

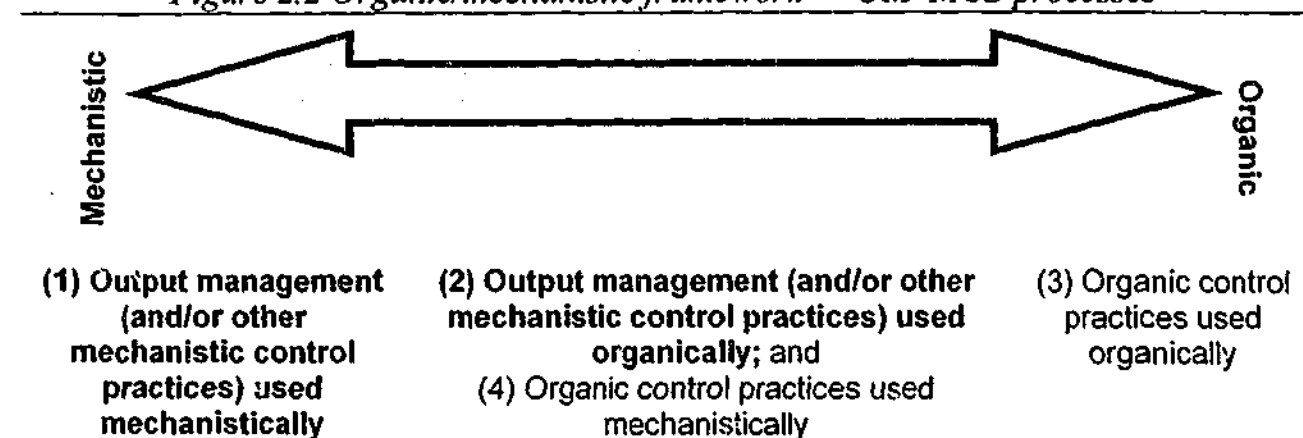
Reasons for the inappropriateness of these tools were that:

The managers interviewed realized that *not all tasks or activities were suited to product-oriented control* (emphasis added). The municipalities were generally not clear about how planning and control of so-called *ad hoc* activities...should be combined with their ordinary planning and control processes. Control of these *ad hoc* activities was often limited to inputs and throughput times (ter Bogt and van Helden 2000, 269).

The managers also expressed a preference for informal consultation rather than performance reports as a main source of information. Further, tensions were identified as the existence of local systems, developed by local managers and accounting staff, were considered to be more useful and were used more than central systems. Hofstede (1981) and others described here suggest that output controls will not necessarily be more useful than input controls, because more mechanistic MCS may fit less well with a public sector organisational context than more organic MCS.

Contingency literature has considered the proposition that the role and effectiveness of similar accounting systems can vary, depending on organisational context (Galbraith 1977; Simons 1990; Simons 1995; Chapman 1997; Chapman 1998; Groot and Merchant 2000; Hartmann 2000). While numerous studies in management accounting have utilised the typology of mechanistic/organic control systems, it is argued in this thesis that whilst mechanistic controls exist, they may be used organically in some organisations and therefore their use is more organic in practice than mechanistic. The reverse application may also occur for organic controls. That is the mechanistic/organic typology can be expanded to include four additional categories to reflect both the technical characteristics of the MCS (practices) and variations in the use of the practice (processes): (1) mechanistic controls used mechanistically; (2) mechanistic controls used organically; (3) organic controls used organically; and (4) organic controls used mechanistically. These additional categories can be conceptualised as belonging in the middle (2 and 4) and at the ends (1 and 3) of the mechanistic/organic continuum (see figure 2.2). These elaborated concepts were introduced in chapter one. In relation to the continuum for technical control practices provided in figure 2.1, figure 2.2 shows where these OM-MCS processes are theoretically represented.

Figure 2.2 Organic/mechanistic framework — OM-MCS processes



Previous research has found evidence of (1) flexible (that is, organic) use of routine accounting reports (that is, mechanistic information); and (2) use of a mix of accounting controls (that is, mechanistic controls), financial (that is, mechanistic controls) and non-financial performance measures (that is, organic controls) (Miller and O'Leary 1993). Hyndman and Eden (2000, 188) state:

The review of the applicability of a rigid rational management model to the agency sector suggests that a *flexible approach* may be more appropriate to certain types of agency, especially those where objectives are ambiguous and where there are unclear cause-and-effect relationships. Indeed it could be argued that all agencies demonstrate these features to a greater or lesser extent. However, this does not necessarily mean the abandonment of a system of setting mission statements, objectives and targets, but it does encourage a *sensitivity to context* and an awareness that the creation of a good system needs creativity and experiment and possibly renewal over time (emphasis added).

Following Hyndman and Eden (2000), it can be argued that output management will fit with departmental context only where: departmental context suits mechanistic controls; or, if used organically, where departmental context suits organic controls or a mixture of mechanistic and organic controls. Therefore, this study extends the idea that mechanistic MCS practices can be used organically and entertains the possibility that organic control practices may sometimes be used mechanistically. An example of an organic control practice used mechanistically is subjective performance evaluations, where qualitative comments are made to explain level of performance, but then a quantitative grading is used to summarise the performance assessment. It is further argued that MCS usefulness and departmental performance will be positively related. Therefore the framework utilised here is an extension of contingency approaches that examines organisational context to provide a way of understanding the appropriateness of organic and mechanistic MCS (practices and

processes).

The propositions (arising from the broad research questions outlined in part one) relating to institutional forces, adoption of output management and departmental performance (through legitimacy gains) are stated in part two, chapter three. The propositions relating to OM-MCS, MCS usefulness and departmental performance (through efficiency gains) are summarised in part two, chapter nine, after the contextual factors are discussed together with development of related propositions in chapters four to eight. This ordering of chapters is necessary because of the proposed relationships between the variables.

PART TWO LITERATURE REVIEW AND PROPOSITIONS

Part two provides a comprehensive literature review of the institutional and contingency literature respectively. The review is structured as follows: the institutional literature is detailed in chapter three, describing the antecedent forces coercive and mimetic isomorphism. The literature is summarised and critically reviewed. The propositions of this study relating to coercive and mimetic isomorphism are outlined at the end of chapter three.

Chapter four introduces the contingency literature that relates contextual factors, OM-MCS, MCS usefulness and performance, providing an overview for the four subsequent chapters that each detail contingency literature specific to contextual factors. That is, the literature relating to perceived external environmental factors is summarised and reviewed in chapter five, structure in chapter six, technology in chapter seven and culture in chapter eight. Chapters five to eight detail the organisational theory literature, followed by the contingency literature and include theoretical and empirical studies, separated into private, profit sector and public and not-for-profit sector literature. Chapters five to eight conclude with the propositions as they relate to the moderating variables in this study.

An overall, critical review is contained in chapter nine, explaining the limitations of contingency approaches. Chapter nine also contains a brief summary of institutional and contingency literature as they relate to this study and subsequently explains the research model in greater detail than in chapter one. Chapter nine then re-states the propositions that are developed in chapters five to eight by way of summary, as a basis for sections three and four that respectively provide details of the research design, method, analysis, results and conclusions.

CHAPTER THREE INSTITUTIONAL LITERATURE: COERCIVE AND MIMETIC ISOMORPHISM

3.1 Introduction

Institutional theory is useful for investigating management accounting practices (see for example Granlund 2001; Modell 2001). Chapter one indicated that institutional arguments would provide a framework for the antecedent variables in the form of institutional forces, identified as coercive and mimetic isomorphism. Antecedent variables are defined by Shields and Shields (1998, 51) as "the cause of an independent variable". In this case the independent variable is adoption of output management, modelled as caused by the antecedents, institutional forces. Recall that output management is modelled as part of the broader MCS (OM-MCS). The institutional arguments, however, relate to the adoption of output management per se, not OM-MCS as a whole. That is, while the independent variable in this study is OM-MCS as a whole, the institutional arguments apply only to the adoption of output management, within the independent variable. The institutional approach adopted in this study is discussed in this chapter.

3.2 Institutional approach

There are three approaches to theoretical modelling of institutional arguments: process, variance (Zucker 1977; Scott 1995) and both process and variance (Fligstein 1991; Scott and Meyer 1994). Mohr (1982) explains that process theories deal with a series of events preceding an outcome. The time ordering of these events are considered critical to the outcome. The focus is on how the outcome occurred. Variance theories by contrast are not concerned with the time ordering of events, but look at causes of an outcome. The focus is on why the outcome occurred. A combined process and variance approach is concerned with both the time ordering of events preceding an outcome and the cause(s) of that outcome.

This study develops a model based on a process and variance approach. The time ordering of output management adoption and subsequent emphasis on output

management are both considered important to the research model introduced in chapter one. Institutional theory is used here to explain why departments adopt and may maintain output management in the absence of any evidence that adoption leads to increased organisational performance through efficiency gains (as a result of MCS usefulness). That is, it is modelled that legitimacy gains may occur from adopting output management, notwithstanding the presence or absence of MCS usefulness and subsequent efficiency gains arising from a fit between context and OM-MCS.

It is argued that coercive and mimetic forces, precursors to the adoption of output management by Victorian government departments, provide necessary and sufficient conditions for adoption. It is argued that the state provided institutional pressure for adoption as a response to economic pressures, bureaucratic recommendations and examples of cross-jurisdictional practice in public sector accounting reform. The institutional framework underpinning coercive and mimetic forces is discussed in the remainder of this chapter.

This study's objective with respect to antecedents is to examine the effect of changes in institutional requirements (introduction of output management) of Victorian government departments at the organisational field level (dominated by Treasury). This examination is designed specifically to explain how these changes resulted in subsequent adoption of output management by the individual departments²⁹. Using institutional theory as a framework, DiMaggio and Powell (1983, 148) define an organisational field as:

those organisations that, in the aggregate, constitute a recognised area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organisations that produce similar services or products.

Having clarified the mode of institutional study to be adopted, it is useful to consider the importance of institutional history. Institutional history is important to understand background. As Scott (1995) notes: time matters because every institution and organisation has its own history of development, that is important in determining the

²⁹ It could be argued that these individual organisations constitute an organisational population. Organisational population can be defined as a collection of similar organisations, particularly those which are homogenous with respect to environmental vulnerability (Hannan and Freeman 1977; Scott 1995).

structures that develop and persist. Zald (1990) asserts that a changing organisational context affects what an organisation does and determines how it functions. Mezas (1990, 435) refers to the "evolution of an institutional environment" noting that the embeddedness of accounting practices of organisations he studied, is highlighted by the history of the institutional environment immediately prior to specific accounting changes. The institutional history relating to the budgeting practices of Victorian government departments is discussed in appendix 1b, as previously noted.

3.3 Review of the institutional framework

Historically, the public sector institutional environment has seen many changes to management techniques. The focus on private sector methods has evolved over time. The current reforms reflect international best practice in government. Presumably, governments that adopt such practices are seen to be highly legitimate (Zifcak 1997). Meyer and Scott (1983) explain the role of accounting in legitimating organisations. They argue that accounting structures are myths, describing an organisation as rational, well controlled, and attaining clear purposes. The accounting myths legitimate an organisation with its controlling external environment:

Technologies are institutionalized and become myths binding on organizations. Technical procedures of production, accounting, personnel selection, or data processing become taken-for-granted means to accomplish organizational ends. Quite apart from their possible efficiency, such institutionalized techniques establish an organization as appropriate, rational, and modern. Their use displays responsibility and avoids claims of negligence (Meyer and Rowan, in Meyer and Scott 1992, 25).

It is argued in this study that the institutional environment of Victorian government departments has provided the impetus to adopt output management. This argument is underpinned by concepts from institutional theory. The remainder of this chapter will summarise and critically evaluate relevant institutional literature.

3.3.1 Contributions of institutional literature

Institutional theory is a valuable doctrine for studying organisations (Scott 1987), notwithstanding that it has numerous limitations that are discussed in section 3.5. According to Selznick (1996, 271), traditional institutional theory:

Traces the emergence of distinctive forms, processes, strategies, outlooks, and competencies as they emerge from patterns of organisational interaction and adaptation. Such patterns must be understood as responses to both internal and external environments.

Traditional, or 'old' institutional theorists focused on issues of influence, coalitions, competing values, power and informal structures (Selznick 1957; Scapens and Roberts 1993). Contemporary, or 'new', theorists focus on legitimacy, embeddedness of organisational fields, classification, routines, scripts and schema (Meyer and Rowan 1977; DiMaggio and Powell 1983). New institutional theorists argue that their paradigm provides a reference point for investigating antecedents to the adoption of structures³⁰; strategies³¹; practices³²; and the adoption of budgeting, cost accounting and related management information systems³³.

Greenwood and Hinings (1996) develop a framework of neo-institutionalism. Neo-institutionalism is the evolved institutional approach that combines ideas from both old and new institutionalism (Scott 1995). A neo-institutional approach is adopted in this study.

³⁰ The research in this area is extensive and includes: Meyer and Rowan (1977); Powell (1988); Meyer, Scott, Strang and Creighton (1994); Roberts and Greenwood (1997).

³¹ The research in this area is extensive and includes: Kurke (1988); Fligstein (1991); Haunschild (1993); Haverman (1993); Deephouse (1996).

³² The research in this area is extensive and includes: Tolbert and Zucker (1983); Covaleski and Dirsmith (1988b); Dobbin, Edelman, Meyer, Scott and Swidler (1988); Hinings and Greenwood (1988); Mezas (1990); Fernandez-Rovuelta Perez and Robson (1999).

³³ See for example and discussion Ansari and Euske (1987); Miller (1994); Mouritsen (1994); Scapens (1994); Carruthers (1995); Geiger and Ittner (1996); Fligstein (1998); Ittner and Larcker (1998); Walker (1998); Malmi (1999); Burns and Scapens (2000); Lapsley and Pallot (2000); Vámosi (2000).

Specifically, neo-institutional theorists suggest that organisations sometimes adopt practices purely to appear rational to external parties, both generally (Rowan 1982; Scott 1987) and specifically with regard to accounting change (Gupta et al. 1994; Carruthers 1995; Fligstein 1998). This phenomenon is particularly applicable to a government organisation. It is argued that pressure to conform to accepted practices is likely to be more powerful in public sector than private sector organisations, because support of external parties is critical to their survival, notwithstanding performance (Meyer and Rowan 1977; DiMaggio and Powell 1983; Scott 1987; Warren 1993; Gupta et al. 1994; Haque 1998).

Institutional forces are more powerful in the public sector because public sector (and not-for-profit) organisations largely depend on public opinion for legitimacy and resources and are subject to evaluation on the basis of contemporary structures and procedures because they cannot be evaluated on profitability (Meyer and Scott 1983; Dobbin, Sutton, Meyer and Scott 1993). This concept of legitimacy may help explain why MCS attributes exist even where they are of minimal use to managers (Geiger and Ittner 1996; Ittner and Larcker 1998).

The value of an institutional framework to the study of governmental reform is well noted (Meyer and Rowan 1977; Zucker 1977; DiMaggio and Powell 1983; Scott 1987; Carpenter and Feroz 1992). Empirical research has generally provided support for the paradigm³⁴. Appendix 2a tabulates some important institutional literature.

3.3.2 Institutional factors — coercive and mimetic isomorphism

Influences from an organisation's institutional environment lead to organisational change (Meyer and Rowan 1977; DiMaggio and Powell 1983; Tolbert and Zucker 1983; Scott 1987; Powell 1988). Organisational change is referred to as change in

³⁴ See, for example Rowan (1982); Tolbert and Zucker (1983); Ritti and Silver (1986); Ansari and Euske (1987); Fennell and Alexander (1987); Covaleski and Dirsmith (1988a,b); Eisenhardt (1988); Levitt and Nass (1989); Mezas (1990); Carpenter and Feroz (1992); Covaleski et al. (1993); Meyer, Scott and Strang (1987); Meyer, Scott, Strang and Creighton (1994); Scott and Meyer (1994); Geiger and Ittner (1996); Lapsley and Pallot (2000).

formal structure, organisational culture, goals, program or mission (DiMaggio and Powell 1983) and practices and procedures (Tolbert and Zucker 1983).

The concept of isomorphic organisational change refers to institutional forces in the organisational field that lead to organisations becoming more similar to each other for the purpose of achieving institutional legitimacy, as opposed to enhanced performance (Meyer and Rowan 1977; DiMaggio and Powell 1983). Such similarity may take the form of adoption of common management and accounting practices. From an institutional perspective, legitimacy is defined as "a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws" (Scott 1995, 45). Covaleski and Dirsmith (1986, 1993) note that budgeting systems are "an integral part of the politics and power of organisational life and that they are used to legitimate action".

Drawing on institutional arguments, DiMaggio and Powell (1983) describe isomorphism as "a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions". The type of isomorphism relevant to this study is institutional³⁵. In particular, two mechanisms (coercive and mimetic) through which institutional isomorphic change occurs, relate to public sector financial and administrative reform adoption (Meyer 1981, in Powell and DiMaggio 1991; DiMaggio and Powell 1983; Tolbert and Zucker 1983). Coercive isomorphism originates from government influence and the need for legitimacy (DiMaggio and Powell 1983; Zucker 1987). Mimetic isomorphism results from organisations wanting to emulate the behaviour of other organisations that they perceive as successful (DiMaggio and Powell 1983; Zucker 1987).

Where organisations are dependent upon other organisations, pressures result in coercive isomorphism. Whilst this pressure can be less explicit, sometimes organisational change is a direct response to government mandate (Meyer, Scott and Deal 1981; DiMaggio and Powell 1983). In particular, public sector management

³⁵ As opposed to "competitive isomorphism", which assumes system rationality and emphasises market competition and is relevant where free and open competition exists (DiMaggio and Powell 1983, 150-151).

accounting systems have been implemented to legitimise governmental activities (Berry et al. 1985; Covaleski, Dirsmith and Jablonsky 1985; Ansari and Euske 1987; Covaleski and Dirsmith 1991; Lapsley 1994; Geiger and Ittner 1996; Lapsley and Pallot 2000).

Government budgetary requirements that ensure the attainment of government funding also shape organisations (DiMaggio and Powell 1983; Scott 1987). For example, Bealing and Riordan (1996) report that a Virginian university deliberately adopted restructuring actions to enhance its legitimacy with external constituents and improved its competitiveness for public funding as a result. Budgetary reform is an example of coercive isomorphism imposed by governments as a qualification for continued grant funding (DiMaggio and Powell 1983; Dirsmith 1986; Covaleski and Dirsmith 1988b).

Organisational change by way of coercive isomorphism, such as adoption of new budgeting or control systems, has antecedents. That is, organisational change is caused by coercion to adopt practices such as output management. A position of dependence on a single source of resources leads to isomorphic change in an organisational field (DiMaggio and Powell 1983). It is argued that government departments are an organisational field. Transacting with government agencies is said to relate positively to coercive isomorphism (DiMaggio and Powell 1983). As previously noted, it is argued that pressure to conform to accepted practices is likely to be more powerful in public sector organisations. This pressure occurs because public sector and private sector not-for-profit organisations largely depend on public opinion for legitimacy and resources. As noted, they are subject to evaluation on the basis of contemporary structures and procedures because they cannot be evaluated on profitability (Meyer and Scott 1983; Dobbin et al. 1993).

Mimetic isomorphism, or modelling, refers to the behaviour of organisations modelling themselves after similar organisations that they perceive as either more legitimate or successful. DiMaggio and Powell (1983) report that US government agencies are "almost a textbook case of isomorphic modelling, from the PPPB of the McNamara era to the zero-based budgeting of the Carter administration". DiMaggio and Powell (1983) indicate that mimetic isomorphism is more likely than efficiency

gains to explain the adoption of alternative structural arrangements. This idea has been supported in a more recent study by Lapsley and Pallot (2000), who found local government organisations seeking institutional isomorphism through mimetic processes to achieve legitimisation, by resembling other local government organisations' structures and practices.

This study argues first, that output management may be adopted by departments for institutional reasons, that provide legitimacy, without which they would not attract sufficient resources for survival. Notwithstanding this, efficiency gains may or may not arise from a high emphasis on output management, depending upon whether there is a fit between OM-MCS and contextual factors, leading to MCS usefulness. That is, output management may be adopted by the departments for survival, consistent with an institutional framework. Therefore, legitimacy gains may arise from adoption — or adoption of, and a high emphasis on — output management. Efficiency gains however, would only arise if there is a fit between OM-MCS and departmental contextual factors, leading to MCS usefulness.

It is further argued that the adoption of output management is partly a function of mimetic but mainly of coercive isomorphism. Coercive isomorphism may occur because the reform adoption is mandated by government and central agencies. Resource allocation is specifically linked to the output budgeting processes imposed. That is, departments are to be funded on the basis of outputs estimated to be produced, rather than on the basis of a level of agreed inputs. At the end of the budgeted period, if departments have produced less than the outputs that they estimated, financial penalties are to be expected. Mimetic isomorphism may also occur, because of perceptions by the departments that cross-jurisdictional adoption of similar reforms in recent history is evident, by surviving organisations.

Coercive isomorphism is most applicable, however, because it relates to the environment (rather than the organisation) as the institution. Zucker (1987) draws the distinction between *environment as an institution* and *organisation as an institution* being the two theoretical approaches adopted in institutional literature. The environment approach is adopted when institutional elements come from outside the

organisation. These outside elements are the state, professions and consensus views of organisational field members (Thomas, Walker and Zelditch 1987).

These external institutional pressures cause organisational change (Zucker 1987) such as the adoption of output management. When organisations take action in response to institutional pressure they buffer their technical activities by partly decoupling their structure from operations. This adversely affects efficiency, but is nevertheless necessary for achieving legitimacy gains (Meyer and Rowan 1977). That is, this institutional outcome is sought because a necessary role of institutionalised organisations is to serve legitimating functions. This means that operations are not performed optimally compared with market oriented organisations (Perrow 1986, 159–64; Zucker 1987, 445). Accordingly, in order to survive (through positive evaluation and resource flows), organisations conform to institutional pressures, even though this may reduce efficiency (Meyer and Rowan 1977; Scott and Meyer 1991; Zucker 1987). The following section provides propositions leading from this discussion.

3.4 Conclusions and propositions 1a, 1b and 2

It is argued in this study that the adoption of output management is partly a function of mimetic but mainly of coercive isomorphism (DiMaggio and Powell 1983). Coercive isomorphism is expected because the adoption of output management is mandated by Victorian government and central agencies³⁶. Resource allocation is specifically linked to the output budgeting processes imposed and therefore coercive forces are likely to have more impact than mimetic forces. Further, coercive isomorphism is particularly applicable here, because it relates to the environment (rather than the organisation) as the institution (Zucker 1987). Mimetic isomorphism is expected because of evident cross-jurisdictional adoption of similar reforms in recent history. These arguments lead to propositions 1a and 1b:

³⁶ It is useful to note that the departments studied rely on the Federal government and other parties for resources also. Hence, even the coercive isomorphic dimension requires more than resource dependence theory to explain the adoption phenomena (see Oliver 1991, for a discussion of the distinction between institutional and resource dependence theories). Further, the data in chapter eleven clearly show that the Federal government does not provide the impetus for adoption.

P1a Coercive forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

P1b Mimetic forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

These external institutional pressures cause organisational change (Zucker 1987). When organisations take action in response to institutional pressure they buffer their technical activities by partly decoupling their structure from operations. This may adversely affect efficiency (Meyer and Rowan 1977). Efficiency can be adversely affected because there are costs involved in, for example, operating two separate accounting systems: one for legitimacy purposes and one for internal control purposes. The maintenance of two systems will be necessary where the MCS, or MCS attribute, adopted for institutional reasons is not also useful for internal purposes to achieve efficiency gains.

The legitimating outcome is sought because a necessary role of institutionalised organisations is to serve legitimating functions. This means that operations are not performed optimally compared to say, market oriented, private sector organisations where it is essential to achieve adequate operating performance (Perrow 1986; Zucker 1987). Accordingly, in order to survive (through positive evaluation and resource flows), organisations conform to institutional pressures (Lapsley and Pallot 2000), even though this may reduce efficiency (Meyer and Rowan 1977; Scott and Meyer 1991; Zucker 1987).

A study of Dutch government reform, replacing input controls with output controls, found that the input controls continued to be relied upon post adoption of the output control systems (ter Bogt and van Helden 2000). One reason provided for the failure to use the new system was that rules can easily be changed, but if the rules do not correspond with the routines and institutions in organisations, real change will not occur. In the framework they develop, subsequent to reporting their case study, ter Bogt and van Helden (2000) model institutional forces as a pressure causing change, such as adoption of output controls.

Based on DiMaggio and Powell (1983), and following ter Bogt and van Helden (2000) and Lapsley and Pallot (2000), it is argued in this study that Victorian government departments will adopt output management to ensure survival through achievement of legitimacy, therefore, achievement of legitimacy gains, notwithstanding any efficiency gains that may, or may not, arise. It is important to understand that legitimacy gains present unique issues relating to this study. Without legitimacy departments are highly unlikely to survive. Therefore, survival is indicative of baseline performance. That is, legitimacy leads to at least survival (through maintaining authority and current level of resources) and possibly an increase in resources. An increase in resources (other things being equal) enables more services to be delivered (but does not mean departments are necessarily more efficient). This leads to proposition 2:

P2 Notwithstanding any contingency effect, adoption of (no adoption of) — or adoption of, and a high/low emphasis on — output management will have positive (negative) effects on departmental performance through legitimacy gains (no legitimacy gains).

3.5 Limitations of institutional theory

Notwithstanding the substantial body of literature that extols the virtues of institutional frameworks, criticism of the institutional perspective — both new and old — exists. It is claimed that issues of power and group interest are ignored (Perrow 1985, 1986; Covalleski and Dirsmith 1995). The institutional perspective is said to ignore the nature of power, self-interest and control over people in organisations (Perrow 1985; Powell 1985; Covalleski and Dirsmith 1988b; DiMaggio 1988; Clegg 1989). Institutional theorists argue that this criticism is somewhat tempered by distinguishing institutionalisation as both an outcome and a process (DiMaggio 1988; Zucker 1988).

Whilst the process of institutionalisation is inherently political, institutionalisation as an outcome renders an organisation's practices beyond political interests, as organisations simply conform to acceptable practice (Covalleski, Dirsmith and Michelman 1993). However, DiMaggio (1988) argues that for institutional theory to progress, issues of power and interest groups must be focused upon. This argument suggests a need to link institutionalisation to concepts such as economic interest

group theory (Peltzman 1976). For example, this theory was used by Carpenter (1987) to explain failure to emphasise a management information system in a US state government health department³⁷.

Related to concerns that institutional theory ignores factors of power and group interest, is the claim that it is insufficient as a theory (Scott 1987; Zucker 1987; DiMaggio 1988; Gupta et al. 1994; Geiger and Ittner 1996). The process of institutionalisation is assumed to be completely passive. Accordingly, organisations conform to societal expectations without resistance (Meyer 1984; Perrow 1985; Powell 1985; Covaleski and Dirsmith 1988b; Scott 1995).

This claim is not entirely deserved, given the extant literature that suggests organisations sometimes, at least partly, construct institutions (Dowling and Pfeffer 1975; Pfeffer and Salancik 1978; Scott 1995). For example, Covaleski and Dirsmith (1988b) detail how the University of Wisconsin abandoned the state sanctioned funding formula in its mid-1980s budget bid request, on the basis of inequity. This action eventually led to changes in the policies and practices in the state law covering budgetary appropriations. From early institutional theory, causality has been inferred in both directions: that institutional environment causes organisational structures and processes, but that these organisations in turn effect the institutional environment. Indeed, institutional literature has been criticised for circularity of reasoning (Zucker 1988; Scott 1995).

Clegg (1989) recommends that studies involving disciplinary practices (such as accounting initiatives) use more than one theoretical perspective. Both Gupta et al. (1994) and Geiger and Ittner (1996) answer this criticism by combining contingency and institutional perspectives in empirical management accounting studies as Greenwood and Hinings (1988) do in a theoretical study of organisation structure and strategic change.

³⁷ There are many studies utilising other theories that deal with these issues. See Carpenter and Feroz (1992) for example, who use political power theory and Cheng (1992) who, in part, uses a political science perspective together with institutional arguments.

Tolbert and Zucker (1983) combine a technical-rational approach with an institutional approach as a necessity to explore the adoption of civil service reforms. Without both paradigms they could not develop their two different, but converging hypotheses. Similarly, Ansari and Euske (1987) combine technical-rational, institutional and social-political perspectives, to investigate accounting cost data use in a US government military organisation. Whilst these responses to claims of an incomplete theory do not enhance the institutional perspective as a framework per se, arguably these approaches serve to utilise the framework more productively.

A further criticism relates to the claim by institutional theorists that decoupling of external systems and internal processes occurs in an organisation to avoid dysfunction (Meyer and Rowan 1977; Meyer 1983). That is, an organisation buffers itself from outside forces by utilising decoupling. This assertion is contradictory to a central research question of institutional theory, that is concerned with the extent to which external displays actually penetrate internal operating processes (Scott 1983, 1987; Powell 1985, 1988; Covaleski and Dirsmith 1988b; Covaleski et al. 1993; Westney 1993). Covaleski et al. (1993) provide empirical support for the argument that external displays penetrate internal processes to some extent. Therefore institutionalisation is not "merely window dressing" as claimed by Meyer and Rowan (1977).

Tolbert (1988) criticises the level of analysis generally adopted in institutional research. Specifically that DiMaggio and Powell (1983) clearly link field level with organisational level predictors of isomorphic change, yet institutional research has largely ignored institutionalised practices at the organisational level. Similarly, Scott (1995) expresses surprise at the paucity of organisational level research. Westney (1993), however, purports that the appropriate level of environmental analysis for institutional theorists is at the organisational field level. Subsequently, Westney (1993, 58) seems to contradict her earlier assertion, however, saying that institutional theory spans the "micro-macro" divide examining the individual organisational and the macro (organisational field) level. There seems to be confusion in the literature on this point. This confusion may be partly attributable to difficulties in ascertaining the boundaries of an organisational field (Powell 1988; Westney 1993).

Selznick (1996) warns that 'new' institutional theorists are in danger of undervaluing the institutional paradigm because they focus on issues of legitimacy, structured cognition, incoherence of complex organisations and decoupling, without reference to the 'old' institutionalism. Selznick's (1996) concern is that there is a failure to integrate the old and the new institutional paradigms by considering theoretical and empirical continuities fully.

Scott (1987, 1995) presents a related viewpoint, that further improvement and growth in institutional theory relies on researchers dealing explicitly with variations (and similarities one assumes) in concepts employed. Both Meyer and Rowan (1977) and DiMaggio and Powell (1983) changed the direction of the institutional perspective away from the process oriented focus of Zucker (1977) and Selznick (1957). In particular, Scott (1987) purports that the isomorphism typology (coercive, mimetic and normative) developed by DiMaggio and Powell (1983) is not consistent with institutionalisation when defined as a process.

Empirical work based on institutional arguments has been criticised for inconsistency. Studies are consistent in arguing that institutional elements affect structural characteristics of organisations, but disagree as to the specifics of effect. Empirical accounts vary as to types of institutional elements studied, influences identified and aspects of structure effected (Scott 1987). This variety is partly due to whether institutionalisation is viewed as a dichotomous variable (institutionalised or not) or as a continuous variable (degrees of institutionalisation) (Westney 1993). This is analogous to the outcome and process distinction. Scott and Meyer (1994) and Scott (1995) try to classify the variety of institutional studies, which provides some justification for the different directions adopted.

With respect to measurement, ascertaining when a structure or process is institutionalised is difficult. The literature has frequently avoided the measurement problem by regarding widespread prevalence of a structure or practice as evidence of institutionalisation (Westney 1993; Scott 1995). Terms used, such as 'norms' need to be better defined, and connections between institutional elements and their consequences need to be specified and tested in greater detail (Zucker 1987). Both Scott (1987) and Zucker (1987) call for a more developed theory of institutions.

More recently, however, Scott (1995) asserted that institutional theory is sufficiently advanced.

Notwithstanding these theoretical and methodological considerations, there is general agreement that a major use of accounting is as a means of legitimising social and political aspects of organisational structure and practices, including accounting practices³⁸. Earlier it was noted that institutional forces are of particular relevance to governmental organisations. Therefore, the institutional perspective provides a strong theoretical framework for investigating adoption of accounting reform in the public sector (Carpenter and Feroz 1992; Geiger and Ittner 1996).

3.6 Summary

This chapter has reviewed the institutional literature as a basis for part of the research model, summarised in propositions 1a, 1b and 2 (which were developed from research questions 1 and 2). It is argued in this chapter that institutional pressure for isomorphic change at departmental (organisational) level causes the adoption of output management. It is proposed that isomorphic change, specifically departmental adoption of output management, will occur for reasons of legitimacy. Legitimacy gains may be reflected in an improvement in performance due, for example, to the ability to attract greater resources. Alternatively, legitimacy gains may be reflected simply in survival. Specific propositions relating to this argument were developed in this chapter.

³⁸ See for example Burchell, Clubb, Hopwood, Hughes and Nahapiet (1980); Meyer, Scott and Deal (1981); Cooper (1980); Hopwood (1983); Meyer (1986); Ansari and Euske (1987); Richardson (1987); Covalleski and Dirsmith (1988b); Mezas (1990); Westney (1993); Geiger and Ittner (1996); Lapsley and Pallot (2000).

The adoption of output management for legitimacy reasons does not necessarily preclude technical benefits. Adoption of output management may result in legitimacy gains per se, and/or efficiency gains where output management is subsequently emphasised, provided that this leads to MCS usefulness. Alternatively, legitimacy gains may be the only benefit arising from adoption of output management. It is also possible that efficiency gains may arise, notwithstanding a legitimacy effect.

Legitimacy theory is insufficient as a basis for the investigation of efficiency gains. Contingency arguments can be utilised to investigate this further question. The investigation of efficiency gains utilising a contingency framework as a basis for guiding the exploration of fit relationships between contextual variables and OM-MCS, leading to a deeper analysis that may deviate from the relationships modelled, is the main focus of the study. The contingency perspective and literature will be discussed in chapters four to nine.

Chapter four begins the literature review relating to contextual factors and their relationship to OM-MCS, MCS usefulness and (indirectly via MCS usefulness) to organisational performance. The remainder of part two leads to propositions 3a-3d and 4.

CHAPTER FOUR CONTINGENCY LITERATURE: CONTEXTUAL FACTORS, OM-MCS, MCS USEFULNESS AND PERFORMANCE

4.1 Introduction

Chapter three argued that government departments may adopt output management because of institutional forces. The desired outcome of these departments is legitimacy, notwithstanding any performance effects through efficiency gains (DiMaggio and Powell 1983). The concepts of institutional outcomes (legitimacy gains) and technical outcomes (efficiency gains) from adoption are not inconsistent (Tolbert and Zucker 1983). It is possible that post adoption, emphasis on OM-MCS could lead to increased performance (through efficiency gains), depending on OM-MCS fit with organisational factors, leading to MCS usefulness. Institutional theory informs the legitimacy argument as previously discussed and contingency theory informs the efficiency argument.

This chapter outlines the central propositions of contingency theory and the contingency literature relating to the contextual variables modelled in this study, providing a basis for the moderating propositions subsequently developed in chapters five to eight. These contextual variables are perceived external environment, structure, technology and culture (see for example, Banbury and Nahapiet 1979; Otley 1980; Govindarajan and Gupta 1985; Dent 1991; Selto et al. 1995).

These four contextual factors are modelled as having a moderating effect between OM-MCS and MCS usefulness for two reasons. First, these variables have strong theoretical links to the model. For example, Anderson and Young (1999) report from their review of the literature on activity-based costing emphasis, that structure variables (centralisation, functional specialisation, vertical differentiation and formalisation/job standardisation) are very important to the outcomes of activity-based costing. In their research model they include competitive environment and environmental turbulence as contextual factors expected to influence evaluations of an activity-based system and management involvement in the emphasis process.

The extant contingency literature has found support for fit relationships between each of these contextual variables (perceived external environment, structure, technology and culture) and MCS. Second, structure, technology and culture³⁹ were found to have an impact on previous attempts at Victorian government budgeting reform (see appendix 1b). The impact of these contextual factors was evident for example, in the Economic and Budget Review Committee discussion paper (1989) and review (1990) into program budgeting in Victoria, that documented empirically derived reasons for the limited success of program budgeting emphasis.

Further, in discussing contextual, moderating factors, this chapter is also focused on the independent (OM-MCS), dependent (MCS usefulness) and outcome variables (departmental performance) modelled in this study. These variables are discussed necessarily in a review of the literature relating to contextual factors, because contingency studies in the management accounting literature are generally concerned with the relationship between context and MCS. These studies generally assume that a fit between context and MCS, and/or specific MCS attributes, leads to improved effectiveness/performance. Some management accounting contingency studies have measured effectiveness/performance as well as context and MCS, others have implied effectiveness/performance from fit. Various structural models (unidirectional linear additive, unidirectional linear interaction, intervening variable path and unidirectional nonlinear) indicating effects of MCS variables on performance have been identified (Luft and Shields 2001).

Contingency theory developed from the organisational design literature in the 1960s and beyond (Burns and Stalker 1961; Woodward 1965; Lawrence and Lorsch 1967; Perrow 1967; Thompson 1967; Pugh, Hickson, Hinings and Turner 1969b; Child 1973; Lorsch and Morse 1974). An investigation of current organisational theory literature shows that these older studies still provide a relevant basis for organisation design research (see for example, Ensign 1998).

³⁹ Perceived external environment was not explicitly mentioned in the literature relating to Victorian government budgeting.

In management accounting, studies by Hopwood (1972) and Otley (1978) began research into contingency relationships. Hopwood (1972) found that reliance on a flexible, profit conscious style of accounting performance measures was likely to lead to higher organisational effectiveness, compared to reliance on a budget constrained style. Otley (1978), however, failed to replicate Hopwood's (1972) results. Otley (1980) suggested that the different contexts of the two studies are likely to be responsible.

The review in chapters five to eight will summarise previous work in this area (both theoretical and empirical) that relates to the contingency variables relevant to this study, provide a critical evaluation of contingency theory and indicate the research path for this study. Whilst contingency literature is private, profit sector dominated, numerous public sector and private not-for-profit sector studies have also utilised contingency arguments. Chapters five to eight will initially focus upon the private, profit sector literature to establish the framework. The private not-for-profit and public sector literature relating to contextual variables modelled as moderators is subsequently discussed.

4.2 Central propositions of contingency theory

Contingency arguments claim that organisational performance depends on matching control system characteristics with environment and organisational contextual circumstances (Macintosh 1984). Specifically, MCS in government agencies can be investigated utilising a contingency framework. As noted, a contingency approach suggests that for an organisation to perform optimally, the components of the organisation, such as structure and MCS, must be consistent with the environment and each other (Perrow 1967). Contingency theorists reject universalistic management principles and organisational solutions, suggesting there is no single optimal way of organising (Wood 1979). Optimal organisation design is contingent on contextual factors relating to organisations (Burns and Stalker 1961).

The moderating variables relevant to this study are grounded in contingency arguments of MCS. Contingency frameworks for management accounting were developed in the 1970s (see for example, Galbraith 1973, 1977; Bruns and

Waterhouse 1975; Sathe 1975; Watson 1975; Gordon and Miller 1976; Ansari 1977; Daft and Macintosh 1978; Waterhouse and Tiessen 1978; Banbury and Nahapiet 1979) based on the earlier organisational design literature (see for example Burns and Stalker 1961; Lawrence and Lorsch 1967; Thompson 1967). The following section summarises the contingency literature relating to external environment, structure, technology and culture.

4.3 Contextual variables

The contextual variables modelled as moderators in this study are perceived external environment, structure, technology and culture. These contextual variables are modelled as moderators in the relationship between OM-MCS and MCS usefulness, leading to consequent organisational performance.

It is argued in this study that the relationship between OM-MCS and MCS usefulness is moderated by contextual factors. However, there is a direct relationship between MCS usefulness and departmental performance. It is an assumption in the formal model of this study that any contextual effect is already considered in the moderating relationship modelled, therefore, contextual factors do not also require modelling as moderators between MCS usefulness and departmental performance. This argument is not inconsistent with the approach taken by Chenhall and Morris (1986). A moderating variable is explained by Shields and Shields (1998, 51) as one that:

affects the relationship between an independent and a dependent variable, it is not a cause of a dependent variable as an independent variable, but it is theorized to affect the relationship between an independent and a dependent variable.

This description of moderator variables is consistent with Briers and Hirst (1990) and Luft and Shields (2001). Luft and Shields (2001) indicate that a moderator variable exerts no independent influence on performance, but only affects the relationship between the dependent and independent variables. If the independent variable does not affect the dependent variable, the moderator would be irrelevant to the dependent variable.

Appendix 2b tabulates many contributions to the contingency literature, demonstrating the use of a variety of research questions, variables and methods. The studies summarised in the table that relate to the contextual, moderating variables in this study are discussed in chapters five to eight. These are perceived external environment (chapter five), structure (chapter six), technology (chapter seven) and culture (chapter eight).

These four contextual factors are discussed in turn, with respect to their relationships with MCS, or MCS attributes and any consequent (outcome) variable. This approach in no way suggests that contextual variables do not relate to each other. Indeed, strong relationships between some contextual variables have been proposed in theoretical frameworks (see for example, Banbury and Nahapiet 1979; Govindarajan 1986b) and supported empirically (see for example, Khandwalla 1973a, 1974; Merchant 1981, 1984; Gordon and Narayanan 1984; Chenhall and Morris 1986; Gresov 1989; Seto et al. 1995). In this study, however, each of these contextual factors is modelled individually, to examine the moderating effects of each contextual factor on the relationship between OM-MCS and MCS usefulness.

CHAPTER FIVE

CONTINGENCY LITERATURE: PERCEIVED EXTERNAL ENVIRONMENT

5.1 Introduction to perceived external environment

This chapter summarises and reviews the literature on perceived external environment. Propositions relating perceived external environmental variables to this study are outlined at the end of this chapter.

For decades, organisational theorists have been concerned with perceived external environment as a variable that has an impact on organisational design⁴⁰. Many studies have investigated perceived external environment as a contingency variable in management accounting systems research since Burns and Stalker (1961). These are both untested, theoretical models⁴¹ and theoretically based, empirical studies⁴².

Further, a variety of perceived external environment attributes have been studied. The most researched of these attributes is uncertainty (predictability)⁴³. Other perceived external environment attributes studied are: complexity and dynamism⁴⁴;

⁴⁰ See for example, Burns and Stalker (1961); Emery and Trist (1965); Lawrence and Lorsch (1967); Thompson (1967); Perrow (1967); Galbraith (1973); Weick (1977); McCann and Selsky (1984).

⁴¹ The research in this area is extensive and includes: Khandwalla (1972b); Gordon and Miller (1976); Amigoni (1978); Waterhouse and Tiessen (1978); Banbury and Nahapiet (1979); Otley (1980); Ewusi-Mensah (1981); Govindarajan (1986b).

⁴² The research in this area is extensive and includes: Khandwalla (1972a, 1977); Hayes (1977); Gordon and Narayanan (1984); Govindarajan (1984); McCann and Selsky (1984); Brownell (1985, 1987); Chenhall and Morris (1986); Evans, Lewis and Patton (1986); Schweikart (1986); Mak (1989); Gul (1991); Gul and Chia (1994); Fisher (1996); Moores and Sharma (1998); Mia and Clarke (1999); Ebrahimi (2000). There are many other studies that model perceived external environment as a variable which are not included here, because they relate to relationships with individual level variables such as role ambiguity (see for example, Rebele and Michaels 1990; Gregson, Wendell, and Aono 1994) and managers' learning (see for example, Chenhall and Morris 1993).

⁴³ The research in this area is extensive and includes: Lawrence and Lorsch (1967); Perrow (1967); Khandwalla (1972b); Galbraith (1973); Burns and Waterhouse (1975); Gordon and Miller (1976); Otley (1978); Waterhouse and Tiessen (1978); Gordon and Narayanan (1984); Govindarajan (1984, 1986a,b); Chenhall and Morris (1986); Ezzamel (1990); Merchant (1990); Gul (1991); Chenhall and Morris (1993); Kren and Kerr (1993); Gul and Chia (1994); Ross (1995); Chapman (1997); Chong and Chong (1997); Moores and Sharma (1998); Tymon, Stout and Shaw (1998); Hartmann (2000).

⁴⁴ See for example, Duncan (1972); Gordon and Miller (1976); Amigoni (1978); Waterhouse and Tiessen (1978); Brownell (1985); Chenhall and Morris (1986); Jan van Helden et al. (2001).

controllability⁴⁵; competition⁴⁶; ambiguity (equivocality)⁴⁷; turbulence⁴⁸; hostility⁴⁹; diversity (heterogeneity)⁵⁰; technical complexity and restrictiveness⁵¹.

As noted, of these attributes, perceived external environmental uncertainty has been most frequently studied. However, perceived external environmental uncertainty as well as these other attributes of perceived external environment will be discussed in this chapter. A basic tenet of perceived external environmental uncertainty as a contextual variable affecting MCS is that the existence of uncertainty makes planning and controlling more difficult than is the case in conditions of certainty (Lawrence and Lorsch 1967). Planning is difficult under uncertainty because the future is unpredictable and controlling is difficult under uncertainty because set standards and targets may quickly become inappropriate (Chenhall and Morris 1986). Reliance on accounting based MCS in conditions of uncertainty results in difficulty in applying controllability principles and as a consequence, a focus on uncontrollable measures can result in incomplete performance measurement and irrelevant evaluation (Hartmann 2000). The next section will discuss theoretical contributions to the literature on perceived external environment.

5.1.1 Theoretical studies on perceived external environment

One of the earliest theoretical papers in management accounting using a contingency framework to relate perceived external environment to MCS is that of Khandwalla (1972b). Khandwalla (1972b), drawing on organisational design literature, developed a model of organisational response to uncertainty, heterogeneity and hostility. Aspects of this model propose optimal relationships between external environment and MCS.

⁴⁵ See for example, Ewusi-Mensah (1981).

⁴⁶ See for example, Khandwalla (1972a); Banbury and Nahapiet (1979); Merchant (1981, 1984); Simons (1987a); Hansen (1998); Mia and Clarke (1999).

⁴⁷ See for example, Ouchi (1979); Daft and Macintosh (1981).

⁴⁸ See for example, Khandwalla (1977); Amigoni (1978); Banbury and Nahapiet (1979).

⁴⁹ See for example, Khandwalla (1972b, 1977); Gordon and Miller (1976); Otley (1978).

⁵⁰ See for example, Khandwalla (1972b, 1977); Gordon and Miller (1976); Merchant (1981, 1984).

⁵¹ See for example, Khandwalla (1977) for both technical complexity and restrictiveness.

In particular, Khandwalla (1972b) proposed that high uncertainty will lead organisations to seek forecasting data, while high uncertainty and heterogeneity will lead them to employ sophisticated control and information systems, and utilise participative management practices. Khandwalla (1972b) concluded that if universal principles of management were abandoned for a contingency approach to organisations and MCS, more effective management would result.

Khandwalla (1972b, 307) explained that environmental hostility "is a condition of perceived threat to the organisations primary goals", that for a firm may mean a threat to its profitability, liquidity, or market share. For a government organisation it may mean the withdrawal or reduction of government support. Hostility is conceptualised on a continuum of malevolence to munificence.

Khandwalla (1972b), drawing on studies in organisational design literature, indicated that the organisational response to hostility is greater integration and co-ordination of activities so that the organisation can manage the threat to its objectives. For example, Janowitz (1959, in Khandwalla 1972b) found that as a military crisis arose in a military organisation, the more officers claimed that the new problems were outside their jurisdiction, requiring direction from a higher authority. Khandwalla (1972b) indicated that a malevolent environment will be positively related to centralisation and routinisation. A munificent environment will be positively related to decentralisation and customisation. Khandwalla (1972b) argued that in a hostile environment, a centralised structure will mean that short-term survival has priority over long term growth. Further, top management will have to take greater responsibility by becoming involved in decisions that would be otherwise delegated under less hostile conditions, until the environment becomes less malevolent.

Following Khandwalla (1972b), Gordon and Miller (1976) developed a framework relating environmental and organisational variables, and decision making styles, to accounting information systems (AIS). With respect to the environmental variables dynamism, heterogeneity and hostility, Gordon and Miller (1976) developed several hypotheses. They proposed that as environmental dynamism and hostility increase, effective AIS will provide frequent reports and substantial non-financial data. In addition, greater use of forecasting information should be linked to high dynamism,

and sophisticated cost accounting and control systems to high hostility. When heterogeneity is high, an effective AIS should be decentralised and information compartmentalised. Their contention is that a custom designed AIS, according to contingency specifications, can relate positively to performance.

Waterhouse and Tiessen (1978) developed an alternative framework, modelling environmental predictability (simple-complex, static-dynamic) as an independent variable affecting structure and MAS. They argued that under conditions of unpredictability, direct control measures that first specify procedures and are then used to evaluate performance, are not possible. Rather, selection and socialisation will be appropriate control mechanisms. Furthermore, they argued that for planning and resource allocation, the greater the unpredictability, the more an organisation will rely on "time constrained coordination plans" such as revised and flexible budgets.

Amigoni (1978) modelled a high degree of turbulence and discontinuity in the environment as requiring change in financial and management accounting practices. Specifically, Amigoni (1978) argued that in a turbulent environment, the more discontinuous the environment is, the more future oriented and timely (a high degree of 'quickness') MCS should be.

Without reference to the models noted above, Banbury and Nahapiet (1979) argued that high competition (following Khandwalla 1972a) would be associated with a 'tight' production control system. They contended that a tight control system is appropriate because of the importance of maintaining timely productivity and product standards by adhering to strict procedures. Also, this tight system is proposed to be appropriate in conditions of economic recession. Following Emery and Trist (1965), Banbury and Nahapiet (1979) proposed that high environmental turbulence would require an adaptable cost control system, which would not be required under stable conditions.

Otley (1980) provided a critical review of contingency theory, and introduced an improved contingency model for organisational control and effectiveness, advising of the importance of constructing a contingency theory of the AIS within the context

of the overall 'organisational control package'. He modelled external environment as a variable affecting the organisational control package and in turn, the organisational control package affecting organisational effectiveness (through intervening variables). Otley (1980, 423) argued that "of all the contingent variables proposed, one in particular stands out, namely unpredictability". Earlier he defined external environment as having dimensions of simple-complex and static-dynamic, two parts of the single dimension of predictability.

Ewusi-Mensah (1981) developed an environmental continuum (controllable to uncontrollable) indicating that organisational information characteristics will differ in the various environmental states. For example, in an uncontrollable environment externally sourced, future oriented, mainly qualitative information will be characteristic. Ewusi-Mensah (1981) concluded that the contingent information profiles developed, are contingent on the environment and related to organisational effectiveness and consequent survival.

A central tenet of these frameworks is that the usefulness of traditional financial accounting information (which is more mechanistic) for organisational control under conditions of high perceived external environmental uncertainty (predictability), and/or: high complexity, dynamism, turbulence, uncontrollability and diversity, is minimal. Consequently, for conditions such as high perceived external environmental uncertainty (predictability), and/or: high complexity, dynamism, turbulence, uncontrollability and diversity, broad information types including qualitative and quantitative non-financial information (which are more organic) suggest optimality. Under conditions of high perceived hostility, and/or: high restrictiveness, certainty and competition, heavy use of accounting information (which is more mechanistic) for control is appropriate.

The conclusions of these theoretical studies regarding their propositions relating external environmental factors to MCS are supported empirically (see for example, Khandwalla 1972a; Hayes 1977; Gordon and Narayanan 1984; Govindarajan 1984; Brownell 1985, 1987; Chenhall and Morris 1986; Chapman 1998). The next section contains a review of the empirical literature.

5.1.2 Empirical studies on perceived external environment (private sector)

This section reviews the empirical, private sector literature on MCS and perceived external environmental attributes. The uncertainty literature is discussed first, then other attributes of perceived external environment, both in chronological order.

5.1.2.1 Perceived external environment — uncertainty dimension

Ferris (1982) utilised Duncan's (1972) measure of perceived environmental uncertainty to test the hypothesis that the amount of 'coping behaviour'⁵² utilised by an organisation will vary directly with the level of perceived environmental uncertainty and effect performance of employees and effectiveness of the coping behavior. Survey data from US professional accounting firms provided no evidence that perceived environmental uncertainty was positively related to either type or quantity of procedural coping techniques. Ferris (1982) nevertheless concluded that the dependency between organisation and environment has important implications for organisations in terms of contingent responses. Further, while noting methodological limitations that may have resulted in disappointing hypothesis testing, an institutional argument was proposed as a possible explanation. It was posited that as procedures become institutionalised over time, data may not reveal the proposed relationship. This is because if in prior periods the procedural activities undertaken in response to uncertainty were effective and institutionalised, the level of coping in later periods may appear high in comparison to level of perceived environmental uncertainty.

Gordon and Narayanan (1984) interviewed managers in various US firms, finding that organisational structure and information systems are functions of external environment. Their second hypothesis argued that the perceived importance of externally oriented, non-financial and ex-ante information is positively associated with increased perceived external environmental uncertainty. Results from structured interviews supported this hypothesis.

⁵² 'Coping behavior' refers to procedural controls used by an organisation to manage under conditions provided by the environment (Ferris 1982, 18-19).

In the same year, Govindarajan (1984) proposed that high (low) perceived external environmental uncertainty would match subjective (formula) performance evaluation and lead to improved performance. The proposed relationships were supported by survey data collected from business unit managers in large, multi-divisional, US firms. Govindarajan (1986a) proposed that a positive relationship between perceived environmental uncertainty and budgetary participation would effect managerial attitudes, motivation and performance positively.

Govindarajan (1986a) based his study on Downey, Hellriegel and Slocum's (1975) revised version of Duncan's (1972) perceived environmental uncertainty instrument, and presented data from middle level responsibility centre managers that supported his proposed relationships. High reliability of the perceived environmental uncertainty measure used was reported.

Chenhall and Morris (1986) investigated the effects of perceived external environmental uncertainty on perceived usefulness of MAS design characteristics (scope, timeliness, aggregation and integration). They hypothesised direct effects between perceived external environmental uncertainty and perceived usefulness of broad scope MAS, timeliness and aggregation. They further hypothesised an indirect effect between perceived external environmental uncertainty and perceived usefulness of both broad scope and aggregation MAS characteristics, through decentralisation. Interview based, structured questionnaire data was gathered from managers of manufacturing organisations. Results indicated that broad scope MAS and timeliness were directly, positively related to perceived external environmental uncertainty. Indirect effects discovered were positive between perceived external environmental uncertainty and aggregation, through decentralisation.

Evans, Lewis and Patton (1986) used an economic modelling approach, that they argued helps to better define explicit relationships between contingency variables. Their two models led them to conclude that investment in MCS is positively related to external environmental uncertainty⁵³. They contended that this is because in times

⁵³ Evans et al. (1986) model actual, not perceived external environmental uncertainty.

of external environmental uncertainty, quality information is more necessary to ensure profits (planning model). However, their auditing model predicted that reducing external environmental uncertainty did not always lead to less investment in MCS because of valuable private information held internally. Their models provided support for external environmental uncertainty contingency relationships in MCS research.

Mak (1989) investigated the relationship between perceived external environmental uncertainty and sophistication of organisational control systems: operational control systems; management control systems; and strategic planning as well as internal consistency between control systems in relation to performance. Mak (1989) argued that where congruence between perceived external environmental uncertainty and each control system exists, that internal fit might be impaired.

Using survey data from New Zealand manufacturing firms, Mak (1989) found weak support for the contingency hypothesis. Specifically, MCS and strategic planning sophistication were positively related to perceived external environmental uncertainty (as expected). Operational control systems sophistication was positively related to perceived external environmental uncertainty (unexpected). MCS/perceived external environmental uncertainty fit was not related to performance and the strategic planning/perceived external environmental uncertainty fit was weakly related. The internal consistency hypothesis was generally supported. It was argued that internal consistency relationships should be all high (sophisticated in all controls) or all low (not sophisticated in all controls). The findings suggest that where sophistication of operational control systems and MCS fit, that financial performance is higher.

The results reported by Mak (1989) should be tempered, however, by potential methodological problems. For example, in addition to the limitations raised by Mak (1989, 295-7) some of the data may be suspect because firms with between 13 to 9 700 employees were included. It would seem reasonable to expect that small firms do not employ formal control systems. How many small firms are included in the sample is not specified.

Gul (1991) hypothesised that the positive effects of sophisticated MAS information on performance would be higher when perceived external environmental uncertainty is greater⁵⁴. The results of survey data collected from small business managers in Queensland light engineering firms supported the hypothesis, consistent with previous research.

In another survey, this time of managers in a variety of Singaporean firms, Gul and Chia (1994), following Chenhall and Morris (1986), investigated the effects of perceived external environmental uncertainty and decentralisation, together with MAS design on managerial performance. They hypothesised that: a combination of a high degree of decentralisation and more sophisticated broad scope and aggregated MAS information will have a negative (positive) impact on the performance of managers who have a low (high) level of perceived external environmental uncertainty. Results support the hypothesised relationships, consistent with prior research.

Otley and Pierce (1995) used Duncan's (1972) perceived environmental uncertainty instrument, revised by Rebele and Michaels (1990), to test for the hypothesised relationships between leadership style (structure, consideration) and dysfunctional behavior, moderated by perceived environmental uncertainty. Amongst other propositions, Otley and Pierce (1995) hypothesise: as the level of perceived environmental uncertainty increases, the positive (negative) relationship between initiating structure (consideration) and (1) audit quality reduction behavior; and (2) under reporting of time, will become stronger. Survey data collected from audit seniors in Irish offices of several Big Six firms generally supported the proposed relationships.

A positive, indirect effect between perceived environmental uncertainty and strategic business unit performance through the extent of use of broad scope MAS was hypothesised by Chong and Chong (1997). Survey data from Western Australian manufacturing firms support this hypothesis, consistent with prior literature. More

⁵⁴ Strangely, Gul (1991) measures perceived external environmental uncertainty, but reports that it is conceptualised as task uncertainty.

recently, Moores and Sharma (1998) proposed that sub-unit managers in retail firms would emphasise (de-emphasise) subjective performance measures under conditions of high (low) external environmental uncertainty. They further proposed that where this fit is stronger, there would be higher sub-unit performance. Their survey data resulted in moderate support for the hypotheses.

Chapman (1998) collected case study data to investigate differences in the use of accounting information and performance, under varying levels of uncertainty. He did not directly measure uncertainty, inferring whether a case was operating under certain or uncertain conditions based on breadth of product range, sophistication of the production technology and organisational strategy. Four contrasting cases within the UK clothing and textiles industry provide support for contingency arguments. In certain environments, an organisation focused upon budgetary control, variance analysis and standard costing (termed pre-planning) performed well. An organisation under certain conditions not utilising a pre-planning approach performed poorly. For the organisations facing high uncertainty, the well performing organisation utilised accounting controls in addition to interactive networks between managers and accountants to enable sufficient information processing. The poorly performing organisation relied heavily on pre-planning, but there was little evidence of interactive networks between accountants and managers.

A combination of both mechanistic and organic MCS elements has also been found to relate to uncertainty (Ezzamel 1990; Merchant 1990). The concepts of organic and mechanistic MCS were detailed in chapter two. The mechanistic elements in these studies, however, appear to have been applied somewhat organically. The manipulation of financial information where there is emphasis on financial targets (Merchant 1990) and the use of high budget participation and interpersonal interaction where there is an emphasis on budgets (Ezzamel 1990) are examples of mechanistic MCS elements applied in a flexible, organic way.

In conclusion, the following relationships between perceived external environmental uncertainty and MCS have been found. Specifically, perceived importance of externally oriented, non-financial and ex-ante information is positively associated with increased perceived external environmental uncertainty. High (low) perceived

external environmental uncertainty matches subjective (formula) performance evaluation and leads to improved performance. A positive relationship between perceived environmental uncertainty and budgetary participation positively effects managerial performance. Broad scope MAS and timeliness are directly, positively related to perceived external environmental uncertainty. Managers will emphasise (de-emphasise) subjective performance measures under conditions of high (low) external environmental uncertainty leading to higher sub-unit performance. In certain environments, an organisation focused upon budgetary control, variance analysis, and standard costing (pre-planning) performs well, whereas, an organisation under certain conditions not utilising a pre-planning approach performs poorly. For organisations facing high uncertainty, utilisation of accounting controls in addition to interactive networks between managers and accountants to enable sufficient information processing (heavy reliance on pre-planning with little evidence of interactive networks between accountants and managers) is positively (negatively) associated with performance.

A common theme from these studies is that under conditions of perceived external environmental uncertainty, organic controls (such as externally oriented, non-financial and ex-ante information; subjective performance evaluation; broad scope MAS and timeliness of MAS information) and less mechanistic controls (such as budgetary participation; and utilisation of accounting controls in addition to interactive networks between managers and accountants to enable sufficient information processing) are most appropriate and lead to improved performance. Under conditions of low perceived external environmental uncertainty, more mechanistic controls (such as formula-based performance evaluation and a low emphasis on subjective performance measures, budgetary control, variance analysis and standard costing) are most appropriate and lead to improved performance.

5.1.2.2 Perceived external environment — other dimensions

Khandwalla (1972a) argued that the greater the competition, the greater the need to control costs. Specifically, the US manufacturing firms surveyed provided results supporting a positive relationship between the use of formal, sophisticated controls

emphasising accounting and competition overall. Product competition (compared with marketing and price competition) resulted in the strongest relationship.

Hayes (1977) hypothesised that environmental factors (planning ability, market share, dealer opinions, environmental stability and diversity) affect sub-unit performance in varying degrees, compared with internal and interdependency variables. He surveyed large, Ohio manufacturing firms and found that production sub-units are minimally affected by the environment (as predicted) due to sufficient buffering. Results for research and development sub-units suggested that financial performance measures are considered inappropriate (presumably because of higher uncertainty in research and development than production — although it was proposed that environment would have little effect on research and development departments). Environmental factors were reported to have the greatest impact on marketing sub-units. Overall, Hayes (1977) found environmental factors (information), more important than financial data in marketing and research and development sub-units⁵⁵.

Brownell (1985) investigated environmental conditions (complexity and dynamism) and control system choices of differing functional activities (marketing and research and development) within a large multinational electronics firm, using surveys and interviews. He proposed that there were differences in environmental conditions between the different units. This argument was supported with respect to environmental complexity. He further proposed differences between units on both budgetary participation and reliance of accounting information, with performance. Extent of use of budgetary participation in research and development units had positive effects on management performance and negative effects in marketing units as predicted. However, the proposal that higher reliance on accounting information in marketing units would lead to higher management performance than in research and development units was not supported.

⁵⁵ However, Hayes (1977) assertion that his hypothesis was supported by the data is questioned by Tiessen and Waterhouse (1978). Their criticism was in turn rejected by Hayes (1978) who, amongst other claims, accuses his critics of not reading the study carefully. An observation made by both however, relates to the use of a factor analytic technique which, if substituted for an alternative factor analysis, may have produced different results.

Again using survey and interview techniques, Brownell (1987) replicated (and extended to include job satisfaction) his earlier study of environmental complexity and dynamism in the Australian subsidiary of the same multinational firm. The relevant functional units this time were sales (high complexity) and customer service (low complexity). This resulted in findings consistent with Govindarajan (1986a), that reliance on accounting information in performance evaluation is positively related to performance and job satisfaction, provided conditions of low environmental complexity exist.

Drawing on Khandwalla (1972a), Mia and Clarke (1999) hypothesised that as the intensity of market competition increases, manager's use of the benchmarking and monitoring MAS information increases. They further hypothesised that where a positive relationship between MAS use and market competition occurs, performance of business units is enhanced. Analysis of interview data from Australian manufacturing managers indicated support for the hypotheses. MAS information in Mia and Clarke (1999) is described as benchmarking and monitoring information, and the survey instrument developed in the study for measuring MAS information use appears to include items consistent with a broader MCS (for example, delivery times). The interview data show that a broad range of information was discussed (for example, customer satisfaction with quality).

In complex and dynamic environments, it is argued that procedures cannot be specified and output measures cannot be developed. Therefore, more organic controls such as selection and socialisation are relied upon in organisations with complex and dynamic environments (Waterhouse and Tiessen 1978).

For diversity, Bruns and Waterhouse (1975) and Merchant (1981, 1984) reported that more diverse (or, heterogeneous) organisations tend to use a more highly developed and formal budgeting system with greater standardisation of information flows and greater operating manager involvement in budgeting. Similarly, Khandwalla (1972b, 1977) indicated that high diversity was best suited to sophisticated MCS, standard operating procedures and a participatory management style, which would appear to be a mix of organic and mechanistic controls.

Several other external environmental attributes, when high, are best suited to more mechanistic MCS. Competition was associated with high usage of sophisticated accounting, financial and statistical control (Khandwalla 1972a). Hostility was found to be positively related to standardisation of outputs and operations (Khandwalla 1977) and an emphasis on budget targets (Otley 1978). A positive relationship was found between restrictiveness and a focus on planning (Khandwalla 1977) and technical complexity⁵⁶ was found to be positively related to both planning and sophisticated MCS.

Where an organisation operates in an external environment characterised by several, competing attributes, contradictory design implications are likely (Khandwalla 1977). Khandwalla (1977) suggested that while there is no neat mathematical formula for selecting the appropriate MCS where an organisation operates in an environment of multiple, competing attributes, these organisations will initially adopt mechanistic controls because of threats to their short term survival, and subsequently adopt more organic controls once stabilised.

In conclusion, the literature indicates that more organic controls (environmental information, low reliance on accounting performance measures, selection and socialisation) are appropriate under conditions of high: external environmental diversity (heterogeneity), complexity, dynamism; and low stability. However, under conditions of high diversity (heterogeneity), some less mechanistic controls (such as greater operating manager involvement in budgeting — a participatory management style) and more mechanistic controls (such as highly developed and formal budgeting systems with greater standardisation of information flows, sophisticated MCS and standard operating procedures) are also appropriate. Further, more mechanistic controls (such as formal, sophisticated controls emphasising accounting, an emphasis on budget targets, standard procedures, output measures; standardisation of outputs and operations; sophisticated accounting, financial, statistical control; and planning)

⁵⁶ Khandwalla (1977) uses the term 'technical complexity' to relate to one of five *external* environmental attributes *not* as a technology variable. This is important, because Woodward (1965) uses the term 'technical complexity' in relation to workflow technology. The concept of technical complexity as a technology variable is discussed in chapter seven.

are appropriate in conditions of high: certainty, competition, hostility, restrictiveness and technical complexity.

Where an organisation operates in an external environment characterised by several, competing attributes, contradictory design implications are likely. This means that where an organisation operates in an environment of multiple, competing attributes, the appropriate MCS may be to initially adopt mechanistic controls because of threats to their short term survival, and subsequently adopt more organic controls once stabilised.

5.1.2.3 Conclusions relating to perceived external environment literature — all attributes (private sector)

In drawing together the reviews of both the uncertainty and the 'other' attributes in the perceived external environmental literature, an overall conclusion may be reached. Specifically, traditional accounting evaluation measures of performance (more mechanistic controls) alone are unsuited to uncertain external environments. In particular, Thompson (1967) argued that under uncertain conditions, financial performance measures (more mechanistic controls) would not be sufficient because of incomplete cause-effect knowledge of relationships relevant to an organisation. The contemporary literature supports the idea that there is a limited role for traditional accounting data in uncertain environments for evaluation and control in organisations. This idea has been refined (see for a discussion Hartmann 2000), to indicate that under conditions of high uncertainty, accounting provides incomplete information about events. However, some external environmental attributes (certainty, competition, hostility, restrictiveness and technical complexity) are suited to traditional accounting controls (which are more mechanistic).

Hartmann (2000) explains that dysfunction can occur using accounting performance measures in uncertain environments because controllability is not possible, and that stressing uncontrollable performance measurement can result in the incompleteness of performance measurement. It is argued that organisations with high levels of perceived external environmental uncertainty, complexity, dynamism, diversity (heterogeneity) and turbulence will perform best if the MCS is largely non-financial,

participative, contains subjective (rather than formula based) performance evaluation measures and includes external and forward looking information (a combination of less mechanistic and more organic controls) (Thompson 1967; Duncan 1972; Hayes 1977; Khandwalla 1977; Amigoni 1978; Waterhouse and Tiessen 1978; Banbury and Nahapiet 1979; Ewusi-Mensah 1981; Gordon and Narayanan 1984; Govindarajan 1984; Brownell 1985; and Chenhall and Morris 1986).

Empirical results of relationships discussed between the perceived external environmental variables and MCS are largely consistent throughout the literature. As Brownell (1987) notes (in relation to the uncertainty attribute), such consistency is remarkable given the variety of operational measures employed. This observation is especially pertinent considering criticism of perceived external environmental uncertainty measures abounds (see for example Tymon, Stout and Shaw 1998). Indeed, the few studies that fail to support contingency relationships between perceived environmental uncertainty and MCS had clear methodological limitations (see for example Pennings 1975 and Mak 1989).

5.2 Empirical studies on perceived external environment (not-for-profit and public sector)

As with private sector studies, not-for-profit and public sector studies have investigated a relationship between perceived external environment and MCS (Rayburn and Rayburn 1991; Geiger 1993, 1995; Geiger and Ittner 1996; Alam 1997; Baraldi 1998). The public sector and not-for-profit studies employ similar theoretical arguments and on the whole support the main conclusions of the private sector literature. These studies are almost exclusively concerned with perceived external environmental uncertainty and will therefore be discussed together, in chronological order.

In a United States hospital context, Rayburn and Rayburn (1991) indicated that perceived external environmental uncertainty, created by a funding arrangement such as the Prospective Payment System⁵⁷, is a relevant variable in a contingency framework. Specifically, Rayburn and Rayburn (1991) examined relationships among perceived external environmental uncertainty, use of accounting controls, and role and behavior of the accountant within different hospital ownership structures. Rayburn and Rayburn (1991) argued that the introduction of a new accounting technology (a prescribed payments system) creates a more competitive environment, and increases environmental uncertainty. They found a positive relationship between perceived environmental uncertainty and the importance and involvement of the accountant, as well as emphasis on financial controls; although there was mixed support that the relationship was contingent upon ownership, as hypothesised.

It should be noted that the findings of Rayburn and Rayburn (1991) are not necessarily inconsistent with prior studies. This follows as a limitation of the study is that it did not include non-financial controls, hence the result that there was greater reliance on financial controls under increased environmental uncertainty does not mean that there was not also greater reliance on non-financial controls.

Geiger (1993) found that external environmental uncertainty, proxied by funding arrangements, was related to the level of cost accounting system complexity. Revolving (break-even) and reimbursement (appropriated) funding in the US Federal government had a significant effect on MCS. Revolving funding provided the impetus for extensive control of costs leading to complex MCS, greater accountability and cost consciousness. Compatible with this was decentralised financial measurement and accountability at first-line manager level. Appropriated funding was associated with less complex MCS and centralised control.

⁵⁷ A prospective payment system (PPS) is one where an organisation receives a predetermined fixed price amount for each completed service (regardless of the actual cost), as opposed to reimbursement of reasonable costs. Specifically the PPS referred to is the introduction of diagnosis related group (DRG) classes which is similar to the Australian hospital environment (varies across states).

Subsequently, in a study of US Federal government cost management accounting systems, Geiger (1995) investigated the contingencies that motivate certain public sector organisations to develop costing systems. A field study including five public sector organisations that had developed costing systems, revealed that all the organisations had revolving or reimbursement funding environments (highly uncertain compared to appropriation), a cost conscious management style, and decentralised financial control and accountability. This was because the management of relationships between unguaranteed cash inflows and outflows required close and careful monitoring to avoid deficits. That more mechanistic MCS such as tight cost controls were appropriate under the new and uncertain funding arrangements is an interesting finding compared to that of the private sector studies which generally suggest that organic MCS is appropriate. Geiger's (1995) finding is consistent with the arguments of Khandwalla (1977), developed earlier.

Geiger and Ittner (1996) used a survey approach to investigate determinants of cost accounting practices about government agencies in the US⁵⁸. Their findings indicated that increased external requirements were positively related to more elaborate cost accounting systems emphasis, but agencies were no more likely to utilise the added information internally. Whereas, agencies that had to operate via full cost recovery (therefore exposed to competition and funding uncertainty), utilised more elaborate information on costs for pricing and management control.

Alam (1997) conducted case studies of budgetary processes in two Bangladesh government enterprises. The primary purpose of Bangladesh public enterprises is to promote growth as part of a national development plan, not generate profit per se. Alam's (1997) study was focused particularly upon external environmental uncertainty. He contrasted the 'jute' organisation, characterised by high uncertainty, with that of the 'sugar' organisation that operated under conditions of low uncertainty. Using interview, archival and questionnaire methods, data suggested that the budgeting process was used to manage relations with institutional actors where conditions in the external environment were highly uncertain. Under conditions of

⁵⁸ The survey data was collected by the US GAO in 1989.

low uncertainty the budgetary process was used for organisational control in addition to institutional relations reasons.

Consistent with Geiger and Ittner (1996), Alam's (1997) study indicated support for both institutional and contingency perspectives. That is, both the jute and the sugar organisations studied, produced information to appease institutional powers. However, subsequent budgeting behaviour varied between the two organisations in response to their different contextual environments. The sugar organisation produced a separate budget from that required by ministers to manage their internal operations because the separate budget was considered useful for internal control only by managers in low uncertainty situations (characterised by the sugar mills). Further, institutional pressures impacted the operations of the jute organisation, but did not have an impact on the sugar organisation because the latter could control the supply of raw materials (as a vertically integrated monopoly) and therefore manage its uncertainty.

More recently, Baraldi (1998) investigated MCS in Italian non-profit organisations in an effort to understand the role and characteristics of information in this setting. Data from interviews and a survey of 76 non-profit organisations in Italy led him to conclude that non-profit organisations experienced high levels of environmental complexity and dynamism. Further, MCS were heavily relied upon in this setting, with organisational and social controls equally important and complementary. MCS needs to be multi-dimensional to aid management in the attainment of heterogeneous objectives relevant to non-profit organisations. Baraldi's (1998) findings are not inconsistent with Khandwalla (1972b).

Overall conclusions that can be drawn from the literature are consistent with the conclusions in the review of the private sector literature. In general, conclusions are that under conditions of uncertainty, complexity and dynamism⁵⁹ in the perceived external environment, more organic controls (or a mix of organic and mechanistic

⁵⁹ Other attributes of perceived external environment (already discussed in the preceding sections) have not been studied in a public sector context.

controls) are appropriate. Issues relating to definition and measurement of perceived external environment are addressed in the next section.

5.3 Conceptual and measurement complexities of perceived external environment

Now that the perceived external environmental literature has been discussed — and before stating the propositions arising from this literature — it is important to outline the complexities of studying external environmental variables, both concepts and measures. First it is useful to distinguish between the concepts of *actual* external environment and *perceived* external environment because it is perceived external environment that has generally been empirically tested (see for example, Duncan 1972; Gordon and Narayanan 1984; Chenhall and Morris 1986). There are theoretical reasons to support the choice of perceived external environment. There is substantial consensus that the perceived environment is more relevant because it is managers' perception that drives organisational responses, not reality⁶⁰. Following this approach, the external environmental variables studied in this thesis are perceived, not actual.

Empirical research relating to perceived external environment has been found to relate to a variety of variables. Specifically, there are relationships between perceived environmental uncertainty and information usage⁶¹, information usefulness and characteristics⁶², evaluative style⁶³ and performance/effectiveness⁶⁴.

⁶⁰ See for example, Lawrence and Lorsch (1967); Weick (1969); Galbraith (1973); Downey, Hellriegel and Slocum (1975); Downey and Slocum (1975); Ferris (1977).

⁶¹ See for example, Khandwalla (1972a), (1977); Chenhall (1984); Govindarajan (1984); Evans, Lewis, and Patton (1986).

⁶² See for example, Khandwalla (1972a); Hayes (1977); Gordon and Narayanan (1984); Chenhall and Morris (1986); Mak (1989); Fisher (1996); Chong and Chong (1997).

⁶³ See for example, Khandwalla (1972a); Hayes (1977); Govindarajan (1984); Brownell (1985, 1987); Schweikart (1986).

⁶⁴ See for example, Govindarajan (1984, 1986a); Brownell (1985, 1987); Mak (1989).

The many various aspects of perceived external environment were outlined previously (uncertainty/certainty; complexity and dynamism; competition; ambiguity [equivocality]; turbulence; hostility; diversity [heterogeneity]; technical complexity and restrictiveness)⁶⁵.

The variety of these dimensions makes perceived external environment a complicated variable. Further, there is some confusion in the literature as to what constitutes perceived external environmental uncertainty. In some studies, for example, uncertainty is conceptualised as a separate dimension of the perceived external environment to say, hostility (see Khandwalla 1972a, for example), whereas other studies conceptualise hostility as a dimension of uncertainty (see Gordon and Miller 1976, for example). The blurring of perceived external environmental variables is also apparent in contemporary literature. Hartmann (2000, 470), for example, refers to "*uncertainty associated with the organization's (external) environment*", specifying that this (external) environment was captured in early studies in terms of *dynamism, heterogeneity, predictability, complexity and variability*, to illustrate his point that *uncertainty* is a central concept of contingency research.

The conceptual problem with blurring perceived external environmental variables is in understanding context-appropriate MCS. Following the abovementioned example, organic MCS is expected to be appropriate under conditions of high uncertainty. In contrast, mechanistic MCS is expected to be appropriate under conditions of high hostility. Therefore, if hostility were modelled as a dimension of uncertainty, the outcomes of appropriate MCS are contradictory. A potential solution follows from the concept developed in chapter two, that appropriate MCS will sometimes constitute a combination of organic and mechanistic MCS attributes.

⁶⁵ Relationships between perceived external environment and other contingent variables are also evident, adding to the complex nature of this variable. For example, Duncan (1972) and Mia and Chenhall (1994) described a relationship between perceived external environmental uncertainty and task uncertainty. Waterhouse and Tiessen (1978) modelled a similar relationship between complexity and dynamism, and decentralisation. Downey and Slocum (1975) and Govindarajan (1986a, 1988) suggested that there is a link between perceived external environmental uncertainty and firm strategy type. Of concern in this study however, is the moderating relationship of perceived external environmental uncertainty (and other contextual variables) between OM-MCS and MCS usefulness, and any consequent impact on departmental performance.

These conceptual complexities of perceived external environment variables have implications for measurement. In trying to develop an instrument to measure perceived external environmental uncertainty, Duncan (1972) concluded that definitions of perceived external environmental uncertainty (such as that of Lawrence and Lorsch 1967) were so broad that they could not be operationalised. Other, earlier definitions were too narrow and mathematical, ignoring important components. This problem led Duncan (1972) to develop a workable measure of external environmental uncertainty⁶⁶ (complexity and dynamism measured by: lack of information, not knowing how to respond, not knowing outcome) termed perceived environmental uncertainty, that has been used by Brownell (1985, 1987), Chenhall and Morris (1986) and Govindarajan (1986a), amongst others.

Khandwalla (1972a) developed a measure of competition, and later, Khandwalla (1977) developed a measure of perceived external environment (turbulence, hostility, diversity, technical complexity and restrictiveness). This was subsequently used by Gordon and Narayanan (1984) (and others) to measure perceived external environmental uncertainty. Empirical research using both these instruments and others⁶⁷ will be reviewed next, in chronological order.

It should be noted that Tymon et al. (1998) have criticised studies that utilise Duncan's (1972) instrument as a measure of perceived external environmental uncertainty. Tymon et al. (1998) indicate that as Duncan's (1972) instrument measures internal and external environment, that studies which utilise this measure are not strictly measuring the perceived external environment, but a combination of internal and external environment.

Whilst this criticism may be justified for much of the literature they review, Tymon et al. (1998) fail to acknowledge that some of these studies utilise a revised version

⁶⁶ Duncan (1972) also developed a measure for internal perceived environmental uncertainty.

⁶⁷ Other instruments exist including Lawrence and Lorsch's (1967) measure of uncertainty in marketing, manufacturing and research sub-environments. Lawrence and Lorsch (1967) employed three uncertainty characteristics: (1) lack of clarity of information, (2) general uncertainty of causal relations, and (3) long time span of feedback about results. This measure had reported low levels of reliability compared with Duncan (1972) (Downey, Hellreigel and Slocum 1975).

of Duncan's (1972) instrument. For example, both Ferris (1982) and Chenhall and Morris (1986) used Duncan's instrument, revised by Sathe (1974).

Having reviewed the empirical literature it is useful to note that there seems to be variation in the literature modelling perceived external environmental variables (particularly of uncertainty). Research on uncertainty has been based predominantly on any one of three developed measures: Duncan (1972); Khandwalla (1972a); and Miles and Snow (1978). Table 5.1 summarises this literature.

Table 5.1 Perceived external environmental uncertainty studies

	Duncan (1972)	Khandwalla (1972a)	Miles and Snow (1978)
Measures	Complexity and Dynamism relating to: Customer, supplier, competitor, socio-political, and technological components. (Internal environment instrument not discussed here)	Competition	Predictability of technology, competitors actions, market demand, product attributes/design; raw material (availability and price), government regulation, and labour union actions
Literature	Ferris (1982) based on Duncan (1972) and Sathe (1974)	Gordon and Narayanan (1984, 38) revised Khandwalla (1972a, 1977) to include predictability and stability of aspects of industry, competition, customers, economy, and technology	Govindarajan (1984) revised Miles and Snow (1978) (Govindarajan 1986a also used this measure, as well as Duncan's 1972 measure)
	Brownell (1985, 1987)	Chenhall and Morris (1993) used Khandwalla (1972a, 1977) as revised by Gordon and Narayanan (1984)	Gul (1991) used Miles and Snow (1978) as revised by Govindarajan (1984)
	Chenhall and Morris (1986) used Duncan as revised by Sathe (1974)	Moore's and Sharma (1998) used Khandwalla (1972a, 1977) as revised by Gordon and Narayanan (1984)	Kren and Kerr (1993)
	Govindarajan (1986a) used Duncan (1972) as revised by Downey et al. (1975)	Mak (1989) used Khandwalla (1972a, 1977) as revised by Gordon and Narayanan (1984)	Gul and Chia (1994) used Miles and Snow (1978) as revised by Govindarajan (1984) ⁶⁸
	Rebele and Michaels (1990) used Duncan (1972), and Ferris (1977)	Chong and Chong (1997) used Khandwalla (1972a, 1977) as revised by Gordon and Narayanan (1984)	Chenhall and Morris (1993) used Miles and Snow (1978) as revised by Govindarajan (1984)
	Otley and Pierce (1995) used Rebele and Michaels (1990) (based on Duncan 1972 and Ferris 1977).	Mia and Clarke (1999) revised Khandwalla (1972a, 1973b)	

Inconsistency in terminology arises where some perceived external environment dimensions are referred to as uncertainty in some studies, and not in others. There seems to be inconsistency in the literature about the dimensions of perceived external environmental uncertainty. For example, Waterhouse and Tiessen (1978) and Otley (1980) explained that the simple-complex and static-dynamic constructs are

⁶⁸ Curiously, Gul and Chia (1994) report that they use the Duncan (1972) instrument, revised by Sathe (1974). However, they actually use Govindarajan's (1984) measure.

dimensions of unpredictability. Waterhouse and Tiessen (1978), however, drew on Duncan's (1972) work, that defined complexity and dynamism as constructs of uncertainty.

Downey et al. (1975, 615) described Duncan's (1972) measures as an uncertainty measure (internal characteristics) *and* a measure of perceived environmental characteristics (complexity and dynamism). Downey et al. (1975) noted that Duncan postulated that perceived dynamism and complexity in the environment contributes to uncertainty perceptions. Downey and Slocum (1975) explained that Duncan (1972) and Lawrence and Lorsch (1967) argued that the degree of perceived uncertainty is a function of environmental characteristics, but that these are not perfectly correlated. For example, a division within an organisation may be buffered from complex and dynamic external characteristics, and therefore perceive low uncertainty. Downey et al. (1975) refer to Duncan's (1972) instruments separately as: the uncertainty instrument, and the environmental characteristics instrument.

Govindarajan (1984), consistent with Waterhouse and Tiessen (1978) and Otley (1980) refers to uncertainty as unpredictability. Therefore, in this study, for the external environment variable, uncertainty and unpredictability are taken to label the same construct, and complexity and dynamism are considered dimensions of uncertainty.

Thompson (1967) described external environment as having two components: stability (stable/dynamic) and diversity (heterogeneous/homogenous). Hayes (1977) utilises Thompson's (1967) constructs of external environment, and neither study used the term uncertainty. Gordon and Miller (1976) described dynamism as one of three key dimensions characterising external environment. They described dynamism as stability and predictability of consumer tastes, production technology, and competition. Gordon and Narayanan (1984) described the dimensions of predictability and stability as external environmental uncertainty.

Brownell (1985, 1987) described external environment as complex and dynamic, and never mentioned uncertainty. Simons (1987b, 340-341) however, explicitly referred to uncertainty:

Environmental uncertainty is highest for firms facing heterogeneous and dynamic environments. Environmental heterogeneity describes complexity and diversity in an organization's activities (Child 1972). Heterogeneity produces uncertainty owing to an absence of relevant information for decisions...Environmental dynamism, by contrast, is the condition of instability and turbulence...this is a different type of uncertainty...Environmental uncertainty in the form of intense product competition...can be associated with the increased use and perceived 'tightness' of control procedures.

Khandwalla (1972b) described perceived external environment as having uncertain, heterogeneous, and hostile attributes. In a later study, however, Khandwalla (1977) described perceived external environment as having heterogeneous, hostile, technically complex, restrictive and turbulent aspects. He made no mention of uncertainty in the later study. Tymon et al. (1998) referred to numerous dimensions (competition, predictability, stability, complexity and dynamism) as perceived external environmental uncertainty. Mia and Clarke (1999, 137) state that "market competition creates turbulence, stress, risk, and uncertainty for organizations".

This discussion has shown that there is some confusion in the literature as to what constitutes perceived external environmental uncertainty, as opposed to other perceived external environment attributes. In attempting to avoid confusion, it is important to keep the dimensions of perceived external environment separate, for example, by recognising that competition, diversity, turbulence, hostility, restrictiveness, technical complexity and uncertainty, are different dimensions.

5.4 Conclusions and proposition 3a

The discussion in this chapter has led to the main conclusion that more organic controls, or a mixture of mechanistic and organic controls, are most appropriate in organisations with perceived external environments characterised by uncertainty, diversity (heterogeneity), complexity, dynamism and turbulence. More mechanistic controls are most appropriate in organisations with perceived external environments characterised by certainty, competition, hostility, restrictiveness and technical complexity. Output management is a mechanistic control, as previously discussed.

These conclusions follow the argument developed in chapter two in relation to mechanistic/organic MCS attributes and this chapter in relation to perceived external environment attributes. The discussion in this chapter leads to proposition 3a:

P3a The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls) under conditions of certainty, competition, hostility, restrictiveness and technical complexity (uncertainty, diversity [heterogeneity], complexity, dynamism and/or turbulence) in the perceived external environment.

This chapter completes the review of contingency literature relating to perceived external environmental factors. Chapter six reviews the contingency literature relating to structure.

CHAPTER SIX CONTINGENCY LITERATURE: STRUCTURE

6.1 Introduction to structure

This chapter summarises and reviews the contingency literature on structure. Propositions relating structure variables to this study are outlined at the end of this chapter. Organisational structure relates to the formal arrangements within an organisation for carrying out activities and has been a major concern of organisational theorists⁶⁹. Organisational structure was identified in early MAS contingency research as an important element of context (see for example Bruns and Waterhouse 1975). Specifically, the central tenet of the literature is that the design of MCS is contingent upon organisational structure (Dermer 1977) and management controls should be designed to be consistent with organisational structure and context (Hopwood 1976).

Management accounting researchers have attempted to develop theoretical contingency frameworks that build on structural concepts from the organisational design literature⁷⁰. Structure has also been considered in a variety of empirical studies⁷¹.

⁶⁹ The research in this area is extensive and includes: Burns and Stalker (1961); Pugh, Hickson, Hinings, Macdonald, Turner and Lupton (1963); Pugh et al. (1968, 1969a,b); Woodward (1965); Hage and Aiken (1967); Lawrence and Lorsch (1967); Lorsch and Morse (1974); Thompson (1967); Hickson, Pugh and Pheysey (1969); Child (1972, 1973, 1977); Galbraith (1973); Khandwalla (1973a, 1974); Downey and Slocum (1975); Ford and Slocum (1977); Hall (1977); Leifer and Huber (1977); Gerwin (1979).

⁷⁰ See for example Gordon and Miller (1976); Waterhouse and Tiessen (1978); Ginzberg (1980); Otley (1980); Govindarajan (1986b).

⁷¹ See for example Bruns and Waterhouse (1975); Watson (1975); Hayes (1977); Khandwalla (1977); Merchant (1981, 1983); Gordon and Narayanan (1984); Merchant (1984); Brownell (1985); Chenhall and Morris (1986, 1995); Lal (1991-92); Foster and Gupta (1994); Mia and Chenhall (1994); Abernethy and Lillis (1995); Foster and Swenson (1997); Gosselin (1997); Abernethy and Lillis (2001); Jan van Helden, van der Meer-Kooistra and Scapens (2001); Lind (2001); Moores and Yuen (2001). Other studies relating to teams (Young and Selto 1993; Scott and Tiessen 1999; Drake, Haka and Ravenscroft 1999) are not included here as they relate to a lower level of analysis than organisational.

6.1.1 Theoretical studies on structure

In Gordon and Miller's (1976) framework, structure (decentralisation, differentiation, integration and bureaucratisation⁷²) is modelled as the main organisational variable for consideration in AIS design. They suggested that structural arrangements are a response to environmental uncertainty, as well as a moderator between AIS design and performance. They proposed that, where there is decentralisation, effective AIS will be sensitive and sophisticated (because as delegation occurs to aid complex administration, formal monitoring must occur from top management) involving decentralised AIS characterised by explicit reports on sub-unit performance, supporting information such as output measurement and sophisticated planning and controls. Where there is differentiation, effective AIS will be decentralised (because that will allow specific, differentiated management needs to be met). As differentiation increases, integration is required, to avoid conflict between divisions. High differentiation and integration would require an AIS to incorporate planning and budgeting to show overall and individual division targets, to achieve integration through goal congruency (consistent with the earlier work of Lawrence and Lorsch 1967).

Gordon and Miller (1976) also argued that where formal monitoring is sought by way of high bureaucratisation, dysfunction might occur due to a dynamic environment. They suggested that the AIS could assist by providing non-financial information on the external environment, alerting top management to the need for more flexible response structures. Notably however, Gordon and Miller's (1976) framework has been criticised for lacking a theoretical basis (Otley 1980).

⁷² Bureaucracy is also studied by Pugh et al. (1968, 72-79; 1969a, 116). Bureaucracy is defined as extent of written, legitimised procedures, rules, instructions and communications. A similar concept, formalisation is described as extent of specification of actual job tasks; existence and level of detail of employee manuals; extent of formality and uniformity in modes of senior managerial decision making and standardisation as extent of "rigid rules and regulations, a hierarchy of offices, narrow specialisation of personnel, an abundance of offices or units which can hamstring those who want to get things done, impersonality, resistance to change" (Perrow 1970, 50). Bureaucracy, formalisation and standardisation seem to be MCS attributes more than structural attributes, when considering the definitions.

Amigoni (1978) modelled degree of structural complexity as a contingent variable related to organisational control tools. Structural complexity (number and degree of interdependence⁷³ of business units, number and type of organisational units) was argued to positively relate to complex management accounting (for example responsibility accounting, strategic plans, operational budgets) as compared to reliance on financial accounting (for example yearly balance sheet, inflation accounting). Amigoni's (1978) main conclusion was that increasing structural complexity could be adapted to by utilising complex management accounting techniques.

Waterhouse and Tiessen (1978) modelled organisational control as dependent on structure (which is contingent upon technology and environment). They argued that formal control systems such as MAS are costly, but necessary where decentralisation exists because of the "leakage of authority" associated with greater access to information and authority delegation. This costliness would lead an organisation to choose centralisation as more efficient. They further argued, however, that under conditions of uncertain environments or non-routine technology, direct control measures (for example procedures) are difficult to specify and therefore centralised authority is unsuitable. Interestingly, Waterhouse and Tiessen (1978) did not refer to the earlier attempt at a contingency framework for accounting information systems design by Gordon and Miller (1976) in their study, even though both are explicitly concerned with structure.

Ginzberg (1980) developed a model of AIS emphasis, contingent upon organisational characteristics, including formal and informal organisation structure. He argued that procedural type management information systems would not be appropriate in organic/informal or decentralised organisations. He further proposed that decision systems to support interdependent tasks are most needed where there is high differentiation and decentralisation, but that such systems would be resisted because they would be perceived as lessening management power.

⁷³ The concept of interdependence among departments is usually modelled as a technology variable. A further note to interdependence is that it appears to be a dimension of structure and technology (see Khandwalla 1977). Interdependence literature is discussed in the technology section of this chapter.

Overall, conclusions that can be drawn from these studies are that decentralised and differentiated structures require formal, sophisticated and decentralised MCS (a mix of organic and mechanistic controls), compared to centralised structures (which require mechanistic controls). Integration requires the use of integrative liaison devices together with MCS which focuses on organisation-wide plans and budgets, as well as sub-unit specific information (a mix of organic and mechanistic controls), for communication, co-ordination and goal congruency across sub-units.

6.1.2 Empirical studies on structure (private sector)

Empirical literature examining MCS and structure utilised similar structural dimensions to the theoretical studies⁷⁴. These studies can be generally grouped into those focused upon decentralised structures, following Khandwalla (1972b, 1974 and 1977 — and to a lesser extent, focused upon differentiation and integration following Lawrence and Lorsch 1967) and generic structural outcomes, referring to those focused upon organic and mechanistic structures, following Burns and Stalker (1961).

6.1.2.1 Decentralisation (as well as differentiation and integration)

Khandwalla (1974) found positive relationships between decentralisation, vertical integration and use of sophisticated controls⁷⁵. When controlling for decentralisation, there was no relationship between vertical integration and use of sophisticated controls. The relationship between decentralisation and use of sophisticated controls was further tested on the split sample (high/low profit), finding support for the high profit group only. This supports a contingency argument that decentralisation and use of sophisticated controls lead to enhanced performance.

⁷⁴ It is important to note that some other literature deals specifically with contingency relationships involving structure for organisational performance/effectiveness, however these studies do not consider MCS and are therefore outside the scope of this study (see for example, Khandwalla 1973a and Miller and Friesen 1982). Similarly, some literature is concerned with structure and other contextual variables (see for example, Fry 1982).

⁷⁵ Other hypothesised relationships were supported also. These other relationships involve structure but not MCS.

Bruns and Waterhouse (1975) investigated relationships between structural and budgetary controls. In this case, structure was modelled as contingent upon contextual variables (size and technology), and aspects of control (complexity, level of perceived control) were modelled as intervening to affect certain budget related behaviors. They proposed that a decentralised and structured organisation operating in a stable environment is well suited to budgetary type control. Alternatively, they proposed that interpersonal control would be better suited to a centralised organisation, which may be a result of an uncertain environment.

Data suggested that size and workflow integration were positively (negatively) related to decentralisation (centralisation) as expected. Lack of autonomy and centralisation were negatively related to control systems complexity as expected. Other (mixed) findings in relation to level of perceived control and control system complexity lead Bruns and Waterhouse (1975) to conclude that as an organisation becomes more specialised, standardised and formalised, that managers perceive a higher level of control.

Khandwalla (1977) provided numerous propositions relating to structure. His survey data of Canadian service and manufacturing firms indicated significant positive relationships between structural variables (delegation of authority, divisionalisation, vertical integration and distributive network) and sophistication of control and information systems. Piper (1978, in Otley 1980) studied multiple retail organisations. He reported that organisational structure acts as an intervening variable between task complexity and financial control structure.

Consistent with Bruns and Waterhouse (1975), Merchant (1981) argued that decentralised and diverse organisations would better fit an administrative type of control. This administrative control type features managerial participation in budget related activities, importance on budget achievement, formal communication and budgetary sophistication. Merchant (1981) extended his hypothesis to suggest that enhanced performance will result where matching of structure and control system occurs. Support was found for the fit hypothesis; although mixed findings resulted with respect to outcome variables.

Merchant (1984) expanded on his earlier research, modelling budget system characteristics as contingent on situational factors (production technology, market factors and organisational characteristics) in relation to the outcome variable, organisational performance. Differentiation is one of these organisational characteristics. It was argued that as differentiation increases, formal budgeting processes should become more important because they are directly related to the use of formal administrative controls and standardised information flows. The relationships hypothesised regarding differentiation were supported; however, consistent with his earlier findings⁷⁶ partial support was provided for the extension to performance.

Chenhall and Morris (1986) investigated MAS characteristics perceived as useful by managers in performing their administrative tasks, within their operating context. Specifically, they modelled structure (decentralisation) as having a direct relationship with perceived usefulness of MAS, and also as having an intervening effect between perceived environmental uncertainty, interdependence, and perceived usefulness of MAS. Chenhall and Morris (1986) proposed that aggregated, integrated, and broad scope MAS would be perceived as useful in decentralised subunits. These direct relationships were supported with respect to both aggregated and integrated aspects of MAS and decentralisation. Results suggested an indirect effect of perceived environmental uncertainty acting through decentralisation for aggregated information, and an indirect effect of interdependence acting through decentralisation for integrated information.

It should be noted that Gordon and Narayanan (1984) found that once environmental uncertainty was controlled within the model, structure (defined as organic/mechanistic as discussed in the following section) per se and the information system were not related; although, Chenhall and Morris (1986) found that there was a relationship between structure (defined as decentralisation) and MAS. In relation to issues raised by Gordon and Narayanan (1984) relating to the primacy of structure as a contextual variable, Chenhall and Morris (1986) provided some insight. Consistent

⁷⁶ As previously noted, the data used were the same in 1981 as in 1984.

with Thompson (1967), their findings suggest that organisations consider the level of organisational interdependence and environmental uncertainty, before making decisions about decentralisation.

Lal (1991-92) investigated the relationship between structure, other contextual variables, and sophistication of control and information systems. In particular, he hypothesised positive relationships between size and structural variables (structuring of activities, decentralisation), as well as between these structural variables and control and information system sophistication. The proposed relationships were found (except between size and structuring of activities). The results pertaining to structuring of activities, decentralisation, and sophisticated control and information systems are consistent with prior research.

Chia (1995) investigated the effects of MAS information characteristics and decentralisation on managerial performance. This is by way of a partial replication and extension of the earlier study by Chenhall and Morris (1986)⁷⁷. Specifically he hypothesised that the greater the degree of decentralisation, the greater is the positive impact of the sophistication of MAS information characteristics (broad scope data, aggregation, integration and timeliness) on managerial performance. Survey data collected from senior managers in various Singaporean companies provided support for the hypothesised relationships. This is consistent with the results of Chenhall and Morris (1986) to the extent that aggregated and integrated information were found to directly positively relate to decentralisation. Timeliness was not modelled in the earlier study as relating to decentralisation.

Overall, the empirical literature suggests that effective MCS in decentralised organisations will be characterised by use of sophisticated, administrative type controls, including reliance on budgets, aggregated and integrated information (a mix of organic and mechanistic controls). Consistent with this conclusion, the literature suggests that centralisation is suited to less sophisticated (less mechanistic) and

⁷⁷ Chia (1995) did not include perceived environmental uncertainty or interdependence as did Chenhall and Morris (1986). Chia (1995) considered only partially the direct hypotheses of the earlier study, and neither of the indirect.

interpersonal controls (more mechanistic controls). As differentiation increases, formal budgeting processes should become more important because they are directly related to the use of formal administrative controls and standardised information flows (more mechanistic). In relation to integration, results indicate that there is a positive relationship between vertical integration and sophistication of control and information systems (but when controlling for decentralisation, there is no relationship between vertical integration and use of sophisticated controls).

An overall conclusion relating to the relationship between structural factors and MCS, is that traditional, formal MAS (more mechanistic MAS) is best suited to mechanistic structures. Integrated, aggregated, broad scope and future oriented MAS (more organic MAS), is best suited to organic organisations, and *in addition* formal MAS is also helpful.

Further, consistent with the concept that both mechanistic and organic control elements are useful in some organisations, is the conclusion that structure is a complex variable. Specifically, the few studies that considered differentiation and integration indicate that where high differentiation creates a need for increased integration, both organic and mechanistic control elements are necessary.

6.1.2.2 Organic and mechanistic

Burns and Stalker's (1961) typology of organic/mechanistic, related to organisational structure. This concept of organic/mechanistic structure was introduced in chapter two, together with an explanation of elaboration on Burns and Stalker's (1961) work, to create an organic/mechanistic MCS typology.

Gordon and Narayanan (1984) hypothesised both direct and indirect relationships (through environment), between structure (organic, mechanistic) and MAS. They argued that MAS should be designed in accordance with the requirements of organisational structure (and environment). Specifically, they hypothesised that perceived environmental uncertainty is positively related to organic forms of structure; and organic structure is positively related to perceived importance of external, non-financial and ex-ante information. While simple correlations showed

relationships between structure and MAS, partial correlations showed no relationship between structure and MAS, after controlling for perceived external environment.

Gordon and Narayanan's (1984) results suggested that both MAS and organic structure were functions of environment, that there was no direct relationship between MAS and organic structure, but there is a significant relation between these two when perceived environmental uncertainty was modelled. Further, the expected fit relations were supported between structure and perceived environmental uncertainty. These results indicated that structural decisions were taken simultaneously with those of MCS characteristics (not prior).

Chenhall and Morris (1995) modelled structural arrangements (organic), with strategic orientation and MAS, to help understand organisational effectiveness. They argued that innovative decision making, relevant to entrepreneurial organisations, requires flexibility that organic structures allow. However, organic structures and processes will require interaction with high use of MAS to enhance performance in entrepreneurial organisations.

While the traditional argument is that formal MAS suit mechanistic organisations (see Burns and Stalker 1961), it is argued that a higher use of MAS can aid organic organisations to focus in an environment of competing values. Therefore, formal MAS and organic structures are not necessarily incompatible. Chenhall and Morris (1995) specifically hypothesise that enhanced performance and organic processes, together with extensive use of MAS will be greater in entrepreneurial organisations. Results of survey data collected from various international firms provided support for the hypothesis.

Selto et al. (1995) investigated whether poor fit among structural factors explains lack of success of JIT/TQC methods. They modelled structure (standardisation, worker authority) in terms of Burns and Stalker's (1961) mechanistic/organic typology in a study of JIT/TQC systems. Following Gresov (1989), the proposed fit relationships with respect to structure were that high (low) standardisation and low (high) worker authority would fit a mechanistic (organic) pattern. Appropriate

management control practices would be high (low) vertical communication, low (high) horizontal communication and low (low) workgroup conflict.

Data from a large manufacturing organisation led Selto et al. (1995) to conclude that there are interrelationships between context, structure, and control, when applying a selection approach. They identified intragroup and structure conflicts as the main impediments to good performance. While some support for contingency propositions was found from the selection tests, none was found from the interaction and systems approaches. It may be that the interaction and systems approaches were too ambitious given the available data, or other methodological problems apparent.

Gosselin (1997) studied accounting innovation emphasis. Specifically he investigated the influence of structure (and strategy) on an organisation's ability to adopt and implement three aspects of activity management (AM). These aspects of AM are activity analysis (AA), activity cost analysis (ACA) and activity based costing (ABC). It was hypothesised that a mechanistic structure is positively associated with organisations that adopt and implement ABC (an administrative innovation). Organic and mechanistic structures were operationalised with measures of centralisation, vertical differentiation and formalisation.

Analysis of survey data from Canadian manufacturing firms indicated that vertical differentiation was positively associated with ABC and that centralisation and formalisation were associated with organisations that adopt and subsequently implement ABC. Gosselin (1997) also indicated that organisations with organic structures were more likely to adopt and implement activity analysis and activity cost analysis (both technical innovations).

An overall conclusion relating to the relationship between structural factors and MCS is that traditional, formal MAS (more mechanistic MAS) is best suited to mechanistic structures. Integrated, aggregated, broad scope and future oriented MAS (more organic MAS) is best suited to organic organisations and *in addition*, formal MAS is also helpful.

6.2 Studies on structure (not-for-profit and public sector)

Structure is found to relate to MCS in public sector studies (Comstock and Scott 1977; Miah and Mia 1996). In a non-profit hospital context, Comstock and Scott (1977) hypothesised that the greater the staff qualifications, the lower the staff differentiation, centralisation of decision making, and standardisation of policies and procedures. They also predicted that role differentiation and centralisation would be positively related to standardisation of policies and procedures. Staff differentiation was found to be positively related to standardisation as predicted. Unexpectedly however, staff qualifications were found to be positively related to standardisation and centralisation and there was no support for the hypothesis that centralisation of decision making would increase standardisation.

In an attempt to reconcile the conflicting results of prior, private sector studies, Miah and Mia (1996) hypothesised that an increased level of decentralisation leads to greater accounting control system (ACS) use in New Zealand central government department district offices. They further hypothesised a positive relationship between accounting control systems (ACS) use and performance, reflecting an extension of the earlier studies by Gordon and Narayanan (1984) and Chenhall and Morris (1986). Miah and Mia (1996) argued that the use of ACS intervenes in the relationship between decentralisation and performance.

They found that managerial use of ACS intervened in the relationship between structure (decentralisation of decision making) and performance in a New Zealand government department context. This is consistent with the earlier results of Chenhall and Morris (1986). Indeed there was no direct relationship found between decentralisation and performance.

It was expected that the results would support Chenhall and Morris (1986) because the respondents were at a similar management level, whereas, Gordon and Narayanan (1984) used data from higher level managers. The variation between the samples has been used to explain the previously conflicting results (Miah and Mia 1996). Sampling would appear to have impacted upon the results given that the measures used in the 1996 study reflect those of Gordon and Narayanan (1984) (for

decentralisation) and Khandwalla (1972a) (for ACS use), yet the results support the findings of Chenhall and Morris (1986).

It should be noted that Jacobs (1997) is critical of the Miah and Mia (1996) study. She claimed that the type of decentralisation and MCS introduced into New Zealand government departments differed from that reported by Miah and Mia (1996). She argued that the decentralisation that occurred related to CEOs of government departments and did not reach levels of district office (the level of Miah and Mia's analysis).

Further, Jacobs (1997) pointed out that the use of Gordon and Narayanan's (1984) measurement instrument was peculiar, as they measured mechanistic/organic structure, not decentralisation. She documented five forms of decentralisation (corporatisation and privatisation; purchaser/provider and contracting out; local government reform; community empowerment; and departmental restructuring) relevant to the setting of Miah and Mia's (1996) study. With respect to MCS, the use of Khandwalla's (1972a) measure, developed for manufacturing organisations was inappropriate for use in a New Zealand public sector context. Furthermore, public sector organisations have multiple objectives. Their performance criteria are much more complex than for private sector organisations, yet Miah and Mia (1997) used a single measure of performance. Each of the five forms of decentralisation is developed to demonstrate that either the organisations would not be part of Miah and Mia's (1996) sample (because they were no longer in the public domain), or would fail to be captured by the measurement method used. Jacobs (1997) theoretical paper highlights the problem of replication logic from private to public sector contexts.

6.3 Conclusions and proposition 3b

In conclusion, the public sector studies indicate that centralisation of decision making would not increase standardisation (unexpectedly). Another conclusion, consistent with some private sector literature, is that managerial use of ACS intervenes in the relationship between structure (decentralisation of decision making) and performance. In particular, decentralisation is positively related to use of accounting controls. While this indicates that a heavy reliance on accounting controls

(more mechanistic) is appropriate in decentralised organisations, the discussion in preceding sections indicated that this was in addition to the use of more organic controls.

The discussion in this chapter indicates that more organic controls, or a mixture of mechanistic and organic controls, are most appropriate in contexts with matrix, decentralised, differentiated, organic and/or structurally complex structures. Output management is a more mechanistic technical control practice, as discussed. Mechanistic controls are most appropriate in contexts with centralised and/or mechanistic structures. The discussion in this chapter leads to proposition 3b⁷⁸:

P3b The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in situations of mechanistic and centralised (organic, decentralised, matrix, structurally complex, differentiated and contextually interdependent) structures.

This chapter completes the review of contingency literature relating to structure. Chapter seven reviews the contingency literature relating to technology.

⁷⁸ Vertical integration is not included here as it was established in the literature review that there was no direct relationship between it and MCS.

CHAPTER SEVEN

CONTINGENCY LITERATURE: TECHNOLOGY

7.1 Introduction to technology

This chapter summarises and reviews the literature on technology. Propositions relating technology variables to this study are outlined at the end of this chapter.

According to Macintosh (1994, 112):

There is a strong relationship between the technology of a work unit...and the characteristics of management accounting and control systems managers require to perform effectively. Mismatches between the characteristics (of MCS) and work unit technology account for a large percentage of management accounting and control difficulties.

Many organisational theorists⁷⁹ and management accounting researchers⁸⁰ have studied aspects of technology in relation to organisational design, MCS design or both⁸¹. There is general consensus that technology is important to MAS design⁸². Technology, at a general level, is defined as "the means by which the primary sub-task converts inputs to outputs" (Banbury and Nahapiet 1979, 164), or "the actions that an individual performs on an object, with or without the aid of tools or mechanical devices, in order to make some change in that object" (Perrow 1967, 198).

⁷⁹ The research in this area is extensive and includes: Burns and Stalker (1961); Pugh et al. (1963, 1968, 1969a,b); Woodward (1965); Lawrence and Lorsch (1967); Thompson (1967); Hofstede (1968); Hage and Aiken (1969); Perrow (1970, 1979); Baumler (1971); Child (1972); Duncan (1972); Khandwalla (1972a, 1974); Galbraith (1973, 1977); Van de Ven and Ferry (1980).

⁸⁰ The research in this area is extensive and includes: Van de Ven and Delbecq (1974); Burns and Waterhouse (1975); Hayes (1977); Khandwalla (1977); Daft and Macintosh (1978, 1981); Ouchi (1977, 1979); Waterhouse and Tiessen (1978); Banbury and Nahapiet (1979); Macintosh (1981); Withey, Daft and Cooper (1983); Merchant (1984, 1985b); Chenhall and Morris (1986); Macintosh and Daft (1987); Brownell and Merchant (1990); Dunk (1992); Mia and Chenhall (1994); Abernethy and Lillis (1995); Abernethy and Brownell (1997); Kalagnanam and Lindsay (1999); Scott and Tiessen (1999); Bouwens and Abernethy (2000); Abernethy, Lillis, Brownell and Carter (2001).

⁸¹ Aspects of technology have also been widely used in studies of lower levels of analysis which are beyond the scope of this study (for an empirical example, see Brownell and Dunk 1991; and Macintosh 1981, for an analytical example). This study approaches technology at the organisational and sub-unit level rather than at group or individual levels (see Hickson et al. 1969, for a discussion of levels and technology studies).

⁸² See for example Hayes (1977); Waterhouse and Tiessen (1978); Sathe (1978); Otley (1980); Otley and Berry (1980); Bimberg, Turopolec and Young (1983); Duncan and Moores (1989); Moores and Chenhall (1994); Govindarajan (1986b); Kalagnanam and Lindsay (1999).

Numerous dimensions of technology have been researched. Fry (1982) provides the following categories to early research: technical complexity, or workflow technology (Woodward 1965; Khandwalla 1974); operations technology (Hickson et al. 1969) and operations variability (Pugh et al. 1969b); routine/non-routine technologies (Burns and Stalker 1961; Perrow 1967, 1970, 1979), task analysability and number of exceptions (Perrow 1970, 1979) and interdependence (Thompson 1967). These early private sector studies will be discussed in chronological order within sections relating to each of these technology dimensions: (1) technical complexity, workflow and operations technology; (2) task uncertainty; and (3) interdependence — followed by more recent studies relating to technology and MCS. A discussion of not-for-profit and public sector technology studies, organised chronologically, is then presented before detailing the propositions.

7.1.1 Technical complexity, workflow and operations technology⁸³

Workflow "is the way programs, activities and events in the input-process-output cycle...are sequenced. Operations technology is the role of mechanical aids in transforming inputs to the workflow into the outputs of the workflow" (Khandwalla 1977, 446). Workflow and operations technology are discussed together in this section because of their connection. Woodward (1965) adopted a workflow concept of technology — technology used in executing tasks — which she termed technical complexity⁸⁴. This workflow concept of technology is also referred to as operations technology (Child 1972).

Woodward (1965) was concerned with the controllability and predictability of the production process (custom, unit and small-batch; mass production processes; continuous production processes). Unit production is at the non-routine end of the continuum and continuous production is at the routine end. Consistent with Burns

⁸³ In their study of teams, Scott and Tiessen (1999) find that teams evolve as a response to high task complexity. They also report that both financial and non-financial measures are necessary to capture performance comprehensively within teams.

⁸⁴ As discussed in chapter five, Khandwalla (1977) uses the term 'technical complexity' to relate to one of five external environmental attributes *not* as a technology variable.

and Stalker (1961), Woodward (1965) recommended the use of organic controls with non-routine technologies and mechanistic controls with routine technologies.

Studies by Hickson et al. (1969) and Pugh et al. (1969a,b)⁸⁵ incorporated concepts of automaticity, workflow rigidity, interdependence of workflow segments and specificity of quality evaluation of operations as sub-concepts of operations technology. Pugh et al. (1969b, 102) defined technology as "the sequence of physical techniques used upon the workflow...even if the physical techniques involve only pen, ink and paper". These studies suggested weak support for Woodward's (1965) findings that structure was dependent on technology, in that they concluded that operations technology was related to structural variables, but only those that were centred on workflow. It should be noted that their instrument and analysis differed from Woodward's. Pugh et al. (1969b) suggested that output diversity could also effect MCS design in their study of various UK organisations. Keller, Slocum and Susman (1974, in Kalagnanam and Lindsay 1999) found support for Woodward (1965) that structure was dependent on technology.

Drawing on the Aston Group studies, Bruns and Waterhouse (1975) modelled technology as workflow integration (degree of automated, continuous, fixed sequence operations). They proposed relationships between workflow integration and two types of control: administrative and interpersonal. Findings from their data analysis suggested that more "technologically sophisticated" (Bruns and Waterhouse 1975, 197) organisations are suited to an administrative control strategy characterised by formalised and standardised operating procedures and rules for work-related behaviour, together with budgetary participation (more mechanistic controls). Bruns and Waterhouse (1975) did not explain whether technologically sophisticated means routine workflow integration (highly automated, continuous production processes) or non-routine workflow integration.

Khandwalla (1974) hypothesised that mass output oriented technology would be directly and indirectly (through vertical integration and decentralisation) positively related to use of sophisticated controls and profitability. Sophisticated controls are

⁸⁵ These studies are commonly referred to as the "Aston Group", and include others such as Inkson, Pugh and Hickson (1970) also.

predominantly financial and quantitative⁸⁶ (more mechanistic). Survey data from US manufacturing firms led Khandwalla (1974) to suggest that firms with mass output oriented technologies (as opposed to unit, custom type) could consider vertical integration, decentralisation and adoption of sophisticated control and information systems as appropriate. However, Khandwalla (1974) did not consider routineness of technology employed. Furthermore, the type of technology he studied was mass production, that falls in the middle of Woodward's (1965) technical complexity scale, instead of testing the extremes of custom and continuous production.

In a similar study to Khandwalla (1974) (but this time in Canadian firms), Khandwalla (1977) studied the nature of operations technology (standardisation, mass production) and the relationship with increased sophistication of MCS (therefore, more mechanistic MCS). He identified three dimensions of workflow (invariance, complexity and program interdependence) and two dimensions of operations technology (automation of operations and standardisation of outputs) in his theoretical development. He proposed that the more an organisation is geared towards standardised mass outputs of goods and services, the more sophisticated the control and information system will be. Khandwalla's (1977) data supported the relationship. Other relationships found were positive associations between both automation and electronic data processing, and sophistication of control and information systems.

Merchant (1984), based on Thompson (1967) (for product standardisation) and the Aston Group studies (for degree of automation), investigated the influence of production technology on the approach to budgeting. He proposed that organisations with routine and repetitive production technologies would place greater emphasis on formal budgeting, arguing that this focus would result in more formal budget related communication and importance placed on achieving budget related performance. He further asserted that where technology and budget approach match, that performance

⁸⁶ Khandwalla (1974, 86) lists nine "sophisticated controls": statistical quality control of operations, standard costing and analysis of cost variances, inventory control and production scheduling by operations research techniques, marginal costing, flexible or activity budgeting, internal audit, quantitative investment evaluation (internal rates of return and present values), systematic evaluation of senior personnel and performance or operational audit.

would be higher. Analysis of survey data gathered from manufacturing managers in electronics firms provided support for the relationship between automation and budget approach, but not for product standardisation. Support for the performance variable was also found in relation to the positive association between automation and formality of budgeting approach⁸⁷.

Merchant (1985b) utilised the same literature as in his earlier study to measure technology variables, finding weak evidence of a positive relationship between budgetary slack and predictable automated processes with high workflow integration. Dunk (1992) reported associations between budgets and manufacturing process automation that were consistent with Merchant (1984).

Some contemporary studies have used concepts similar to Woodward's (1965) workflow technology. Abernethy and Lillis (1995) studied the link between MCS and manufacturing flexibility and while they did not explicitly refer to Woodward, they indicated that mass production technology required different MCS to manufacturing flexibility. Specifically, manufacturing flexibility implies a lack of standardisation in production processes and outputs, and higher levels of interdependence than traditional mass production technologies. Abernethy and Lillis (1995) proposed that firms committed to manufacturing flexibility will place less reliance on accounting and other traditional efficiency (more mechanistic) measures, in favour of integrative liaison devices (for example, example task forces, committees and teams)⁸⁸ which are more organic controls. Specifically, they investigated the effects of manufacturing flexibility on the design of MCS (use of efficiency based performance measures and integrative liaison devices) and firm performance. They hypothesised positive (negative) relationships between manufacturing flexibility and use of integrative liaison devices (efficiency based performance measures). They further proposed that where this fit occurs,

⁸⁷ Still concerned with budgeting and technology, Merchant (1985a) studied budgetary slack and participation. Brownell and Merchant (1990) reported on a similar study concerning flexibility of budget targets.

⁸⁸ It should be noted that whilst Abernethy and Lillis (1995) did not reference Galbraith (1973) or Ginzberg (1980), the control concepts of liaisons, teams, and committees were developed in this early literature.

organisational performance would be enhanced. Firms adopting manufacturing flexibility were compared with those utilising non-flexible production strategies.

Data collected through semi-structured interviews with managers of various manufacturing organisations supported the contention that integrative liaison devices were critical to organisations for control in the context of implementing flexible manufacturing. The role of efficiency based performance measures such as accounting was found to decline in this context, as hypothesised. There was some support for the fit hypothesis in relation to higher performance from the statistical tests, although the qualitative data did not confirm the fit hypothesis in relation to enhanced performance. Greater insight into the conflicting findings may have been gained from the qualitative data if it had not been subjected to such significant data reduction in the coding process.

More recently, Kalagnanam and Lindsay (1999) found support for Woodward's (1965) study. Specifically, Kalagnanam and Lindsay (1999) explicitly applied Woodward's (1965) theory to the use of JIT technology finding that JIT firms adapting their structural arrangements towards an organic model of control had higher improvement rates than firms with mechanistic/bureaucratic structures. Kalagnanam and Lindsay (1999), based on Woodward (1965, 1980) argued that adoption of new manufacturing technologies such as JIT should be accompanied by a move from mechanistic to organic controls. Their case study and survey results supported the earlier work of Woodward (1965, 1980), and therefore reported that Woodward's (1965, 1980) theory is generalisable to new technologies. Further, Kalagnanam and Lindsay (1999) hypothesised that the adoption of organic controls in JIT firms would lead to improved performance. The results strongly supported their hypothesis.

In conclusion, research into the association between workflow and operations technology (technical complexity) and MCS, indicates that more organic controls are appropriate in organisations with non-routine technologies (such as unit and small batch, or flexible manufacturing) and more mechanistic controls are appropriate in organisations with routine technologies (such as continuous production processes). While the workflow and operations technology research is useful,

Khandwalla (1974), suggests that the work of Woodward (1958) and Hickson et al. (1969) was not based on an explicit model of how technology might relate to structure, and that the conceptual arguments of Perrow (1967) (number of exceptions and analysability of problems in tasks — otherwise referred to as task uncertainty) and Thompson (1967) (interdependence) hold more promise. As suggested by Khandwalla (1974), Perrow advanced the concept of technology from simply the means utilised for performing tasks, to include characteristics of raw materials and requisite knowledge to convert these to final outputs. The concepts of Perrow (1967) and Thompson (1967) are discussed in the following sections, relating to task uncertainty and interdependence.

7.1.2 Task uncertainty

Task uncertainty can be described as "the actions that an individual performs on an object, with or without the aid of tools or mechanical devices, in order to make some change in that object" (Perrow 1967, 198). Two dimensions of task uncertainty are task variety or task variability, and task knowledge or task difficulty (Perrow 1970; Galbraith 1973; Daft and Macintosh 1978; Ouchi 1980; Macintosh 1994). Task variability is high when individuals encounter many exceptions in their daily work and low when they do not. Task difficulty is high when tasks are not well understood and individuals have no systematic, certain way of arriving at correct solutions, and low when it is well understood and systematically analysable to reach the correct solution.

Concepts of task technology (captured under the banner of task uncertainty in this section) have developed from the organisational design literature (see for example, Galbraith 1973) and management accounting contingency research has adopted these concepts (see for example, Daft and Macintosh 1981). The organisational design and management accounting contingency literature relating to task uncertainty will be discussed in this section, classified into studies following (1) Perrow (1967, 1970); (2) Galbraith (1973, 1977); and (3) Ouchi (1977, 1979, 1980).

It should be noted that predating the abovementioned studies, Burns and Stalker (1961) provided empirical evidence which suggested that different industries have

different technologies, and will therefore suit different types of control systems. Burns and Stalker (1961) identified routine technology (low task variety and mechanised production process) as evident in process industries. They further identified mechanistic controls (formalised standards and procedures, central bureaucratic authority) as suitable in this circumstance. Non-routine technology (high task variety and complex production process, including interdependencies between sub-units) was evident in the electrical engineering industry. Organic controls (participative decision processes and use of feedback strategies, decentralisation of authority) were more suitable with non-routine technologies.

7.1.2.1 Perrow's (1967, 1970) task uncertainty

Consistent with Burns and Stalker (1961), Perrow (1967, 1970) also uses the terms routine and non-routine in describing technology types. Routineness refers to well established techniques applied to similar raw materials that have sure and successful outcomes (low uncertainty in method and low variety in task performance). Non-routineness refers to few established techniques, non-standard raw materials, or many custom products (high uncertainty and high variety). Perrow's concept of technology has sometimes been referred to as materials technology (Child 1972).

Perrow (1970) proposed another two types of technology, that reside between routine and non-routine, where an organisation's technology is high in one aspect of routineness, and low in the other ('craft' and 'engineering' type technologies). This typology translates to task analysability (transformation process well/not well understood) and task variability (number of exceptions encountered)⁸⁹. Drawing on Burns and Stalker (1961), routine technology is consistent with mechanistic MCS and non-routine with organic MCS.

Management accounting researchers have utilised Perrow's (1967, 1970) concept of task uncertainty to investigate its relationship with MCS in both theoretical (see for example, Waterhouse and Tiessen 1978) and empirical studies (see for example, Abernethy and Brownell 1997)⁹⁰. Waterhouse and Tiessen (1978) propose that an organisation will decentralise (centralise) in response to non-routine (routine) technology. Further, that in decentralised situations, direct control measures relevant to a centralised organisation, such as standard operating procedures and output measures, are not appropriate. Control measures relevant to the decentralised organisation will be selection of staff with specific professional training, and socialisation. Abernethy and Brownell (1997) argued that task characteristics in R&D sub-units can vary across all four of Perrow's (1970) categories. They hypothesised that where tasks are high (low) in analysability and exceptions are few

⁸⁹ Other terms for these two dimensions of technology are task variety and task knowledge. Task variety is high when individuals encounter many exceptions in their daily work and low when they do not. Task knowledge can be either not well understood and have no systematic, certain way of arriving at correct solutions and is uncertain, or be well understood and be systematically analysable to reach the correct solution, which is certain (Daft and Macintosh 1978; Macintosh 1994). Further, in a theoretical study, Henderson and Nutt (1978), based on Van de Ven and Delbecq (1974) and Thompson (1967), discuss simple (stable and homogenous characterised by frequent occurrences with known procedures) and complex (shifting and heterogeneous characterised by unique occurrences with unknown procedures) task environments. The general outcome of the analysis was that across various stages of planning, all types of management information (personal, interactive, reports, analytical) were useful in both simple and complex task environments, but that these varied in both planning stage and task environment. In general the simple environment was most suited to report and analytic information systems, and complex to personal and interactive information systems.

⁹⁰ Other contingency based management accounting literature has also utilised Perrow's concept of task uncertainty. For example, Ginzberg (1980) draws on Perrow (1967), incorporating routineness into his technology profile, and indicated that orientation toward decisions rather than procedures was another aspect of technology. Ginzberg's (1980) framework provided that procedural systems (systems that support interdependent tasks) will unlikely (likely) succeed in sub-units characterised by non-routine technologies. Brownell and Dunk (1991) indicated that low (high) budget participation should be accompanied by low (high) budget emphasis, under conditions of low task uncertainty. This is consistent with the idea that mechanistic controls are suited to conditions of low task uncertainty.

(many), reliance on both accounting and behavior type controls (personnel type controls⁹¹) will positively relate to management performance in R&D sub-units. They further hypothesised that where tasks are low (high) in analysability and exceptions are few (many), reliance on accounting type controls (both behavior and personnel type controls) will positively relate to management performance in R&D sub-units. Survey data collected from research officers in an Australian and a US firm, confirmed the findings relating to the extremes of the task uncertainty continuum, except for the proposed relationship between the most routine characteristics and behavior controls.

These examples from the literature indicate that more organic controls (selection of staff with specific professional training, socialisation and personnel controls) are suited to conditions of high uncertainty. More mechanistic controls (standard operating procedures, output measures and accounting controls) are less appropriate under conditions of high uncertainty.

7.1.2.2 Galbraith's (1973, 1977) task uncertainty

Galbraith (1973), consistent with Perrow (1970), argued that where task uncertainty is higher, more information must be processed to achieve a given performance level. Galbraith (1973) argued that high (low) task uncertainty would result in few (many) standard operating procedures (SOPs) and little (much) reliance on rules. Management accounting researchers have utilised Galbraith's (1973, 1977) concept of task uncertainty to investigate its relationship with MCS⁹². These studies are briefly discussed below.

Daft and Macintosh (1981) investigated task uncertainty and information types. Task variability was hypothesised to be positively related to the amount of information processed. Task analysability was hypothesised to be positively related to reliance on

⁹¹ Personnel controls, described by Abernethy and Brownell (1997), following Merchant (1985c), are not to be confused with *interpersonal* controls described by Bruns and Waterhouse (1975) and Merchant (1981, 1984, 1985a).

⁹² These studies include: Daft and Macintosh (1981); Chenhall and Morris (1986); Gul (1991); Mia and Chenhall (1994); Gul and Chia (1994); Chong (1996).

standard operating procedures, programs, and plans. Results of analysis of their case data for four companies supported both hypotheses.

The remainder of these studies suggest that broad scope MAS information is suited to conditions of high task uncertainty (Chenhall and Morris 1986; Gul 1991; Gul and Chia 1994; Mia and Chenhall 1994; Chong 1996). For example, Mia and Chenhall (1994) examined whether functional differentiation moderates the effect of broad scope information use on performance, based on the argument that marketing divisions are characterised by greater task uncertainty than production departments within manufacturing organisations. This occurs as organisations functionally differentiate their tasks to manage uncertainty. Data collected from site inspections and interviews with managers provided information related to task analysability, number of exceptions, product diversity, product standardisation and automation of the production process. Analysis of the data resulted in support for the suggested relationship between functional differentiation and task uncertainty. The analysis also provided support for the specific hypothesis, that there is an interaction between the functional areas and broad scope MAS use, affecting performance. Specifically, that broad scope MAS use improved performance in marketing (characterised by high task uncertainty) more than in production (characterised by low task uncertainty).

High amounts of information processing indicate a more organic MCS. High reliance on standard operating procedures, programs and plans indicates a more mechanistic MCS. Similarly, broad scope MAS controls are more organic than narrow scope MAS controls. The literature following Galbraith (1973, 1977) indicates, therefore, that organic controls are more appropriate than mechanistic controls under conditions of high task uncertainty.

7.1.2.3 Ouchi's (1977, 1979, 1980) task uncertainty

Another framework is developed by Ouchi (1977, 1979, 1980), who refined Perrow's (1967, 1970) concept of task uncertainty, providing a similar matrix of technology and control to Perrow. Ouchi provided links between task uncertainty and MCS types. He suggested that some technologies produce easily measurable outputs, and

others produce outputs that are difficult or impossible to measure. Ouchi (1977, 1979, 1980) proposed that perfect (imperfect) knowledge of the transformation process, together with high (low) ability to measure outputs, would best suit behavior or output type control (ritual and ceremony, clan control). He further proposed that imperfect (perfect) knowledge of the transformation process, together with high (low) ability to measure outputs, would best suit output type control (behavior control). Ouchi (1977) tests these propositions using interview and survey data collected from US retail organisations, finding support for the above positions, although the statistics applied were purely descriptive⁹³.

Utilising Ouchi's (1977, 1979, 1980) concepts of task uncertainty, Rockness and Shields (1984)⁹⁴ proposed relationships with organisational controls and technology (specifically, knowledge of the transformation process and measurability of the output). Survey data collected from work group leaders in R&D sub-units indicated that importance of behavior control: formal rules and procedures, technical scheduling controls (input control: social control and expenditure budget), was positively (negatively) associated with knowledge of the task transformation process (technological uncertainty), as proposed. They also hypothesised negative relationships between importance of input control and measurability of the output; and positive relationships between the importance of output control (determined by internal market prices) and measurability of the output, task complexity, and task dependency.

Empirical support was not found for these hypotheses, which conflicted with the findings of Ouchi that task complexity and interdependence were related to the importance of controls. Rockness and Shields (1984) partial lack of convergence may be due to their use of heterogeneous organisations, where Ouchi (1977) used homogenous organisations.

⁹³ A later (although earlier dated) study, Ouchi and Maguire (1975), found support for the model at the individual level of analysis.

⁹⁴ Rockness and Shields (1984) included both profit and non-profit organisations. Their study is included here as 80 per cent of their sample was from the private, for-profit sector.

In summary, high task uncertainty is consistent with low reliance on standard operating procedures and planning (Daft and Macintosh 1981), low reliance on accounting performance measures (Hirst 1983), use of behaviour controls (Rockness and Shields 1984), broad scope data (Mia and Chenhall 1994) and subjective performance evaluation (Macintosh 1994). Low task uncertainty is consistent with rules and standard operating procedures (Galbraith 1973), behaviour and output controls (Ouchi 1977). That is, the literature indicates that more organic controls are appropriate under conditions of high task uncertainty; and that more mechanistic controls are appropriate under conditions of low task uncertainty.

7.1.3 Interdependence

Another important aspect of technology, briefly mentioned earlier, is that of interdependence (March and Simon 1958; Thompson 1967). Organisational control was reported as dependent on the degree of interdependence decades ago (see for example, Baumler 1971).

Interdependence refers to the extent to which departments depend upon each other and exchange both information and resources to accomplish tasks (Macintosh 1994, 119). The workflow pattern influences the type of interdependence among departments within an organisation. Thompson (1967) developed an interdependency framework consisting of pooled, sequential and reciprocal interdependence⁹⁵. Work enters and leaves an organisation, passing through a single sub-unit in the case of pooled interdependence. Work enters one organisational sub-unit, and is processed by several sub-units, each following the other in a unidirectional manner, in the case of sequential interdependence. Work enters an organisation and is processed by numerous sub-units, in a bi-directional manner (therefore sometimes work returns to a sub-unit where it has already been, for additional processing, after another sub-unit has performed some other part of a necessary process) in the case of reciprocal interdependence (see Macintosh 1994, for a discussion).

⁹⁵ Van de Ven et al. (1976) extended this typology, adding team interdependence. This study will be discussed in the public sector section in this chapter.

Each degree of interdependence is suited to a different MCS type. "Pooled interdependence is coordinated by rules and standards; sequential interdependence, by planning; and reciprocal interdependence, by mutual adjustment" (Galbraith 1977, 41).

The importance of interdependence as a contingency variable is indicated by Otley (1980), who suggests that the conflicting results between Hopwood (1972) and Otley (1978) may lie in the contextual differences apparent in the two studies. Specifically, Hopwood (1972) concluded that a profit conscious style of performance evaluation was not dysfunctional, as was a budget constrained style. However, his sample had high interdependence. Otley (1978) could not confirm Hopwood's (1972) results, but used a sample with independent units. Numerous studies have included interdependence as a variable in MCS research suggesting it effects the use of AIS⁹⁶. These studies are discussed below, in chronological order.

In early research, Baumler (1971) concluded after conducting a laboratory experiment simulating a decision making organisation, that rigid use of formally defined performance measures was unsuitable where there was high interdependence. Hayes (1977) studied interdependency and performance relationships in varying sub-units of manufacturing firms. He reported that traditional MCS such as financial data and budgets were not heavily relied upon by sub-units in which reciprocal interdependence was characteristic. Hayes (1977) suggested that traditional MCS information was used for planning rather than coordination and evaluation under conditions of high interdependence.

⁹⁶ See for example, Baumler (1972); Bruns and Waterhouse (1975); Hayes (1977); Rockness (1977); Ginzberg (1980); Otley (1980); Chow (1983); Emmanuel and Otley (1985); Merchant (1985b); Chenhall and Morris (1986); Govindarajan (1986b); Macintosh and Daft (1987); Scott and Tiessen (1999); Bouwens and Abernethy (2000).

Ginzberg (1980) also proposed a framework involving technology (including the degree of interdependence). His concern was the effect of organisational variables on AIS emphasis. Specifically, he contended that it was important to match the information processing capacity (IPC) and requirements (IPR) of sub-units, for organisational success. Drawing on Galbraith (1973, 1977), Ginzberg (1980) proposed creation of slack, to loosen the links among interdependent tasks and self-contained tasks, to minimise interdependency.

These techniques will reduce IPRs at the risk of creating inefficiency in the case of slack, and adopting perhaps costly structural change in the case of independent task creation. Where the latter is not possible, however, because tasks are so complex that interdependence is unavoidable, organisational IPC can be increased instead. IPC can be increased by implementing formal AIS and/or by developing lateral relations (use of liaisons, teams, task forces and committees).

The effect of interdependence on the usefulness of specific MAS design characteristics was examined by Chenhall and Morris (1986). Interdependence was hypothesised to be directly associated with a preference for broad scope and integrated information. It was further hypothesised that interdependence would be indirectly associated with perceived usefulness of broad scope MAS and integration, through decentralisation. Data collected from sub-unit managers in manufacturing organisations supported all relationships hypothesised with the exception of the indirect effect between broad scope MAS and interdependence (through decentralisation). An unexpected finding was a direct effect between aggregated information and interdependence. An indirect effect (not hypothesised) between aggregation and interdependence (through decentralisation) was also found.

Macintosh and Daft (1987) investigated departmental interdependence finding an association with emphasis on standard operating procedures (SOPs), budgets and statistical reports. Specifically they hypothesised that pooled interdependence would be positively related to use of SOPs and negatively related to operating budgets and statistical reports for control. Sequential interdependence was modelled to positively relate to use of operating budgets and statistical reports, and negatively relate to SOPs for control. Reciprocal interdependence was modelled as negatively related to

all three control types. Analysis of survey and archival data collected from public and private sector organisations generally supported the hypotheses, although some mixed results led to the overall conclusion that the hypotheses hold except in the case of reciprocal interdependence where statistical reports were reported to be heavily used for planning (consistent with Hayes 1977), target setting and coordination (as opposed to use in measuring and monitoring as at lower levels of interdependence).

Macintosh and Daft (1987) further suggested that high interdependence would be appropriate to controls such as personal interaction, frequent communication and mutual adjustment. This supported earlier suggestions by Thompson (1967) who also included expert knowledge and project managers as replacement controls for formal reporting systems.

Hirst and Yetton (1999) investigated the effects of task interdependence⁹⁷ and goal setting on the level of, and variance in, performance. Specifically they hypothesised that the level of task performance was a function of the interaction between goal setting and task interdependence; that performance variance was a positive function of task interdependence, and a negative function of goal setting. Their hypotheses were not supported by the analysis of data collected by an experiment with Australian managers. They reported that under both pooled and reciprocal interdependence, positive effects of goals on performance were evident. Hirst and Yetton (1999) suggested that various methodological issues might be responsible for the results.

In their study of teams, Scott and Tiessen (1999) found that the use of intra-departmental teams was positively associated with reciprocal workflows. Use of comprehensive financial and non-financial performance measures was positively associated with time organisational members spend in teams. The relationship found between reciprocal interdependence and time spent in intra-departmental teams suggested that teams may be created as coordination mechanisms among department

⁹⁷ Hirst and Yetton (1999, 205) state "following the work of Thompson (1967), we operationalise task complexity in terms of task interdependence, namely pooled and reciprocal task interdependence".

members who manage the initial tasks and those who manage the work when it returns from elsewhere in the organisation.

Interdependence was operationalised by Bouwens and Abernethy (2000) following Thompson (1967). They argued that a firm following a high customization strategy would be highly interdependent because sales and production areas will need to work jointly to fulfil customer requirements. High interdependence creates high uncertainty in input/output relations, requiring higher information processing capacity. The need for more information can be met by increased scope, integration, aggregation and timeliness of MAS. Bouwens and Abernethy (2000) hypothesised that there is a positive, indirect relationship between customization and broad scope MAS, through interdependence. The results of analysis of their survey data collected from production and sales managers in the Netherlands, showed that customization affects MAS only through its effects on interdependence.

This section has explained that different MCS is appropriate depending upon the degree of interdependence — pooled, sequential and reciprocal — experienced in an organisation. Pooled (that is, 'low') interdependence is best coordinated by more mechanistic controls (such as rules and standards). Sequential (that is, 'medium') interdependence, is best coordinated by planning (a less mechanistic control than rules and standards, but not as organic as mutual adjustment). Reciprocal (that is, 'high'⁹⁸) interdependence, is best coordinated by mutual adjustment (a more organic control). The following section outlines not-for-profit and public sector studies of the relationship between technology variables and MCS.

7.2 Studies on technology (not-for-profit and public sector)

Consistent with private sector literature, technology has been identified as a contingent variable, in a public sector (and not-for-profit) context. Technology has been found to relate to emphasis strategies, budget use, individual performance,

⁹⁸ As noted, 'team' interdependence is a 'higher' degree of interdependence than reciprocal, and is discussed in the public sector literature.

organisational effectiveness and effectiveness of MCS types⁹⁹. These studies will be discussed chronologically, within the following categories: (1) technical complexity; (2) task uncertainty; (3) interdependence; and (4) combinations of technology variables.

7.2.1 Technical complexity

Mohr (1971) surveyed work groups in US local health departments. He partially replicated Woodward's (1965) study, expecting to find that technology was an important determinant of structure. Technology was defined in terms of the manageability of tasks and materials (uniformity, complexity and analysability). Structure was conceptualised in terms of participativeness of the supervisory style (high is organic, low is mechanistic). Whilst Mohr (1971) concluded that he found a weak relationship between technological manageability and subordinate participation in decision making, his results showed otherwise. The confusion appears to be in the interpretation of results. According to Mohr (1971, 449) "the correlation is too small to signal the existence of an important relationship between technology and social structure in organisations". "The correlation", however, was in the hypothesised direction and was statistically significant at the .05 level, which would seem to suggest an important relationship¹⁰⁰. Support was not found for the fit hypothesis of effectiveness resulting from a fit between structure and technology. However, despite Mohr's (1971) claims to the contrary, it appears that his results did support the earlier work of Woodward (1965).

Based on Galbraith (1973), Schoonhoven (1981) measured workflow uncertainty as a technology variable in the context of operating theatres in US, non-profit, acute-care hospitals, finding a relationship between technology, structure, and effectiveness. Specifically, Schoonhoven (1981) extended Galbraith's (1973) hypotheses regarding technology to include nonmonotonic (that is, inconstant) relationships, better

⁹⁹ The research in this area is extensive and includes: Hage and Aiken (1969); Mohr (1971); Hrebiniak (1974); Van de Ven et al. (1976); Comstock and Scott (1977); Van de Ven and Ferry (1980); Schoonhoven (1981); Gordon, Haka and Schick (1984); Gossuin, (1985); Abernethy (1988); Kim (1988); Abernethy and Stoelwinder (1991); Mia and Goyal (1991); Gupta et al. (1994).

¹⁰⁰ A "stronger" relationship is reported when technology is expanded to include task interdependence.

reflecting the complexity of contingency relationships. Schoonhoven (1981) found that the impact of decentralisation, destandardisation and professionalism on effectiveness was nonmonotonic over the range of technological uncertainty. She did not find support for Galbraith's (1973) more simple contingent relationships relating to decentralisation and destandardisation.

7.2.2 Task uncertainty

Hage and Aiken (1969) based on Perrow (1967) investigated the association between technology (routineness) and the structure and goals of health and welfare organisations¹⁰¹ in the US, at the organisational level of analysis. Interview data supported the hypothesised relationships that organisations with routine work are more likely to be characterised by centralisation, formalisation (presence of rules and job descriptions and degree of job specificity), and efficiency goals as opposed to quality or innovativeness. This is consistent with private sector contingency research, previously discussed.

Using case studies from prior literature, Gordon, Haka, and Schick (1984) tested information processing requirements and capacities needed for task performance (depending on uncertainty) across various settings (both public and private sector organisations), suggesting that varying strategies can be implemented to increase the likelihood that zero-based-budgeting will be successful. Based on Galbraith (1973), Gordon et al. (1984) argued that when information processing requirements (IPR) exceed information processing capacity (IPC), organisations could employ either of two strategies to achieve a fit. The organisation must either decrease the IPR (by, for example extending the budget period), or increase the IPC (by, for example implementing standard procedures to aid budgeting processes). They found support for the hypothesis that five strategies can be used to minimise the times that IPR exceeds IPC during the emphasis of zero-based-budgeting.

¹⁰¹ These were both public and private.

Abernethy and Stoelwinder (1991) measured the influence of task uncertainty and system goal orientation on the effective use of budgeting in large, Australian, not-for-profit hospitals. They found that an appropriate fit between these variables improved performance.

7.2.3 Interdependence

Based largely on Thompson (1967), Gosselin (1985) investigated interdependence in a case study of physicians from a large Canadian teaching hospital. Gosselin (1985, 467) draws a distinction between workflow interdependency and process interdependency. Process interdependency refers to "the degree to which individuals who perform a similar task are dependent upon one another to further their knowledge, expertise or skill". He contended that the choice of differentiation (grouping of tasks or units on the basis of technology, time, output, client or place) within an organisation, if incorrect, may cause ineffectiveness.

Specifically, Gosselin (1985) proposed that recent medical specialisation developments further differentiate physician's knowledge, skill and work processes for the purpose of serving distinctive patient groups. These changes may be inconsistent with the formal departmental structure in the hospital. Gosselin's (1985) major finding was that in the context of the hospital, process interdependence was more integral to the organisation than workflow interdependence. In this setting, workflow interdependence could be handled through routines and standard procedures, hence not requiring intensive physical interaction.

Gosselin (1985) made an important contribution to interdependence studies by demonstrating that interdependence is more complex than Thompson (1967) indicated. Gosselin (1985) demonstrated that the uncertainty and intensity of interdependence was a better basis for choosing organisational grouping than was Thompson's (1967) criticality¹⁰².

Mia and Goyal (1991) measured span of control and perceived task interdependence, finding support for their hypothesis that these variables would positively relate to perceived usefulness of MAS in New Zealand public hospitals. They argued that this relationship was due to such variables resulting in greater job complexity.

7.3 Combined technology variables

As with many private sector studies aforementioned, Hrebiniak (1974) based his hypotheses largely on the works of Thompson (1967) and Perrow (1967). At the work-group level¹⁰³, he surveyed staff in a large US teaching hospital on extent of work group controls (usage of rules, closeness of supervision) and technology (complexity, uniformity and analysability), amongst other variables. When controlling for supervision, Hrebiniak (1974) found that technology characteristics were associated with work group structure (control). He recognised however that the multidimensional nature of technology (and other) variables suggested that the results are simplistic.

Van de Ven et al. (1976)¹⁰⁴ studied the relationship between task uncertainty, interdependence and work unit size with control, or co-ordination mechanisms (impersonal, personal and group). They collected data from work units within a US

¹⁰² Thompson equates different degrees of interdependence with different levels of criticality. That is, work relationships in pooled interdependent situations are not critical compared to work relationships in reciprocal interdependent situations. Gosselin (1985, 472-3) defines criticality as "the extent to which the contributions rendered by a service to another are crucial for the performance of the focal service. More specifically, criticality addresses the question of how essential the flow of work and information is for the performance of physicians' tasks".

¹⁰³ He also conducted individual level analysis which will not be discussed here.

¹⁰⁴ Van de Ven and Delbecq (1974) developed and tested a task contingent model of work unit structure. Data collection was carried out in work units of a large US state government employment-security agency. This study did not address management control however.

state government employment-security agency. Van de Ven et al. (1976) based their hypotheses largely on the works of Thompson (1967) and Perrow (1967). They hypothesised that increases in task uncertainty and workflow interdependence would be associated with lower use of impersonal coordination, greater use of personal coordination and much greater use of the group coordination mode. An increase in work unit size was hypothesised to be associated with a decrease in use of group coordination and increases in personal and impersonal coordination modes. Survey data provided support for the hypothesised relationships with respect to task uncertainty, and limited support for interdependence and work unit size. Specifically they found increasing positive relationships between task uncertainty and interdependency and controls (mutual adjustment and group strategies). The rationale for selecting the employment-security agency as their data source is not reported¹⁰⁵.

Comstock and Scott (1977) studied technology as a predictor of subunit structure in US non-profit hospitals. Specifically, they studied task and workflow predictability. Technological predictability was defined as the degree to which raw materials and transformation processes were well understood. Their definition was very similar to that of Perrow's (1970) task difficulty. They hypothesised that the greater the task predictability, the lower the qualifications of staff and the greater the differentiation of staff roles. Support was found for the hypotheses. An additional relationship (not originally proposed) was found between task predictability and centralisation of decision making. With respect to workflow, they hypothesised the greater the predictability, the greater the standardisation of policies, procedures, and centralisation of decision making. The predicted relationship was found for standardisation. An unexpected negative relationship was found between predictability and centralisation however.

¹⁰⁵ Following the Van de Ven et al. (1976) study, Gresov, Drazin and Van de Ven (1989) also studied technology variables in US state government employment-security agency work units. Their extension to include work unit morale renders the study beyond the scope of this research which is limited to the organisational and divisional levels of analysis.

Following Van de Ven et al. (1976), Gresov (1989)¹⁰⁶ investigated the effects of task uncertainty and horizontal dependence on work unit design and efficiency in US state government employment-security offices. Gresov (1989) reported on a multiple contingency model, focused upon the interaction between task uncertainty and horizontal dependence in order to extend previous single variable contingency studies. He proposed that low (high) task uncertainty and low (high) horizontal dependence were optimal, the former fitting a mechanistic pattern choice, the latter organic. Where other combinations occurred, however, there existed conflicting contingencies that led to lower performance. The relationships were generally supported by the data¹⁰⁷.

Based on both institutional and contingency theories, Gupta et al. (1994) investigated how audit professionals in a US Federal government agency were coordinated and controlled as well as the forces that shape the control structures adopted. Results from analysing survey data indicated that institutionalisation of the environment was positively related to a bureaucratic mode of control. Whereas, the greater the task difficulty (but not task variability as also hypothesised) and team interdependence, the greater the reliance on personal and group modes of control and improved performance.

In a study of US non-profit hospitals, Kim (1988) examined whether the match between technology (task predictability, problem analysability, task interdependence) and coordination modes of AIS development groups led to higher performance. Kim (1988) argued that the study represented an improvement of earlier work by controlling possible confounding variables. Consistent with Van de Ven and Delbecq (1974), Kim (1988) hypothesised that impersonal (personal) coordination methods would result in greater user information satisfaction under conditions of high (low) task predictability¹⁰⁸ and problem analysability, than under low (high) task

¹⁰⁶ Van de Ven and Ferry (1980) reported on the long term study involved in the development of their organizational assessment instrument, which is largely focused upon technology variables and used in public and private sector organizations for testing.

¹⁰⁷ Williams, Macintosh and Moore (1990) studied interdependence in Canadian public sector organisations. Their focus on budget related behavior is beyond the scope of this study.

¹⁰⁸ It is interesting to note how the use of terminology has changed over time with respect to technology variables. For example, Kim (1988) refers to task predictability as similar to task variety

predictability and problem analysability. Further, it was proposed that impersonal (personal) coordination methods would result in greater user information satisfaction under conditions of low (high) interdependence, than under conditions of high (low) interdependence. The only relationships supported were those relating task predictability with type of coordination method and user satisfaction.

Kim (1988) argued that confounding variables such as external environment were held constant by sampling non-profit hospitals only. However, this assumption is flawed if these hospitals have varying governing structures (see for example, Rayburn and Rayburn 1991) or are subject to different methods of revenue receipt (see for example, Geiger and Ittner 1996). Other simplistic assumptions were made such as rank of the person responsible for information system success being a sufficient proxy for the organisational environment. These and other factors, including a low response rate (31 per cent) to the survey questionnaire may help explain the lack of support achieved for most of the hypothesised relationships.

7.4 Complexities of studying technology variables

This chapter has reviewed literature that relates technology variables and MCS. Before moving to conclusions and propositions, it is important to note the complexities involved in studying technology variables.

Gresov (1989) used task uncertainty as a measure without attempting to separate it into dimensions, which suggests the measure was considered unidimensional. Furthermore, Gupta et al. (1994) discussed task difficulty and variability as dimensions of task complexity, whereas, most of the literature described the dimensions as components of task uncertainty (see also Kim 1988; Abernethy 1988; Abernethy and Stoelwinder 1991; Macintosh 1994;). Task complexity related to Woodward's (1965) technology measure. In summary, there has been confusion in the literature about task-related measures.

(or variability). Earlier, Comstock and Scott (1977) had modelled task predictability as referring to the extent to which raw materials and task activities were well understood. The earlier concept is similar to task difficulty, not task variability.

A note regarding technology variables generally may be important, before moving to analysis and results. Rousseau (1985: 19–20) indicated that different technology variables have tended to have been used at different levels of analysis. She suggested that typically individual level analyses have adopted Perrow's task uncertainty concepts. Thompson's interdependence has been used predominantly in sub-unit level studies, and Woodward's concept of workflow complexity at organisational level.

Support for this approach to studying technology is mixed. "There is yet no theoretical basis to believe that technology means the same thing across levels...but the use of different definitions of technology across levels has no basis in theory either" (Rousseau 1985, 19–20). This study adopts the latter approach, using Perrow's technology constructs at the divisional level of analysis, based on the idea that task uncertainty levels in this study are common within divisions, but different between divisions. As discussed throughout this chapter, there is a vast literature on technology. Perrow's formulation of task uncertainty constructs is considered a seminal work and consequently is most widely used in the management accounting, contingency research.

A further source of confusion is that relating to technical complexity. Woodward's (1965) concept of technical complexity related to the standardisation of workflow (customised/mass produced). Piper (1978) described task complexity as the diversity of the range of products sold, seasonal variations, and variations in the type of outlet. Piper's (1978) concepts could be readily confused with external environmental diversity (heterogeneity). Further, Hirst and Yetton (1999) referred to interdependence as complexity.

7.5 Conclusions and proposition 3c

To recapitulate, technology as a contextual variable is a multi-faceted concept that has been conceptualised and operationalised in several ways. In a task-related sense for example, Duncan (1972) indicated that dimensions of complexity and stability make up the task environment. Perrow (1970) indicated that the dimensions of task

environment were task analysability and number of exceptions. Withey, Daft and Cooper (1983)¹⁰⁹ operationalised these dimensions as components of task uncertainty.

Van de Ven and Delbecq (1974) also used Perrow's basic task concepts, operationalising¹¹⁰ these as task difficulty and task variability, two dimensions of the construct task uncertainty. These dimensions have been used both separately and as a combined measure of task characteristics. Figure 7.1, based on Perrow (1970), attempts to categorise task characteristics and control types from the literature reviewed to make clear the overall consensus on this relationship, despite differences in terminology. Terminology relating to task aspects of technology differs for what are essentially Perrow's (1967, 1970) constructs of task uncertainty (difficulty and variability).

¹⁰⁹ Prior to this Hage and Aiken (1969) had operationalised technology in terms of routineness of work.

¹¹⁰ Van de Ven and Ferry (1980), and others, later refined these task measures as part of a larger organisational instrument.

Figure 7.1 Task characteristics and matching control types
Task difficulty (task analysability) [knowledge of transformation process]

		Low, routine (high) [well understood]	High, non-routine (low) [not well understood]
Task variability (number of exceptions) [ability to measure outputs]	Low, routine (low) [high]	Formal, bureaucratic administrative controls (mechanistic) Accounting controls Mechanistic control system Programmed strategies (SOPs, target setting, statistical performance reports, budgets, supervision) Job codification Rigid reporting and accountability mechanisms Large data bases (for example, standard costing system) Behavior or output controls	Output controls
	High, non-routine (high) [low]	Behavior controls	Formal and informal coordination mechanisms (organic) Non-accounting, personnel controls Organic control system Mutual adjustment Group coordination strategies Informal information Selection and training: professional/collegial socialisation Ritual and ceremony, clan control Input controls

Adapted from Perrow (1970) and Ouchi (1977).

Low technical complexity, task variability, task difficulty and interdependence (that is, pooled) fits high use of programmed or mechanistic controls such as standard operating procedures, rules, statistical performance reports, budgets and supervision. High technical complexity, task variability, task difficulty and interdependence (that is, reciprocal and team) fits high use of organic controls, such as clan controls and integrative liaison devices (see for example, Woodward 1965; Van de Ven et al. 1976; Chenhall and Morris 1986; Macintosh and Daft 1987).

An overall conclusion, therefore, that may be drawn from the studies reviewed in this chapter is that traditional MCS (more mechanistic) is less likely to fit more complex,

uncertain, more interdependent technological environments, than more simple, less dynamic, less interdependent technological environments. More organic controls are appropriate in more complex, uncertain, more interdependent technological environments.

Technical complexity studied in relation to MCS, and previously discussed in this chapter, is not included in the propositions. Technical complexity is not included as a moderator in this study because it is most relevant to manufacturing organisations. The following propositions, therefore, relate only to the task uncertainty and interdependence concepts of technology.

In conclusion, technology is related to MCS. Specifically, where task difficulty, variability and interdependence are high (low), organic controls (mechanistic controls) are most suitable. Where task difficulty is high (low), but task variability is low (high), output controls¹¹¹ (behavior controls) are most suitable (Perrow 1970; Ouchi 1977; Van de Ven and Ferry 1980; Merchant 1985c). As detailed in table 2.1, both output controls and behaviour controls are mechanistic (although not at the extreme of the organic/mechanistic continuum). This relationship was elaborated upon in figure 7.1. Refining this slightly, in relation to the discussion in chapter two regarding mixed controls, it is suggested that where task uncertainty is mixed (that is, high in task difficulty and low in task variability; or low in task difficulty and high in task variability) that both mechanistic and organic controls will be appropriate.

Recall also that in chapter two, it was argued that output management is a mechanistic control practice. The discussion in this chapter indicates that more organic controls, or a mixture of mechanistic and organic controls, are most appropriate under conditions high task uncertainty and/or high interdependence. Mechanistic controls are most appropriate under conditions of low task uncertainty and/or low interdependence. The discussion in this chapter leads to proposition 3c:

P3c The usefulness of MCS will be positively associated a high (low) emphasis on output management, together with a high emphasis on other

¹¹¹ See appendix 1f for definitions of input controls, output controls, behaviour controls, clan controls and integrative liaison devices.

mechanistic controls (organic controls or mixed controls), in task certain environments or in environments where technological interdependence is low (task uncertain environments and/or in environments where technological interdependence is high).

This chapter completes the review of contingency literature relating to technology. Chapter eight reviews the contingency literature relating to culture.

CHAPTER EIGHT CONTINGENCY LITERATURE: ORGANISATIONAL CULTURE

8.1 Introduction to organisational culture

This chapter summarises and reviews the literature on organisational culture. While there is much contingency research that investigates the relationship between *national* culture and MCS (see Chenhall 2003 for a recent review), there is a paucity of *contingency* studies which focus on types of *organisational* culture and appropriate MCS. In chapter three, studies which focus on accounting affecting culture were discussed. It was identified in chapters one and three that modelling organisational culture as a contingency variable is complicated, because of the bi-directional relationship between organisational culture (hereafter referred to as 'culture') and MCS (as discussed in chapter three). This bi-directional relationship means that organisational culture is not strictly a contingency variable. Notwithstanding this, organisational culture is modelled in this study as a contingency variable, accepting that the further analysis reported in chapter fourteen explores the bi-directional nature of this variable with MCS.

Private sector studies are discussed first, followed by public sector and not-for-profit literature, both in chronological order. Propositions relating culture to this study are outlined at the end of this chapter.

Culture is recognised as an important contingency variable relating to size, structure and technology (Pratt and Beaulieu 1992) and MCS (Flamholtz 1983; Markus and Pfeffer 1983; Thomas 1989; O'Connor 1995; Dewing and Jones 1996; Rimmer et al. 1996; Goddard 1997a,b). Culture manifests itself in organisational practices, such as the control mechanisms of selection and socialisation (Pratt and Beaulieu 1992). Reynolds (1986) operationalised a definition of culture as "a sociostructural system composed of the perceived functioning of formal structures, strategies, policies and management processes".

Culture and MCS are heavily intertwined. Ouchi (1979) implied that culture and controls are inexplicably interlinked. A particular example of this is his discussion of clan control requiring shared values, beliefs and traditions. The strength of the relationship between culture and MCS is described by Flamholtz (1983, 160):

The traditions which characterize an organization's culture may be an equally or even more important factor in predicting behavior than the formal core control mechanisms. Faced with a conflict between organizational traditions and a "new" control mechanism, it is not clear which element of control will ultimately affect actual behavior.

8.2 Studies on culture (private sector)

Flamholtz (1983) recommended that the core control system, structure and culture be designed together. He warned that if core control systems and structures were inconsistent with the organisational value system (in other words, culture), resistance and the demise of the structure and core control system was likely. Field study results from three US organisations (a real estate firm, an industrial abrasives distributor, and a financial institution) provided data to examine the relationship between accounting, budgeting and control.

In the real estate case an entrepreneurial, sales type culture existed where budgets (more mechanistic controls) were largely ignored because they were inconsistent with the culture. The abrasives organisation was entrepreneurial and had no formal control systems (more mechanistic controls). Control was exercised through direct supervision of family members (this can be organic or mechanistic) who managed the firm, without using accounting information. Accounting was generated for taxation and ownership information only. Even though the firm had rapidly expanded, there was no attempt at professional management. The financial institution case differed. Accounting control was heavily relied upon in this professionally managed organisation. There was a change taking place in the organisation from traditional budgeting to zero-based-budgeting (both mechanistic controls). Management was able to adopt the new methods of budgeting, although was unable to carry out associated budget cuts.

Flamholtz (1983) indicated that within an entrepreneurial organisation the appropriate culture might be based on the values of individual initiative, flexibility,

lack of bureaucratic control and independence of action. This type of organisation is characterised by decentralisation, loosely defined roles and minimal rules and standard operating procedures. The control structure and the culture would otherwise be incongruent. The major finding in Flamholtz's (1983) study was that budgeting is not a control system, but a component of overall control that does not influence behaviour without other control system elements. Flamholtz (1983) made an important contribution by highlighting the problem of MCS research that focuses on partial control components. He indicates the importance of viewing controls as a package to prevent incongruencies.

Markus and Pfeffer (1983) indicated that dysfunctional effects would occur if MCS was inconsistent with organisational culture. O'Connor (1995) conducted a survey of Singaporean managers finding that organisational culture may be an important determinant of the effectiveness of budget participation in evaluation processes¹¹². Consistent with Markus and Pfeffer (1983), Rimmer et al. (1996) indicated that dysfunctional effects would occur if MCS was inconsistent with organisational culture. Rimmer et al. (1996) suggested that cultural enablers were critical for successful change management. Cultural enablers according to Rimmer et al. (1996) were change leadership, empowerment, and external networks.

The studies described here show that culture can be an important factor in designing MCS, notwithstanding that culture has not traditionally been modelled in contingency studies. Overall conclusions drawn from these studies will be indicated in the final section of this chapter, after a discussion of the not-for-profit and public sector literature.

8.3 Studies on culture (not-for-profit and public sector)

In a public sector context, organisational culture has been used in a management accounting, contingency framework. The impact of culture on MCS within public

¹¹² National culture, and the relationship between national culture and organisational culture, was also important to O'Connor's (1995) study.

sector organisational reform has been documented (Dewing and Jones 1996; Goddard 1995, 1997a,b).

Dewing and Jones (1996) performed a longitudinal study in a UK hospital relating to MAS usefulness. They found, contrary to expectation, that management accounting information (a mechanistic control) did not help interaction between departments of the entity and did not facilitate better use of resources (because the devolution of budgets and focus on financial accountability created barriers between departments, decreasing the quality of patient care as decisions as to the efficient use of resources became departmental, rather than hospital wide). Further, staff did not find accounting information helpful in achieving key objectives. Devolution of financial responsibility within departments led to an increase in financial controls — except that this did not produce overall benefits because of the clash in co-existing cultures (that is, the new managerialist v the old medical culture).

Providing support for this, Goddard (1997a) suggested that a humanist culture (which values public service management and is concerned with the social aspects of the organisation) was consistent with a participative budgetary style (defined as participation in budget setting and explaining variances — a mixture of organic and mechanistic controls). A managerialist culture (which values managerialisation and private sector attitudes and practices) was consistent with a managerial budgetary style (characterised by much importance placed on ability to manage budgets, budget manipulation, budget flexibility, budget usefulness and much time spent on budgets — a dominance of mechanistic controls, the exception being budget flexibility).

In two other studies, Goddard (1995, 1997b) identified four aspects of culture based on prior literature: corporate culture, professional culture, hierarchical culture and national culture. The first three types of culture are relevant to this study, and are referred to simply as culture subsequently¹¹³, meaning organisational culture.

¹¹³ National culture is not a relevant variable in this study. As an aside, national culture was found by Goddard (1997b) to be unrelated to budget related behavior as hypothesised.

Support was found for the hypothesised relationships between the organisational culture variables, budget related behavior and financial control systems.

Specifically, Goddard's findings suggested that managers working in a bureaucratic organisational culture perceived high levels of participation, high hierarchical control, high support for the managerial role, and that budgetary practice will be time consuming (a dominance of mechanistic controls, the exception being budget participation). Whereas, managers working in a socially oriented/caring culture perceive the opposite. Managers in a task oriented culture perceived high levels of participation, high hierarchical control, high support for a managerial role and found budgetary practice time consuming where the financial control system was perceived to assist the achievement of tasks.

Goddard (1997b) emphasised the importance of a fit with organisational culture in the design and operation of financial control systems. This is consistent with the previous hypotheses of Flamholtz (1983) and Markus and Pfeffer (1983), that when a financial control system is incompatible with organisational culture, it will meet resistance and eventually fail. Importantly, Goddard (1997a) indicated an overall finding of two sub-cultures: the most dominant labelled the 'humanist' culture — that which values public service management and is concerned with social aspects of the organisation; and the 'managerialist' culture that values private sector attitudes and practices. The cultural differences highlight the juxtaposition of the traditional public sector bureaucrat with the new local government manager.

It would seem that Dewing and Jones's (1996) findings of transition from a medical to a managerialist culture is akin to Goddard's (1997a) findings of transition from a humanist to a managerialist culture. Overall conclusions are drawn in the following section.

8.4 Culture and MCS

This chapter has discussed the relationship between culture and MCS, drawing on literature on the private sector and the not-for-profit and public sectors. Conclusions

from the literature discussed in this chapter relate to the appropriate MCS for different cultures.

There is agreement in the literature that if core control systems and structures are inconsistent with the organisational culture, resistance and the demise of the structure and core control system is likely (Flamholtz 1983; Markus and Pfeffer; 1983; Bourn and Ezzamel 1986; Dewing and Jones 1996; Goddard 1997b).

In an entrepreneurial culture (based on the values of individual initiative, flexibility, lack of bureaucratic control and independence of action) budget controls (more mechanistic controls) will be largely ignored because they are inconsistent with the culture; whereas, decentralisation, loosely defined roles and minimal rules and standard operating procedures (organic controls together with a low emphasis on mechanistic controls) will be used. In a culture of clan control, an initiative to appoint general managers to impose the introduction of management budgets (more mechanistic controls) on clinicians, is inappropriate (Bourn and Ezzamel 1986). Devolution of financial responsibility within departments leading to an increase in financial controls (more mechanistic controls) will not produce overall benefits (does not help coordination, efficient resource use and goal attainment) because it clashes with a medical culture (Dewing and Jones 1996). A humanist culture is consistent with a participative budgetary style (an organic control). A managerialist culture is consistent with a managerial budgetary style (more mechanistic with a high emphasis on budgets) (Goddard 1997a).

Overall, more mechanistic MCS (such as a heavy reliance on budgets) will be inappropriate in entrepreneurial, medical and humanist cultures as well as cultures characterised by clan control (and appropriate in bureaucratic or managerialist cultures). More organic MCS (such as participative budgeting, loosely defined roles and a low emphasis on mechanistic controls represented by minimal rules and standard operating procedures) are likely to be more appropriate in these cultures.

8.5 Conclusions and proposition 3d

Culture has been identified in this section as an important variable in determining appropriate MCS. As identified in chapter three, MCS has also been identified as (1) important in determining culture; and, (2) as a dimension of the culture construct. The propositions in this study relate only to the former relationship, because contextual factors (such as culture) are modelled unidirectionally in this study, as moderators between OM-MCS and MCS usefulness (as discussed in part one).

In chapter two, it was argued that output management is a mechanistic control practice. The discussion in this chapter indicates that more organic controls, or a mix of organic and mechanistic controls (following the discussion in chapter two), are most appropriate where there is a predominance of a traditional public sector culture and that more mechanistic controls are most appropriate where there is a predominance of a managerialist culture. The discussion in this chapter leads to proposition 3d:

P3d The usefulness of MCS will be associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in a managerialist culture (a traditional public sector culture).

This chapter completes the review of contingency literature relating to culture¹¹⁴. Chapter nine discusses the limitations of contingency approaches, provides a brief summary of institutional and contingency frameworks, revisits the research model and draws together the propositions which were developed in chapters three to eight, for clarity.

¹¹⁴ As noted earlier in the chapter, some of the literature included here is not strictly contingency based, but is useful to support the contingency relationships proposed.

CHAPTER NINE

LIMITATIONS OF CONTINGENCY APPROACHES, SUMMARY OF INSTITUTIONAL AND CONTINGENCY FRAMEWORKS, RESEARCH MODEL AND PROPOSITIONS

9.1 Introduction

The contingency literature was reviewed in chapters four to eight. Limitations of contingency theory are discussed in the following section (as limitations to institutional theory were discussed following the institutional literature review in chapter three). Notwithstanding these limitations, institutional and contingency frameworks are considered useful as the conceptual framework underpinning the model in this study. This chapter then summarises the institutional and contingency frameworks (sections 9.3 to 9.5), discusses the internal logic of the model (section 9.6) which was introduced in part one and draws together the propositions underpinning the model in this study (section 9.7). These propositions were developed from the institutional and contingency frameworks reviewed in chapters three to eight. Section 9.8 summarises this chapter, concluding part two of this thesis.

9.2 Limitations of contingency theory

Chapters three to eight discussed the central propositions of contingency theory and summarised the relevant extant literature as a framework for this study. Consequently, it is important to recognise the contributions and limitations of these contextual factors as explanatory variables. Evaluations and criticisms of contingency theory in a management accounting context have been made¹¹⁵.

¹¹⁵ See for example, Waterhouse and Tiessen (1978); Dewar and Werbel (1979); Otley (1980, 1994); Schreyögg (1980); Schoonhoven (1981); Van de Ven and Drazin (1985); Merchant and Simons (1986); Fry and Smith (1987); Otley and Wilkinson (1988); Dent (1990); Young and Selto (1991); Moores and Chenhall (1994); Fisher (1995, 1998); Selto et al. (1995); Firth (1996); Chapman (1997); Langfield-Smith (1997); Shields (1997); Chenhall (forthcoming).

Contingency research has been criticised with respect to both theoretical progress and methodological practice¹¹⁶ (see Chenhall 2003 for the most recent review). Problems with a contingency framework are discussed first. Otley (1980) criticised traditional contingency research as failing to progress our understanding of MCS in organisations. In 1994, Otley again indicated that contingency based research in MCS had progressed little. This criticism is partly based on the incomplete approach that has commonly been adopted (Otley and Wilkinson 1988; Moores and Chenhall 1994; Shields and Shields 1998). Otley (1994), whilst critical of the literature, implied that a contingency framework is more relevant to contemporary organisations because of increasing uncertainty. He indicated that an organisation is in greater need of a contingency framework to help control its future. Therefore, it is the traditional utilisation of contingency frameworks, rather than the concepts behind them that have restricted contingency research.

The theoretical model underlying contingency research has been criticised as incomplete, focusing on structure and not on structure and social processes of organisations (Otley and Wilkinson 1988). Wood (1979) suggested that political and ideological issues also relate to organisational design, not solely technical factors. Consistent with Wood (1979), Dent (1986) suggested that the contingency approach is too simplistic, and that both social and political considerations may be relevant. It is arguable, however, whether contingency research should be developed at the level of social and political elements, or remain at organisational and lower levels.

Contingency theory is also criticised for considering only accounting controls, consequently failing to consider broader controls (Otley and Wilkinson 1988; Moores and Chenhall 1994; Shields and Shields 1998)¹¹⁷. In addition, the literature has mainly focused on control and therefore has not sufficiently investigated strategic management; nor has it investigated the interaction of form and process

¹¹⁶ See for example, Otley (1980); Schoonhoven (1981); Kren and Liao (1988); Otley and Wilkinson (1988); Hopwood (1989); Briers and Hirst (1990); Moores and Chenhall (1994); Keating (1995); Chapman (1997); Atkinson and Shaffir (1998); Fisher (1998); Shields and Shields (1998); Hartmann and Moers (1999); Hartmann (2000); Otley and Pollanen (2000).

¹¹⁷ However, there are exceptions to these charges. For example, Chenhall and Morris (1986) investigated broad scope MAS which included non-accounting information. Miller and Friesen (1982b) used a holistic approach to investigate contextual variables and MCS.

characteristics of MCS (Moore and Chenhall 1994). Research is too infrequently conducted in non-manufacturing settings (Shields 1997).

Most contingency research takes a rational-analytical perspective, which assumes that management accounting systems are designed to achieve effectiveness by supporting organisational goals (Moore and Chenhall 1994), although, studies have frequently failed to address effectiveness as a whole (Waterhouse and Tiessen 1978; Otley 1980; Merchant and Simons 1986; Otley and Wilkinson 1988). In addition, it is suggested that an organisation's own goals should be used in assessing organisational effectiveness (Otley 1980; Chua 1986; Otley and Wilkinson 1988) but that has seldom been the focus of past research. Otley (1980, 421) noted, however, that "there are substantial difficulties in the measurement of organisational effectiveness".

Furthermore, contingency theory appears to imply causal relationships between context and structure (Wood 1979; Rosenzweig 1981). Wood (1979) and Schreyögg (1980) criticised the underlying contingency paradigm as deterministic in that for a given context, a single structure is modelled as optimal. For example, Wood (1979) noted that contingency theory under emphasises the possibility that several modes of organisation may be equally optimal in a specific organisation. Schoonhoven (1981) argued that the substance of contingency theory is unclear due to ambiguity in the terminology used. Waterhouse and Tiessen (1978), Otley (1980) and Evans, Lewis and Patton (1986) similarly criticised the imprecise definitions of environment and technology.

As noted, a second set of limitations apparent in the contingency literature can be classified as methodological. For example, operationalising of variables differs (Otley and Wilkinson 1988). The lack of standardisation across studies makes comparison problematic (Otley 1994; Selto et al. 1995). Empirical research has operationalised fit relationships in an ad hoc manner, which may be the cause of mixed results (Schoonhoven 1981; Van de Ven and Drazin 1985). The use of survey questionnaires capturing cross-sectional data and undertaking statistical analyses leads to the discovery of weak (although, significant) relationships (Otley and Wilkinson 1988; Moore and Chenhall 1994) due to ignoring other variables that

may influence the dependent variable. For example, many studies are limited to a two-way interaction analysis.

In addition, relating to the concern (already noted) that performance/effectiveness outcomes have too often been overlooked, where researched, they have generally been operationalised subjectively (Selto et al. 1995)¹¹⁸. Furthermore, empirical methods have mostly been too simple to capture the complex nature of contingency relationships (Downey and Slocum 1975; Otley and Wilkinson 1988). Further, Schoonhoven (1981) noted there are implicit assumptions of linear relationships between variables because of reliance on a linear model and correlational procedures, and an assumption is made of symmetrical effects. This suggests a need for alternate methodologies (Otley and Wilkinson 1988; Moore and Chenhall 1994; Otley 1994). Numerous articles in the past two decades have commented on the need for a case study methodology in order to address some of the methodological problems described earlier in this section (see for example, Hopwood 1989; Otley 1994; Keating 1995; Atkinson and Shaffir 1998). While cross-sectional research designs remain abundant, some authors have adopted case study methods to investigate contingency models (see for example, Archer and Otley 1991; Chenhall and Langfield-Smith 1998b).

More recently, Hartmann and Moers (1999) criticised the use of moderated regression analysis to test contingency hypotheses that predict interaction effects between budgetary and contextual variables, claiming that the use and interpretation of this technique is flawed in 96 per cent of studies they reviewed. The main errors they found were: format of statistical tests was not in conformity with the hypotheses; incorrect use of tests for strength interactions, higher-order interactions, interpretation of main effects and conclusions about effect sizes; and, incorrect specification of the regression equation.

¹¹⁸ 'Subjective' measurement is not necessarily a limitation however. Fry (1982, 540) notes "objective measures may be biased or nonsensical because the phenomena under study may be misperceived or misrepresented by spokesmen or records..."

Three further observations are made here with respect to the general research orientation of contingency literature. First, numerous articles in the past two decades have commented on the need for a case study methodology, yet these same critics overall have employed cross-sectional, survey research designs. Second, the majority of literature focuses on the profit oriented manufacturing sector. This is curious, as a fundamental aspect of contingency related research would appear to be that it must be tested in many and varied circumstances, in order to establish that particular contingent relationships exist¹¹⁹ in a variety of contexts. In this way contingency related research can provide insights into public, and not-for-profit organisations. Third, contingency theory would seemingly apply in the context of management accounting as a whole; however, there appears to have been an overly attentive focus on the budgeting aspect of MCS.

It should be noted however, that whilst there are numerous limitations of contingency research, it is strongly purported that this framework has much to offer. In particular, Otley (1994) indicates that a contingency framework is more relevant to contemporary organisations because of escalating uncertainty, which makes the future increasingly difficult to predict. Consequently, organisations are in greater need of a contingency framework to help control their future. Furthermore, because the management control focus has been too narrow, a case study approach is useful to address the criticism of a limited focus and be able to observe a more comprehensive set of control practices and elements of context to improve understanding of contingency relationships.

As noted, notwithstanding the limitations outlined in this section, a contingency approach is considered valuable to underpin the model in this study. The following two sections provide a brief summary of both the institutional and contingency frameworks discussed comprehensively in chapters three to eight. Further sections then review the research model (providing a deeper explanation for the model than

¹¹⁹ However, in a seminar at Monash University, Department of Accounting and Finance 1997, Otley pertinently explained that contingency studies should be replicated in similar environments with identical instruments in an attempt to arrive at more conclusive evidence.

when it was introduced in chapter one) and draw together the propositions developed in chapters three to eight, recollecting their links to the model as a whole.

9.3 Contingency framework summarised

The variables outlined in chapters four to eight are common to the underlying contingency framework of management accounting. Central to contingency approaches is the concept that if contextual factors are consistent with, or fit with the MCS of an organisation, the organisation is effective. Accordingly, the contingency framework indicates that there is no single MCS type that is appropriate for all organisations.

As noted, contingency variables often have combined and interactive effects. Consequently, whilst contingency variables have deliberately been modelled individually, it is necessary to acknowledge the full extent of their combined contribution. For example, type of structure adopted by an organisation relates to the extent of environmental uncertainty it faces. Similarly, structure is related to the technology an organisation adopts. Further, the optimal fit between say, structure and technology with MCS may be more complex than the sum of the two contextual variables taken separately. Thus, it could be said that the contingency variables themselves are contingent upon each other, as well as other factors. The modelling of the interaction between contextual factors, however, is beyond the scope of this study.

Preceding chapters discussed contributions to theoretical and empirical contingency literature relating to the contextual variables modelled as moderators in this study. The literature discussed related to studies that were conducted in either a private, profit or not-for-profit sector, or a public sector context. Generally, the results of public sector and not-for-profit research are consistent with findings from the private, for-profit sector contingency research.

9.4 Institutional framework summarised

The variables outlined in chapter three are common to institutional frameworks. Notwithstanding the theoretical and methodological limitations detailed in chapter three, there is general agreement that a major use of accounting is as a means of legitimising social and political aspects of organisational structure and practices, including accounting practices. Institutional forces are of particular relevance to government organisations. Therefore, the institutional perspective provides a strong theoretical framework for investigating adoption of accounting reform in the public sector.

It is argued in this study that institutional pressure for isomorphic change at departmental (organisational) level involves adoption of output management and that this is for reasons of legitimacy. Legitimacy gains may be reflected in an improvement in performance due, for example, to the ability to attract greater resources. Alternatively, legitimacy gains may be reflected simply in maintaining survival. Chapter three discussed contributions to the theoretical and empirical institutional literature related to the institutional variables modelled as antecedents in this study.

9.5 Joint frameworks summarised

Institutional arguments provide a reference point for investigating antecedents to the existence of MCS, by providing a framework to explain why organisations might adopt alternative MCS notwithstanding efficiency explanations. Contingency arguments provide a framework useful for analysing organisational variables that may play a part in understanding situations in which innovations such as output management are appropriate. The importance of both institutional and contingency arguments in designing appropriate MCS has been discussed in the management accounting literature.

It is argued in this study that the adoption of output management will lead to enhanced departmental performance. This outcome will occur through (1) legitimacy gains; and (2) efficiency gains, but only if a high emphasis on OM-MCS leads to MCS usefulness, contingent on moderating effects.

The institutional argument is important because it can explain why adoption of output management might be desirable even in the absence of efficiency gains (that is, because of legitimacy gains). The contingency argument is important because whether (or not) isomorphic change occurs because of institutional pressures as modelled, it can explain whether the change results in enhanced performance because of efficiency gains (through MCS usefulness). That is, the contingency argument can be used to identify whether efficiency gains occur (or not) and why this happens (what contextual factors are associated with this). The contingency argument, therefore, can explain effects on performance, beyond the institutional argument that explains the ability to attract additional resources, or just survive.

Having reviewed the literature from the institutional and contingency perspectives in chapters three to eight, this chapter draws together the underlying propositions of the research model. These propositions are underpinned by the literature previously reviewed, which were developed in chapters three to eight. This chapter will collectively outline these propositions, after discussion of the model.

9.6 Research model

The following model (figure 9.1) has been developed using themes from the institutional and contingency literature. The model has also been considered by high level managers in the Department of Treasury and Finance, Victoria and after minor changes, was deemed relevant and applicable to government departments.

The model argues that institutional forces provide pressure on departments, which will affect the design of their MCS by adopting output management. This will lead to improved performance, or just survival, through achievement of legitimacy gains. Recognising that adoption of, and emphasis on output management are separate processes is important here, because this study posits that adoption can occur¹²⁰ without subsequent high emphasis being placed upon output management (although, an emphasis on output management can only occur subsequent to adoption).

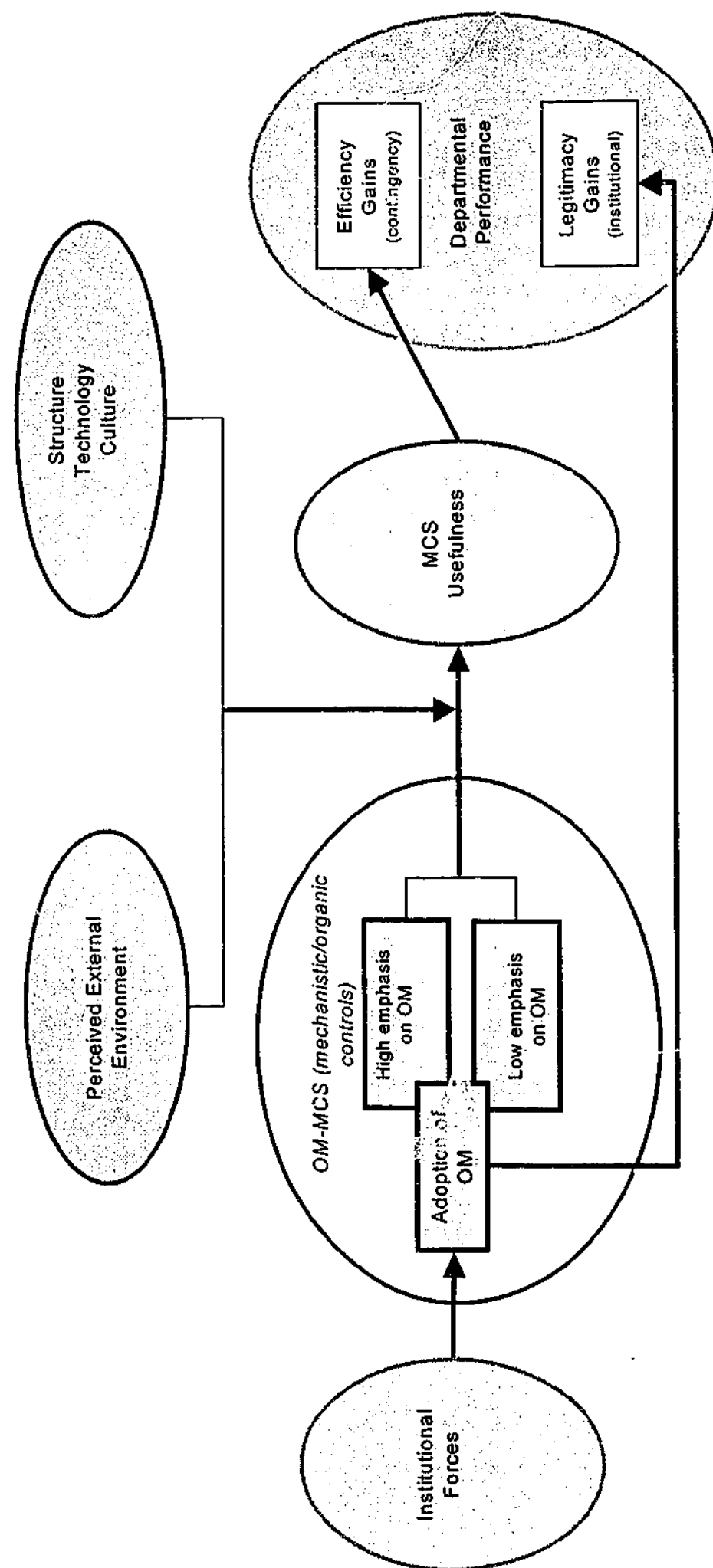
Adoption of output management is defined in this study as evidence of output management in the organisation's formal MCS (irrespective of the level of emphasis on output management). Therefore, output management may be adopted, without any evidence that managers place a high emphasis on output management information¹²¹.

¹²⁰ This argument is supported by Gosselin (1997), who draws a clear distinction between adoption and emphasis of management accounting innovations in his study of activity based costing. Adoption relates to the stage where an organisation makes the decision to adopt or reject an innovation. Emphasis relates to introducing the innovation, a separate process to adoption. Gosselin (1997) also describes two other stages — preparation and routinization. Preparation occurs between adoption and emphasis and refers to development of the infrastructure needed to support the innovation. Routinization occurs after emphasis, and refers to the innovation becoming part of daily organisational practice. What Gosselin (1997) describes as emphasis is akin to a high emphasis in this study. A low emphasis on output management is akin to little or no emphasis. This study considers that preparation is part of emphasis, because while conceptually these are separate, it is difficult to empirically identify these processes (or actions) separately. Routinization cannot be tested here because it is something requiring a longer time span (and is therefore beyond the nearly two and a half year scope of this study).

¹²¹ A high emphasis on output management is defined in this study as evidence that output management information is both provided to managers and used for internal management purposes. Anderson and Young (1999, 24) address the question of what is meant by 'success' in ABC implementation? Their answers, derived from interviews, reveal that 'success' is defined as whether ABC data are used internally and are more accurate than traditional cost data. Modifying the definition empirically derived by Anderson and Young (1999) for success in activity-based costing emphasis, this study does not use the term success, but simply considers a high emphasis on output management per se to be a successful outcome (from a Treasury perspective). That is, conceptually, this study considers a high emphasis on output management as consistent with Anderson and Young's (1999) 'success' in implementation. Consequently, a low emphasis on output management, as modelled in this study can be considered consistent with a 'lack of success' of implementation in Anderson and Young's (1999) study. To recapitulate, implementation means the extent to which output management is emphasised.

As explained in chapter one, the RAPM literature describes a high emphasis as where managers consider a MAS attribute to be 'quite or very important'. A low emphasis is defined as where a MAS attribute has 'little or no importance' to managers (see Otley and Fakiolas 2000 for a review of RAPM literature). Consistent with these definitions, but applying these to OM-MCS attributes, this study identifies a high emphasis on output management as where output management is quite or very important to managers. A low emphasis on output management is where output management is of little to no importance to managers.

Figure 9.1 Institutional and contingency relationships modelled in this study



As indicated in figure 9.1 (and introduced in chapter one), institutional forces (coercive and mimetic isomorphism) are modelled here as antecedents to the adoption of output management within government department MCS. As previously indicated, output management is a control practice that exists together with other controls that comprise an organisation's broader MCS (following Otley 1994; 1999), denoted here as OM-MCS. It is argued that the adoption of output management will change departmental MCS (irrespective of whether or not output management is emphasised), resulting in legitimacy gains, that will in turn, have a positive impact on departmental performance (outcome variable) in the form of survival¹²². This relationship is predicted in addition to, and notwithstanding, any effects that lead to enhanced MCS usefulness from a relationship between OM-MCS and MCS usefulness (moderated by contextual factors), which in turn, improves departmental performance through efficiency gains.

Figure 9.1 also indicates that contextual factors (perceived external environment, structure, technology and culture) moderate a relationship between OM-MCS and MCS usefulness. A fit between a high/low emphasis on OM-MCS and context results in MCS usefulness and, in turn, improved departmental performance through efficiency gains. Recall that a high/low emphasis on OM-MCS means a high/low emphasis on output management, but that output management co-exists with other mechanistic and organic MCS attributes, forming OM-MCS. That is the emphasis relates to output management alone, but recognises that output management co-exists with other MCS attributes.

¹²² That is, the organisation continues to exist in substantially the same organisational form, or structure.

In overview, the model predicts that (1) a department will receive legitimacy gains from adopting output management¹²³ irrespective of emphasis on output management; and (2) that a fit between a high/low emphasis on OM-MCS and context leads to MCS usefulness, which in turn leads to improved departmental performance through efficiency gains.

In this study MCS usefulness is a dependent variable and departmental performance is an outcome variable. The model depicts two path relationships, that when considered in the context of the full model, explain why MCS usefulness is termed a dependent variable (and not an intervening variable) and departmental performance is termed an outcome variable (and not a dependent variable). Shields and Shields (1998, 51) distinguish between a dependent and an outcome variable, explaining that a dependent variable is caused by an independent variable and an outcome variable is caused by a dependent variable. Both of these relationships are modelled by Shields and Shields (1998) as unidirectional linear relationships (see Luft and Shields 2001).

One path in the model is the *institutional path*. The institutional path predicts that: institutional forces (antecedents) cause adoption of output management (independent)¹²⁴ and that adoption of output management causes improved departmental performance through legitimacy gains (outcome).

The other path in the model is the *contingency path*. The contingency path predicts that: the high/low emphasis on OM-MCS¹²⁵ (independent) causes MCS usefulness (dependent), although this relationship is moderated by contextual factors

¹²³ Adoption with low emphasis on output management means incorporating output management components into departmental MCS, with little to no use of these components in management control. Departmental production and availability of output reports, for example, without managerial use of those reports constitutes adoption with low emphasis.

¹²⁴ In chapter one it was explained that the independent variable contains both adoption of output management and emphasis on OM-MCS. Therefore in the institutional path the independent variable is the adoption of output management and in the contingency path the independent variable is OM-MCS (which implicitly contains adoption because output management cannot be part of MCS unless it is adopted).

¹²⁵ Otley (1994, 1999) highlights the importance of studying specific control attributes within the context of the broader MCS, therefore, output management is considered in the broader MCS context.

(moderators). Then MCS usefulness causes departmental performance through efficiency gains (outcome)¹²⁶.

Legitimacy gains and efficiency gains are different, although both have a positive impact on departmental performance. Legitimacy gains relate to the increase in legitimacy — for example, appeasing institutional powers to achieve either greater resources or the authority to continue to exist in substantially the same organisational form. Efficiency gains relate to the increase in efficiency — for example, the use of fewer resources to achieve the same outcomes, or the use of the same resources to achieve improved outcomes.

In summary, departmental outcomes involve efficiency gained by enhanced MCS usefulness. Enhanced MCS usefulness occurs only where there is a fit between OM-MCS and contextual variables. Improved, or at least sufficiently sustained departmental performance for survival, achieved through legitimacy gains occurs from increased legitimacy through adopting output management, irrespective of the degree of emphasis on it and the fit implications of this. This outcome occurs because the institutional authorities reward the adopting action of the department by either providing additional resources or permitting survival in substantially the same organisational form.

Both the institutional and the contingency paths are important to the full model. In incorporating both the institutional and contingency paths in a single model, however, a difficulty arises that departmental performance could be considered a dependent variable instead of an outcome variable in the legitimacy path and MCS usefulness could be considered an intervening variable instead of a dependent variable in the contingency path.

¹²⁶ It could be argued that the research model in this study employs both efficiency and legitimacy gains as intervening variables, however these are not variables per se, but part of departmental performance, and are included in the model for explanatory reasons. If efficiency and legitimacy gains were considered to be variables the model would describe these relationships as intervening paths: for efficiency gains, from MCS usefulness to efficiency gains to departmental performance; and for legitimacy gains, from MCS design to legitimacy gains to departmental performance.

Before summarising the detailed, formal propositions supporting the model, clarification of the relationships between the variables is outlined. This is important because Shields and Shields' (1998) generic variable definitions are applied in this study, however in so doing, the model in this study is slightly different to the generic examples provided in the management accounting literature by Shields and Shields (1998) and Luft and Shields (2001). The generic model in this study (underlying the specific model) differs because it is less complex than the full model described in Shields and Shields (1998) and more complex than the partial models described by Luft and Shields (2001).

It is important to note that Luft and Shields (2001) describe an intervening variable path, where the independent variable causes the dependent variable, through an intervening variable. In a linear path, Shields and Shields (1998) model a relationship between an independent, dependent and outcome variable, where the independent variable causes the dependent variable, and then the dependent variable causes the outcome variable. These paths, though representing theoretically different situations, appear the same in a figurative display. For example (see figures 9.2a to 9.2d):

Figure 9.2a Luft and Shields (2001) intervening variable path

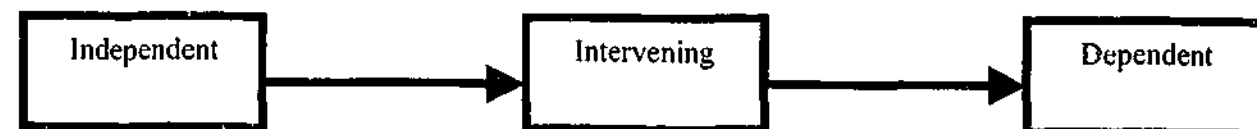


Figure 9.2b Shields and Shields (1998) relationship between independent, dependent and outcome variables

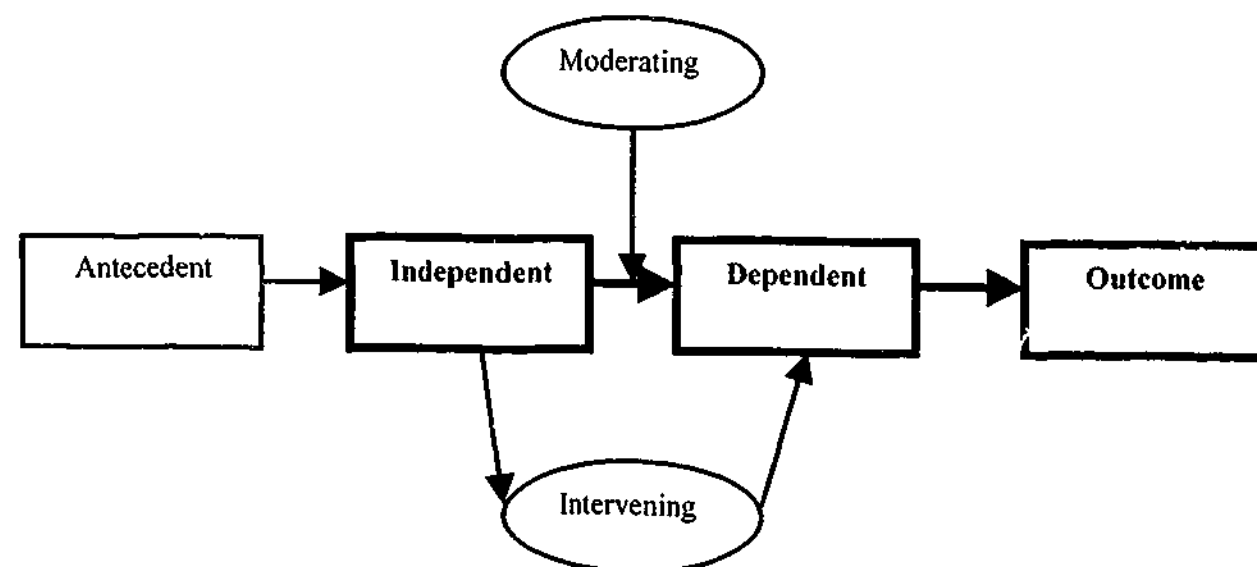


Figure 9.2c Model in this study – generic form

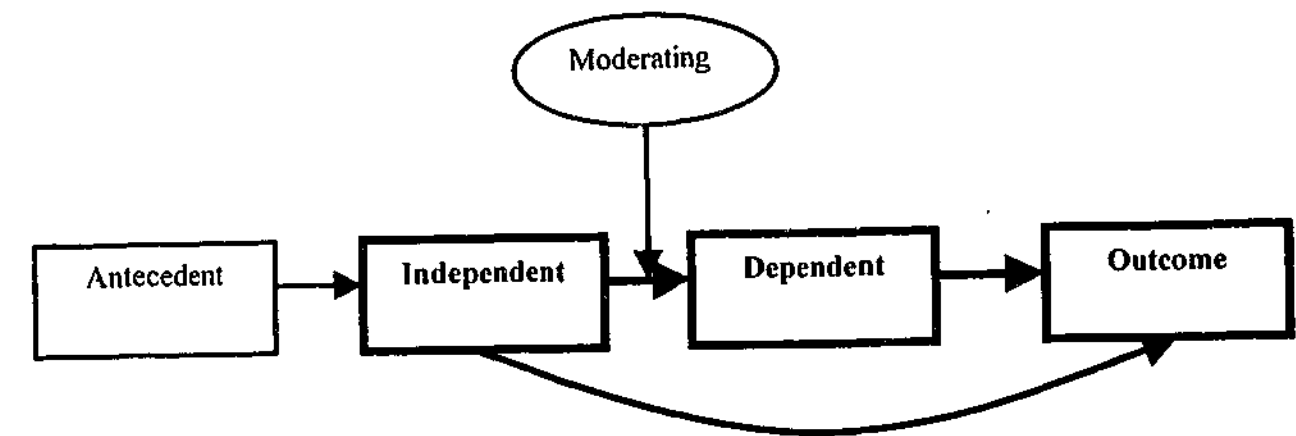
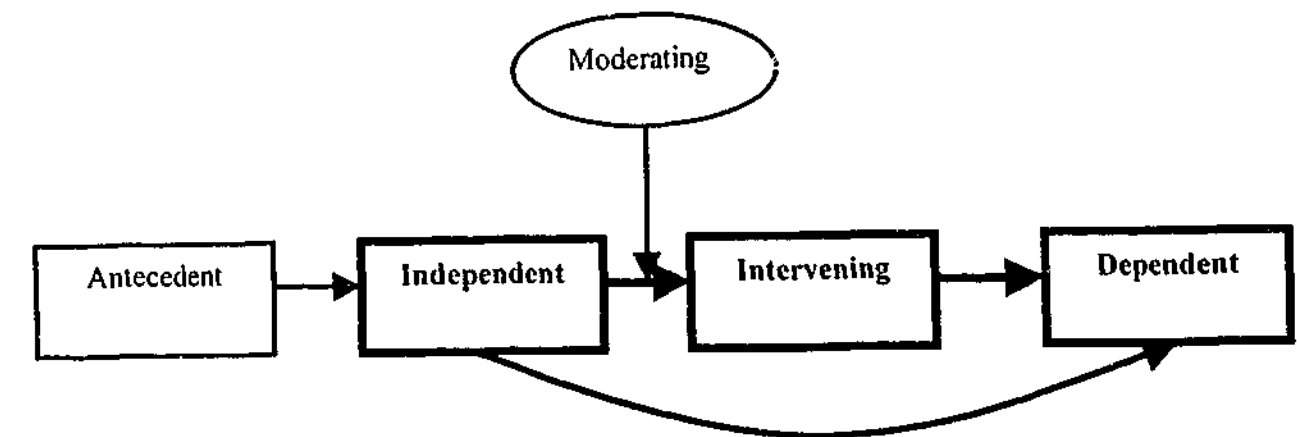


Figure 9.2d Alternative to model in this study



It could be argued that the model in this study should appear as in figure 9.2d instead of that in figure 9.2c. Following the generic variable definitions developed by Shields and Shields (1998), neither model is perfectly consistent because of the need to accommodate both the institutional and contingency paths within a single model, as discussed previously (see table 9.1).

Table 9.1 explains that according to Shields and Shields (1998) definitions, figure 9.2c would be the best theoretical representation if it could be argued that an independent variable directly causes an outcome variable; and figure 9.2d would be the best theoretical representation if it could be argued that an intervening variable can be conceptualised as a dependent variable. In this study it was decided that it was reasonable to model a direct relationship between the independent and outcome variables because, conceptually, a dependent and outcome variable are very similar. Therefore figure 9.2c is chosen as the best generic theoretical representation of the

model in this study.

Table 9.1 Application of Shields and Shields' (1998) definitions to this study

Consistent with Shields and Shields (1998) definitions (in italics below), these arguments, as they relate to the relationships proposed in this study are:	
Figure 9.2c (model in this study)	Figure 9.2d (alternative model)
1. Institutional forces (antecedents) cause adoption of output management (independent). <i>An antecedent variable is the cause of an independent variable.</i>	1. Institutional forces (antecedents) cause adoption of output management (independent). <i>An antecedent variable is the cause of an independent variable.</i>
2. OM-MCS (independent) causes MCS usefulness (dependent). <i>An independent variable causes a dependent variable.</i>	2. OM-MCS (independent) causes MCS usefulness (intervening). <i>An intervening variable is caused by an independent variable (as well as being the cause of a dependent variable).</i>
3. MCS usefulness (dependent) causes departmental performance (outcome). <i>A dependent variable is the cause of an outcome variable (as well as being caused by an independent variable).</i>	3. MCS usefulness (intervening) causes departmental performance (dependent). <i>An intervening variable is the cause of a dependent variable (as well as being caused by an independent variable).</i>
4. The relationship between OM-MCS (independent) and MCS usefulness (dependent) is moderated by contextual factors. <i>Moderators do not cause the dependent variable but affect the relationship between an independent and dependent variable, in this case OM-MCS and MCS usefulness.</i>	4. The relationship between OM-MCS (independent) and MCS usefulness (intervening) is moderated by contextual factors. <i>Moderators do not cause the dependent variable but affect the relationship between an independent and dependent variable, in this case OM-MCS and MCS usefulness. Therefore, this argument is inconsistent with Shields and Shields (1998) definition, because MCS usefulness in the alternate model is an intervening, not a dependent variable (unless it can be argued that an intervening variable can be considered dependent because it is caused by an independent variable).</i>
5. Adoption of output management (independent) also directly causes departmental performance (outcome). <i>An independent variable causes a dependent variable. Therefore, this argument is inconsistent with Shields and Shields (1998) definition, because departmental performance is an outcome, not a dependent variable.</i>	5. Adoption of output management (independent) also directly causes departmental performance (dependent). <i>An independent variable causes a dependent variable.</i>

Specifically, Shields and Shields (1998) claim that an antecedent variable is the cause of an independent variable (therefore institutional forces lead to the adoption of output management). An independent variable causes a dependent variable (therefore OM-MCS leads to MCS usefulness and adoption of output management leads to departmental performance through legitimacy gains). Chapter one explained that legitimacy and efficiency gains were part of departmental performance, and are

therefore not considered as separate variables in this study. A dependent variable causes a consequent (or outcome) variable (therefore MCS usefulness leads to departmental performance through efficiency gains).

Specifically, the difference between a dependent and an outcome variable is that a dependent variable, while caused by an independent variable, also causes an outcome variable, whereas an outcome variable does not cause another variable. A model less complex than that described by Shields and Shields (1998) or this study, may describe the variable modelled as a dependent in both, or as an intervening variable. This issue was discussed and clarified in chapter one.

A moderator variable¹²⁷ affects the relationship between an independent and dependent variable (Shields and Shields 1998; Luft and Shields 2001). Therefore, perceived external environment, structure, technology and culture moderate the relationship between OM-MCS and MCS usefulness.

As discussed, the model in this study is best theoretically represented by the generic relationships described in Shields and Shields (1998) (without the intervening variable and with an added arrow from the independent variable to the outcome variable to represent the institutional path). This is because the relationships between the variables are considered in the context of the full model, rather than describing each piece of the model in isolation. Further, Luft and Shields (2001) note that more complex models can have additional arrows. The parts of the model in this study can be generically described according to Luft and Shields' (2001) terms as a unidirectional linear interaction (in moderator form) with additional unidirectional linear relationships on either end of a model.

The model in this study, therefore, depicts the variables as follows: institutional forces as antecedents, OM-MCS as the independent variable¹²⁸, MCS usefulness as

¹²⁷ An intervening variable (not modelled here) is caused by an independent variable, and is a cause of a dependent variable. This differs from a moderator variable which is neither caused by an independent variable, nor does it cause a dependent variable.

¹²⁸ Or just adoption of output management as part of OM-MCS in the case of the legitimacy path, as explained.

the dependent variable, contextual factors as moderator variables (in the relationship between OM-MCS and MCS usefulness) and departmental performance as the outcome variable. The research model is formally stated by propositions developed earlier, in the literature review. These propositions are recalled and drawn together in the next section to consolidate understanding of the study's objectives, prior to discussing the research method, analysis and results in parts three and four.

9.7 Summary of propositions

This section summarises the underpinning literature and collates the formal propositions relating to the research model discussed in the previous section. Theoretical development of the relationships between variables in these propositions was provided in the literature review. Specifically, the relationships between the antecedent, independent and outcome variables were considered in chapter three. The relationships between the independent, moderator, dependent and outcome variables were discussed in chapters four to eight. Propositions 1a and 1b relate to the predicted effect the institutional variables have on adoption of output management. Proposition 2 relates to the effect of output management adoption on departmental performance (arising through legitimacy gains). Propositions 3a-3d relate to the predicted moderating effects of the contextual factors on the relationship between OM-MCS and MCS usefulness. Proposition 4 relates to the effect of MCS usefulness on departmental performance (arising through efficiency gains). Proposition 4 was not developed in the literature review with the other propositions. Proposition 4 will be developed in section 9.7.2.

9.7.1 Institutional forces

It is argued in this study that the adoption of output management is partly a function of mimetic but mainly of coercive isomorphism (DiMaggio and Powell 1983). Mimetic isomorphism is expected because of cross-jurisdictional adoption of similar reforms in recent history. Coercive isomorphism is expected because the reform adoption is mandated by Victorian government and central agencies. Resource allocation is specifically linked to the output management processes imposed; therefore, coercive forces are likely to have more impact than mimetic forces.

Further, coercive isomorphism is particularly applicable here, because it relates to the environment (rather than the organisation) as the institution (Zucker 1987)¹²⁹.

These external institutional pressures cause organisational change (Zucker 1987). When organisations take action in response to institutional pressure they buffer their technical activities by partly decoupling their structure from operations. This may adversely affect efficiency (Meyer and Rowan 1977). Efficiency can be adversely affected because there are costs involved in for example, operating two separate accounting systems: one for legitimacy purposes and one for internal control purposes. The maintenance of two systems will be necessary where the MCS, or MCS attribute(s), adopted for institutional reasons is (are) not also used for internal purposes (that is, highly emphasised) to achieve efficiency gains.

The legitimating outcome is sought because a necessary role of institutionalised organisations is to serve legitimating functions. This means that operations are not performed optimally compared to say, market oriented, private sector organisations where it is essential to achieve adequate operating performance (Perrow 1986; Zucker 1987). Accordingly, in order to survive (through positive evaluation and resource flows), organisations conform to institutional pressures (Lapsley and Pallot 2000), even though this may reduce efficiency (Meyer and Rowan 1977; Scott and Meyer 1991; Zucker 1987).

Institutional forces are modelled by ter Bogt and van Helden (2000) as a pressure causing change — specifically — replacing input controls with output controls. Based on DiMaggio and Powell (1983), and following ter Bogt and van Helden (2000) and Lapsley and Pallot (2000), it is argued in this study that Victorian government departments will adopt output management to ensure survival through achievement of legitimation, therefore, achievement of legitimacy gains, notwithstanding any efficiency gains that may, or may not arise.

¹²⁹ It is useful to note that the departments studied here rely on the Federal government and other parties for resources also. Hence, even the coercive isomorphic dimension requires more than resource dependence theory to explain the adoption phenomena (see Oliver, 1991 for a discussion of the distinction between institutional and resource dependence theories). Further, the data clearly show that the Federal government does not provide the impetus for adoption.

This section summarised the discussion that led to the development of propositions 1a, 1b and proposition 2, in chapter three. These propositions are repeated below:

P1a Coercive forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

P1b Mimetic forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

P2 Notwithstanding any contingency effect, adoption of (no adoption of) — or adoption of, and a high or low emphasis on — output management will have positive (negative) effects on departmental performance through legitimacy gains (no legitimacy gains).

9.7.2 Contextual factors

The proposed relationships between OM-MCS and MCS usefulness, moderated by contextual factors, are summarised here. The theoretical framework of organic/mechanistic MCS, and MCS attribute(s), which are contained in OM-MCS, was developed in chapter two. Specifically, output management was identified as a mechanistic technical control practice, or MCS attribute.

Organisational or contextual factors are modelled here as moderating variables. The organisational factors expected to moderate the relationship between OM-MCS and MCS usefulness are perceived external environment, structure, technology and culture. These contextual factors were included because of their theoretical links to the model. The constructs of all variables modelled, together with their dimensions, were defined in chapter one. The contextual variables are modelled as moderators in the relationship between OM-MCS and MCS usefulness. The importance of the relationship between contextual variables, OM-MCS and MCS usefulness, was discussed in the contingency literature review, chapters four to eight.

This section summarises the fit combinations for the contextual variables modelled with OM-MCS. With respect to the moderators, the literature review in this study indicated that a high emphasis on output management (as a mechanistic control practice) together with a high emphasis on other mechanistic controls would be most appropriate under the following contextual conditions: certainty, competition, hostility, restrictiveness and/or technical complexity in the perceived external

environment; centralised and/or non-matrix structures; task certainty and/or low interdependence in technology; and a managerialist culture. A low emphasis on output management¹³⁰ together with a high emphasis on organic controls or mixed controls would be most appropriate under the following contextual conditions: uncertainty, diversity, complexity, dynamism and/or turbulence in the perceived external environment; decentralised and/or matrix¹³¹ structures; task uncertainty and/or high interdependence in technology; and a traditional public sector culture. Table 9.2 summarises the proposed fit relationships between OM-MCS and contextual factors (defined by the organic/mechanistic typology).

Table 9.2 Organic/mechanistic typology of control variables

Contextual factors	MCS fit relationships	
	OM and other mechanistic controls	Organic controls
Perceived external environment:		
High (Low)	Misfit (Fit)	Fit (Misfit)
Uncertainty	Misfit (Fit)	Fit (Misfit)
Turbulence	Fit (Misfit)	Misfit (Fit)
Hostility	Misfit (Fit)	Fit (Misfit)
Diversity [heterogeneity]	Fit (Misfit)	Misfit (Fit)
Technical complexity	Fit (Misfit)	Misfit (Fit)
Restrictiveness	Misfit (Fit)	Fit (Misfit)
Complexity	Misfit (Fit)	Fit (Misfit)
Dynamism	Misfit (Fit)	Fit (Misfit)
Competition	Fit (Misfit)	Misfit (Fit)
Structure: High (Low)		
Decentralisation	Misfit (Fit)	Fit (Misfit)
Matrix	Misfit (Fit)	Fit (Misfit)
Organic	Misfit (Fit)	Fit (Misfit)
Mechanistic	Fit (Misfit)	Misfit (Fit)
Structural complexity	Misfit (Fit)	Fit (Misfit)
Differentiation	Misfit (Fit)	Fit (Misfit)
Contextual interdependence	Misfit (Fit)	Fit (Misfit)
Technology: High (Low)		
Task variability	Misfit (Fit)	Fit (Misfit)
Task difficulty	Misfit (Fit)	Fit (Misfit)
Interdependence	Misfit (Fit)	Fit (Misfit)
Culture: High (Low)		
Managerialist	Fit (Misfit)	Misfit (Fit)
Traditional public sector	Misfit (Fit)	Fit (Misfit)

¹³⁰ Recall that in chapter two it was argued that contexts under which organic MCS attributes are most appropriate may also require a mixture of organic and mechanistic controls.

¹³¹ A matrix structure if viewed on a continuum of mechanistic to organic is more organic than a decentralised structure.

This section summarised the discussion that led to the development of propositions 3a–3d, in chapters four to eight. These propositions are repeated below:

P3a The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls) under conditions of certainty, competition, hostility, restrictiveness and technical complexity (uncertainty, diversity [heterogeneity], complexity, dynamism and/or turbulence) in the perceived external environment.

P3b The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in situations of mechanistic and centralised (organic, decentralised, matrix, structurally complex, differentiated and contextually interdependent) structures.

P3c The usefulness of MCS will be positively associated a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in task certain environments or in environments where technological interdependence is low (task uncertain environments and/or in environments where technological interdependence is high).

P3d The usefulness of MCS will be associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in a managerialist culture (a traditional public sector culture).

A further proposition, not yet developed, follows from the contingency propositions re-stated here. This proposition (proposition 4) was not developed previously because it leads from the discussion from chapters four to eight combined, which this chapter draws together. Proposition 4 relates to the association between MCS usefulness and departmental performance.

Contingency frameworks assume that where there is a fit between contextual factors and MCS, or MCS attribute(s), there will be a positive association with organisational effectiveness/performance. However, early contingency studies generally failed to measure effectiveness/performance in their contingency models to confirm or disconfirm this assumption. More recently, effectiveness/performance has been measured (see for example, Gresov 1989; Chenhall and Morris 1995; Selto et al. 1995) to strengthen contingency research models. In relation to contingency factors, this study models organisational performance as an outcome variable positively associated with the dependent variable, MCS usefulness. This leads to

proposition 4:

P4 Where a department's MCS is more (less) useful as a result of the fit relationships in propositions 3a–3d, there will be positive (negative) effects on departmental performance through efficiency gains (lack of efficiency gains).

9.8 Summary

This chapter provided a brief summary of the institutional and contingency literature that was detailed in chapters three to eight, explained the research model in detail, brought together the propositions that were developed throughout part two and provided a further proposition arising from these chapters combined. Part two has provided formal propositions to support the model in this study. The variable constructs and their dimensions were defined and an explanation of how the variables are important to the model was provided. Part two also demonstrated how these propositions are supported by the institutional, organisation design and management accounting contingency literature.

Chapter ten in part three will describe the research method utilised to investigate the propositions in this study. Chapter ten will include an explanation of how the variables defined in part two are measured in this study.

PART THREE

RESEARCH DESIGN, METHOD, ANALYSIS AND RESULTS

Part three contains a detailed description of the research design and method used in this study (chapter ten) and a discussion of the analysis and results of data used to investigate the propositions in part two (chapters eleven to thirteen). Chapters eleven and twelve present analysis and results relating to the legitimacy path and investigate propositions 1a, 1b and 2. Chapter thirteen presents analysis and results relating to the contingency path and investigates propositions 3a-3d and 4.

Specifically, chapter eleven details the analysis and results pertaining to the antecedent variables (coercive and mimetic forces) and in part, the independent variable (adoption of output management). Chapter twelve details the analysis and results pertaining to the outcome variable and the impact of the independent variable (adoption of output management) on the outcome variable (performance, through legitimacy gains). Chapter thirteen provides the analysis and results pertaining to the independent (OM-MCS), dependent (MCS usefulness) and the outcome variable (performance, through efficiency gains) together with the variables (contextual factors) that are predicted to moderate the relationship between OM-MCS and MCS usefulness. Finally, chapter fourteen presents an additional analysis, relating to emerging propositions that are beyond the scope of the formal model.

CHAPTER TEN

RESEARCH DESIGN AND METHOD

10.1 Introduction

The purpose of this chapter is to detail the method used to investigate the propositions developed in part two. To investigate these propositions, a qualitative, longitudinal, multiple case study approach was utilised, that consisted predominantly of taped interviews with public sector managers. Interviews were conducted during lengthy site visits to the two case study organizations. Archival and informal data were also collected as corroborative sources of evidence. Data were collected at organisational and divisional levels over a period of 21 months.

This chapter will explain why a qualitative, longitudinal, multiple case study method was chosen for this study, as opposed to possible alternatives. It will also provide details about the research setting and participants, the interview protocol design and explain how the variables have been operationalised. Validity and reliability properties of the data will be discussed. The formal approach to describing and justifying the research design and method adopted in this study is considered important, as critics have noted the need for more rigour in qualitative management accounting research, particularly because some studies are not replicable. Some studies, while both interesting and insightful, fail to document method at all (see for example, Lowe and Doolin 1999). This study attempts to address the problem of replicability by providing sufficient detail about research design and method.

10.2 Qualitative, longitudinal approach

The benefits of a qualitative, longitudinal approach to studying MCS are discussed in this section. Keating (1995, 66) notes that:

Prominent researchers have argued that progress in management accounting research has been stymied by a lack of understanding of how accounting systems actually function. The case study research produced since the late 1980s may be seen as a response to the call to develop a greater understanding of how management accounting actually functions in organizations and society.

With respect to investigating the adoption and emphasis of innovative management accounting practices, Kaplan (1993a) indicated that standard cross-sectional field research studies using regression and correlational analysis are less appropriate methods of investigation (of ABC, specifically) compared with case study and longitudinal research methods. Ahrens and Dent (1998) described the ability of qualitative research to provide rich insights into organisational behaviour that quantitative research cannot achieve. Fisher (1995) noted the paucity of contingency studies that include multiple contingencies and MCS, and apply a longitudinal research design. He suggested that for contingency research to progress from correlational to causal investigations, a longitudinal approach would be appropriate.

An increasing number of recent management accounting case studies have taken a qualitative approach to collecting and analysing data¹³². These case studies in the management accounting literature seek to develop a rich understanding of MCS within organisational contexts.

Ahrens and Dent (1998) addressed how richness can be achieved in field studies. Their preference is for fewer cases, even single cases. This preference is due to the propensity for broader field studies to gain a less deep understanding of organisational processes. This depth or 'richness' is important to move management accounting research forward. Chapman (1998, 740), for example, collected data on 34 companies in his study of uncertainty, completeness of accounting controls and performance, opting to report upon only four of these in a qualitative fashion because "it was decided that detailed concentration on a small number of organisations would be the best way to delve into the intricacies involved".

¹³² See for example, Ansari and Euske (1987); Merchant and Manzoni (1989); Miller (1990); Simons (1990); Dent (1991); Ahrens (1997, 1999); Boyns and Edwards (1997); Chapman (1998); Chenhall and Langfield-Smith (1998b); de Haas and Kleingeld (1999); Euske and Riccaboni (1999); Fernandez-Revuelta Perez and Robson (1999); Jazayeri and Hopper (1999); Kalagnanam and Lindsay (1999); Lanen (1999); Lowe and Doolin (1999); Mouritsen and Bekke (1999); Seal, Cullen, Dunlop, Berry and Ahmed (1999); Vaivio (1999a, 1999b); Walker and Johnson (1999); Widener and Selto (1999); Ang and Teo (2000); Kloot and Martin (2000); Lapsley and Pallot (2000); ter Bogt and van Helden (2000); van der Meer-Kooistra and Vosselman (2000); Abernethy et al. (2001); Campbell and Fogarty (2001); Collier (2001); Granlund (2001); Jan van Helden (2001); Lind (2001); Moores and Yuen (2001); Seal (2001); Radcliffe, Anderson, Hesford and Young (2002); Lillis (2002).

This study, in using a qualitative approach, is able to corroborate management responses to interview questions about the level of emphasis on OM-MCS with that actually observed directly through inspecting the MCS, which a survey approach does not allow. Further, a survey approach does not provide an opportunity for follow up questions — for example, once the manager has been asked the 'standard' question (from the interview protocol) and provided a response, the interview forum allows scope for further questions if necessary to get an understanding of reasons behind the initial response. Therefore, the use of an in depth, qualitative approach is expected to provide greater insight into the criticality of the contextual fit issues apparent between organisational context and OM-MCS.

10.2.1 *Qualitative analysis techniques*

This research takes a longitudinal, multiple case study approach. This approach utilises a combination of 'pattern-matching', 'explanation-building' and 'time-series' analysis as a data analysis technique (Yin 1994), communicated through a variety of matrix displays (Miles and Huberman 1994).

Pattern-matching, recommended by Miles and Huberman (1994) and Yin (1994, 106) as "one of the most desirable strategies" for case study analysis, is used as a data analysis technique. Both Yin, and Miles and Huberman are recognised within the management accounting literature as experts in qualitative research methods (Jazayeri and Hopper 1999; Marginson 1999; van der Meer-Kooistra and Vosselman 2000). Further, pattern identification and explanation are recommended (Scapens 1990) and used (Jazayeri and Hopper 1999) within the management accounting literature. Pattern-matching involves the comparison of an empirically based pattern with a predicted one (Yin 1994). In this case, the predicted pattern is based on institutional and contingency constructs.

A second analytic strategy, time-series analysis, where changes are traced over time from beginning to end points, is used in this study to focus on the institutional relationship between institutional forces and the adoption of output management. A third analytic strategy termed 'explanation-building' (Yin 1994, 110) is subsequently used. This approach is used to deeply analyse the case study data by building an

explanation about the cases, beyond the relationships predicted by the pattern — that is, beyond the relationships predicted by the model.

Pattern-matching, time-series analysis and explanation-building represent “dominant” modes of analysis — compared to “lesser” types of analytic techniques (analysing embedded units and making repeated observations) that are useful where a case study has embedded units of analysis or in which there are large numbers of cases to be analysed — and are jointly referred to as “program logic models” (Yin 1994, 106–119). Embedded units are lesser units than the case itself, for which numerous data points have been collected, as part of a single case study. In this study, making repeated observations constitutes the same technique as analysing embedded units because they are made over time, rather than cross-sectionally.

Yin (1994) explained that any of the dominant modes of analysis should be used in analysing qualitative data and the lesser techniques should only be used in conjunction with the dominant analytic modes. The main analysis is also supplemented by these two “lesser” modes of analysis.

The case study approach allows a holistic model to be used. This approach helps to answer critics of contingency research who complain of the limitations in two and three way interaction research (as previously discussed, see for example, Otley 1994).

10.2.2 Qualitative data reliability and validity properties

The research method and design selected in this study is necessary to help overcome problems of incomplete models and superficial research results. Case study methodology can be rigorous providing that certain methodological rules are applied to ensure data reliability and validity (Miles and Huberman 1994; Yin 1994). A case study approach is appropriate for use in management accounting research (see for example, Dent 1990; Atkinson and Shaffir 1998).

Yin (1994) provided methods to enable case study research to attain validity and reliability properties. Yin's (1994) methods are similarly recommended by Van de

Ven and Huber (1990), who made consistent suggestions pertaining to reliability and validity that, they argued, minimises the limitations and maximises the benefits of longitudinal and retrospective case studies. For example, Van de Ven and Huber (1990) described a case replication method to test the generality of particular findings from a single longitudinal case study. This method requires examining if the findings are present in other cases studied. Case replication is used in this study to attain analytical generalisation. These properties and the means of testing used are summarised in table 10.1.

Table 10.1 Qualitative data validity and reliability checks

<i>Tests</i>	<i>Approach</i>	<i>Research Stage</i>
Construct validity	Use of multiple sources of evidence (convergence): interviews, documentation, observation in site visits	Data collection
Internal validity	Do pattern-matching: development of a matrix covering all variables (to be used in comparing to modelled relationships)	Data analysis
External validity	Use replication logic in multiple case studies (analytical generalisation): use of two cases	Research design
Reliability	Use of case study protocol: documented questions and procedures to follow Develop case study database: NUD*IST project developed	Data collection

Adapted from Yin (1994).

Pelz (1981) suggested that one useful approach to successful analysis of interview data is to code events numerically and apply statistical analysis. Some recent work in management accounting has used this approach (see for example, Abernethy and Lillis 1995). However, “this (statistical) approach still fails to address the needs of doing analysis at the level of the whole case, in which there may only be a single or a few cases” (Yin 1994, 103).

Atkinson and Shaffir (1998) indicated that qualitative research creates greater construct validity than either laboratory or survey methods. They suggest that there is a need for qualitative research in management accounting. According to the authors, qualitative research is not unscientific and they provide suggestions for attaining reliability and validity properties that are not inconsistent with Yin (1994), Van de Ven and Huber (1990) and Atkinson and Shaffir (1998).

This study attempts to enhance validity and reliability by developing a specified, replicable framework. Detailed procedures and practices for the construction of the research instruments, collection and analysis of data have been utilised. These procedures and practices are detailed in the remainder of this chapter.

10.2.3 Levels of analysis

As noted in chapter one, this study crosses levels of analysis. Luft and Shields (2001, 14) drawing on Rousseau (1985) and others, indicated that "the level of a variable is defined at the level at which it varies" and identify four levels of analysis consistent with Hopwood (1976): individual, subunit, organisation and beyond organisation. Similarly, Rousseau (1985) identified four slightly different levels of analysis in organisational research: organisational, department, work-group and individual. Rousseau (1985) distinguished within the subunit level, whereas Luft and Shields (2001, 14) included "all multi-individual units from small teams to major corporate divisions". Following Rousseau (1985), the levels of analysis in this study are both organisational and departmental. To avoid confusion, organisational level in this study is termed departmental (because the entities are departments) and Rousseau's (1985) departmental level is termed divisional level here.

A focus on both departmental and divisional levels of analysis is necessary because output management adoption is pertinent at departmental level, and level of emphasis on output management is pertinent to both departmental and divisional levels. Contextual factors moderate the relationship between OM-MCS and MCS usefulness at both divisional and departmental levels.

In this study, the perceived external environment varies between divisions within the departments studied and is therefore reduced to the divisional level. Technology is described at divisional level, as the same within a given division, but different between divisions and is therefore studied at the divisional level of analysis. Structure is mainly (but not always) a departmental level variable and culture is a departmental and divisional level variable. Where contextual factors are the same between divisions within a department, the departmental level of analysis is

applicable. Where contextual factors are different between divisions within a department, the divisional level of analysis is applicable.

A priori, it was predicted that the *adoption* of output management would be universal across the observations at departmental level, for institutional reasons. In exploring issues of *emphasis on* output management, a priori, it was predicted that there would be contextual differences *between* the departments studied, that would impact the emphasis on OM-MCS and MCS usefulness.

Indeed the project was initially motivated by a contingency concept, that at institutional level (regulators — higher than departmental level), the imposing of output management would not fit with all Victorian departments. This argument remains. The argument has been extended however, because upon initial data collection, it became apparent that there were differences *within* as well as *between* the departments, thus bringing in elements of divisional level analysis. That is, differences between divisions within the departments also.

This finding demonstrates that not only is applying output management universally across departments potentially sub-optimal, but that the issues are more complex, indicating that even applying output management universally across divisions within a particular department may be sub-optimal. Extending the study to include the divisional level of analysis results in stronger support for the contingency propositions developed than initially expected.

10.2.4 Case selection

This study comprises two cases. The Departments of Education and Human Services were chosen for detailed study because a priori, they were widely considered as the most important departments in terms of size (together they comprise well over half of the Victorian budget sector based upon budget and employee numbers) and community/political visibility.

Further, because the Departments of Education and Human Services were considered large and highly visible, it was expected a priori that they may find adoption of

output management more prevalent than the smaller departments because of access to more substantial resources (Chenhall and Langfield-Smith 1998a). A logical extension of this argument is that where adoption is easier, there may be greater likelihood of a high emphasis on output management. As the level of emphasis on output management was an important factor under study, Education and Human Services seemed most fertile for investigation. Eisenhardt (1989) recommends this basis for choosing cases to analyse when the object of the study is to test or extend existing theory. Ex post, it was considered that the most comprehensive data sets collected were those pertaining to Education and Human Services, further supporting the choice of these departments as the cases for analysis.

This design for reporting case study data is recommended by Yin (1994) and Miles and Huberman (1994) as a method of corroborating results, strengthening claims of theoretical links with qualitative data. A similar design was used by Chenhall and Langfield-Smith (1998b), who reported the findings of a single main case and supplemented their analysis with observations from a further four cases.

10.2.5 Longitudinal approach

The data were collected longitudinally over 27 months from December 1997 to February 2000 (see table 10.2). Data collected during this time were divided into three time periods: one period with data close to the time of the output management adoption; a second period once there had been some time for output management to become embedded; and a third period where more time (approximately two years) had passed since the adoption of output management. Details of data collection are shown in table 10.2, which is constructed from the research appointment diaries retained from 1997–2000. A longitudinal, field study approach is appropriate for investigating the antecedents and/or consequences of changes in organisational forms or administrative practices because it enables observation of the order and sequence of events (Van de Ven and Huber 1990).

Table 10.2 Longitudinal data collection

Department	Number of site visits for interviews and document viewing/collection			
	Period one	Period two	Period three	Total
DOE	20	13	13	46
DHS	20	11	16	47
DOI	18	12	13	43
DNRE	17	10	12	39
Others	19	5	9	33
Total	94	51	63	208

The 208 site visits referred to in table 10.2 include the two departments (Education and Human Services) used in the analysis, as well as categories for the five others, that have been excluded from the analysis. The data relating to the other five departments were excluded for a variety of reasons. One reason was that a less complete data set was collected at two of these sites (Justice and State Development). This was largely due to less cooperative contacts. For example, the initial contacts at these two sites promised to organise a list of seven or eight managers for interview. Both contacts indicated that they would make initial contact with all parties to assist access. Both parties provided a list of only three or four managers for interview. Further, after the first interviews, one department prevented further access (Justice), and the second (State Development) participated but with only three managers.

In another department (Premier and Cabinet), access and data were forthcoming, however, it was decided to exclude this case on the basis that it is a central¹³³, rather than an operational department. The remaining departments (Infrastructure, and Natural Resources and Environment) were operational and complete data sets were obtained at these sites. It was decided to exclude these two sites, however, because of the comparative immateriality to the budget sector of these departments. That is, these departments make up a small proportion of the total Victorian Government budget.

It should be noted that at the inception of the study it was considered prudent to include as many of the eight departments as possible, predicting potential 'site

¹³³ Output management is expected by Treasury to have most relevance to operational (or 'line') agencies rather than central agencies.

mortality' by the end of the study period (either through non-survival or unwillingness to continue).

Five additional visits (not tabulated) were made to Department of Treasury and Finance prior to the initial collection of data as previously noted. A further five visits were made to the Public Sector and Community Union Victoria. Once for an interview with the Branch Secretary and a further four visits to view documents pertaining to the industrial relations of the studied organisations, making copies and notes where relevant.

The beginning of the data collection period coincided with a mandate from the Victorian Government that all government departments in their jurisdiction adopt output management — that is, coercive forces. The purpose of the longitudinal research design was to track any change in the MCS due to the adoption of output management and emphasis on OM-MCS and ascertain whether the fit between organisational context and OM-MCS changed over time. The purpose of this was to assess whether OM-MCS had either directly, or indirectly through MCS usefulness, produced a positive, negative or neutral performance outcome. The outcome, performance, is important because it is purported by the proponents of the Management Reform Program, that output management would enhance organisational performance by providing managers with better information.

Therefore, the longitudinal design was adopted, as it was important to investigate whether output management had an impact on MCS over time. It is common to reforms such as output management that a considerable period of time is necessary for emphasis to occur (Rimmer et al. 1996). It was expected that over time, departmental MCS might exhibit a high emphasis on output management. Further, it was modelled that if legitimacy and/or efficiency gains arise from adoption of output management and a high emphasis on OM-MCS, that it was necessary to measure performance across time. Otherwise associations between OM-MCS and MCS usefulness, and then MCS usefulness and performance, could be difficult to identify.

As previously discussed (chapter two), output management is an MCS attribute, contained within the broader MCS — OM-MCS. Therefore, with the adoption of

output management, it was expected that there would be change over time in the independent variable (OM-MCS), the dependent variable (MCS usefulness) and the outcome variable (departmental performance). The antecedent variables (institutional forces) were expected to be static, as were the moderator variables perceived external environment and technology. However, the research design allows for the possibility that some contextual factors may be dynamic. Specifically, it is expected that if a high emphasis is placed upon output management, there may be changes in structure and culture. That is, there may be bi-directional effects (see Luft and Shields 2001), however, these bi-directional effects are not formally modelled in this study in an attempt to limit the complexity of the model. The idea that structure and culture may change if a high emphasis is placed upon output management, stems from the notion that some contextual factors may need to change to ensure that a high emphasis is placed upon output management. That is, a high emphasis on output management may not occur if structure and culture are not altered to support output management. Further, emphasis may also cause some change to culture (Dent 1991; Rimmer et al. 1996).

Therefore, the longitudinal research design allows data collection for the static variables and the dynamic variables. Notwithstanding this, questions relating to static variables were again asked at times two and three as both a reliability test, and to ensure that these variables did prove to be static, as expected. For example, at time one it was established that institutional forces were responsible for departmental adoption of output management. Questions pertaining to adoption were asked again at later interviews, so that responses could be verified with those initially provided. This process served as a reliability test. To test whether variables such as perceived external environment were static, as expected, questions pertaining to these variables were also asked in each interview period (hence, not just for reliability but to ensure that there was no change in them, as implicit in the model).

Inclusion of the two cases¹³⁴, along with the longitudinal research design should address concerns of sufficient richness of data (Ahrens and Dent 1998). Similarly,

¹³⁴ As noted, whilst data are collected on seven cases, two of these are selected for analysis. These are the two cases referred to subsequently (highlighted in table 10.3).

the multiple case approach helps to address concerns of analytical generalisation (Yin 1994).

Atkinson and Shaffir (1998) classify field research in management accounting into three types. Those that (1) provide a description of practice; (2) test a theory developed elsewhere; and (3) develop a theory. As noted by Atkinson and Shaffir (1998), whilst this suggests that field studies can be neatly classified, there is scope for crossing the boundaries of the typology. The current study mostly typifies that of testing theory (institutional and contingency) developed elsewhere, but through necessity is also descriptive of current practice and has the potential for refining and extending theory (rather than developing it). The results of the pattern-matching analysis (reported in chapter thirteen) are best described by category (2). The results of the explanation-building analysis (reported in chapter fourteen) are best described by category (3).

10.2.6 Participants

Data were collected via a series of semi-structured interviews with senior resource, budget, finance, and operational division managers from seven (initially) of the eight Victorian government departments. The mix between resource, budget, finance and operational managers was not considered problematic, based on the argument that studies investigating management accounting innovations have shown that accountants are no more likely (or, indeed less likely) to support accounting change than non-accountants (Foster and Gupta 1989; Shields and Young 1989; Chenhall and Langfield-Smith 1998b).

Further, it was considered important to focus substantially upon managers involved in budgets and resource management, because senior Department of Treasury and Finance, Victoria (Treasury) contacts advised that other managers may be unaware of output management, at least initially. The number of participants by department and time period involved in this study are outlined in table 10.3. The two departments used in the analysis reported are shaded. Access to participants was achieved through contacts in Treasury.

Specifically, after much consultation, a senior official involved in the Management Reform Program, in his role as Director of Management Improvement in Treasury, generated a letter to each departmental representative on the Departmental Reference Group, a Management Reform Program committee. This group comprised a representative from each of the eight departments. The Treasury letter asked each departmental representative to furnish details directly to the researcher, of senior managers appropriate to be interviewed regarding output management adoption and level of emphasis, MCS attributes, organisational factors and performance (see appendix 3a).

Initially seven Departmental Reference Group representatives provided this access, subject to agreement from the individual managers selected¹³⁵. All managers were then contacted by the researcher and appointments for initial meetings made. Number of participants by department and time period are provided in table 10.3.

Table 10.3 Number of participants by department and time period

Interview period	Departments							Total
	Human Services	Education	Natural Resources and Environment	Infrastructure	Premier and Cabinet	State Development	Justice	
First	8	8	8	8	6	3	2	43
Second	8	8	8	7	5	3	0	39
Third	7	7	7	8	5	2	0	36
Total	23	23	23	23	16	8	2	118

According to the rules of the Monash University Standing Committee on Ethics in Research on Humans, consent forms were signed by participants at the first meeting,

¹³⁵ Curiously, the Departmental Reference Group representative who refused to be involved or to nominate managers within his department was from Treasury. Reasoning provided was that the reforms were not relevant to Treasury as it was a central agency, not an operational one. This was not consistent with the view of others in Treasury, from preliminary meetings. Further, the other central agency managers interviewed considered that the reform was relevant to them and provided access accordingly. In addition, the process with Department of Justice began positively, but failed to gather momentum after the first few interviews, and eventually Justice became a non-respondent despite many attempts to gain sufficient access.

and formal explanatory statements pertaining to the project were provided by the researcher (see appendix 3b). In almost all cases, the same manager was re-interviewed at the second and third interview stages. This approach was used by Marginson (1999) in investigating the use of MCS. The adoption of this method was also thought to control for personality bias of managers.

10.2.7 Interviews and interview protocol

During site visits, one hundred and eighteen interviews were conducted in the seven departments (23 in each department used for analysis and the remainder across the others). Participants were managers across a range of levels (although, mostly senior) and divisions. Precedents for the participation of managers at various levels in studies about emphasis on MCS, and MCS attribute(s) exist (see for example, Marginson 1999). This participant selection design achieved a more holistic organisational picture.

A semi-structured interview protocol was developed from the institutional and contingency literature, covering all modelled variables. This protocol was considered for validity by both academics and government officials — a process that is discussed in a subsequent section. The decision to use a semi-structured interview protocol was made to allow the beliefs and perceptions of managers, and other organisational insights to be obtained, rather than just facts. The semi-structured interview approach is common to contemporary management accounting case study research (see for example, Jazayeri and Hopper 1999; Marginson 1999).

In essence, managers were asked to describe: the reasons for their department adopting output management, their departments and divisions on all contextual variables, components of MCS and MCS usefulness; departmental performance; and explain the level of emphasis on output management. There was also scope for managers to provide additional details not covered in the protocol, through informal discussion during site visits, before and after the formal interview process. The formal interview protocol approach was used to collect interview data on all modelled variables. These data are described in table 10.4 for the two cases analysed

only (Education and Human Services). Table 10.4 displays the nodes created for the modelled variables and the amount of interview data coded to each.

The two cases studied here are analysed by placing evidence within a matrix of categories, as recommended by Miles and Huberman (1994). These categories (based on the variables) were developed by relying on the theoretical propositions stated earlier and were listed amongst the nodes reported in table 10.4.

Table 10.4 List and description of database

Main Nodes ¹³⁶ in aggregated form	Data coded
(1)/Demographics	
(1 1)/Demographics/Department	
(1 1 1)/Demographics/Department/Education	23/23060
(1 1 2)/Demographics/Department/Human Services	23/25390
(1 2)/Demographics/Time Period	
(1 2 1)/Demographics/Time Period/Interview One	16/21040
(1 2 2)/Demographics/Time Period/Interview Two	16/12702
(1 2 3)/Demographics/Time Period/Interview Three	14/14708
(1 3)/Demographics/Participant	
(1 3 1)/Demographics/Participant/T9,32,46	3/4214
(1 3 2)/Demographics/Participant/T10,25,40	3/2907
(1 3 3)/Demographics/Participant/T11,26,41	3/3440
(1 3 4)/Demographics/Participant/T12,27,42	3/3763
(1 3 5)/Demographics/Participant/T13,28,43	3/2384
(1 3 6)/Demographics/Participant/T14,29	2/2227
(1 3 7)/Demographics/Participant/T15,30,44	3/3229
(1 3 8)/Demographics/Participant/T16,31,45	3/3226
(1 3 9)/Demographics/Participant/T1,17,33	3/2767
(1 3 10)/Demographics/Participant/T2,18,35	3/2030
(1 3 11)/Demographics/Participant/T3,19	2/2361
(1 3 12)/Demographics/Participant/T4,20,36	3/4367
(1 3 13)/Demographics/Participant/T5,21,37	3/1944
(1 3 14)/Demographics/Participant/T6,22,38	3/4361
(1 3 15)/Demographics/Participant/T7,23,34	3/2422
(1 3 16)/Demographics/Participant/T8,24,39	3/2808
(2)/Institutional forces	
(2 1)/Institutional forces/Coercive isomorphism	21/227
(2 2)/Institutional forces/Mimetic isomorphism	20/156
(3)/Contextual factors	
(3 1)/Contextual factors/External environment	
(3 1 1)/Contextual factors/External environment/Turbulence	26/357
(3 1 2)/Contextual factors/External environment/Hostility	33/591
(3 1 3)/Contextual factors/External environment/Diversity	32/746
(3 1 4)/Contextual factors/External environment/Technical complexity	No coding
(3 1 5)/Contextual factors/External environment/Restrictiveness	41/1340
(3 1 6)/Contextual factors/External environment/Complexity	26/423
(3 1 7)/Contextual factors/External environment/Dynamism	26/589
(3 1 8)/Contextual factors/External environment/Competition	21/352
(3 1 9)/Contextual factors/External environment/Uncertainty	30/636
(3 3)/Contextual factors/Structure	
(3 3 1)/Contextual factors/Structure/Centralisation	37/1538
(3 3 2)/Contextual factors/Structure/Formalisation	19/308
(3 3 3)/Contextual factors/Structure/Bureaucracy	24/374
(3 3 4)/Contextual factors/Structure/Standardisation	26/571
(3 3 5)/Contextual factors/Structure/Divisionalisation	20/257
(3 3 6)/Contextual factors/Structure/Distributive network	20/163
(3 3 7)/Contextual factors/Structure/Contextual interdependence	38/467

¹³⁶ There were numerous other nodes created also relating to other themes not modelled. These do not form part of the main database, however, and data coded to these additional nodes is not reported upon here.

Table 10.4 List and description of database (continued)

Main Nodes in aggregated form	Data coded
(3 4)/Contextual factors/Technology	26/426
(3 4 1)/Contextual factors/Technology/Task difficulty	24/300
(3 4 2)/Contextual factors/Technology/Task variability	23/433
(3 4 3)/Contextual factors/Technology/Interdependence	
(3 7)/Contextual factors/Culture	37/833
(3 7 1)/Contextual factors/Culture/Managerialist	14/206
(3 7 2)/Contextual factors/Culture/Traditional public sector	
(4)/MCS	43/4029
(4 1)/MCS/Design	14/215
(4 1 1)/MCS archetypes/Mechanistic	16/446
(4 1 2)/MCS archetypes/Organic	39/2061
(4 2)/MCS/Usefulness	25/1642
(4 3)/MCS/Output budgeting	15/352
(4 4)/MCS/Output management	41/2685
(4 5)/MCS/Performance evaluation	12/167
(4 6)/MCS/Integrative liaison devices	44/5424
(5)/Performance	
(5 1)/Performance/Performance assessed	22/135
(5 1 1)/Performance/Performance assessed/Low	31/401
(5 1 2)/Performance/Performance assessed/Moderate	35/454
(5 1 3)/Performance/Performance assessed/High	37/540
(5 2)/Performance/Performance reasons	29/461
(5 3)/Performance/Measurement problems	5/58
(5 4)/Performance/Other departments	46/9692
(F1)/Output management emphasis	46/12589
(6)/Unused text	

Initially questions about the managers background and department were asked as a method of developing an initial bond between participant and researcher, a method recommended by Baxter and Chua (1998). Following the introductory questions, inquiries relating to the institutional propositions were asked, to investigate whether the reasons for adopting output management were institutional (adopted because of coercive and/or mimetic forces) or not.

Questions relating to contextual factors were then asked, to ascertain what type of context was relevant to each department. Questions about MCS attributes were then asked, seeking the particular nature of OM-MCS within each department, followed by questions about the usefulness of information from these systems (corresponding documentation is discussed in the following section). These questions included probing for information about how much emphasis was placed upon output management information and whether this information was useful or not.

Together with these questions, managers were asked to elaborate upon any issues surrounding the level of emphasis on output management. For example, if there was a high or alternatively, a low emphasis on output management so far, why was that? What factors apparent in the specific department make it difficult, or easy to place an emphasis upon output management? Finally, questions about management's perception of the performance of their department were asked.

Between interview periods one and two, and then two and three, each managers' previous taped interview was listened to and notes were made, just prior to the subsequent interview. This process ensured that any important issues mentioned by the manager previously were followed up, and assisted the development of relationships.

The difficulty in conducting research free from existing theoretical perspectives is recognised in management accounting literature (Berry, Loughton and Otley 1991). Because of this theoretical bias, Marginson (1999) recommends that at the outset of any study it is important to be explicit about the theoretical perspective applied to an investigation. Following the advice of Berry et al. (1991) and Marginson (1999), the explicit recognition of institutional and contingency frameworks used is adopted here. Therefore, the basic interview protocol (see appendix 3c), was developed using the literature reviewed in chapters two and three (see appendix 3d), whilst remaining open to alternative questions that seemed relevant to the study.

Interviews took between one and a quarter and three and a half hours, sometimes in several visits. All data were collected on the research site to provide the opportunity to observe the organisational setting, help develop the trust of participants (Buchanan, Boddy, and McCalman 1988) and to minimise the inconvenience to participants so that they were more likely to continue to support the research. Two hundred and eight site visits were made in total for the seven departments (as reported in table 10.2) and of these, 93 were in Education and Human Services. Informal case notes were made where something appeared to be of significance. For example, sometimes comments were made during interviews that were not taped, by request of the participant; or something was said prior or post interview during the site visit that was relevant.

All interviews were taped and transcribed. Taping interviews is recommended by Lofland and Lofland (1984) as important to gain accuracy of data collection and researcher attentiveness during interviews. It is common in management accounting case studies to tape interviews (see for example, Chenhall and Langfield-Smith 1998b and Jazayeri and Hopper 1999; and see for exception, Euske and Riccaboni 1999 and Fernandez-Revuelta Perez and Robson 1999). Interview data collected by Euske and Riccaboni (1999) was not taped at the request of the subject company (presumably due to confidentiality concerns). In the case study of Fernandez-Revuelta Perez and Robson (1999), field notes were rewritten and checked by participants to test the veracity of the data.

The superiority of taped interviews is that the data, when transcribed verbatim, is highly accurate. Observer bias cannot effect the data at the collection stage with taping, as it can when the researcher takes interview notes. Each participant was asked whether it was acceptable to tape the interviews. A number of participants asked for reconfirmation that the interviews were confidential at that stage and were reassured that no individual would be identified.

Only one manager (after agreeing to be taped) said that he 'hated that thing', referring to the tape recorder. The researcher insisted that the interview could be done without taping and quickly removed the device. The manager responded by insisting that the tape be used. Interview responses from this manager were checked with those of other managers in his department, finding that he was no less forthcoming with information than others. Indeed this managers' responses were quite open in many respects (perhaps indicating why he *hated that thing*). The interviews in this study comprise the most comprehensive aspect of the data collected. Documentation collected from research sites was used to corroborate interview material where possible.

10.2.8 Documentation

Documentation collected consists of a variety of financial and non-financial information, some of which is highly confidential: internal monthly management reports, individual performance plans, business plans, policy and procedure manuals,

statistical data and policy briefs (see appendix 3e). Procedures for viewing and collecting documents were consistent across participants. This information was collected¹³⁷ in a separate visit or visits after the conclusion of the interview and all participants were given promises that data would be kept at the researcher's home and reported upon only at departmental and divisional level.

Documentation (and notes from viewed documents) were collated for each site, summarised and categorised as relating to either OM-MCS or departmental performance (sometimes both). An internal budgeting document, for example, showing budgeted against actual expenditure was used to determine whether managers in interviews accurately described their MCS attributes, while also providing evidence of the presence of a mechanistic MCS attribute and whether budgets reflected an output management approach. Documents were also used as evidence of performance. For example, poor (good) performance was considered as the failure (success) of meeting targets. The interview data alone were used to explain whether budgets and targets were *used* mechanistically or organically to provide understanding of whether these documents were really evidence of, for example, mechanistic controls and/or poor performance.

10.3 Analytical method and framework

This section describes how data collected are analysed in the study. First descriptive displays of data are discussed, then inferential displays. Examples of displays are included subsequently.

10.3.1 Descriptive displays and analysis

Just as is commonly found in quantitative research, it is possible to display and analyse qualitative data in both descriptive and inferential ways. These displays have been developed largely upon the advice of Miles and Huberman (1994), who provided one of the few detailed operational texts to date, regarding the analysis of

¹³⁷ By request, sometimes documents were only viewed and notes taken about their form and type of content. This was due to sensitivity and confidentiality of information.

qualitative data. The following section will deal with the descriptive displays of data collected here.

10.3.1.1 Interview data

Interview data over the three periods are primarily analysed, creating an electronic NUD*IST software database, using the categories listed in the analysis protocol (see appendix 3f). This is done on a departmental basis, using the two cases, comprising 46 transcripts. This process includes an 'audit trail', whereby the text coded under each variable can easily be traced back to the original transcript. Unused text can be coded as such, enabling the process of data reduction to be transparent. This process reduces data only minimally however (limited to that coded as unused), keeping text in full sentences as in the original transcripts. Figure 10.1 illustrates the process described here.

Figure 10.1 Example of the coding and data analysis process

Transcript excerpt – Participant T1	Database coding
Q In terms of the external environment to the Department, to what extent is there unpredictability in the needs of your consumers and/or your service technologies? (T1)	Whole passage coded to node 1.4.1 'Questions' in Nudist coding tree. When category 1.4 is retrieved, this text will appear showing cross reference to (T1)
A Considerable, I'm in the office of Training and Further Education, which is part of the Department of Education and Training and Further Education deals with training particularly through TAFE institutes and private providers. And there are enormous external influences on our behaviour. The South East Asian crisis and its impact on Asian students, the growth in the hospitality sector of the economy, the growth in retail and the decline in the traditional trade based employment areas have a tremendous affect on us, because we... plan and provide the training for those areas. So in terms of external forces both economy wide and industry specific they are significant. (T1)	Whole passage (shaded and unshaded) coded to 1.4.2 'Answers' Coded to 3.3 'Diversity' Coded to 3.2 'Turbulence' Coded to 12 'Unused text'

Retrieval of text coded to node 3.2 Turbulence:

The South East Asian crisis and its impact on Asian students, the growth in the hospitality sector of the economy, the growth in retail and the decline in the traditional trade based employment areas have a tremendous affect on us, because we... plan and provide the training for those areas. So in terms of external forces both economy wide and industry specific they are significant (T1)

(All other text coded to turbulence from all the other transcripts automatically appears also, unless NUD*IST is requested to retrieve by a particular participant, department, and/or by a particular time period)

Manual insertion of summarised retrieved text into participant data sheets

Summarised text retains origin transcript and text unit numbers.

Aggregation of participant data sheet into analysis protocol

Summarised text retains origin transcript and text unit numbers.

Various inferential displays developed from the analysis protocol

Summarised text retains origin transcript and text unit numbers.

Second, manual data sheets were prepared on an individual participant basis from the NUD*IST database created, allowing a summary of each participant's response on each variable, across the three interview periods (see appendix 3g). These were later aggregated into the two cases in order to analyse data at the divisional and departmental levels. However, this process allows for within case analysis for the investigation of anomalies within a case, if subsequently needed. The data sheet process also provides continuation of the audit trail, that is important because significant data reduction occurs at this stage.

As discussed, while change across time is expected mainly on the independent, dependent and outcome variables (OM-MCS, MCS usefulness and departmental performance), all participants were re-questioned in the second and third stage interviews on antecedent and moderator variables (institutional forces and contextual factors). This process was followed for two reasons. One, as a test of reliability to ensure that participants still provided the same version of events, for example, in explaining why their department adopted output management. Two, to ensure that there had been no change in the contextual variables, or if there had, to explore that change. Therefore each data sheet was examined to check for consistency in responses from each manager.

Third, manual reduction of data from the individual data sheets (provided by participants from the two cases) into the three analysis protocols (one for each interview period), provides a comprehensive summary of responses for each category (variable), by department and by time period. This enables data to be viewed both across cases and within cases, across time. This process results in further data reduction and the audit trail is maintained by the use of the cross referencing coding system.

10.3.1.2 Archival data and report notes

Subsequent to primary coding of the interview data, the data collected in note form were then summarised into the displays already created, continuing to use the cross referencing coding system. These unplanned data were collected over time by making notes from things discussed with participants outside the scope of the taped interviews, or observed by the researcher on visits to participants. These data serve to enrich and corroborate (or contradict) interview data. These data are not distinguished from those collected in the formal interviews.

Archival data (or, in some cases, notes taken from archival data) were collected subsequent to each interview. These data are added into the three analysis protocols (in the OM-MCS category), by time and by department. These data are participant and time coded also, therefore it is possible to trace back to the original documents

from the analysis protocols. The 'hard' facts learned from the investigation of archival data were used to corroborate and supplement the richer interview data.

These data mainly comprise documentation in the form of internal management information such as financial and non-financial monthly management reports. Other documents collected are internal memorandums, individual performance plans, business plans, statistical data, policy briefs, minutes of meetings, procedures manuals, trade union documents, and published material including external financial and non-financial reports. Some of these data are highly confidential. Participants were assured that the documents would be treated confidentially. The internal management information is analysed into the following categories: mechanistic and organic OM-MCS attributes, according to the definitions outlined in part one. The other documents (previously listed) are included where appropriate. For example, these documents were used to contribute to understanding structure (using organisational charts) and performance (using internal management and published reports). These archival data, in the form of internal management reports serve to corroborate the interview data, in measuring emphasis on OM-MCS attributes. Archival data could not be used to corroborate the primary source data in measuring MCS usefulness, therefore interview data were alone used for this variable. For example, from interview data it may be identified that managers are heavily reliant on informal management information. This insight would not be identifiable from archival data.

10.3.2 Inferential displays and analysis

Inferential displays are created from the descriptive displays already constructed. These displays represent a pattern-matching technique, where conceptualised relationships from the institutional and contingency literature are examined in the data to see if they are evident. This is done for the purpose of investigating the propositions of the study. The main propositions are repeated below and a brief analysis is carried out for the purpose of example only. This illustration is to show how the analysis is to be done — it is not to be confused with the analysis and results stage of the study.

P1a Coercive forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.
P1b Mimetic forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

P2 Notwithstanding any contingency effect, adoption of (no adoption of) — or adoption of, and a high or low emphasis on — output management will have positive (negative) effects on departmental performance through legitimacy gains (no legitimacy gains).

P3a The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls) under conditions of certainty, competition, hostility, restrictiveness and technical complexity (uncertainty, diversity [heterogeneity], complexity, dynamism and/or turbulence) in the perceived external environment.

P3b The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in situations of mechanistic and centralised (organic, decentralised, matrix, structurally complex, differentiated and contextually interdependent) structures.

P3c The usefulness of MCS will be positively associated a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in task certain environments or in environments where technological interdependence is low (task uncertain environments and/or in environments where technological interdependence is high).

P3d The usefulness of MCS will be associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in a managerialist culture (a traditional public sector culture).

P4 Where a department's MCS is more (less) useful as a result of the fit relationships in propositions 3a-3d, there will be positive (negative) effects on departmental performance through efficiency gains (lack of efficiency gains).

From this display (see table 10.5 at the end of this section), evidence that institutional forces (coercive and/or mimetic) have or have not caused the departments to adopt output management is discernible. Further, evident in the display is whether subsequent to the adoption, a high emphasis is placed upon OM-MCS.

Similarly, an inferential display is used for the fit relationships between context and OM-MCS. This display provides an overview of the relationship first between OM-MCS and MCS usefulness and then the organisational context to investigate propositions 3a-3d. Further, the organisational performance variable is included, so that the display provides patterns of information to help investigate propositions 2 and 4 (see table 10.6). For example, if the 'fit' column in a case has been analysed as 'good', then it is expected that the departmental performance row would also show 'good' as the outcome, if the contingency framework were supported.

Further inferential displays are created to investigate the sub-propositions in greater detail. See table 10.7 for a partial example of how these displays might appear. Table 10.7 provides an example of data pertaining to the fit relationship for structure and OM-MCS, resulting MCS usefulness and consequent departmental performance.

A further analysis can investigate MCS usefulness more closely. Specifically, this is a more detailed inferential display that can illustrate the reasons why OM-MCS does or does not enhance MCS usefulness, with consequences for the performance of departments. This display is an in depth investigation into propositions 3a-3d and 4, that are concerned with fit between contextual factors and OM-MCS, with subsequent effects on MCS usefulness and then performance outcomes.

This type of more detailed analysis is an explanation-building display that also provides scope for investigating those contextual factors that managers perceive as causal to the level of emphasis on output management. This analysis is beyond the scope of the formal model, presenting emerging propositions consistent with theory building, subsequent to investigating the formal propositions.

Table 10.5 Partial example of an inferential display for propositions 1a and 1b

Reasons for adoption of output management	Coercive forces Mimetic forces	Human Services			Education		
		Time 1			Time 2		
		Time 3			Time 4		
Changes to MCS (emphasis on output management and other MCS attributes)	Evidence of output budgeting	Divisions developing output groupings	Divisions refining output groupings	Divisions developing systems for data on an output basis	Divisions developing output groupings	Divisions refining output groupings	Central finance area is working on systems to improve management information
	Evidence of output management	No evidence (except Acute Division)	No evidence (except Acute Division)	Output group and output data included in Corporate Board report, low emphasis by managers	No evidence but CFO is keen	Output group and output data partly included in Corporate Board report in same format as external report; no emphasis by managers	Senior management talking in terms of outputs; Output group and output data included in Corporate Board report, no emphasis by managers

Table 10.6 Partial example of an inferential display for propositions 3a-3d

Human Services	OM-MCS		Fit	MCS Usefulness
Variable	Ideal	Actual		
Structure: Decentralised, matrix	Organic	Mechanistic and organic elements – more organic but unsophisticated	Good	Outputs are rigid categories; Output structures do not match organisational structures so reports are of limited use resulting in low emphasis on them
Departmental performance: Education			Good	
Variable				
Structure: Bureaucratic, centralised	Mechanistic	Mechanistic and organic elements	Moderate	Output structures do not match organisational structures so reports are of limited use resulting in no emphasis on them
Departmental performance:			Moderate	

Table 10.7 Partial example of a more detailed inferential display for propositions 3a-3d

Human Services	OM-MCS		Fit	MCS Usefulness
Variable	Ideal	Actual		
Structure: Decentralised in a complex matrix structure, with divisions or programs reflecting services and regions cutting across these. In addition, divisional heads are responsible for a region each, so they play dual roles.	Heavily both financially (cost) and non-financially (efficiency measure) oriented; many qualitative and quantitative effectiveness measures More organic than mechanistic	Heavy financial (unsophisticated but improving) and efficiency measures, but in aggregate mainly; limited disaggregated, sophisticated cost or service delivery information except in Acute; very limited effectiveness measures; subjective performance measures More organic than mechanistic	Good	Useful but incomplete: need much more data in most divisions on cost and quantity; need to be able to evaluate the quality of services much more Cannot use output information because categories do not line up with responsibility areas
Departmental performance:			Good	

Table 10.7 Partial example of a more detailed inferential display for propositions 3a-3d (continued)

Education	OM-MCS		Fit	MCS Usefulness
	Ideal	Actual		
Variable Structure: Centralised, although regions exist. These regions have very limited functions and authority, with the bulk of decisions being made by head office.	Heavily financial and non-financial (efficiency and effectiveness measures) More mechanistic than organic	Heavily financial (unsophisticated but improving); heavily non-financial (efficiency and effectiveness measures) More organic than mechanistic	Moderate	Useful but incomplete: need more data on commitments; need more sophisticated (individual rather than aggregate) performance tracking system for clients Have not seen any real output management reporting. What is developed so far is used externally and is of no use internally
Departmental performance:			Moderate	

10.4 Further comment on variable measurement and summary

All variables in this study were measured, primarily, by the questions contained in the interview protocols (see appendix 3c). The interview protocols used in this study were developed from conceptualisations based on prior institutional and contingency research, as discussed. Many empirical studies were included in this process. These studies and the variables they utilised are summarised in appendix 3d. The measures used for each variable modelled in this study are described subsequently.

To understand measurement as it occurred here, it is important to understand the differences in measurement between survey research and the qualitative method utilised in this study. Commonly in a survey, specific, highly structured questions require a numeric answer that in turn is analysed as the response to a particular dimension of a variable. For example, when Khandwalla (1977) measured the external environmental attribute, diversity, he asked respondents to what extent their external environment was: heterogeneous, where the organisation's clientele or markets have variegated characteristics and needs, on a seven point scale ranging from low to high. This question precipitates a single numeric response.

In using a qualitative method, this study measures diversity (and other perceived external environmental variables, for example) by asking managers to describe the environment external to their department. A description of what is defined as diversity in this study, following Khandwalla (1977), may or may not be described. A prompt specific to diversity (such as Khandwalla's question) was asked only if external environmental conditions were not comprehensively explained in the manager's response (this method applied to all variables — reference to diversity is an example).

Another important difference between the methods is that the analysis of structured survey data includes all data collected (albeit, highly aggregated). The analysis of unstructured interview data generally requires substantial data reduction techniques (initial coding). Data reduction is necessary to isolate data relating to the modelled variables, segregating some other data for further consideration (because it may impact the study) and the remaining data for rejection. Data reduction results in comprehensive, explanatory responses in disaggregated form, which relate to the

research model. This allows the researcher to ascertain not just whether diversity is high or low, but may also explain what form diversity takes, what causes diversity and the impact that diversity has upon the organisation.

All modelled variables were measured using unstructured interviews. The interview protocols were previously discussed in this chapter and variables defined in chapter one. In addition to the interview data, some variables (OM-MCS and departmental performance) had additional data collected by alternative means. These additional data were collected because it was considered that OM-MCS and performance were the most critical of all modelled variables due to their dynamic nature and because they alone relate to all propositions of the study.

Reliability of responses relating to the dynamic variables could not be tested across time as the static variables were. Because these variables are dynamic, reliability could only be measured by checking responses at a single point in time. For example, if managers in a particular department described OM-MCS as heavily financial, but relatively unsophisticated at time one, it was possible to test this for reliability by checking the documentation generated by departmental OM-MCS collected at time one. A similar process occurred for departmental performance also, by checking interview responses with performance reported in documentation (internally and externally).

Particular care was taken in measuring performance in this study because measurement of effectiveness/performance in the management accounting contingency literature has been much criticised. In a general sense, Otley (1999) notes the difficulties of measuring performance in management accounting, or indeed, any research. Performance is criticised as an ambiguous term, particularly problematic in that it is not specified "to whom the organisation is delivering its performance" (Otley 1999, 364).

Defining and measuring performance in government departments is similarly complicated. Measures used are often simplistic, unable to capture the 'real' performance of these entities. Worse, it is often difficult to define the criterion by which performance is assessed. For example, a department may be considered

efficient because it has provided the full complement of specified services on a shrinking budget. This efficiency would be considered high performance by Treasury. On the community front however, there is likely to be a perception of insufficient quality of services as a result. On another level, a department may be considered a low performer 'politically', notwithstanding high performance on both cost and quality of services. For instance, where a department has not managed political issues sufficiently well, they may be considered ineffective by ministers.

Similarly, reported measures of performance (such as output targets in annual reports) fail to capture the responsiveness required of departments. Meeting business plans and annual targets would logically suggest high performance. However, a department may fail in its role to provide services to the community within the confines of government policy even if these plans and targets *are* realised. This is because of the capacity needed for responsiveness to new community issues that variously come to the forefront. For example, after the budget and business plans are set, a minister at short notice may wish to specially deal with youth suicide prevention, or primary level literacy because there has been a related incident or issue suddenly capturing public-wide attention. This requires departments to quickly reprioritise, diverting funds from elsewhere, to support new initiatives.

Notwithstanding these limitations, formal, reported measures are used as a primary data source for each case to measure performance. These formal measures are from various sources. Externally reported documentation is one source and takes two forms. One, externally reported documentation generated by departments, reflects performance against internally set targets. Two, externally reported documentation generated by external bodies, reflects performance against similar organisations. A third data source, department's internally reported information, is used to corroborate external sources in the form of confidential management reports, that are not externally generated. Finally, interview data from managers are used as a fourth data source for measuring departmental performance and to assist in understanding any limitations of more formal measures.

Each of the data sources related to performance was analysed in turn, to ascertain whether the results from one data source corroborated that of the others. Results from analysis of these data sources are reported in chapter twelve.

Interview data were the only source of evidence on MCS usefulness. Managers were probed in interviews to elaborate on MCS usefulness (for example, how or why were items from OM-MCS used and what information would be more useful that they do not have access to). While interview data alone were used to describe MCS usefulness, archival data on OM-MCS was used to partly verify interview responses on MCS usefulness by checking that where managers reported in interviews that output management or other MCS attributes were useful, documentation generated by OM-MCS was evaluated to ensure that the type of information described was at least available. While this process was not a test of MCS usefulness, it was a test of the reliability of managers' responses to usefulness questions in interviews. For example, if a manager reported that a particular information type was useful during interviews, the OM-MCS data were checked to find that information was available at that time — if it was not available, then the response was not considered reliable, following the logic that if a particular MCS attribute was not contained in the MCS, it could not be found to be useful (or not useful).

The antecedent and moderating variables are (generally) static, and therefore questioning managers on these variables across time was a reliability test. For example, reliability was able to be tested by evaluating whether managers within a particular department described the reasons for adopting output management, and described the context of their department similarly at times two and three, as they did at time one. Therefore, to measure the antecedent and moderating variables, interview responses were not corroborated by an alternative data source, but by interview data at another point in the study period.

This chapter has described the longitudinal research design and qualitative method utilised in this study to investigate the propositions developed in part two. The analyses and results arising from the research methods described here will be reported and discussed in subsequent chapters, eleven to fourteen. Chapters eleven to fourteen focus on the two cases, Department of Education and Department of Human

Services. Chapter eleven focuses on the antecedent forces, coercive and mimetic isomorphism and part of the independent variable, adoption of output management. Chapter twelve discusses the analysis and results of the outcome variable, departmental performance. Chapter thirteen investigates the moderating variables, contextual factors, using fit relationships to explain the relationship between OM-MCS and MCS usefulness, and the consequent impact of MCS usefulness on performance. Chapter fourteen presents an additional analysis, developing emerging propositions that are complementary to the formal model.

CHAPTER ELEVEN

RESULTS AND ANALYSIS: ANTECEDENT AND INDEPENDENT VARIABLES

11.1 Introduction

This chapter is the first of four chapters relating to analysis and results. Reported in this chapter is the analysis and results relating to propositions 1a and 1b which predict that institutional forces (antecedent variable) cause the adoption of output management (which as discussed, is part of OM-MCS). OM-MCS is the independent variable modelled in this study.

Propositions 1a and 1b are investigated in this chapter, because antecedent effects are argued to precede moderating effects in this study, as modelled. The relationships to be investigated by propositions 1a and 1b and 2 were referred to in parts one and two as the institutional path. The analysis and results relating to performance are reported in chapter twelve, so that proposition 2 can then be examined, completing the analysis of the institutional path. Chapter thirteen then presents the analysis and results relating to propositions 3a-3d, the main section of the contingency path modelled. Subsequently, chapter thirteen investigates proposition 4, completing the analysis of the contingency path. The analysis and results are therefore discussed in the order of the logic presented in the model. This means, however, that investigation of proposition 4 (in chapter thirteen) must revisit the analysis and results related to performance which will be presented in chapter twelve, because both propositions 2 and 4 relate to the outcome variable (performance).

The first propositions posed in this study (propositions 1a and 1b) relate to the existence of coercive and mimetic institutional forces, respectively, as antecedents to the adoption of output management by the departments studied. Chapter three provided the theoretical framework for these propositions. The institutional propositions (propositions 1a, 1b and 2) developed in chapter three were:

P1a Coercive forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

P1b Mimetic forces cause isomorphism in Victorian government departments MCS, evidenced by the adoption of output management.

P2 Notwithstanding any contingency effect, adoption of (no adoption of) — or adoption of, and a high or low emphasis on — output management will have positive (negative) effects on departmental performance through legitimacy gains (no legitimacy gains).

Section 11.2 investigates the impact of both coercive and mimetic institutional forces on the adoption of output management by Education and Human Services¹³⁸ for investigating propositions 1a and 1b. Questions used in interviews were designed to elicit responses explaining why output management was adopted. As discussed, it is predicted that adoption of output management is due to coercive and mimetic institutional forces. Section 11.3 presents the summary and conclusions relating to the institutional analysis and results.

11.2 Institutional forces and investigation of propositions 1a and 1b

As modelled, both coercive and mimetic institutional forces are expected to exist, having a causal effect on the adoption of output management. Specifically it was predicted in propositions 1a and 1b that output management will be adopted as a direct effect of institutional forces. This section will outline the data relating to both coercive and mimetic institutional forces. These data were collected in interviews with case study participants. The specific questions asked in relation to institutional forces were discussed in chapter ten and shown in the interview protocols (appendix 3c).

Table 11.1 displays descriptive information relating to data that had been manually coded to the institutional isomorphism nodes. These data form part of the NUD*IST database constructed for this project. The database was described previously, in chapter ten. Data for these variables were retrieved using an exclusionist search command that enabled the data coded at the institutional nodes to be broken into the respective departments.

¹³⁸ As discussed in chapter ten, relating to research method, these departments were selected for analysis because together they constitute the majority of the Victorian budget sector.

Table 11.1 Institutional forces data

Institutional variables	Education	Human Services	Total coded to variables
Coercive isomorphism	11 documents ¹³⁹ 119 text units	10 documents 123 text units	21 documents 242 text-units
Mimetic isomorphism	11 documents 99 text units	10 documents 83 text units	21 documents 182 text-units

11.2.1 Coercive isomorphism

Subsequent to coding these data to the coercive and mimetic nodes, an analysis was performed to investigate whether institutional forces in relation to output management were evident. This analysis involved a process of manually scanning through the coercive and mimetic nodes, evaluating evidence from participants as to whether coercive and/or mimetic isomorphism was the cause of output management adoption in each department. These data were considered to support proposition 1a and 1b overall, because numerous participants within each department explained that output management had been adopted for institutional reasons and no participants provided contrary evidence.

These institutional data were initially more finely categorised into interview time periods. This initial analysis was useful to test reliability, in finding that responses from later periods corroborate initial responses for these variables. Some summarised results of data analysis (coding, as described in table 11.1) for coercive isomorphism are displayed in table 11.2. All participants from both Education and Human Services made comments relevant to coercive forces. Several of these comments, illustrated in table 11.2 are highlighted and discussed subsequently.

From Education data, it is clear that output management was mandated by the Victorian government. In response to being asked why Education adopted output management, the following examples are illustrative¹⁴⁰:

We didn't have a choice. Yeah, it was imposed on us. And it was imposed on all departments by Treasury (T34).

¹³⁹ It is a coincidence that there were 11 and 10 documents coded respectively for the departments at the two institutional nodes. Hence, the 11 (10) documents coded to coercive isomorphism for Education (Human Services) are not necessarily the same as the 11 coded to mimetic isomorphism.

¹⁴⁰ Throughout this thesis quotes from interview data are used as verbatim as possible.

For two reasons, one because we were required to by government. The budget process put in place by Treasury altered a number of years ago to firstly talk in terms of specification of outputs and then their costing and then over time the purchase of outputs for a given dollar sum. That was the first reason (T33).

There was consensus as to the opinion that coercive isomorphism had occurred, resulting in the adoption of output management by Education. Only one Education manager tried to soften the suggestion that Education was coerced into adopting output management. By the end of his statement however, he had acknowledged that there was no choice in adoption *you just can't have it voluntarily picked up by some departments and not by others* (seemingly attempting to justify the decision to mandate adoption).

Oh, I wouldn't use the term imposing it on departments. I think we had an old line item, program sort of budgeting system. We have to have a budgeting framework, so it's not a matter of imposing the framework, you have to have a framework. We're all departments, you know part of the State of Victoria...the stakeholders of the State of Victoria deserve to be able to interpret budget information on a consistent basis from one department to another. So if that's the decision that the government takes, it's only reasonable that it applies to all departments. You just can't have it voluntarily picked up by some departments and not by others (T35).

When prompted further, he reluctantly admitted that Education would not have adopted output management without coercion. Whilst the data do not explicitly assist in understanding why this manager spoke reluctantly about the reasons Education adopted output management, on the basis of other managers' comments the reluctance was considered to be because output management is widely perceived as a contemporary management tool and Education may be perceived by Treasury as perhaps backward or even obstructionist by its failure to adopt output management voluntarily. Later in the interview, the manager expressly indicated that output management was not adopted voluntarily by Education:

(...Would Education have adopted something like output management for its internal use regardless of what the budgeting and reporting regime might have been?) I'd like to say yes, but I'll say no (T35).

Table 11.2 Coercive isomorphism

Education	Human Services
<p>(Where do you think the pressure has come from...who would you say was driving the reform?) Oh I think Treasury in terms of pushing it, particularly the Treasurer and the Secretary of the Treasury were concerned that they didn't have adequate information to make decisions in the period after the slash and burn had finished. It was difficult for them to decide to give Education more at the expense of Health, or Health more at the expense of Agriculture, without good information. They needed that information to help them make those decisions. So I think it came from the centre, not just Treasury but Treasury and Premiers (T1*).</p> <p>Certainly here it's not a negative attitude and when I say Treasury are pushing it I'm not saying we're just complying with it because we have to do it. I think there's a reasonable commitment to it, regardless of whether the minister is pushing it or not. At the moment I don't think he's able to (T5).</p> <p>(Treasury are) pushing it (output management) very hard, yes. (T7).</p> <p>(What was the reasoning for the department adopting output management?) Well, that was a government initiative. It was through the MRP, so department's were just really applying the changes that were being put through that related to a different type of appropriation base and things like that. So those sorts of reporting – compliance reporting on outputs (T24).</p> <p>(...Output management...why did DOE decide to adopt it?) For two reasons, one because we were required to by government. The budget process put in place by Treasury altered a number of years ago to firstly talk in terms of specification of outputs and then their costing and then over time the purchase of outputs for a given dollar sum. That was the first reason (T33).</p> <p>(Why did DOE decide to adopt output budgeting then?) We didn't have a choice. Yeah, it was imposed on us. And it was imposed on all departments by Treasury (T34).</p> <p>(Why did Victoria adopt output management and impose it upon departments?) ...We had an old line item, program sort of budgeting system. We have to have a budgeting framework, so it's not a matter of imposing the framework.... We're all departments, you know part of the State of Victoria...the stakeholders of the State of Victoria deserve to be able to interpret budget information on a consistent basis from one department to another. So if that's the decision that the government takes, it's only reasonable that it applies to all departments. You just can't have it voluntarily picked up by some departments and not by others. (In having said that it's a whole of government initiative, would DOE have adopted something like output management for its internal use regardless of what the budgeting and reporting regime might have been?) I'd like to say yes, but I'll say no (T35).</p> <p>(Why did DOE adopt output management?) This is a whole of government initiative basically. I think we may have thought about it otherwise, but I think really the driving force was that it was a WOG initiative. It was the way the central agencies were asking us to plan, and the way they were setting up structures for budget planning and so on (T36).</p> <p>(What's the reasoning behind the Department adopting output management?) Well, my view as to why I think the department is doing that. One it's government policy obviously, and State Treasury and government and DPC have decided to move in this particular way of reporting (T38).</p> <p>It could not adopt an output driven model without a central agency drive, because it was totally dependent on a whole raft of legislative changes to support that approach, which included accrual accounting. So as long as the central agencies were on a cash basis of accounting, then unless departments put in and accounted on two different systems, which would have been hugely costly, then they could not really go to that approach...So it would never have occurred to the Department to move down that track. It would have been too difficult (T39).</p>	<p>(...Important to the decision to introduce output based budgeting?) It really took the change in government to take a change of direction and also a perceived financial crisis in the public sector finances in Victoria as well to actually force the need for change. The public sector is not likely to change unless there's an outside force, which is creating the need for change. (So the public became aware of the problems?) I think so yes. It's not so much that they demanded change but they'd wanted something better so the government has to go through a process of change to demonstrate that they have actually done something to improve the situation. It doesn't matter if it does or not, as long as it gets re-elected, as long as people believe that things have changed. If it actually produces a result we might wizz out a second report. It would be nice if it does but it's not really necessary (T9).</p> <p>(Does this mean that departments don't really have a lot of choice but to adopt output based management?) No, we don't. I guess our only concern is that – is that going to restrict us in terms of our capacity to then manage the program (T10).</p> <p>There is no doubt that this government has a flavour that they believe in commercial sector, approaches, they believe in unleashing competitive pressures, and they've got a strong believe in accountability and they've got a strong interest in resource management and those sorts of issues (T15).</p> <p>One of the biggest influences is this whole pressure to move to output based funding and then develop performance measures to measure the effectiveness of those outputs... (What was the impetus for that?) I guess it would be the shifting focus of the Victorian government, under the Kennett government to having outputs and outcomes, rather than inputs, which was the traditional measure (T32).</p> <p>(Why did Human Services decide to adopt output management?) My understanding is that it was a whole of government objective, and requirement. So we didn't have much, if any, role in deciding whether or not we were to go down that particular path. (So it was really because Treasury was sufficiently coercive that you didn't have a choice I suppose?) Yes (T40).</p> <p>(Why did DHS decide it would adopt output management?) I don't think that was a decision that DHS would have made independent of what the directions of government are (T41).</p> <p>(Why did the Department adopt output management?) We were probably told to. And at one level we probably believe in it from Acute, from what it did for Acute in hospitals, in terms of getting significant technical efficiency. I think – our view is that it's a bit simplistic (T42).</p> <p>(Do you think it would have happened though if it wasn't government policy?) No. No it certainly wouldn't have happened if it wasn't government policy (T43).</p> <p>(With respect to output management, do you remember why DHS decided to adopt it?) It was a Treasury directive. It was a BERC directive that all department's manage to outputs and include those outputs originally just as a, if you like, as performance measures or performance indicators in budget papers, and more recently to expand those outputs into quantity, timeliness, cost and quality, which also appear in the budget papers, and there's quarterly reporting against those. It wasn't an initiative of this department (T45).</p> <p>(When DHS decided to adopt output management, what was the reasoning behind that?) Well it was a Treasury directive I think, and a way of government moving forward so that – I mean output funding has it's... (If DTF hadn't directed you to adopt output management, would you have done so? I mean from an internal point of view. I mean obviously you'd still report to them on whatever mechanism they require)...From an internal point of view...Probably not I don't think, if you weren't forced externally. Although some parts of the Department might have moved more to that, like Acute that has WEIS funding and those sorts of things (T46).</p>

*Transcript code

The response from Human Services was similar. All participants from Human Services made comments relating to coercive isomorphism. The following excerpts are used to illustrate responses to the question *why did Human Services decide to adopt output management?*

My understanding is that it was a whole of government objective, and requirement. So we didn't have much, if any, role in deciding whether or not we were to go down that particular path (T40).

I don't think that was a decision that Human Services would have made independent of what the directions of government are (T41).

And in response to prompting *do you think adoption of output management would have happened though if it were not government policy?*

No. No it certainly wouldn't have happened if it wasn't government policy (T43).

These statements refer to adoption of output management at the organisational level. As in the case of Education, there is consensus amongst the Human Services participants that coercive isomorphism had occurred, resulting in the adoption of output management by Human Services. Further, both Education and Human Services data show that adoption would not have occurred in the absence of coercion, that came in the form of Victorian State government legislated mandate.

With respect to coercive institutional forces as antecedents causing departmental adoption of output management, proposition 1a is fully supported. Institutional theory, as discussed, argues that coercive isomorphism occurs for legitimacy reasons. The data explicitly support the legitimacy contention, consistent with institutional theory:

...Commitment to financial reform...So it really took the change in government to take a change of direction and also a perceived financial crisis in the public sector finances in Victoria as well to actually force the need for change. The public sector is not likely to change unless there's an outside force, which is creating the need for change. (So, the public became aware of the problems.) I think so yes. It's not so much that they demanded change but they'd wanted something better so the government has to go through a process of change to demonstrate that they have actually done something to improve the situation. It doesn't matter if it does or not, as long as it gets re-elected, as long as people believe that things have changed. If it actually produces a result, we might wizz out a second report. It would be nice if it does but it's not really necessary (T9).

11.2.2 Mimetic isomorphism

As modelled, coercive and mimetic forces can co-exist as output management adoption antecedents. Just as coercive isomorphism is evident in data presented in

the previous section, mimetic isomorphism is also evident (although at government, not organisational level). Partial, summarised results of data analysis (coding) for mimetic isomorphism are displayed in Table 11.3. Data show that mimetic isomorphism occurred prior to, and at a higher level than coercive forces. That is, mimetic and coercive isomorphism were not simultaneous as predicted, mimetic forces having an impact at Treasury (the higher) level and coercive forces having an impact at departmental (the lower) level. This suggests that mimetic isomorphism can be an antecedent to coercive isomorphism.

All participants from both Education and Human Services made comments relevant to mimetic forces. Several of these comments, illustrated in table 11.3 are highlighted and subsequently discussed.

From Education data, it was evident that mimetic isomorphism exists in relation to the Victorian government. In response to being asked what the State's decision to adopt output management was due to, the following examples are illustrative:

...Not only in the Victorian jurisdiction but also federally, (and interstate) in New South Wales (and overseas) in New Zealand. Many western democracies are following this change, because it can be quite evident that government can't continue to provide all the...It's happening in Britain, has happened in Britain and is certainly happening in America to some degree, the Commonwealth jurisdiction in Australia is starting to pick it up but is behind us, New Zealand has had a full accrual budget process in train for 3 or 4 years, and New South Wales the same. It is a wide spread phenomena...(T3).

So there's a lot of groundswell in other states to move onto this sort of Management Reform Program, and similarly it's been fully implemented in New Zealand (T8).

From reading the Education column of table 11.3 there is a sense that output management is part of a *world wide trend in public sector management* and is adopted by the Victorian government in mimicry:

...All that sort of stuff was very new to them (Treasury) as well, and they looked at New Zealand and they looked at all other countries and other states and so forth (T22).

While it could be argued that the trend is occurring for efficiency reasons, not legitimacy reasons, the sense obtained from these excerpts suggests this is unlikely considering the focus on how *widespread* and *worldwide* output management reforms in government are, not how useful or efficient they have made provision of public services.

Similarly in the Human Services data, support is found for mimetic isomorphism in relation to the adoption of output management by the Victorian government:

...This State isn't the only state that is moving there. There was a move in this direction prior to this particular government taking office...(New South Wales — or do you mean Canberra?) Oh yes — both...I think there are (output management) trends that were in place, and are continuing in all jurisdictions around the world and I think those trends have been greatly pushed forward and given prominence by this government — it's a bit of combination (T15).

There was a general international trend towards management reforms of that kind in government, and I guess reflecting private sector practices where you got what you paid for and you were very clear what you were buying. The New Zealand experience had been a very close, neighbourly one, where they had obviously done significant things in the role of government in terms of the output purchasing, and a lot of Australian states and the Commonwealth picked up that model and modified it to some extent as a general government model (T41).

It is possible that whilst mimetic forces were apparent at the Victorian government level, wholesale adoption of output management type models may have occurred for reasons of expected efficiency. In consideration of the contingency arguments presented in parts one and two (and contingency results presented later, in chapter thirteen) it seems unlikely, however, that a universalistic approach to output management models is optimal.

An explanation alternative to that of efficiency can be illustrated by the following Education manager's excerpt:

(I) can see some business sense but — and there's no doubt been a lot of lobbying. I mean the consultants are on a gravy train now. So you know, I'll be a cynic there, and you just wonder how much the consultants like Peat Marwick and Price Waterhouse who are quite influential some of them with the politicians, they've got their ears and say well this (output management) is the way you've got to go. Definitely the way you've got to do it because it's a self-perpetuated interest. I mean we have six or seven consultants on deck (T6).

Perhaps the reality lies somewhere between the efficiency and legitimacy arguments, and tempers the efficiency argument with context:

Well, I guess the literature has been around hasn't it? You know, and frankly, if Acute Health is 30 per cent of the budget and it works there, it's a good start. There's a bit of following New Zealand, following the trend (T42).

The above excerpt suggests that there is some evidence of adoption because output management systems *work*. The Human Services manager (from a non-acute division) alludes to output management working in Acute Health, indicating that efficiency reasons explain the prevalence of output management and implicitly suggests that output management systems will be useful elsewhere. This manager also alludes to an alternate reason for adoption as simply *following the*

(international) trend, which supports the argument that mimetic forces cause the adoption of output management.

Table 11.3 Mimetic isomorphism

Education	Human Services
<p>(Do you think that they've adopted the best part of the New Zealand model or has there been some other...influence?) I think they've looked at the New Zealand model and picked the best bits of it then adapted them for Australian conditions. And some of the rigidities of the New Zealand model in terms of for example the contractual relationships between ministers and secretaries, and secretaries and departments, have been done away with, because they were considered not to be appropriate or necessary here. I think other countries have been looked at, but they probably haven't got a whole lot to offer and I think in some cases when you cut through for example some of the US stuff it's not much more than the old fashioned line item budget to be honest (T1).</p> <p>(...The impetus for adopting output management?) Well, there's often a tendency for people to view these sorts of changes very parochially, but what you'll find is there is similar developments taking place in most of the other states and across the public sector as a whole. You can look up the internet and you can pull off documents that look very similar to what we are doing here in Victoria. There's always local variations but the policy directions are very similar across government jurisdictions (T2).</p> <p>...Not only in the Victorian jurisdiction but also federally, in New South Wales, in New Zealand. Many western democracies are following this change, because it can be quite evident that government can't continue to provide all the... But as I said earlier, that is not something that is unique to Victoria. It's happening in Britain, has happened in Britain and is certainly happening in America to some degree, the Commonwealth jurisdiction in Australia is starting to pick it up but is behind us, New Zealand has had a full accrual budget process in train for 3 or 4 years, and New South Wales the same. It is a wide spread phenomena (T3).</p> <p>...Delivery type area, so I don't really know. I mean from what you read it seems to be a trend around other countries and other states, you know a move towards management reform of public service, mainly towards the output specifications and so on. So I would have thought it's a trend that's there regardless of government (T4).</p> <p>...Changes through, yeah the financial management reforms. But I guess every state in Australia seems to be doing that in some fashion or other. We've probably pushed it a bit harder in this state than other states, but we're probably years behind the New Zealand experience (T5).</p> <p>(I) can see some business sense but, and there's no doubt been a lot of lobbying. I mean the consultants are on a gravy train now. So you know, I'll be a cynic there, and you just wonder how much the consultants like Peat Marwick and Price Waterhouse who are quite influential some of them with the politicians, they've got their ears and say well this (output management) is the way you've got to go. Definitely the way you've got to do it because it's a self-perpetuated interest. I mean we have six or seven consultants on deck (T6).</p> <p>But then there were a number of other states that were going in that (accrual) direction... So there's a lot of groundswell in other states to move onto this sort of Management Reform Program, and similarly it's been fully implemented in New Zealand (T8).</p> <p>I mean all that sort of stuff was very new to them (Treasury) as well, and they looked at New Zealand and they looked at all other countries and other states and so forth. This has been going on for two or three years (T22).</p> <p>I think just about every state in Australia is at different stages of implementing output budgeting. It's a worldwide trend in public sector management, it's narrowing the differences between good practice in commercial environments and good practice in public sector environments (T35).</p> <p>...That that's the best way to go. And overseas, lots of government departments have done this for years. So it's not that we are reinventing the wheel here, in fact we're a lot behind (T35).</p>	<p>Sometimes one department will follow another with a particular strategy but they wouldn't admit to that in the end because of the perception of them not being a leader in the field (T9).</p> <p>The interesting thing about that in Victoria is that – you can call it the New Zealand model – whatever that model is – of the minister being the purchaser and the departments being the provider and those sort of splits (T13).</p> <p>Having said that, there is a national move in these sort of directions, like this state isn't the only state that is moving there. There was a move in this direction prior to this particular government taking office... (New South Wales – or do you mean Canberra?) Oh yes – both... I think there are trends that were in place, and are continuing in all jurisdictions around the world and I think those trends have been greatly pushed forward and given prominence by this government (T15).</p> <p>I think regardless of government it would have happened anyway as most states are heading down that way – and the commonwealth, they're all heading towards accrual accounting and accrual management. A lot of them look to New Zealand that's had sort of output type management before (T16).</p> <p>(Why did the government as a whole decide to adopt it as government policy?) I think you would appreciate a trend in government – well there's a couple of trends I guess. One is around openness... The other one I think is around trying to drive the public sector into a more business oriented environment. In the past – and some of the agencies we fund still think this – you know, "you give us a whole pile of money, and because we're in the (business of helping people, you can trust us)" (T40).</p> <p>(Why do you think Victoria decided to adopt output management for departments?) There was a general international trend towards management reforms of that kind in government, and I guess reflecting private sector practices where you got what you paid for and you were very clear what you were buying. The New Zealand experience had been a very close, neighbourly one, where they had obviously done significant things in the role of government in terms of the output purchasing, and a lot of Australian states and the Commonwealth picked up that model and modified it to some extent as a general government model (T41).</p> <p>Well, I guess the literature has been around hasn't it? You know, and frankly, if Acute Health is 30 per cent of the budget and it works there, it's a good start. There's a bit of following New Zealand, following the trend (T42).</p> <p>I'm just trying to think of what were some of the more influential documents that emerged at the time. No I think it was consistent with public sector policy developments in Western countries (T43).</p> <p>... Traditional input controls. It's contemporary thinking. I don't know what research they (Treasury) did. I think a fair amount was borrowed from New Zealand, who was sort of funding to outputs, if you like (T45).</p> <p>... Context of that we were going to move to output based funding that we were going to be more accountable. That we would go down the Acute model of actually being able to fund things and cost them out. So I guess not even if Treasury – there was also contextually in all the sort of literature and management thrust of the time was also around doing that. So there probably would have been pockets that would have still, like Acute and others that would have continued. And areas of ACMH that would have been easy to cost out... Will compare globally how things are going. And globally in the Western world the output model is the way, output based funding is the way we're going (T46).</p>

There is consensus, both within and between the two departments, as to the impetus for the Victorian government's adoption of output management. Therefore, with respect to mimetic institutional forces as antecedents, causing departmental adoption of output management, proposition 1b is supported. Further, there is explicit evidence that such mimetic isomorphism occurs for expected legitimacy reasons, consistent with institutional theory:

I think just about every state in Australia is at different stages of implementing output budgeting¹⁴¹. It's a worldwide trend in public sector management, it's narrowing the differences between good practice in commercial environments and good practice in public sector environments (T35).

In health, because of it's criticality to the community, we have to show that our system is still as good (T46) and,

Reporting outputs is a "do it or die" situation. We can't say to DTF that we won't do it. We don't want to look like incompetent business managers inside or outside Human Services (T40).

This suggests that output management is adopted because it is seen as demonstrating best practice, commensurate with other public sector jurisdictions. Both departments have adopted output management, have continued to receive funding and have not been restructured. Hence the suggested legitimacy gain.

In conclusion, whilst the proposition relating to institutional isomorphism is supported on both the coercive and mimetic dimensions, the original model is simplistic. That is, the model predicted a causal relationship between each of the isomorphic types and adoption of output management (see figure 11.1). Data were also used to elaborate on the formal model to explore relationships that were not modelled.

¹⁴¹ The manager refers to output budgeting, the precursor to output management.

Data show that coercive isomorphism acts as modelled, but that mimetic isomorphism has indirect effects. Mimetic isomorphism occurred first, causing Treasury (not the departments) to decide to adopt an output management model for Victoria. Specifically, Treasury decided to adopt an output management model because much of the public sector in the western world was doing so, therefore output management type reforms were proclaimed as superior and contemporary management methods for public sector organisations. Coercive isomorphism occurred subsequently, causing the departments to adopt output management. The model could be refigured accordingly and appear as in figure 11.2. From the data in tables 11.2 and 11.3, it would appear that the model might more accurately describe the relationships if it was revised as depicted in figure 11.2:

Figure 11.1 Partial original model

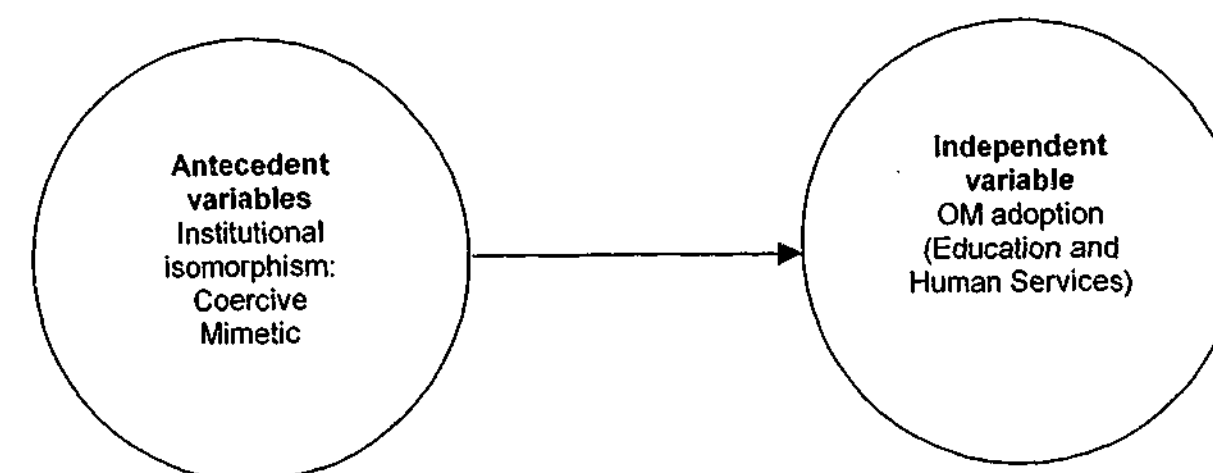


Figure 11.2 Partial revised model

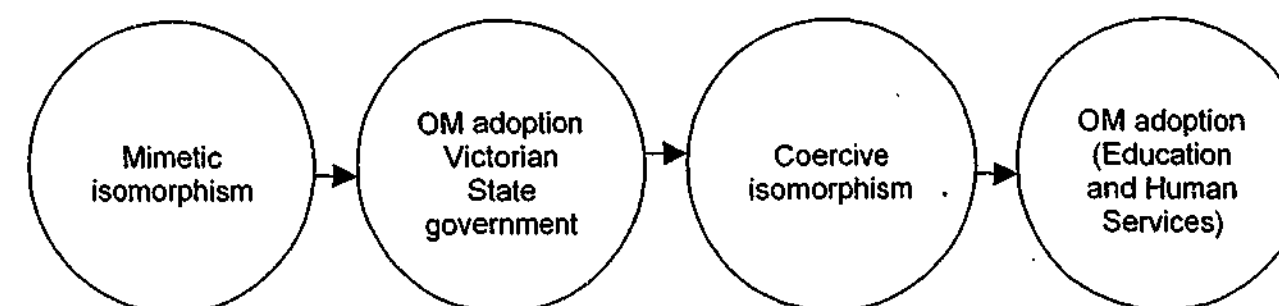


Figure 11.2 demonstrates that whilst both coercive and mimetic isomorphism are antecedents to output management adoption by departments, it is only coercive isomorphism that is directly related. Mimetic forces are also causal, although indirectly. Mimetic forces caused the Victorian State government to adopt output management, which then caused the individual departments to adopt output management by coercion. Nevertheless, the finessing of the research model does not contradict the conclusion that propositions 1a (and 1b, indirectly) are supported overall by the data presented in this chapter.

11.3 Summary and conclusion

This chapter has investigated data to investigate propositions 1a and 1b, finding that output management was adopted for institutional reasons. Specifically, output management was adopted because of coercive isomorphism, supporting the direct relationship predicted by proposition 1a. That is, proposition 1a is supported. The results also indicate that mimetic forces were important to the adoption of output management, although this relationship was found to be indirect. That is, mimetic forces were found to be important to the adoption of output management by the Victorian State government at central agency level, not directly at line-agency level (that is, in Education and Human Services), as predicted. These results suggest that while mimetic forces cause, in part, the adoption of output management by Education and Human Services, that this effect is indirect, not direct as predicted in proposition 1b.

Institutional theory, and analysis of institutionally-based data, as a basis for exploring OM-MCS in government departments is limited. The main focus of this study is on the contingency effects predicted by the model and other effects not predicted by the model but that may arise from the deeper analysis. Notwithstanding this, institutional arguments are included for completeness of the model and while the outcome that coercive forces lead to adoption of OM may be considered unsurprising, it was considered prudent to measure all variables modelled. In particular, establishing that coercive forces led to the adoption of OM is important to the contingency analysis because it clarifies that OM was adopted, therefore leading to the contingency question which explores the more interesting issue — or the less

predictable outcome — as to whether OM was implemented post-adoption and if not, for what reasons.

The following analysis discussed in chapter twelve, reports upon the outcome variable, departmental performance.

CHAPTER TWELVE

RESULTS AND ANALYSIS: OUTCOME VARIABLE

12.1 Introduction

This chapter reports an analysis of data pertaining to performance for the two departments studied. Performance is examined prior to context because, as already noted, the first path (the institutional path) in the model, leads from antecedents (institutional forces) to part of the independent variable, adoption of output management, then directly to performance. It is in the second path modelled (the contingency path), that performance follows MCS usefulness. Therefore, because of the two paths, the propositions cannot be investigated in the order indicated by the model if performance is discussed later, unless performance is to be discussed twice (which seems impractical). This ordering of presenting the results is consistent with the logic that it is important to understand what is occurring, before attempting to explain the reasons for the occurrence.

Propositions 1a and 1b were investigated in chapter eleven. This chapter reports on the analysis and results of performance, to investigate proposition 2 (the rest of the legitimacy path). Chapter thirteen will report on analysis and results relating to propositions 3a-3d, as well as discuss whether proposition 4 (relating to performance) is supported. While proposition 4 is investigated in chapter thirteen (in order to follow the logic of the model), data analysis reported in this chapter forms the basis for proposition 4 investigation.

Performance, as noted in the literature review, has proven to be an elusive and difficult concept to measure. Much of the contingency literature in management accounting has applied simple measures, or has implied performance/effectiveness through contingency fit relationships without measuring performance/effectiveness. Several attempts are made to capture performance in each case studied here.

It is important to measure performance across the period of study for the purpose of ascertaining any effects OM-MCS may have had on departments. Revisiting the

model, the institutional proposition of this study is that adoption of output management will lead to legitimacy gains which will enhance departmental performance; and the contingency proposition of this study is that OM-MCS will effect MCS usefulness, which will in turn impact departmental performance. The moderating effects of contingency variables on the relationship between OM-MCS and MCS usefulness, and then departmental performance, are discussed in chapter thirteen.

The analysis and results of data collected on the performance of Education and Human Services are reported in section 12.2. Section 12.3 discusses how the results and analysis reported in section 12.2 investigate proposition 2. Definition and measurement complexities of investigating performance are considered in section 12.4. Section 12.5 provides a summary and conclusions relating to performance.

12.2 Performance assessed by formal and informal data sources

This section will discuss the performance of each department across time, evaluated on the basis of formal, reported, targeted and actual performance. First, targets reported externally by each department will be discussed. These data are primarily from the annual reports and other publications of the departments. Second, performance measures formally reported from sources external to the departments are assessed. These data are primarily from Industry Commission Reports, although other publicly documented reviews are also included.

12.2.1 Departmental formal, externally reported performance

Data reported here are primarily from the annual reports of each department, however, other information published by departments such as quarterly Hospital Services Performance Reports are included. In order to make an assessment against targets, the Victorian budget papers were also used. This was necessary for, in the earliest time period reported upon, the targets were not provided in the annual report along with the actual results. Budget papers do not publish past performance (achievement against targets), notwithstanding that they publish prior year targets.

The annual reports and budget papers must be read in conjunction to discover whether performance targets were met.

This analysis involved checking targeted and actual performance for each reported indicator, for each year, and then assessing whether each actual performance was higher, equal to, or lower than its corresponding target. For example, Panel A in table 12.1 displays an example of the analysis process for the 1998–99 year.

Table 12.1 Performance: formal measures

Panel A						
Example measure of observations (that is, N) in Panel B	Target			Actual		Assessed score
Education	1:16.8			1:18.2		Lower
School Education: Teacher to student ratio						
Human Services	754 000			777 900		Higher
Acute Health Services: WEIS separations						
Panel B	Education			Human Services		
Performance against target (aggregated measures)	1997–98 N=42	1998–99 N=120	1999–00 N=144	1997–98 N=170	1998–99 N=149	1999–00 N=168
Higher/ Better	(22) 52%	(40) 33%	(55) 38%	(78) 46%	(60) 40%	(77) 46%
Met	(15) 36%	(49) 41%	(46) 32%	(15) 9%	(32) 22%	(33) 20%
Total met or exceeded target	(37) 88%	(89) 74%	(101) 70%	(93) 55%	(92) 62%	(110) 66%
Lower/ Worse	(5) 12%	(31) 26%	(43) 30%	(77) 45%	(57) 38%	(58) 34%
Total	100%	100%	100%	100%	100%	100%

Tables 12.2 and 12.3 display the outcome of analysis of Education and Human Services departmental annual reports for years 1997–98, 1998–99, and 1999–00. Reports for 1996–97, the year ending just prior to the formal introduction of output management were assessed, although can be compared only on budget performance because there are no performance measures¹⁴² published as in latter years. The 1996–97 data are therefore not included.

¹⁴² There are statistics reported. These are not meaningful however for performance assessment. For example, Department of Education report the existence of 1 700 schools, by region and over 500 000 students enrolled (1997, 24–25). Is this good or bad? They do not report how many schools they thought necessary or how many students they expected to enrol, much less any quality component of services.

Performance measures in the later years include quantity, quality and timeliness measures. Quantity refers to the volume of service delivered. Quality refers to the standard expected of the service delivered. Timeliness refers to the expectation for delivery of services within a standard timeframe.

In overview, table 12.1 shows that Education is a higher performer across time than Human Services for aggregated measures (quantity, quality and timeliness)¹⁴³. This conclusion is reached on the basis that 88, 74 and 70 per cent of Education's total targets were either met or exceeded in 1998, 1999 and 2000 respectively, compared with 55, 62 and 66 per cent for Human Services. This must be viewed critically however, considering the possibility that Education may set less challenging targets or has less complexity to manage than Human Services.

Tables 12.2 and 12.3 disaggregate the analysis in table 12.1. The analysis in tables 12.2 and 12.3 outlines each department's performance against targets set out at the beginning of the respective year. This is broken into quantity, quality and timeliness measures for each division in 1999–00 and 1998–99, but aggregated in 1997–98 due to the departmental method of reporting.

¹⁴³ Because the population of measures with corresponding targets was used, the percentages represent differences without inferential significance testing.

Table 12.2 Performance: Education formal measures

	Aggregated measures (number and per cent)			Disaggregated measures (number)			
	1998-99 N=144/154	1998-99 N=120/144	1997-98 N=42/44*	Quantity 1998-99 1999-00	Quality 1998-99 1999-00	Timing 1998-99 1999-00	Quantity Quality Timing ¹⁴⁴ 1997-98
Higher/Better than target	(55) 38%	(40) 33%	(22) 52%	A (14) (16) B (3) (12) C (2) (4) Total: (19) (32)	A (10) (12) B (5) (9) C (0) (2) Total: (15) (23)	A (4) (0) C (2) (0) Total: (6) (0)	A (15) B (7) Total: (22)
Met target	(46) 32%	(49) 41%	(15) 36%	A (12) (18) B (0) (2) C (0) (2) Total: (12) (22)	A (9) (7) B (3) (5) C (4) (4) Total: (16) (16)	A (11) (4) B (5) (3) C (5) (1) Total: (21) (8)	A (5) B (10) Total: (15)
Lower/Worse than target	(43) 30%	(31) 26%	(5) 12%	A (10) (19) B (4) (4) C (2) (3) Total: (16) (26)	A (11) (12) B (0) (2) C (1) (0) Total: (12) (14)	A (2) (3) C (1) (0) Total: (3) (3)	A (4) B (1) Total: (5)

Key to services:

A=School education

B=OTFE and higher education

C=Strategy and ministerial services

*The lower number used due to either no measures or no targets corresponding to item

1996-1997 Either no targets and/or no measures reported for any outputs

1997-1998 120/144 measures

1998-1999 42/44 measures

¹⁴⁴ Only aggregated measures were available for 1997-98.

Table 12.3 Performance: Human Services formal measures

	Aggregated measures (number and per cent)			Disaggregated measures (number)			
	1999-00 N=168/174	1998-99 N=149/150	1997-98 N=170/183	Quantity 1998-99 1999-00	Quality 1998-99 1999-00	Timing 1998-99 1999-00	Quantity Quality Timing ¹⁴⁵ 1997-98
Higher/Better than target	(77) 46%	(60) 40%	(78) 46%	A (4) (5) B (3) (7) C (1) (11) D (2) E (6) F (12) (11) G (2) (4) H (4) (7) I (2) (7) J (4) K (1) (2) Total: (42) (54)	A (1) (0) B (1) (2) C (0) (1) F (2) (2) G (0) (1) I (2) (3) K (1) Total: (7) (9)	A (3) (2) C (0) (6) F (0) (1) G (2) (1) H (1) I (2) (2) J (1) K (1) (2) Total: (10) (14)	A (10) B (7) C (6) D (8) E (10) F (6) G (6) H (7) I (12) J (1) K (5) Total: (78)
Met target	(33) 20%	(32) 22%	(15) 9%	A (0) (1) B (1) (0) C (1) (1) G (0) (1) H (2) (1) I (1) (0) K (2) (1) Total: (7) (5)	A (3) (2) B (0) (1) C (1) (3) F (2) (1) G (0) (2) H (4) (3) I (3) (1) K (0) (1) Total: (13) (14)	A (2) (1) B (2) (2) F (1) (1) G (1) (1) H (4) (3) I (0) (2) K (2) (4) Total: (12) (14)	A (2) B (1) C (1) D (1) E (2) I (4) K (4) Total: (15)
Lower/Worse than target	(58) 34%	(57) 38%	(77) 45%	A (3) (2) B (2) (1) C (5) (13) D (3) E (8) F (1) (2) G (4) (3) H (3) (4) I (3) (7) J (1) K (4) Total: (37) (32)	A (0) (2) C (0) (1) D (1) E (3) F (3) (6) G (1) (1) H (1) (4) I (1) (4) J (1) K (1) Total: (12) (18)	A (1) (3) B (1) C (0) (1) D (2) F (0) (1) G (1) (1) I (2) (2) J (2) Total: (9) (8)	A (4) B (4) C (8) D (5) E (13) F (1) G (19) H (3) I (13) J (3) K (4) Total: (77)

Key to services:

A=Acute

B=Ambulance

C=Aged care¹⁴⁶

D=Coordinated care

E=Mental health

F=Disability

G=Housing

H=Public health

I=Youth and family services¹⁴⁷

J=Concessions to pensioners and beneficiaries

K=Aboriginal affairs

*The lower number used due to either no measures or no targets corresponding to item

1996-1997 Either no targets and/or no measures reported for any outputs

1997-1998 170/183 measures

1998-1999 149/150 measures

¹⁴⁵ Only aggregated measures were available for 1997-98.¹⁴⁶ Divisions C, D, and E are all reported under C for 1999-00.¹⁴⁷ Divisions I and J are both reported under I for 1999-00.

Notwithstanding that Education is a higher performer than Human Services on the basis of an analysis against each department's own targets, Human Services has reported improved performance from 1998 to 1999 (met or exceeded targets increased 7 per cent) and from 1999 to 2000 (met or exceeded targets increased by a further 4 per cent), whereas, Education has reported declining performance (met or exceeded targets decreased 14 per cent, then a further 4 per cent). This has considerably lessened the performance gap of the two departments, now showing only an overall 4 per cent difference in met and exceeded targets.

Budget measures show a deficit for Education in 1997-98 and a surplus for 1998-99 and 1999-2000. Human Services reported a surplus in all three years (see table 12.4). It is difficult to interpret budget outcomes however. For example, clearly Treasury view exceeding the budget as low performance, however, if the budget was exceeded to meet unexpected needs that the minister(s) and public deem important, it would be low performance to meet budget and ignore the unexpected demands.

Table 12.4 Budget measures

	1997-98	1998-99	1999-2000
Education \$million			
Revenues	3 576.8	4 343.5	5 166.9
Expenses	3 613.4	4 196.1	5 006.6
Operating surplus (deficit)	(36.6)	147.4	160.3
Human Services \$million			
Revenues	5 764.8	6 514.1	6 717.1
Expenses	5 502.7	6 193.5	6 485.8
Operating surplus (deficit)	262.0	320.6	231.3

Source: Department of Education Victoria (2000); Department of Human Services Victoria (2000).

A more detailed assessment of the formal performance measures, displayed in table 12.5 shows that in 1998-99, Education demonstrated a higher percentage of targets in the met/better than met range for all categories of indicators than did Human Services. However in 1999-2000, Human Services demonstrated a higher percentage of targets in the met/better than met range, for both quantity and timeliness measures. Measures for 1997-98 were reported in aggregate only. That is, they were not classified into quantity, quality and timeliness categories.

Table 12.5 Education and Human Services quantity, quality and timeliness measures
DOE 1998-99, 1999-2000 DHS 1998-99, 1999-2000

Quantity	Better than target	65.9%	40.4%	56.9%	48.8%
	Met target	67.5%	40.0%	81.7%	70.1%
	Worse than target		27.5%		8.1%
Quality	Better than target		34.0%		11.6%
	Met target		32.5%		4.3%
	Worse than target				18.2%
Timing	Better than target	72.0%	34.8%	64.4%	22.5%
	Met target	73.4%	43.3%	57.5%	15.1%
	Worse than target		30.1%		42.4%
Quantity	Better than target		27.9%		38.7%
	Met target		26.4%		42.4%
	Worse than target				
Quality	Better than target	90.0%	20.0%	70.9%	32.2%
	Met target	72.7%	0%	86.2%	55.2%
	Worse than target		72.7%		31%
Timing	Better than target		10.0%		29.0%
	Met target		27.3%		13.8%
	Worse than target				

If an arbitrary scale of performance for the purpose of evaluation is applied, say therefore, that 50-75 per cent of targets met or exceeded is equivalent to moderate performance and 75-100 per cent of targets met or exceeded is equivalent to high performance, some conclusions can be drawn. From the analysis on performance in this section, it seems that Education was a high performer in 1998-99 with an average of 75.9 per cent of its targets either met or exceeded. In 1999-2000, Education's performance had declined 4.7 percentage points to 71.2 per cent, which could be described as moderate.

In 1998-99, Human Services was a moderate performer with an average of 64.0 per cent of its targets either met or exceeded. In 1999-2000, Human Services performance had increased 11.1 percentage points to 75.1 per cent, which could be described as high. That is, Education's performance has changed from high to moderate; Human Services performance has changed from moderate to high. Overall conclusions about performance of the two departments will be made at the end of the chapter after examining further evidence.

12.2.2 Other formal, externally reported performance

To corroborate the overall performance results, table 12.6 shows the summarised results of a further analysis. These data relate to divisions within Education and Human Services and are generated by bodies external to these departments¹⁴⁸. These data are based on a comparison of Education and Human Services respectively, with their counterparts in other Australian jurisdictions (six states, two territories and the Commonwealth). Data mainly relate to 1998–99 and are used, therefore, to corroborate the results from the previous section for the 1998–99 year only. While a comparison of the departments is not the specific aim of this section, a comparative analysis can provide evidence to indicate whether the conclusion in the previous section is reliable. Specifically, Education was a high performer in 1998–99 and Human Services was a moderate performer, where both departments were evaluated against their departmental specific targets. A comparative analysis (again using department specific targets) is considered appropriate, because it is objective in that only numbers of targets met/not met are compared.

A list of the documents used in this analysis appears in appendix 3h¹⁴⁹. Appendix 3i shows the full analysis. Such data were available for most services in Human Services and Education. The analysis in table 12.6 is used as corroborating evidence to validate the findings of the analysis in tables 12.1, 12.2 and 12.3.

These data were analysed by taking 100 measures¹⁵⁰ reported by external bodies for departmental divisions, and scoring Victoria's performance relative to that of the other Australian jurisdictions. These scored data were then further analysed using an independent samples t-test, to ascertain whether the performance of the departments is different.

¹⁴⁸ For example, Industry Commission, Productivity Commission and Australian National Training Authority reports.

¹⁴⁹ Only those documents listed which include performance data were used, however, all those listed were perused for this purpose.

¹⁵⁰ This does not represent random sampling. It was that of the measures reported, there were 34 (Education) and 66 (Human Services) measures that related to performance evaluation. Other measures were simply descriptive and unanalysable from a performance perspective.

Table 12.6 Externally generated publication results

Panel A Example of measure and rating						
Education	Rating 1=poor, to 5=excellent	Human Services	Rating 1=poor, to 5=excellent			
Fall in number of government schools from 1994 to 1998 with corresponding increase in non-government schools until 1997. Midpoint on scale.	Less access to government schools; higher than average loss of schools (2)	Percentage of beds in public hospitals accredited by the ACHS 1996, 1997, 1998 third highest.	Very good, quality third highest and better than the national percentage (4)			
Total points Points: 134 divided by 35 measures Score: 3.82/5 or (76.5%) very good		Total points Points: 205 divided by 66 measures Score: 3.10/5 or (62%) good				
Panel B						
	N	Mean	SD	t	df	p
Education	34	3.7941	1.1222	2.854	98	0.005
Human Services	66	3.1061	1.1520			

Source: Steering Committee for the Review of Commonwealth/State Service Provision (SCRCSSP) (2000).

Table 12.6 shows the results of the additional analysis. Panel A displays an example of a measure for each department and how this was scored. Panel B displays the results of an independent samples t-test¹⁵¹, indicating that the performance of Education is significantly higher than the performance of Human Services, with $p < 0.01$ (two-tailed).

The difference in scores reported above corroborates the analyses in tables 12.1, 12.2 and 12.3 for the year 1998–99. This corroboration allows the conclusion that while both departments perform well, Education's performance is higher. Whilst it would be more convincing to separate the measures from table 12.6 into different years for comparison, such data were not available at the time of the analysis. For example, much of the data provided in SCRCSSP (2000) referred to 1998. The dynamic of the model could not be investigated by this analysis without more current data.

It should be noted that there are other data available of a comparative nature. However, these other data are not helpful for comparing performance because they are of an unanalysable nature. For example, data on the distribution of school sizes

are available across jurisdictions, however, it is difficult to see how these data would be analysed to assess performance. It is impossible to say whether it is optimal to have more small schools, or alternatively, less large schools.

12.2.3 Departmental formal, internally reported performance

Internal documentation was collected from departments. The major purpose of collecting these data was to enable classification of OM-MCS attributes and ascertain the level of emphasis on output management. Several of these documents also contain confidential performance data. These internal performance data are used here to corroborate the previous analyses performance results. A list of internal documents used in the analysis appears in appendix 3j.

Because the internal documentation was collected to assess OM-MCS, the performance aspect of these data is not comprehensive. For example, some participants considered management documents too sensitive to allow a copy to be taken. In these cases, notes were taken in a document viewing session during site visits where the levels of recipients, types of information, formats and comprehensiveness of the reports were recorded.

This process meant that data were sometimes useful only in describing OM-MCS, because type of data was permitted to be recorded, however, the documenting of performance information reported was not permitted. For example, the researcher was permitted to record whether the measures were largely organic or mechanistic in nature (by recording details of OM-MCS, for example that mechanistic, internal budgets were available), but not whether performance on these measures was high, low or indifferent.

¹⁵¹ The necessary assumptions for performing t-tests were tested for and met: observations are independent, the dependent variable is approximately normally distributed and variances are equal.

However, it is useful to utilise those internal data where reproduction or documentation was permitted, to corroborate the comprehensive targets and results reported in previous sections. Selection of these items was made by taking the first measure from each report that met the following criteria:

- the measure was reported in departmental terms;
- the measure was a performance measure and not just descriptive data;
- the measure related to quantity, quality or timeliness;
- the measure had not already been checked from another document; and
- the measure could be cross matched to an externally reported measure.

Most of the performance data collected internally were either disaggregated (for example, detailed hospital performance reports were collected, however, these reported measures on individual hospitals only) or related to budget. Therefore, this process limited the data significantly, enabling relevant items to be summarised in table 12.7.

Table 12.7 shows that internally reported data corresponds to externally reported data. In the case of the first measure, for example, table 12.7 indicates that 100 per cent of category one hospital patients were reported as having been treated immediately in both the internal and external reporting sources. In most instances investigated, the externally reported data was identical to that reported internally. In some other instances, the two figures were different, however, they were less than 10 per cent different in any example. Indeed, in some cases (for example drug treatment episodes of care) the internally reported figure indicated higher performance than its externally reported counterpart.

If the externally reported performance data were unreliable, it was expected that the internally reported data would show different, less favourable results. It is concluded therefore that table 12.7 suggests the performance data used in tables 12.1 to 12.5 are reliable.

Table 12.7 Audit of reported departmental performance measures

Case	Performance information reported internally	Corresponding performance information reported externally	Supports/negates
Human Services	Category 1 hospital patients treated immediately: 12/97: 100% 12/98: 100%	SCRCSSP (2000) – Table 9.4 Annual reports 1997–98, 1998–99 both 100%	Supports
	Drug Treatment episodes of care: 1997–98: 31 923	Annual report 1997–98: 30 580	Internal report reports better performance than external report (<10% variance)
	Acute care services admitted patients WEIS: 1998–99: 774 000 (estimate)	Annual Report 1998–99: 777 900	Annual report reports better performance than internal report (<10% variance)
	Palliative care bed days 1997–98: 45 300 (target)	Annual report 1997–98: 45 300 (target)	Supports
	Housing number of private rental bonds issued: 1997–98: 16 795	Annual report 1997–98: 16 795	Supports
	Category 2 hospital patients treated immediately: 1996–97: 75–80%	Annual report 1996–97: 78%	Supports
	Total households assisted, period end, long term public rental 1996–97: 60 883	Annual report 1996–97: 60 883	Supports
	School education percentage of year 1 cohort accessing reading recovery programs 1998–99: 12.5%	Annual report 1998–99: 12.5%	Supports
	Level of adult, community and higher education student contact hours 1997: 2.89M	Annual report 1997–98: 2.89M	Supports
	Student achievement in years 3 and 5 as measured by the learning assessment project 1997–98: 92%	Annual report 1997–98: 92.27%	Annual report shows better performance than internal report (<10% variance)
Education	Number of schools from 1994–98: Falling	SCRCSSP (2000) Table 9.4: Falling	Supports

Sources: Department of Education Victoria (1998, 1999); Department of Human Services (1998, 1999); SCRCSSP (2000).

In summary, the outcomes reported by the formal measures are corroborative. Published data reported by the departments in the previous section (tables 12.1, 12.2 and 12.3) show that Human Services is a moderate performer and that Education is a high performer. This is supported by the descriptive statistics from published data reported by bodies external to the departments (table 12.6). Inferential statistics in table 12.6 also show that Education was a higher performer than Human Services in 1998–99. Additional corroboration from a further formal data source, that of the internal, confidential, departmental reports generated from departmental MCS, indicates that the publicly reported measures used in this analysis are reliable. Section 12.2.4 provides an analysis of interview data. This analysis is reported to find whether the evaluation of performance from the formal data sources is supported by managers' perceptions.

12.2.4 Departmental interview reported performance

Interview data from Human Services and Education that was coded using NUD*IST as relating to the outcome variable, departmental performance, is reported upon in this section. Initial coding of interview data resulted in 5 424 text units (from 44 transcripts) being coded to the performance node for the two departments. Fine coding was then performed, to reduce these data, and categorise performance data into low, moderate and high (a judgement task). This analysis reduced these data to 990 text units and enabled the construction of a performance matrix, consisting of approximately 10 000 words (see appendix 3k). Summarised examples from the results of this analysis are illustrated and discussed here.

Table 12.8 shows descriptive data for the performance node. The number of text units coded within the node is displayed, with the number of interview transcripts the text units were derived from following, in parentheses.

Table 12.8 Text units and documents in performance assessed node (number)

Performance	Time 1	Time 2	Time 3	Total
Education				
Low	21* (3)** or 11.6%	22 (4) or 24.4%	37 (4) or 47%	80 (11) or 18%
Moderate	53 (5) or 29.2%	19 (4) or 21.1%	57 (4) or 44%	129 (13) or 29%
High	107 (7) or 59.1%	49 (6) or 54.4%	79 (4) 34%	235 (17) or 53%
Total	181 (15) or 100%	90 (14) or 100%	173 (12) or 100%	444 (41) or 100%
Moderate+High	88.3%	75.5%	78%	
Human Services				
Low	36 (4) or 14.1%	15 (5) or 9.1%	4 (2) or 3.1%	55 (11) or 10%
Moderate	140 (7) or 54.7%	61 (5) or 37.1%	71 (6) or 56.3%	272 (18) or 50%
High	80 (6) or 31.2%	88 (6) or 53.7%	51 (6) or 40.5%	219 (18) or 40%
Total	256 (17) or 100%	164 (16) or 100%	126 (14) or 100%	546 (47) or 100%
Moderate+High	85.9%	90.8%	96.8%	

* Number of text units. ** Number of documents.

The interview data described in table 12.8 were analysed by ascertaining in which performance category (low, moderate or high) the largest proportion of observations was made. The interview data show that managers perceived that Education performed highly at time one. Human Services at time one, was perceived as having achieved moderate performance. At time two, both departments were assessed as performing highly. At time three, performance was assessed as moderate for Human Services and low for Education. Within Human Services, managers perceived improvement in performance over time, whereas, in Education a decline in performance was perceived (where each department was compared to itself in a preceding period).

Tables 12.9 and 12.10 elaborate on the interview data described in table 12.8, cutting data from the high, moderate and low performance categories and putting them into subject categories of performance. These subject categories were taken from the interview data — for example, grouping data around managers' perceptions of how well their department, say, meets demand for its services. Tables 12.9 and 12.10 explain that even though the performance of Education is perceived as decreasing compared to itself over time, that managers perceive Education to be a high performer. Furthermore, while the performance in Human Services is perceived to be improving, managers perceive Human Services as a moderate performer.

More specifically, managers in Education expressed the view that the Office of Technical and Further Education (OTFE) performed extremely highly, particularly on efficiency and highly on quality. Office of Schools (Schools) performed less well, but was still considered a high performer. Human Services managers reported that their department performed at an acceptable (moderate) standard, but that there was much scope for improvement. To illustrate this sense of difference between the two departments, the following passages compare some comments from Human Services managers from the 'good' column of the performance matrix:

*...And in Human Services, we've done reasonably well in terms of outputs in meeting the financial...
...Some of the stuff that we've seen comparing us to other states (on health and welfare services) shows that Victoria has actually done quite well in a climate of fiscal restraint...*

With those of the Education managers:

*...We're very much used as an example for other providers (in education services) of what is possible...
...(Our) budget is very well managed...*

The Human Services comments appear more restrained and qualified than those of Education. Notwithstanding the more positive comments from Education, Education and Human Services both reported low performance in a number of areas. However, the sense that Education is a higher performer still permeates the data, perhaps because the areas in which Education does not perform well are less critical than those in Human Services. Some contrasts following table 12.9 serve as examples. A partial summary of the performance matrix appears in table 12.9.

Table 12.9 Partial summary of performance interview data (poor category)

	Education	Human Services
Optimality of internal and service structures	Duplication of some finance functions. Critical of internal structures, although it's what happens in Schools and OTFE that's important. Some schools are under performing.	Multiple-afflicted clients fall between the programs, and fail to get help. Duplication of regional and network service delivery structure.
Quality of service and outcomes	Lower in quality, although high standards show in LAP tests. We are not the best on student outcomes.	Compared to services benchmarks in the private sector we look bad. Cannot pick up clients in the health system until after something goes wrong — we should respond before but our capacity is too low. Eroded hospital equipment — lack of funds.
Efficiency of service provision		Waste time due to: inflexible rules (have to work around); and, managers from professional backgrounds who consult far too much before making decisions. We need to do more things at less cost.
Management	Lack of planning. Lack of long term strategic thinking.	Bad management of ambulance services. Planning is ad hoc.
Public perception	Rationalisation has meant we're unpopular in the community, but it reflects good management.	
Meeting demand		Not responding well to the community on public health issues. Increasing number of child protection notifications — with social and economic consequences. Hospitals are in trouble, struggling to meet the cost of increasing demand.

Table 12.9 summarises the 'low' comments from the performance matrix for both departments for the purpose of ascertaining the criticality of the performance defects of Education and Human Services. Table 12.9 displays the major performance problem areas for Education and Human Services. From this analysis of the interview data, it may be concluded that Human Services has more serious performance problems, particularly with respect to service delivery structures and ability to meet demand, than does Education.

With respect to efficiency of service provision and meeting demand, Education was

not mentioned in the low performance column of the performance matrix (that is, there were no comments from Education managers which were coded as describing low performance). For Human Services, managers perceive that there are inefficiencies in management practice and that service delivery needs to be leaner still, despite previous massive budget cuts.

Interestingly however, the impression given from the performance matrix is that Human Services certainly has no 'fat' to cut. The efficiency issue seems more related to the knowledge that the tight budget climate will persist whilst simultaneously demand for services is increasing. Management is conscious that it must improve upon current efficiency, simply to prevent worsening unmet demand in the health and community services sector. Further, managers are conscious that they have little or no control over the increase in demand, and to that extent do not perceive that Human Services can be held responsible for the social and economic factors that cause an unreasonable demand on their services for their given level of funding.

With respect to optimality of internal and service structures, both departments perceived problems. Education reports problems with duplicating some finance functions and other internal structural problems that are considered relatively unimportant. Comparing this with Human Services, that reports major problems of service delivery duplication and yet continues to mislay clients with multiple needs, notwithstanding the regional structure, it is apparent that Human Services performs less well than Education.

Similarly, in terms of service quality, Human Services appears to have more serious concerns than Education. In Education, the criticism of quality in student outcomes is qualified by *although high standards show in LAP tests*¹⁵². It is almost as though managers are unsure whether a problem with quality really exists. In contrast, Human Services reports definite problems in *eroded hospital equipment* and lack of responsiveness to client need *until after something goes wrong*.

¹⁵² Italics highlight interview excerpts from the performance matrix.

Repeatedly mentioned in the low column for Education were problems with a lack of strategic planning, because *the intray becomes the killer*, the general lack of long term thinking and *divisive, uncooperative* behaviour by senior management. Human Services reports a similar problem within senior management of *ad hoc planning*, as well as *unincorporate* behaviour. Human Services also reports additional management problems, specifically that of mismanaged functions within a critical response area (ambulance services). This suggests that Human Services has more serious management shortcomings than Education, although, these problems are confined to particular services and are not reflective of senior management generally.

Public perception of both departments is poor, however, only Education's comment on this was classified in the low performance column. The explanation is that Education is as unpopular as Human Services, however, management in Education appears to have done little to solve its issues of poor public perception. It may well be that Education felt little need to manage its public relations because it was subjected to surprisingly little public criticism despite its severe cost cutting imperatives. Where Human Services describes its public perception difficulties, this is qualified by comment that the public relations people do a good job in the circumstances. This leaves an impression that Human Services perhaps manages its unpopularity more effectively.

Education had no comments classified under low performance relating to the ability to meet demand for services. Human Services expressed numerous problems of unmet demand, although this is qualified as largely due to economic and social consequences (such as the ageing population) and can perhaps only be considered responsible for *not responding well to the community on public health issues*.

In summation, it may be concluded from the interview data that Human Services has more serious performance problems than does Education. The interview data are therefore consistent with the formally reported performance measures discussed earlier, which after analysis, suggested that Human Services was a moderate performer and Education was a high performer.

The formally reported performance measures also suggest that the performance of

Human Services had improved across time and that the performance of Education had decreased. Table 12.10 shows the performance matrix summary across time periods.

Table 12.10 Summary of performance data over time

Time	Education	Human Services
One	Lack of planning. Duplication of some finance functions. Lower in quality, although high standards show in LAP tests.	Waste time due to: inflexible rules (have to work around); and, managers from professional backgrounds who consult far too much before making decisions. Compared to services benchmarks in the private sector we look bad. Cannot pick up clients in the health system until after something goes wrong — we think we should respond before but our capacity is too low. Multiple-afflicted clients fall between the programs, and fail to get help. Bad management of ambulance services. Staff are concerned about quality levels. We need to do more things at less cost.
Two	Critical of internal structures, although it's what happens in Schools and OTFE that's important. Some schools are under performing. Lack of long term strategic thinking. We are not the best on student outcomes. Rationalisation has meant we're unpopular in the community, but it reflects good management.	Eroded hospital equipment — lack of funds. Not responding well to the community on public health issues. Increasing number of child protection notifications — social and economic consequences. Duplication of regional and network service delivery structure.
Three	Perceived as too cheap, as opposed to efficient. Community sees us as too much cost cutting. Corporate Services under perform. Management does not work as a team.	Hospitals are in trouble, struggling to meet the cost of increasing demand (everywhere). Planning is ad hoc.

The interview data displayed in table 12.10 partially support the findings of the formally reported performance data with respect to changes in performance over time. The Human Services interview data show that the performance improved over time, which is consistent with the formally reported performance measures. The Education interview data show little evidence of a decline in performance across time, but do not show an increase in performance either, and are therefore not entirely inconsistent with the formally reported performance measures. The anomaly in the Education data may be due to the performance in Education changing only marginally. That is, whilst Education's performance may have declined, it can still be described as high across the time period studied.

The following section discusses proposition 2. Specifically, section 12.3 indicates how the analysis and results discussed in section 12.2 relate to the prediction that adoption of output management leads to legitimacy gains.

12.3 Investigation of proposition 2, performance arising from legitimacy gains

Investigation of proposition 1a (and 1b, although indirectly) in chapter eleven, showed that coercive and mimetic institutional forces caused Education and Human Services to adopt output management. Propositions 1a and 1b represent the first of two steps in the institutional path modelled in this study. The second step in the institutional path is represented by proposition 2. It is important to recall that legitimacy gains present unique issues relating to this study. Without legitimacy, departments are highly unlikely to survive. Therefore, survival is indicative of baseline performance. That is, legitimacy leads to at least survival (through maintaining authority and current level of resources) and possibly an increase in resources. An increase in resources (other things being equal) enables more services to be delivered (but does not mean departments are necessarily more efficient). A positive effect on performance in relation to legitimacy gains means at least survival. Proposition 2, which was developed in chapter three, states:

P2 Notwithstanding any contingency effect, adoption of (no adoption of) — or adoption of, and a high or low emphasis on — output management will have positive (negative) effects on departmental performance through legitimacy gains (no legitimacy gains).

In relation to proposition 2, it was evident that Education and Human Services had survived, retaining substantially the same structural form that characterised them at the beginning of the study period. Proposition 2 predicted that adoption of output management, through institutional forces (supported in chapter eleven) would lead to enhanced, or at least sufficiently sustainable performance through legitimacy gains. Section 12.2 reported analysis and results that support this prediction. Specifically, data indicated that throughout the period of study, Education had high, although declining, performance. Data relating to Human Services indicated that it had moderate, but improving performance throughout the period of study. Overall, Education and Human Services have both performed sufficiently well to survive in

substantially the same form at the end, as at the beginning of the study period. This supports proposition 2.

This chapter provided evidence to support proposition 2 which predicted that departments adopting output management (irrespective of any subsequent emphasis) will achieve legitimacy gains that will lead to positive effects on departmental performance, demonstrated by survival. As previously noted, departmental performance is measured in two ways in this study. One measure, survival, relates to departmental performance through legitimacy gains (outcome variable), caused by adoption of output management (independent variable), as this relates to proposition 2. Another measure, goal achievement, relates to departmental performance through efficiency gains (outcome variable), caused by MCS usefulness (dependent variable), as this relates to proposition 4 (discussed subsequently, in chapter thirteen).

12.4 Definition and measurement complexities of government performance

This chapter so far has presented analysis and results from performance data, drawing conclusions about performance levels in each department. This section provides additional analysis, relating to the difficulty of measuring performance, demonstrating limitations of the performance data. These limitations indicate that while attempts have been made to ensure that the performance data can be relied upon to draw conclusions, that some care must be taken in interpreting results.

As mentioned previously, performance in government is extremely difficult to measure. Interview data are used to illustrate the complexities of performance definition and measurement in the governmental environment. Throughout the interviews, a number of issues pertaining to performance measurement were raised. In re-coding the 5 424 text units of performance interview data more finely, 416 text units were classified as relating to performance measurement problems. These data were subsequently more finely coded into six categories (political, interpretative, availability, comparability, measurability and multiple uncertain goals). The categories were derived from the data, rather than from any preconceived constructs, and represent a typology of performance measurement problems.

A matrix was constructed from these data for the purpose of viewing all relevant comments within each category (see appendix 31). Selected comments from the analysis in appendix 31 are used here to illustrate the problems that both Human Services and Education encounter in defining and measuring performance.

One problem relating to performance measurement in the departments is multiple, uncertain goals. It is difficult for the departments to measure and assess performance because senior managers are unclear as to how their departments are evaluated:

Well it's hard to define the measure by which you'd evaluate it (Education) because depending on who you are, and the perspective you have, there are different ways of evaluating. Whether they're political, financial, educational, or whatever (T17).

(How does Human Services perform as a whole?) How would I know? On what front? How would I assess the Department? From a public perspective? Probably the best – a good place to start isn't it. Yeah... (T31).

The departments also have conflicting goals.

...As a citizen, you believe that you should have access to it, regardless of the cost. I don't say that they're unreasonable expectations, but the difficulty is, if you stand back and look at global economics and you look at Australia's overall of the things that we notice is that there is a very, very major drive for efficiency and alternative models of delivery in trying to actually make existing dollars spread further to try and minimise the impact of that sort of problem (T15).

There seems to be a sense that optimal performance is elusive anyway:

I mean health and welfare are strained – I mean do you ever meet the objectives? Have you got zero priced output? (T12).

Indeed, even where a goal is considered *tangible*, complications ensue. For example, one goal for Human Services is acute (hospital) patient satisfaction:

Health Issues Centre – I think in the end you have to have some matrix of measures. Because the problem with asking consumers is that we'll all make different trade offs as consumers. So you probably will not get a consistent voice. I don't know if I used the example last time, but if it's my child who's sick, I might be willing to trade off a whole lot of communication things, because I'll get the best surgical outcome, because I know who the surgeon is. Which raises the question like in Acute, why don't we like in America, have lists of surgeons who perform well and what their rating is. But on the other hand, if I'm dying and I'm in a palliative care unit, then probably the quality of the care and the food and those sorts of things are going to be more important (T32).

The above excerpt illustrates that there are competing goals even within a relatively tangible measure such as hospital patient satisfaction. Closely linked to the concept of multiple uncertain goals is the problem of the political environment:

Ministers didn't want the output costs in the budget papers because of the lack of robustness of the data and the adversarial nature of our environment where data is purposefully blurred... (T44).

The complication of disclosure due to the political environment, means that some useful measures of performance cannot be accessed by relatively senior management, much less publicly disclosed. This is not necessarily because government is deliberately secretive, but perhaps more because of the democratic system as alluded to in the above excerpt. In the performance matrix in appendix 31, a concern was expressed with *staying off the front page*. These political concerns override any management propensity for collecting and reporting (even internally), pertinent, objective performance data. After a discussion with a Human Resources manager about performance plans, the manager was asked, "are rewards linked to budgets and targets at all, or is it entirely intangible factors considered?" His response was:

Intangible, totally. Which is all about the political perception of how well you've done I guess. So that you've managed to get through and deliver the tasks that you're required to do during the year without causing too many adverse political consequences. That's a sort of overriding constraint (T9).

In discussing departmental performance, another participant said:

...An election, because the rural voters in Victoria did not swing against a coalition government in the federal election. So they are the sorts of things one thinks about as a public servant, because if next year is an election year, then we all know that that will have an impact on what (initiative) gets up and what doesn't get up, or where they may put their energy (T32).

Furthermore, having ascertained that the departments work in an environment where goals are elusive, other problems in assessing performance ensue. The measurability of much departmental output is questionable. Further, the availability of data is often limited. Where data are available they are often not comparable to data in other, similar organisations, which impedes assessment. Where indicators are measured and data are available for the assessment of departmental performance, problems with the interpretation of these data abound.

The following excerpts from interview transcripts illustrate these points. With respect to measurability:

...One of the difficulties we have is separating things that we are responsible for from other things... (T44).

For example:

That you probably, if you saw some increase in the health status it would be minimal. And all you could draw is correlation between the health centre and the local region, but there may be 50 000 other factors that impacted on health improvement. So I think people would like to make those leaps of faith, but I'm (not convinced) (T32).

And

Senior Secondary Education, you know, retention rates and VCE pass rates. I mean they are things you can influence over time, but potentially that's driven by the economy. So I mean it's a measure, it's a descriptor if you like of how we're going, but it's not something you can really set a target for (T36).

The managers quoted in these interview excerpts express a frustration that even where they have ascertained goals and decided how these goals might be assessed, they cannot separate those goals (things) that they control (that they are responsible for). So it is difficult to understand what contribution Education and Human Services have made. Further, with respect to the comparability problem, where performance data are available, there are further complications pertaining to data comparability. First there is the problem of differences between the structures and environments of services within the same service type:

...Putting states in competition, or cooperation, so that you can assess them. Otherwise it's actually hard to assess them in any real way. We've got these comparisons of cost per separation, that the Productivity Commission put out, that's one thing. The acute health sector is actually organised differently in different states, and I think that's really important, you know. We've got networks, we've devolved responsibility, while New South Wales keeps much closer tabs (T27).

So there aren't numbers to compare one state to another. We're starting that process. We're developing for the first time, nationally comparable measures of literacy and numeracy between states. But one will need to be very careful when you look at those numbers, once they're ultimately prepared and published. Because just because one state has got a higher number than another, doesn't mean to say that it's performing better than the other. It may actually be performing worse, and that's because you have different systems in Education in each state. You've got different environmental conditions, one state as compared with another state, may have more students that have come in from non-English speaking backgrounds, and those sorts of things. They've got different cultural backgrounds, so you wouldn't be expecting in overall terms those people to be achieving the same as any other state. They may not have as many. So even when we get the numbers up, there's... (T35).

Second, those assessing services are sometimes ignorant of alternative services, and can therefore not compare:

...Have nothing to compare anything against. You know, you (the client) may be in the shittiest service in the world, but if it's the only one you've ever known, then in actual fact you'll think it's probably okay. And one of the things that we found was that crappo services got basically the same scores as services that we felt were fantastic. There you go. So there's a range of difficulties involved... (T40).

More tangible problems are apparent also. Specifically, the time frame of available assessment data is often lengthy, so assessment cannot occur in sufficient time for managers to respond from feedback:

Now, we're going to put \$50M to that program. We've thought it through, we're going to put teachers, we're going to give them this sort of curriculum, we're going to train them, we're going to do all that, this that and the other. At the end of the day, your question is, how do you know that's worked? Well the only way you are going to know that's worked, is if that standard, that benchmark

we've set, has been achieved. (And that's not going to be this year though is it? Or next year?) 2002. (Right that's the target is it?) Yes. So at the year 2002, let's talk again and see whether we've reached standard 4 for all kids, or for 95 per cent of kids or whatever the target may (be) (T22).

Another constraint on performance measurability is that clients of some services are unable to articulate their assessment:

... Actually tried to look at pulling together a consumer satisfaction survey. Which for people with an intellectual disability in particular is very difficult. Because generally speaking, and we did a consumer satisfaction a while ago, consumers have limited intellect... (T40).

In areas such as acute health and adult training, the ability of clients to articulate their assessment of department's performance is not problematic in this way. However, both Education (for example, in primary or secondary education) and Human Services (for example, in child protection or disability services) have program areas where client assessment cannot be relied upon. Therefore, quality of services can sometimes only be assessed from an input perspective or from a poor proxy such as carers of people with an intellectual disability instead of the client of disability services.

Even where performance is measurable, it is often sparse. The paucity of performance data occurs for several reasons:

...In (some areas needs are) predictable and we can plan on the basis of it. But in a whole lot of other areas it's more difficult just because the nature of the needs isn't as well documented and we don't have an ABS database necessarily for... (T11).

...You went in and did a specific project that looked at it, there's no routine data that can be managed in any sort of regular way, to say, "well, we put in X amount of money into this area last year and this is what we seem to be getting from it", when we have these discussions every budget time (T11).

They work with social workers who are more interested in doing what they do, rather than measuring for some other party. (Yes, so it's a real cultural issue that they've got to handle if they wanted to implement a different kind of a system?) Yes. Hence the SAP, Supported Accommodation Program, it's a nationally funded program in the states. They're the social workers who look after the homeless and so forth. That national data collection was lucky to get what it got. It still hasn't got half of what it should get. So I think it's the industry they work in, and the people that work in that industry... Social workers are a profession, and no professional enjoys measurement. But if you take the hospital sector, they understand fully why they need to be measured. Their whole funding is determined on measurement under casemix. Whereas that's not the case with the social workers under YAFS. They tend to get their recurring grants (T31).

Well, we don't have very many measures at the moment. I mean in terms of student outcome measures, in terms of quality of learning, you don't really have anything. You've got surrogates like the amount of money spent per student, or retention rates in schools, or participation rates in education, student destinations. I mean you've got those surrogate ones, and we do pretty well... (T36).

The abovementioned excerpts illustrate that there is a lack of systematic data collected that can link inputs to performance. The *social workers* example provides one explanation for this, noting that this group of professionals *are more interested in doing what they do, rather than measuring for some other party*. The other availability problem illustrated is that measures for the actual outcomes have not been well developed (because this is difficult). There is an over reliance on *those surrogate...student outcome measures*.

The final problem identified from re-coding the performance measurement problems data, was that of data interpretation. The complexities of performance data are not well understood:

DRG or two DRGs for burns, so the suburban hospitals have the easy cases but the hard cases go to The Alfred, which aren't quite reflected in the DRG and it's a significant amount of money (T12).

Indeed, where managers do understand the measures reported, they are often unable to interpret them for decision making purposes:

...Do unit costing on our community based houses, and we say, "this house costs \$210,000 for five people and this one costs \$180,000". Now we actually have no way of knowing whether the \$210,000 is fair and reasonable, and the \$180,000 is too cheap, or the \$180,000 is just right and the \$210,000 is excessive. We don't know (T25).

Yeah. We've done quite a bit of work on that, because I guess we're saying okay on the quality side it's hard to satisfactorily measure. We have had some patient satisfaction stuff that says 96 per cent or 97 per cent of people are satisfied or very satisfied. In a way it helps the polities, but it doesn't actually help you improve the service (T42).

Managers that do understand the measures are concerned that if 'difficult to interpret' measures are relied upon for resourcing decisions that misallocation would occur:

...If we spend that amount of money. But again getting the measures right would be — you know you worry that people will come in and say "well you spend this much money, let's divide it by the EFT you've got and then work out that Acute costs a lot less than ACMH". One of the dangers of that is it may be more difficult to manage complex services that are hard to manage performance in, than it is to manage a hospital where the funding formula is clearly worked out. And so then people say things like "well all you have to do is get the funding formula right in ACMH". But it's not as easy (T32).

So even when we get the numbers up, there's going to have to be a lot of Education of politicians, the media play an important role in the community in interpreting those numbers...it may not even be a matter of mischief, it's misguided (T35).

The outcome (high performance/low performance) is reliant on the perspective from which the departments are evaluated:

If it tells them for example that our cost of educating a child is the lowest in Australia and perhaps

one of the lowest in the western world... (Then the media will probably tell you we're not doing a good job. Bad quality?) Exactly. So that wasn't a good idea. Now you could read that another way, so we are very efficient, and one of the most efficient organisations because we can run an excellent education process with less dollars. But if I was arguing at the other end I'd say yeah, you're the cheapest too so Jesus the quality you've given me must be pretty bad. And therefore we run into quality, which is not as measurable as us accountants can put together in figures. You know, have we got a better system or a worse... (T6).

In addition, even if the measures reflect exactly what they seem to reflect on face value, it is unclear whether measures of efficiency for example, when used to assess departmental performance, are appropriate anyway:

A lot of efficiencies... (are part of the) positives I think. But are children smarter? I don't know. Are children — and that's the part I can't answer. And until someone can convince me or tell me otherwise that we're performing from (that perspective) — then I don't think we've done much (T38).

This section has highlighted that in evaluating the performance of Education and Human Services there have been complications to consider. However, notwithstanding these difficulties, or limitations of the data, the result of each method of performance evaluation largely corroborates the others. The main data source, interviews, indicated that Education is a superior performer to Human Services, although Human Services is a 'good' performer. Both the publicly available performance data and the internally generated, confidential performance data were found to support this conclusion.

12.5 Conclusions and summary

This chapter outlined the performance of each department studied. Conclusions about the relationship of MCS usefulness to departmental performance levels are discussed in chapter thirteen (where propositions 3a–3d and 4 are investigated). It was important to measure performance in this study in order to ascertain subsequently any efficiency effects MCS usefulness may have had on departments. This is notwithstanding the institutional effects of adoption of output management, leading to legitimacy gains that were previously reported in this chapter. This chapter has shown that there has been change in departmental performance in each case. Specifically, Education has *high* performance. Education was a higher performer than Human Services in 1997–98, 1998–99 and 1999–00, however performance level is *declining*. Human Services was assessed as a *moderate* performer. Human Services performed less well than Education in 1997–98, 1998–99 and 1999–00,

however performance is *improving*.

Following the analysis and results reported in this chapter, proposition 2 was investigated. Proposition 2 predicted that adoption of output management would lead to positive effects on performance through legitimacy gains. Data for both departments indicated at least moderate performance for both throughout the period of study. These data indicated support for proposition 2.

This chapter has discussed analysis and results to investigate proposition 2, completing discussion of the institutional path. Chapter thirteen reports on analysis and results relating to the contingency path, investigating propositions 3a–3d and 4.

CHAPTER THIRTEEN RESULTS AND ANALYSIS: INDEPENDENT, DEPENDENT, MODERATING AND OUTCOME VARIABLES

13.1 Introduction

The analysis and results relating to performance data for Education and Human Services were reported in chapter twelve. These results indicated that Education is a high performer and the performance level of Education is declining, and that Human Services is a moderate performer and the performance of Human Services is improving.

Chapter twelve also investigated the relationship between adoption of output management and performance through legitimacy gains. Notwithstanding the institutional findings supporting propositions 1a, 1b (albeit, indirectly) and 2 relating to adoption of output management, this study is also designed to investigate the possibility of efficiency gains arising from the relationship between a high/low emphasis on OM–MCS and MCS usefulness. In order to investigate whether the relationship between a high/low emphasis on OM–MCS and MCS usefulness achieves improved performance through efficiency gains within the departments studied, it is necessary to ascertain what type of MCS departments had before and after any output management emphasis. Subsequently, the relationship between OM–MCS and MCS usefulness will be explained by investigating contextual, moderating effects on this relationship.

The contingency path modelled in this study suggests that OM–MCS may indirectly impact upon the performance of the departments studied. It is argued that OM–MCS may impact upon performance through efficiency gains arising from enhanced MCS usefulness. Further, the relationship between OM–MCS and MCS usefulness will be moderated by contextual factors. These relationships are predicted in propositions 3a–3d and 4 and will be investigated in this chapter.

The contingency propositions (propositions 3a–3d and proposition 4) relate to the relationship between OM–MCS (the independent variable) and MCS usefulness (the

dependent variable), suggesting that this relationship will be moderated by contextual factors. Specifically, it is proposed that there is a relationship between OM-MCS and MCS usefulness, which is moderated by contextual factors. Moreover, enhanced performance through efficiency gains will arise where there is a fit between OM-MCS and contextual factors, leading to improved MCS usefulness:

P3a The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls) under conditions of certainty, competition, hostility, restrictiveness and technical complexity (uncertainty, diversity [heterogeneity], complexity, dynamism and/or turbulence) in the perceived external environment.

P3b The usefulness of MCS will be positively associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in situations of mechanistic and centralised (organic, decentralised, matrix, structurally complex, differentiated and contextually interdependent) structures.

P3c The usefulness of MCS will be positively associated a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in task certain environments or in environments where technological interdependence is low (task uncertain environments and/or in environments where technological interdependence is high).

P3d The usefulness of MCS will be associated with a high (low) emphasis on output management, together with a high emphasis on other mechanistic controls (organic controls or mixed controls), in a managerialist culture (a traditional public sector culture).

P4 Where a department's MCS is more (less) useful as a result of the fit relationships in propositions 3a-3d, there will be positive (negative) effects on departmental performance through efficiency gains (lack of efficiency gains).

These propositions will be investigated in this chapter by reporting on related analysis and results. In investigating these propositions, analysis will explore the contextual issues associated with the relationship between a high/low emphasis on OM-MCS and MCS usefulness that are specific to Education and Human Services (sections 13.2 to 13.4). Section 13.2 examines MCS at time period one, prior to any emphasis on output management and reports a preliminary analysis of MCS usefulness. Section 13.3 examines MCS usefulness at time one, prior to any

emphasis on output management. Section 13.4 examines OM-MCS and MCS usefulness across the nearly two and a half year period of study. Together, sections 13.2 to 13.4 discuss the analysis and results relating to the first step in investigating propositions 3a-3d. Section 13.5 examines contextual, moderating effects on the relationship between OM-MCS and MCS usefulness. Overall, section 13.5 reports on the analysis and results of contextual fit and OM-MCS, using the pattern-matching analysis, representing the second step in investigating propositions 3a-3d. Section 13.6 investigates proposition 4, relating to performance through efficiency gains arising from MCS usefulness. Section 13.7 provides a summary and conclusions.

13.2 MCS before any emphasis on adopted output management

Propositions 3a-3d, which examine the contingency aspects of the model, will be examined later in this chapter. Before the formal propositions can be examined there needs to be an analysis of MCS at the early stage of the study (time one) to understand how MCS was characterised before output management¹⁵³ was emphasised (if it was emphasised at all, throughout the period of study). It is important subsequently to ascertain what direct effect OM-MCS, across the period of study, has on MCS usefulness — that is, notwithstanding any contingency (moderating) effects that are investigated in propositions 3a-3d. Specifically, it is important to understand any direct relationship between OM-MCS and MCS usefulness, before considering any moderating, contingency effects on this relationship.

This preliminary analysis of MCS attributes and MCS usefulness is reported upon in the remainder of this section. This analysis is a first step in investigating the contingency propositions 3a-3d.

¹⁵³ This refers to the adopted form of output management as distinct from any output type controls that some areas of the departments may have already.

13.2.1 MCS evaluated according to the mechanistic and organic framework

OM-MCS is modelled as the independent variable in this study. Chapter two explained that while output management is the focal point of this study, it must be investigated within the broader MCS. Data were collected on OM-MCS that capture the mechanistic/organic nature of OM-MCS in each of the three interview periods. This chapter focuses on those data collected in the first period, in order to ascertain whether Education and Human Services had more mechanistic or more organic MCS, prior to any emphasis on output management.

Evaluating departmental MCS according to the mechanistic/organic MCS framework is necessary so that any change to MCS as a result of output management can be assessed, using the mechanistic/organic criteria developed in chapter two. That is, to assess whether any emphasis on output management has resulted in the MCS of either department becoming more mechanistic. This is important for evaluating whether OM-MCS has had any impact, as a consequence of the fit/misfit between OM-MCS and contextual factors, on MCS usefulness and then MCS usefulness on departmental performance. These moderating (contextual) and outcome (performance) effects will be explored in subsequent sections. Table 13.1 below, displays the descriptive information for data coded to the OM-MCS node. These data were subsequently reduced substantially and re-coded more finely (disaggregated) into mechanistic and organic sub-nodes. Intersect searches were then performed to gather only those data pertaining to time period one.

Table 13.1 Descriptive information for OM-MCS data

	Education	Human Services	Total
OM-MCS	22 documents	21 documents	43 documents
(total project)	1744 text units	2266 text units	4010 text units
Mechanistic MCS	7 documents	4 documents	11 documents
(time one)	95 text units	93 text units	188 text units
Organic MCS	8 documents	6 documents	14 documents
(time one)	165 text units	211 text units	376 text units

13.2.2 Analysis of MCS

Appendix 3n presents summarised data coded from time one to the organic and mechanistic MCS nodes within the NUD*IST database, for Education and Human Services respectively. The data summarised in appendix 3n enables an evaluation of

mechanistic or organic elements in Education and Human Services MCS at time one. Conclusions drawn from an analysis of these data indicate that overall, both departments had more organic MCS prior to any emphasis on output management, although Education's MCS is less organic than Human Services. Analysis and discussion of results leading to this conclusion are reported in the remainder of this section.

As discussed, output management is a technical control practice within the broader MCS. Data were collected on MCS in each of the three interview periods. This section focuses on those data collected in the first period, in order to ascertain whether Education and Human Services had more mechanistic or more organic MCS, prior to any emphasis on output management. That is, whilst the departments had *adopted* output management for the institutional reasons explored earlier in this chapter, there was no evidence that any *emphasis* had been placed on output management at the stage of the first site visits. This was notwithstanding that output management had been adopted several months before the end of the first stage of data collection.

For both departments, the MCS data indicate that MCS at time period one is more organic than mechanistic. This evidence is important to establish because the central contingency argument of this study is designed to investigate whether OM-MCS leads to MCS usefulness, where this relationship is moderated by contextual factors; and subsequently, to enhanced performance through efficiency gains arising from MCS usefulness.

Several examples from the interview data are shown below, to illustrate that while dominated by organic controls, MCS in both cases has both mechanistic and organic attributes, prior to there being any emphasis on output management. Further, the excerpts are selected with the intention of showing how MCS attributes that may be classified as mechanistic, are used in an organic way. Alternatively, there is some (limited) evidence that organic MCS attributes are used in a mechanistic way (see figure 13.1). Chapter two presented the theoretical development relating to mechanistic and organic controls as technical control practices and processes, establishing that a technical control practice which is mechanistic (organic) can be

used mechanistically (organically); and a technical control practice which is mechanistic (organic) can be used organically (mechanistically).

Figure 13.1 Mechanistic and organic use of MCS attributes

	Used organically	Used mechanistically
Organic control practices	Cell 1	Cell 3
Mechanistic control practices	Cell 2	Cell 4

13.2.2.1 Organic MCS attributes used organically (cell 1, figure 13.1)

Education has organic MCS attributes, such as the use of non-financial information:

...Strategic planning area that one because...they benchmark all the educational performance and things like that. So there are a lot of (non-financial) benchmarks (T8).

Well the issue is that performance measures and — you know we're continuously refining our performance measures, both measures of financial performance and also measures of effectiveness and quality of service delivery. So the accounting and budgeting people aren't going to have any enhanced role in monitoring performance (T2).

Use of input controls:

Well it not so much changed — we are certainly increasingly strongly moving into quality systems. All TAFE institutes — within the Office of Training and Further Education — we've adopted the Australian Quality Council procedures. Institutes — virtually all of them are ISO 9000 accredited and they're also moving to HUC procedures as well... (T7).

We can say that there is, that the model is implicitly in place already with school global budgets, and school charters and things like that. So you know, they're funded to a formula and they manage within that formula to provide the services. And it's just there at the moment and we give grants to private sector schools...we can compare the costs from school to school. So, you know we're sort of on that track. It's just not as explicit as it is on the TAFE side (T8).

Low reliance on financial and detailed controls:

...A more formal accountability in respect to, a lot more transparent reporting hasn't been there and it's that side that's now going in. So, and the benchmarks and the performance measures. So I think the structure is there for it, it's just that it hasn't been a requirement and so the accountability's really been at the top level and not managers formally reporting back in terms of a formal process against budget. They may well have done against other indicators, in terms of their work programs and things like that but not being held accountable in a financial sense. So I think that it's there, it's just getting more formal in a sense in terms of putting in those performance measures. In a financial sense they

haven't really been held accountable for those decisions, because there's been no way of managing their accountability because we didn't have the information (T8).

So they have tremendous autonomy. But apart from the requirement to abide by general public sector accounting standards and financial regulations and legislative requirements, there's very little detailed control that we have (T7).

Use of external data:

There's a lot of information (that's used internally) there'd be population information from ABS that would be used (T5).

In addition, use of informal performance evaluation:

I also have a gut feel that Fred or Frida has done a good job or a bad job. I suppose that gut feel is in part a product of the agreement that we set ourselves at the start of the year. So I certainly, in coming up with a performance result, get a copy of the performance plan that was agreed and go through it to work out what's been done, what's not, and why. But I'd be lying if I said that I base my judgement entirely on that. I have what is called an overall assessment that is probably more qualitative than anything. (Is that partly because people's jobs change but the plan doesn't change? Yeah, it's clearly that people's jobs change and the circumstances change...so you can hardly criticise someone for not producing a result if there are external factors that make it impossible. And you have to take that into account when you are evaluating someone's performance (T1).

In Human Services, there exist organic MCS attributes also, such as the use of non-financial information:

...There are certain types of statistics that ministers like to report...rather than (just) percentage of the population that goes to kindergarten, they like to have trend data on those things. Very keen (on) child protection cases and things like that, ambulance bypasses, and there's a whole lot of those critical data that they like to have...if you didn't have a ministerial system...we would need all that information for effective program management (T14).

Use of input controls:

I think, it adds some particular complexities and a way that those complexities have been tackled internally is through service agreements. So that what happens is that the regions operate under a service agreement with the central programs, so programs are primarily involved in major policy direction, broad program management, the regions are fairly much involved in delivery, so the central programs develop contracts for service delivery by the regions, those contracts have — there's some flexibility in them, so that the regions can deal... (T15).

Low use of financial and output controls:

...Problems in that the organisation hasn't had a particular history of cost attribution, so when we start putting in cost attribution systems, and just things like accommodation, payroll tax, insurance charges — a lot of things were held in central budgets and weren't attributed out to relevant cost centres...That's one of the very big issues of this organisation, because our accounting of those outputs is not good, and it's not very corporately collected. It's through all layers of the organisation and we really don't have the infrastructure at the present stage to capture them properly and we're trying to deal with that — and it's a real problem for us (T15).

Low reliance on formal plans:

...So in terms of is our performance linked to strategic planning at the moment I'd say no it isn't because there isn't a Public Health strategic plan, a current one....Some other areas do have current strategic plans (T14).

Use of external data:

We have a policy and research area that relies a lot on ABS statistics, on household types and properties, growths and so forth. A lot of other areas do housing type studies as well — local councils and so forth. But yes, we rely a lot on large suites of statistics to predict demand because make — we purchase around about \$300 million of houses per year and you could argue that they're a 40 or 50 year investment, so we want to get it reasonably correct, we don't want to acquire, that is build or buy, in areas where demand is falling — so we need to try and match that. Our approach is — we use — we've got a lot of data in our own systems as well, particularly as to where the immediate demand is, if you could call it that, being those on the priority waiting lists. The longer term demand being those that are paying more than 30 per cent of their income after any commonwealth rent assistance privately. Their demography, if you like, and we match those two together. That's aggregate-type information which we have available here. That then needs to be overlaid with local evidence and we do find, in each of our nine regions, a part time research analyst, on one of our external advisory organisations to undertake similar local research — we try and marry the two. That's data and fact driven and then overlaid by local knowledge and anecdotal evidence (T16).

Even in Acute you can't use output controls everywhere. In emergency for example, you have to have the capacity (an input control estimated by what the demand might be) no matter what the output, so it's a nonsense... (T12).

And, use of informal and subjective performance evaluation:

And if your division...is not performing to that level then you will be told in no uncertain terms. I would get a few phone calls a week at least from people telling me where they thought we could improve...again just from my jurisdictions, I have service agreements with — internal service agreements with all the directors, we've performance benchmarks as well from all the services I'm providing to them. The others would have external feedback, and similarly, the way the process works and the way that government works, the hospitals, CEO's and others who are very influential people talk to people and they would be providing feedback through all and sundry on the performance of the department whether they believe that they've done a good job or a bad job in managing certain things in the jurisdiction — so there are formal feedback and informal processes that are in operation (T15).

(Are rewards for managers and subordinates linked to budgets and targets?) No. Look you'd like to think that it's really scientific but it's not. It has a degree of haphazardness to it. At administrative staff level we've got a performance bonus profile that we have to meet. We basically sit around as a senior management group and work out who's going to get a bonus, and who won't... it's the only way that we could think of doing it that made it somewhat fair. And what that meant was that as a manager, I'd actually say that these of my staff deserve an outcome, and these guys don't. And then everyone else put up their names and we would say but "no you're not saying that this person should get a pay outcome — no way. Get them back on the other side. 'Cause if they're staying there, I'm moving my guys across. And so it's that toeing and frowning. (So there's a negotiation between the divisions?) Just within the division. At divisional management level. It's an interesting meeting.

(Do you try to get the best for your staff?) Well you try to get fair. The rules say that you can only have 75 per cent of your staff get a pay outcome, across the whole division — so people have to miss out. What we've tried to do is ensure that those people who do miss out, that there is some sort of relativity there. You're not missing out because you happen to be in an unlucky section (or) an unlucky exception or anything like that. You're missing out because you and all these other people that are missing out are broadly similar (T10).

13.2.2.2 Mechanistic MCS attributes used organically (cell 2, figure 13.1)

As noted, Education demonstrates a focus on financial controls. Indeed, several of these monthly executive reports were evaluated, and assessed as almost exclusively financial in nature. However, these financial controls are sometimes used with flexibility. Specifically, informal communication and liaison devices operate, to understand deviation from budgeted performance:

It...(is) particularly the case with TAFE, I mean we haven't got that far with schools yet. The sort of contracts they have with TAFE institutes is quite strong. They have to deliver the hours in the business areas and the industry areas. If they don't then there are some consequences. I mean it's not automatic — they obviously go out and talk to them about it, to find out why, what happened, why didn't you do it? If there are some reasons for it obviously it's not a problem, but I think it's happened once or twice where they actually write to the TAFE council and say you didn't deliver. We'd like our money back or something like that anyway (T4).

The heavily financial nature of the report to corporate board¹⁵⁴ is considered unsatisfactory. At lower executive levels, some managers have little use for budget data and it is not used in their performance evaluation:

...Managing the budget even at my level I don't have a...budget for my branch, there is a budget for our division...which our general manager of the management group has responsibility for obviously. But there's not really a performance thing as such. He likes to consider it as a divisional budget which he can use back and forth across things so yeah. A bit of flexibility there I suppose because it's only quite a small division. So staff that I work with, it plays very little part. And even...say in the Office of Schools where you've got people in Schools area who have responsibility for certain programs, some of them would have — for some of them managing the budget would be part of their performance, but others very little part again (T4).

When the accounting reports were inspected, it was evident that centrally this manager (T4) is allocated a budget, but in practice, this and other branch budgets are pooled for the whole division to provide flexibility.

There exists a move within Education to tighten the mechanistic elements of MCS. This in itself suggests that MCS is not considered highly mechanistic.

What we've got to try to do this year in the performance plans is make them a little tighter. We've got an operational plan for the division that we've just completed, we've now got to make sure that the specific projects in that are drawn down to individual performance agreements. But in truth I think it's more the motherhood issue at the moment (T1).

...Use it — when I say that, there's still no real understanding that they've got to work within their budgets, because they've always had a blanket budget and nobody ever worried about it. Now I think they're starting to realise that each unit and each centre has it's own budget and it's own responsibility...just started to introduce a whole new reporting mechanism now, which is based on

¹⁵⁴ The Corporate Board report is generated to divisional managers who, together with the CEO, constitute the Corporate Board.

that traditional methodology. For the first time...broken up the whole department, well certainly the Office of Schools component of the total budget, into it's various cost centres, and linked those cost centres back to individuals. So each individual manager has got to report back against his own budget. That's a concept that's foreign to most of them, so they're grappling with that at the moment (T3).

While the manager in T3, from finance, believes that budget consciousness was occurring, the T4 quote above demonstrates that the devolution in budget structure has not occurred in practice.

Consistent with this theme, inspection of internal documents also revealed the existence of comprehensive manuals covering standard operating procedures and the like. However, as one manager succinctly explained:

Yes, we do seem to have a lot of those (manuals) — I've never actually seen anyone around here use one though (T3).

This suggests either that the manuals are ignored, or that the policies and procedures are already known. A further search through the data helped to clarify this situation:

(How clearly specified would you say the tasks are in your organisation? For example, for staff, how much is their work driven by standard operating procedures and policies and so on?) To a fair degree, they still have a fair degree of flexibility, but each job has a role description which is fairly structured and there are policies and guidelines on how to do things, but that is becoming less and less relevant now, that red tape thing has gone. It hasn't gone, but it's becoming less. I think that probably the operatives have a bit more freedom, but there is a manual on how you should do this, though I must say I've been here for 5 years now and I've got finance manuals on how you do this and how you do that and I've never referred to them because you just do it, provided you follow professional standards. In fact to some degree those sorts of processes can slow the thing down quite dramatically, and I think a lot of those things need to be reengineered to make them more realistic (T3).

A search through the Education data coded to standardisation and formalisation nodes suggests the existence and use of procedures is varied across divisions:

(In terms of tasks in the organisation, how clearly specified are they for staff in terms of the use of standard operating procedures and those sorts of things?) It varies. It varies from one part of the department to another. I'd say there would be quite a lot of variability about that. (Is that division specific then?) Division specific — yes. There's not much standardisation, operating procedures across the department except in the area of the executive services where we are talking about our briefings and services provided to the ministers and to the Secretary. Obviously those sorts of arrangements have to be standardised and uniform across the department. But departments have been fairly free to organise themselves in the way that they see as being most appropriate. (Do you have a standard operating procedures manual for your staff in this division?) We do have — yes we do. (Do staff use it though or is it there to be referred to in case of emergency or that sort of thing?) Well for administrative procedures yes we have a manual. And it's the same for Division of Executive Services, we follow the departmental set of procedures. And when you're getting down to writing policy analysis sort of like that, we haven't got the documents to say you have to do it this way. It doesn't mean to say that we couldn't do that but — sometimes you can be over prescriptive in certain areas to the detriment of ones creativity and those sorts of things (T2).

There is not a heavy reliance on policies and procedures at a detailed level:

(How clearly specified are tasks in the organisation?) Reasonably well specified, but there's a lot of projects and so there's a lot of — what we're doing one year is not the same as what we do the next year. So it's specified in a general sense as to what you might do, but the actual details of the work might be quite different from time to time (T7).

(So would staff at fairly junior levels utilise standard operating procedures, manuals and that sort of thing?) We have very little of that, in (X's) area there'd be some and in (Y's) area there'd be some, but very little with us. We're really more a — increasingly a policy planning unit. There's...area, where there's a process of registering an apprentice or registering an institute to deliver apprenticeships or registering an institute to deliver training, but there are set procedures. But they're a relatively small part of the total operation (T7).

(How clearly specified are the tasks in the organisation?) In this area not too badly. The operational plan for OTFE at least is fairly clear in terms of defining the things that need to be done during the year. And because we've got like a budget area, a strong transactional role there are certain things that you need to do at a certain time each year. A calendar of events, so it's not too bad...In this area they've (staff) got a fair degree of freedom because — well within a framework actually — we purchase widgets at a price. The people at the operating lower level have to purchase widgets at a price, but in choosing which widgets and what price do exercise considerable judgement. So there is considerable freedom at that level but within a constrained sort of an environment (T1).

...Families who need assistance etc. And a lot of that is done through the school system. Now in the country regions, many of those services are outsourced to professionals, third party professionals in private enterprise. Whereas, some of the city regions are doing it by hiring staff in house. So there's three or four different models working, and where it can be demonstrated that those services can be delivered by third parties the deputy secretary, here anyway, has given the green light effectively to general managers to make sure that happens at the best ways that suits that particular region. But because of the disparity of the way — and the huge audience we serve, or huge market we serve right across the state, it's not practical to generalise (by using set procedures) (T3).

Where policies and procedures are relied upon, it is something passed on verbally by those with corporate knowledge:

I think that the documentation and so on (on procedures) would be pretty poor. I think what people rely on is that there are a number of people in an organisation or an area that's got years of experience and will pass that on verbally and of course when you're relying on that you're in difficulty if those people don't pass it on or don't really have a clear understanding of why or what they're doing. There's not a lot of clearly specified guidelines or procedures or policy documentation in the place (T5).

...Secretary (CEO) to sign off. Now you're not going to find that in any book anywhere, it's just a judgement that you've got to make. I mean you learn quickly if you make the wrong one because they'll let you know it. So you've only got to get burnt once or twice which we all have, and then you know, well in the future I'll do it this way (T6).

In addition, there is a suggestion that Education managers would like to develop policies and procedures where possible, highlighting the lack of policies and procedures. Further, it seems that many policies and procedures are not formally documented:

Changes in work practices, yes, emerging. We have embraced the principles of the quality movement formally as a Department. We're a big Department, so it's a matter of working through what that means. We've had a number of working parties, task forces. I've been chairing one of them, which has been looking at process management and process improvement. So that will translate into, eventually a change in work practice for the Department as we adopt those principles. But we still are probably

at the early phases of that at this stage. (Will that involve in the long run, perhaps writing procedures or standards or something like that?) Yes, yes. (Is it readily able to be done for a lot of the work in this Department? I mean in terms of the ability to standardise things that perhaps standardisation doesn't lend itself to?) Well, I mean not all things need to be standardised. But certainly what we're in the process of doing there is documenting our key business processes, management processes, support processes. And identifying those, documenting them, looking to areas where we can improve the efficiency and effectiveness of those processes. And part of that is the documentation and developing the process manuals and procedures, for process improvement (T4).

The concept of mechanistic elements used organically is also reflected in planning:

...To meet their local needs. So while we do have central planning, and try to get some sense as to the way the markets might be going, we recognise that really it's very important that the institutes themselves can respond flexibly to the local run (T7).

And use of mechanistic elements for feedback, rather than control:

...Compare between institutes. So that we get statistical returns and information returns from the institutes that enables us to say, to compare some ratios, financial ratios, asset utilisation and a number of things like that and we put out to institutes, or we put out to councils, the performance against these. Of the councils, on each of these areas, compared with the average of similar colleges. So we break our colleges up into three groups and basically they rate size and then compare — then in the information we provide — say for a middle sized college we'd say this is you, this is the average, you might want to think about why you are so much less. The aim of that is not so much to control from our point of view, but to give the councils of the colleges some information, which they can use to question the performance of their college... (T7).

Mechanistic elements of MCS are utilised in a somewhat organic way in Human Services, perhaps to alleviate dysfunction:

I'm meant to manage within my budget, the actual performance score has nothing at all to do with the performance plan, it's just a perception of how well I've done. So what you do is you write a performance plan, that gets signed off at the end of the year and in the assessment of your performance you don't even go through the plan. It's just general perception of how well you've done during the year. (Are rewards linked at all to budgets and targets, or is it entirely intangible factors considered?) Intangible, totally (T9).

There is the Strategic Development Fund where I was saying the department frees up an amount of money to move from lower priorities to newer priorities. It's really if I actively work within my program to lock in money, then I would make my job harder at finding that money. And I don't have the option of not finding that money (T14).

In summary, both departments had mechanistic and organic elements in their respective MCS, although both departments' MCS appeared relatively organic. That is, organic MCS attributes were predominant. If conceptualized on a continuum, Education's MCS appeared to be less organic, and Human Services' more organic. In both cases, in situations where there was need for an organic approach, mechanistic style controls were used flexibly, as discussed in this section.

13.2.2.3 Organic MCS attributes used mechanistically (cell 3, figure 13.1)

Just as some mechanistic elements in Education's MCS are used organically, some (albeit, few) organic elements are used mechanistically. For example, assessment of operational areas is done on a wider basis than financial, but appears sometimes to be used rigidly, both in Schools and OTFE:

So they do a lot of the assessment, principal assessment. Shouldn't say this but they're almost like, a lot of them like inspectors... Well, they'll review the principal's performance annually, yes you have, no you haven't — achieved. That's your six out of ten, eight out of ten (T6).

...Send across the money, we (OTFE) have a performance agreement with the institute in which we're asking them for various performance indicators to report, to be accountable on the basis of various performance indicators. And they report on those, and if they don't deliver then it affects their funding next year (T7).

In Human Services there was some evidence of the outcomes of organic processes used in a rigid mechanistic form:

(Can you tell me about the dissatisfaction with the system?) Well I guess, a lot of the dissatisfaction would be resident only in Housing I imagine. It's a system that has — it's a stupid system... So it's a system where 70 per cent get something, and 30 per cent get nothing, you're probably aware of that. It's a system where there's a budget imperative of less than 2 per cent of the salaries budget. Let me find the rules (manager looking through papers on performance evaluation). It's a system where — and there's two categories below that, satisfactory and I guess not satisfactory. It's a system where if you do your job you're called satisfactory, it's a system where there's a massive jump — see that "effective" there (one of the categories), that's a bonus payment of 1.5 per cent, and the next one is in fact 4.75 per cent, with a 1.75 per cent current component, and it's very, very difficult. So it's 2 per cent of salaries, 70 per cent get something, but you've got major jumps like that, and you've got recurring components like that. And if someone does their job they're called satisfactory. So, we find it very frustrating.

(Do you use the performance plans that your staff set up to actually evaluate them on, or do you do that more as a...?) Yeah, they do a self assessment, and we just do a quick interview with them. (And you take into account — I mean I assume things change in between when the plan is written and...?) Oh yeah, yeah, and that depends on how good each manager does it and whether he holds the original plan really hard, and doesn't allow movement outside. In reality, I've never in all the plans I've ever done, I've never achieved my full plan, but I've often achieved a lot of other things outside. It's often that you need to take that into account. But this thing here, I mean it's the reward system that is the driver of it all, as opposed to just the pure recognition, and it's just unfortunate that it's set up that way. I'd like to be able to pay, particularly in Housing's case, more bonus orientated rather than a recurring payment, and much more scope of movement, rather than these fixed levels. I'd like between naught and five, or even naught and ten bonus range. And I'm not alone.

So that's the system, and we think it's fundamentally flawed, by having all these silly parameters around it that you can't pay 30 per cent something. I mean it's pretty demoralising. And if you do, you've got to pay them in these big steps, which makes life very hard to do. And then there's a budget across the top. Now the budget parameter is okay, because you must have a budget parameter. You can't have directors getting out of control. So 2 per cent of your salaries budget you can pay, but I think they should leave the rest to more flexible arrangements. In which case a couple of people may get the big ones and the rest none, or a lot a little bit. Anyway, you know the system and it's flaws (T16).

These excerpts suggest that managers are sometimes forced to convert their organic decision making processes into rigid outcomes, that they consider inappropriate. They would prefer a more organic system to one with *all these silly parameters around it*.

13.2.2.4 Mechanistic MCS attributes used mechanistically (cell 4, figure 13.1)

In Education, there is evidence of mechanistic MCS properties:

There's a very comprehensive reporting package in place that covers finance, budgets, personnel, staffing...it's an information package prepared by the resource managers over in the finance group. It's a corporate management information package that goes out every month. It draws information from the finance system and the personnel system as well as management information in relation to policies and projects and initiatives that are currently running, how they're going and what they're achieving. It's a fairly widespread thing (T3).

There seems to be a strong focus on financial targets:

...Think it is interpreted in some way down the management structure in the sense that there's certainly a strong, an absolutely strong command in a sense, not to overspend in any sort of way. So you know this is the budget, and you keep within your budget. So, at the top it's seen as achievement (T8).

The focus on financial information is curious, considering numerous managers commented on the lack of usefulness of such reporting and the need to change the reporting regime to something broader and more helpful¹⁵⁵.

For Human Services, mechanistic control elements are evident in some areas:

Housing is very, very organised in that sense...we probably have a hundred key performance measures that are output based. We use that for our own management, for interstate comparison, for national reports...90 per cent of our expenditure is externally provided. 83 per cent of our operations are externally provided — one's the dollars the other's the extent — it's a very large amount though. (Is that hard to keep control of?) No, not if we have good contracts. (So it all comes down to the way the contract's written and monitored?) Yes, indeed (T16).

Oh, in Acute at least 80 per cent of our management reporting is based on financial data. We use it to evaluate hospitals and networks (T12).

¹⁵⁵ This desire for more helpful management information at time one was consistent with the various attempts to develop a balanced scorecard approach for corporate board reporting in Education throughout the period of study. The balanced scorecard was again in development at the end of the study, after a failed previous attempt described by senior management as adopting a "far too detailed" approach.

In other areas some mechanistic MCS attributes exist, but are dysfunctional:

If you've got a miserable budget performance you're going to get flogged. If you've got a good budget performance you'll get a pat on the back. (And how do you control that?) You do everything around anything you possibly can to ensure that initiatives get up and running and the money gets spent. (So it's good to have the money spending attitude within budget?) At this point in time yes. (Is there a fear that if you don't spend it all that you don't get as much next year?) No. (Why is it then that if you don't spend...?) About — maybe four years ago we were allowed to roll forward unspent funds. And that actually ended the mad end of year — you know it's like five truckloads of toilet paper and ten...that finished that off. What that then led to was a view that — you know, shit — here's Disability who's \$500M dollars — they're under spent by seven. Yet here they are crying poor about how hard up they are and how hard up the clients are, you'd reckon if they were that hard up that they should

spend all the money — wouldn't they? Doesn't it make sense? So, obviously they got too much money. So what that sort of in turn does is actually redirected that pressure to ensure that we spend (T10).

Section 13.2 has discussed MCS attributes apparent in the data for the two cases at time period one, before any emphasis on output management. Section 13.2 overall has illustrated that both departments have more organic than mechanistic MCS, describing the predominant organic attributes of MCS. This predominance includes both organic and mechanistic attributes of MCS used organically. There was also some evidence of other elements in MCS found in both departments which were mechanistic elements used mechanistically, and to a limited extent, some organic elements used mechanistically. Overall, both departments had a mixture of organic and mechanistic control practices, used both organically and mechanistically. In both departments, however, there was a predominance of organic control practices used organically, together with mechanistic control practices used organically. The remaining sections of this chapter discuss first, MCS usefulness at time period one (section 13.3) and second, the link between OM-MCS and MCS usefulness with preliminary analysis of contextual effects across the period of study (section 13.4). The fit relationships between contextual factors and OM-MCS are reported in section 13.5.

13.3 MCS usefulness

This section specifically explores the analysis and results in period one, for the dependent variable, MCS usefulness. Some preliminary discussion of MCS usefulness at time one occurred in the previous section as description of MCS attributes was frequently inextricably intertwined with comments on their usefulness. Descriptive data for MCS usefulness are displayed in table 13.2, below. Table 13.2

describes the data coded to the MCS usefulness node and then shows the result of intersect searches for these data into the respective time periods of the study for Education and Human Services.

Table 13.2 Descriptive information for MCS usefulness data

	Education	Human Services	Total
MCS usefulness	19 documents	20 documents	39 documents
(total project)	1066 text units	995 text units	2061 text units
Time one	6 documents	7 documents	13 documents
	230 text units	180 text units	410 text units
Time two	7 documents	8 documents	15 documents
	496 text units	514 text units	1010 text units
Time three	6 documents	5 documents	11 documents
	340 text units	301 text units	641 text units

As with MCS, it is important to assess MCS usefulness before and after any emphasis on output management in order to evaluate the impact of OM-MCS on MCS usefulness. Propositions 3a-3d developed earlier, predicted that OM-MCS would impact MCS usefulness as a consequence of the fit/misfit between OM-MCS and contextual (moderating) factors. The propositions further predicted that a fit (misfit) would lead to more (less) useful MCS, positively (negatively) relating to departmental performance. These moderating (contextual) and outcome (performance) effects will be specifically explored later in this chapter. Appendix 3o displays data pertaining to MCS usefulness at time one for Education and Human Services respectively, after reducing these data for text coded at the OM-MCS node¹⁵⁶.

¹⁵⁶ This resulted in a small amount of data reduction from 18 documents (122 text units) only, but was done to make sure that data analysis was not repetitive from section 13.2.

13.3.1 MCS usefulness in Education

The summarised data in appendix 3c suggest that Education managers were not satisfied with the information they received prior to any output management emphasis. At this stage, it appeared that managers would welcome information on outputs, detailed strategic planning information, and linkages between budgets and strategic plans:

...Importantly to ask the managers what they want. Because at the moment even in this place, you get reports and you're not quite sure what they are and they're not much good to you, and they're certainly not related to your outputs.

We haven't really had clear set of priorities on which you can make decisions on funding as well, I mean that — it would be nice to have those priorities because then...you can evaluate those sort of things. We do have priorities and I know they've been used and things like that, sometimes what happens is you have the submission which gets approved and then it becomes the priority and...things come through. (Chicken and egg?) Yeah, that's right.

(In the strategic plan) that's very flowery words and that's their objective, (for example) to expand the scope of consumer choice, to further encourage education and training institutions, to compete for clients...to expand competitive tendering for the provision of occasional adult community and further education...to enhance the physical and learning environment of students in schools...You can see the very, very high — motherhood...it's high...But we're not like that and if service indicators are our real drivers, then we should be putting a lot of work in that in my view. Having said that I still see a big advantage in accrual accounting.

(Are those plans consistent with the budget as well?) They should be. But really, so far even our divisional plan is like this, it's more a top — like a top priority area and the projects that you're going to do under those and how they're going to be achieved and then the budget sort of, if there is a budget associated with that, fine you can incorporate that but sometimes there's no extant budget it's just staff time and working things through like that. So it'd be consistent with the overall budget but there's no, the planning relationship is very murky between the divisional level plans and the budget, at least in our area anyway.

In particular, it seems managers desire long term planning for the issues that are important that might not be so urgent, perhaps in addition to their short term focus on budget planning for the immediate issues:

We've got a lot of work to do. So you're dealing all the time with the immediate issues, the urgent issues that have to be resolved, and you don't have a lot of time to think of those issues that are important that might not be as urgent...in terms of our budget planning, it tends to be on a short term focus. Okay, what do we need next year rather than what's our plan going to be over the next five or ten years. But I think, you know, we'll get there eventually and we'll start to have this longer term focus.

Consistent with the discussion regarding MCS, which described that the central departmental MCS is not useful to managers, there exist numerous MCS attributes specific to areas, that managers would like integrated:

The only issue as far as we're concerned here is that there doesn't seem to be any use of that major corporate data warehouse for strategic purposes. It's being introduced for practical purposes, that is to run the payroll and get the leave records and do all those day to day things. So I find from my area

in the planning and the resource area here, that you then have to resort back to maintaining your own database structure for the various sorts of information needs. So everybody's got data islands around the place. So the concept of data warehousing hasn't really been grappled with here.

13.3.2 MCS usefulness in Human Services

Human Services managers seem satisfied with some attributes of MCS:

What SAMs will do is link back to the activity, in other words the chart of accounts and so each activity has a program service plan that then goes into a service agreement — and then you purchase specific products under that activity. So I think it works really well...I'd count that as a significant tool.

However, there is much dissatisfaction expressed relating to other MCS attributes.

As in Education there is a need for strategic planning, although this need was less noteworthy in Human Services:

...We tend to do things in the context of the budget...I would rather see the strategic plan as the vehicle and the budget as just a reflection of the financial decisions that fall out of the strategic plan. So we'll see what happens.

...But there probably aren't right now in terms of really key performance indicators that are important to the executive. But if this — if we take this new strategic plan which if you like, looks for a level of commonality across the department, and you can take that strategic plan and make out what are the key performance indicators and implement...(improvements) across the programs...That if you don't have a strategic plan then what you end up with is you develop some sort of plan to say what my branch is going to do, then you're assessing with my own performance and the performance of my branch against it, and you get yourself into a situation where your plan, your targets and your time lines are all assessed by yourself and I think that's a situation we've fallen in. I don't think that's very helpful at all...If you never take a long term outlook, you are just never going to start to tackle those real environmental obstacles....and we are a very active department. Now whether there is some sort of coherent strategic framework for the department, I am less sure of that and I think just in recent times we have seen examples where say, work done in one program and work done in another is clearly contradictory. That's either saying the strategy is not there, or people aren't aware of it. Or there is insufficient communication. The department just sort of gets so big that you just can't talk to everyone that you really should, to do your job. But we certainly are thinking and improving...

Managers expressed a need for more mechanistic MCS attributes such as *hard* measures and standardisation, although recognised the difficulty of developing and using mechanistic controls:

...People's problems and dealing with it and how to measure that — and look the people who are running that area would agree wholeheartedly that we need more measurement in it, and it's been left too soft. And it is difficult, and it is hard to decide what to measure. But having said that, we haven't done enough of that hard measurement. We've done some good things in that area — we've made mistakes too — but you know, we need some more measurements.

...Satisfaction survey we rank about third top, in client satisfaction with services provided. Now, it's again, it's difficult to know whether you've got an exact comparison about the sort of measures that you can really use. The difficulty also is once you start looking at international comparisons you get issues between the layers of government...

...Harder in a way to deliver what we're doing because the structure makes it very difficult to have control over what we are doing. Regions will act in a reasonably illogical way quite often and its very

hard for us to actually pull them into line and then to approach the purchaser in the way we would like to do so...there's a degree of inconsistency across the state.

There's no great catastrophe which will lead to a change in demand — its very slow change and reasonably easy to predict — if we've got data.

However, the lack of usefulness regarding existing mechanistic MCS attributes was apparent:

Restructure was to try to solve that (local fragmented service delivery problem) organisationally...The notion that you can have business units who then communicate with each other by some formal arrangements, and they buy and sell each others services etc, didn't have a hell of a lot of application to a lot of the services that we provide. It might for some things like corporate services and we've certainly gone down (that) track...But as a method of relating between different parts of the service system, it didn't have a lot going for it. I'd like to think that we aren't really going down that path. Though as recently as a couple of months ago someone in one of the programs said to me that they did regard themselves as separate businesses that needed separate rules for allocating funds for example to the regions.

If you really want to make strategic decisions about whether you should put more into slip, slop, slap or more into AIDS or more into cancer, you actually need a really good evaluation of programs, a really good evaluation of trends and a really good evaluation of what the opportunities to make gains are...And budget papers are pretty awful, they're just not the sort of information for making those sorts of decisions.

Further, managers also expressed a need for more organic MCS attributes, such as more meaningful non-financial data, and data that can be flexibly accessed:

(So would that be along the lines of qualitative performance measures?) It is yes. Again from a reasonably simplistic point of view because they don't have a good understanding of the business. So it's hard to actually have KPIs which are meaningful.

A final major criticism Human Services managers made regarding MCS attributes prior to any emphasis on output management, was that it lacks integrated and disaggregated information, in areas where clients are shared:

We're in the process of creating what will be known as a segmented waiting list, which will basically treat each of those groups I just mentioned as different groups, and there will be different strategies for handling each. And the priority, if you like, will be we'll cater for the homeless first...And we involve the community sector in managing some of those groups as well. It's not only just the housing operation, but if you take people with various types of disabilities, they can utilise a number of other services, whether it be local council or you'll often find they're also clients of this department whether it's disability, psychiatric, or whatever. So one of the concepts of housing coming to...Human Services as opposed to where it was in Infrastructure, was the overlapping clientele, or the potential overlapping clientele. But the department itself caters for those people. We don't have very good data systems yet between each other to identify that and aspects of privacy come up so we can only deal in aggregates.

...Suite of management information that program managers need in the department to manage their programs and try to understand how their programs are working. Now, having said that, I don't think we've got a good set of management information within the department yet, but I would think people will realise the improvement. As we know more about it, as we have more certainty about the budget, now that we've moved on to the new financial management system, shortly well we're rolling out release one of SAMs at the moment, and so that will actually give us a fair bit of commitment to the budget and things like that. So we'll actually really, really know our whole — cash flow for the budget

will actually be held, and you'll be able to see it at activity, at agency, by program, by region, there'll be a whole range of ways you can cut into that information and have a look at it. So that will be a great improvement in the type of management information that's available.

Sections 13.2 and 13.3 reported results and analysis of data relating to mechanistic/organic MCS attributes at time one in the study, before any emphasis on output management. The relationship between OM-MCS and MCS usefulness at time period one needed to be established before exploring this relationship across the period of study in section 13.4. It was important to do this before examining whether there are direct effects of OM-MCS on MCS usefulness, and then whether any moderating, contextual effects are important to this relationship.

13.4 Emphasis on OM-MCS, MCS usefulness and context across time

This section will illustrate the emphasis (if any) on OM-MCS, the resulting implications for MCS usefulness, and provide a preliminary examination of contextual effects, across the period of study. Section 13.5 further and more specifically discusses contextual moderating effects between OM-MCS and MCS usefulness. Section 13.6 explains the implications of the relationship between OM-MCS, MCS usefulness and contextual factors, to performance. This relates to propositions 3a-3d and 4. The model predicts that OM-MCS will impact upon MCS usefulness and that MCS usefulness will impact upon the performance of the departments studied. Further, the relationship between OM-MCS and MCS usefulness will be moderated by contextual factors. Specifically, the model suggests that if OM-MCS fits (misfits) with contextual factors in terms of the organic/mechanistic framework, then a high (low) emphasis on OM-MCS will have a positive impact on MCS usefulness (assuming in the case of low emphasis that alternative, organic controls are emphasised) and these positive effects on MCS usefulness will subsequently lead to improved performance.

The analysis of MCS at time period one (section 13.2) described MCS for both departments as predominantly organic. It is important to note that across time, the description of other MCS attributes (and MCS usefulness) remained substantially the same across the period of study (see appendix 3m). This section therefore, will focus on the emphasis on output management across the period of study because it would

be repetitive to revisit data and analysis relating to the other MCS attributes and the way in which they are used.

In exploring the impact of OM-MCS, the study assesses the extent to which output management has been emphasised across the period of study. This analysis demonstrates whether high/low emphasis on OM-MCS has impacted MCS usefulness of each department.

As Gosselin (1997) demonstrates, many organisations will adopt new MCS attributes (in his study, activity management), however not all will continue to the emphasis stage. That is, the attribute is adopted but there is little to no emphasis. Emphasis in this context was previously defined as the extent to which output management information is considered of high/low importance to managers.

The OM-MCS emphasis node for Education and Human Services consisted of 9 692 text units (from 46 transcripts). This node was re-coded more finely (disaggregated), and one category resulting from this focused on the emphasis on output management information by managers for management purposes. This node consisted of 180 text units from 42 transcripts (21 Education; 21 Human Services), that was subsequently used to create a matrix of approximately 2 500 words.

Some examples from this analysis are discussed below. These examples are taken from the middle and later stage interview transcripts. These transcripts are most relevant for determining the level of output management emphasis established in the almost two and a half year period subsequent to adoption. The results suggest that in Education, output management has not been emphasised, only utilised in preparation of budgets for external use:

I'd say output budgeting has been implemented because that's the way we prepare our budget for discussion with government. In terms of the actual management of resources within the department, we are not yet on an output management basis (T35).

People saw it as an add on thing and not really related to their work...We haven't integrated into people's minds. We're addressing that problem now...We'll be reviewing our output structure again this year...Overhead is only allocated to output group level because that's all Treasury requires of us (T36).

We have understanding of what's required to implement output management at the top level but other issues are always more pressing and urgent (T39).

In Human Services, output management has had a low emphasis:

The pressure to develop outputs and PMs (performance measures) has certainly influenced what we do here...We've made real progress in unit costing Home and Community Care Services and Dental...Working towards unit costing in harder areas. Debate is occurring about whether measures are input or output on those which are hard to measure like counselling (T32).

We're not very far advanced with the output reforms. We've got the reporting part done and we're in the second stage of redefining outputs, questioning the validity of our output measures (T40).

Other divisions in trying to measure everything have ended up with input measures like hours worked (T42).

This demonstrates that within certain divisions there has been a moderate emphasis on output management, but this is not so for the whole department:

Everyone is working on understanding what it costs to provide services...None of the information we pass up to DTF is part of our "internal management reporting review" because it's gone down a path of public spending accountability rather than providing strategic management information. The MRP has lost it's way (T41).

Throughout the period of study (nearly two and a half years), there was a low emphasis on output management in Education, and a low to moderate emphasis in Human Services. Specifically, output management could not aid MCS usefulness at all for Education (except by avoiding a high emphasis on output management where this is dysfunctional and allowing organic or mixed MCS attributes to dominate if this is appropriate to context), because a moderate emphasis, at least, is a necessary (but insufficient) condition preceding any impact upon MCS usefulness. There had been no evidence any emphasis on output management by the time of interview cessation within Education. Output management by itself cannot impact MCS usefulness, because it contributes very little to OM-MCS. Output management has had the potential to partially increase Human Services MCS usefulness, but only where Human Services had a paucity of basic information for monitoring and controlling, as was the case in the Youth and Family Services Division.

For most divisions within Human Services, and in particular the largest division (Acute Services) output management has simply been an overlay for external reporting and has not been emphasised, because those divisions that require more mechanistic MCS attributes were already utilising other types of output control practices. That is, output controls (together with organic controls) are already used, rendering output management redundant. For example, the Acute Health Services division was heavily reliant on Weighted Equivalent Inlier Separations (WEIS)

information for control purposes prior to adoption of output management. WEIS are amounts of output that hospitals produce, calculated on a casemix¹⁵⁷ basis. Acute Health Services does not collect information from hospitals about the inputs used in producing WEIS. A similar scenario is apparent in the Housing division also:

Casemix is output management, which we did for our (Acute Health Services) own purposes (T15).

...Output management is not new to Housing which is a commercial operation (T16).

Or, divisions had previously collected this type of information for mandatory reporting to resource providers:

Outputs haven't changed our performance measurement because we do far more extensive measurement and reporting for our Federal agreement (T31).

Similarly in Education, if there had been any emphasis on output management it seems there would have been little impact on the Training and Further Education division of the department:

We had output based funding in OTFE before DTF thought of it but not in the other areas of Education...In OTFE we've taken the output model to extremes. We take money back from institutes for under delivery and we're moving toward outcomes (T34).

In summary, output management has a low emphasis (that is, little to no emphasis) in the case of Education. Output management has a moderate to low emphasis in the case of Human Services, although it is not used mechanistically, or to replace other control practices. Output management is a mechanistic control practice designed to be used mechanistically and to replace the input control practices (which are more organic) predominantly used in government departments. Where it has moderately emphasised output management, Human Services has done so in a somewhat organic way, and retained a high emphasis on input and other organic control practices, simultaneously. Figure 13.2 summarises this analysis.

Figure 13.2 illustrates that Education and Human Services have produced different outcomes in relation to emphasising output management. Education has placed a low emphasis on output management and Human Services has placed a moderate to low emphasis on output management. That is, Education places a high emphasis on input

¹⁵⁷ Casemix is an output funding system relating to diagnostic related groups of medical episodes funded by fixed price reimbursement.

and other organic controls, together with mechanistic controls and a low (little to no) emphasis on output management. Human Services also places a high emphasis on input and other organic controls, together with mechanistic controls, but places a moderate to low emphasis on output management¹⁵⁸. While both departments have a mixture of controls across the period of study, these are predominantly organic control practices, used organically.

Figure 13.2 Emphasis on OM-MCS

		Departmental result	
		Emphasis on OM-MCS	
High emphasis on input and other organic controls		Moderate to low	Low
	Yes	Human Services	Education
	No		

Reflecting on the earlier institutional analysis momentarily, the analysis reported here would seem complementary. That is, notwithstanding the low emphasis on adopted output management (reflecting the extent of importance and use to managers internally), the headings in budget papers and annual reports (that is, external reports) have changed to reflect output groups, outputs, and activities. Interestingly Olson and Romabach (1992) in Bjornenak (2000, 200) state:

In the 19th century, the budget was said to be divided by 'headings' and by 'titles'. Another label has been 'programs' and now the label is 'activities'...We might then say that Swedish municipalities have presented their budgets in terms of activities for more than a hundred years.

Perhaps the same description might be made for Victorian government department budgets. This implies that the external appearance of output management is apparent, even where there is low (little to no) emphasis on it internally. A summary of output management usefulness is provided in table 13.3. It is important to understand that after establishing that there is a low emphasis on output management that analysis of

¹⁵⁸ As an interesting aside, Treasury had developed an evaluation framework for departments to apply to a self-assessment of output management (Treasury, 2000). Upon enquiring to the relevant official in Treasury (on 01/12/2000) whether departments had completed these evaluations, the researcher was informed that they were complete, but that the evaluation report was "cabinet-in-confidence", and would not be released even to senior public sector managers.

the broader MCS (previously reported) became dominant because where emphasis on output management is low, managers had to be using other MCS attributes, so these became the primary focus.

Table 13.3 Output management usefulness

Education	Human Services
Feeling in Schools of "what does this have to do with what we want to achieve" whereas in OTFE there is a central planning focus already (T4) Each output has PMs but some of those measures don't change much during the year, are measured annually and we have to report quarterly (T20) When the structure and the funds we receive are on an accrual basis then it will have meaning. Sure it's important that we know about full costs, but the decision making processes haven't been changed to an accrual basis (T23) Although the quarterly reporting is inappropriate for measuring progress against targets when 95 per cent of enrolments occur in one quarter (T34) We don't have strategic clarity in DOE so you can't link everything back to where you want to be which is essential for any output management system...Old Secretary said our performance plans would be driven by output performance but nothing came of it (T36)	Not sure that objective of getting 100 per cent output based funding is appropriate. Some activities just do not lend themselves to that kind of measurement (T12) Further there's management information that is more relevant to our role as service purchasers that would be mad to report up the line to DTF (T26) DTF think if you have commercial financial statements plus output information that is what you need to manage. I agree that's important but politicians need to put labels on buckets of money for specific initiatives (which require input controls) (T30) Quality is of great concern to us and hard to measure. We have clients for life and are not throughput based so you need to be careful not to just focus on the numbers (T40)

As noted, the analysis of MCS at time one reflects MCS attributes (organic/mechanistic), their usage (organic/mechanistic) and their usefulness over the period of the study. OM-MCS remained predominantly organic in control practices and use over time for both departments. As noted, the summarised analysis and results of OM-MCS over the period of study are reported in appendix 3m. These were not repeated or elaborated upon in the text as they are substantially similar to the analysis and results reported in sections 13.2 and 13.3 and would therefore be unnecessarily cumbersome.

13.4.1 Implications of low emphasis on output management for OM-MCS

Section 13.4 has so far discussed emphasis on OM-MCS across the period of study. The preceding sections discussed other MCS attributes dominant in the departments at the time of adoption, but before there was opportunity for any emphasis to be placed on output management. Section 13.5 investigates contextual factors more specifically, then draws on the analysis to investigate propositions 3a-3d.

Sections 13.2 and 13.3 reported on an analysis of MCS and MCS usefulness data from time one data collection, that was prior to any output management emphasis and then clarified that OM-MCS and MCS usefulness remained substantially the same across time periods where there was opportunity for departments to emphasise output management. The conclusions drawn from the analysis are that over the period of study there was little to no emphasis on output management in Education and low to moderate emphasis on output management in Human Services. OM-MCS for both departments was mixed, but more organic than mechanistic reflecting the low emphasis on output management and the high emphasis on organic controls (both practices and how these are used). Education's MCS was less organic, however, than Human Services. Findings also show that managers in both departments were somewhat dissatisfied with OM-MCS across the period of study, although more so for Education. This finding is relative to a comparison of OM-MCS with a high emphasis on output management. That is, while managers perceive OM-MCS to be moderately, rather than highly useful with a low emphasis on output management across the period of study, the data show that a potential high emphasis on output management is perceived as less useful than the mixed, although predominantly organic OM-MCS in use.

These findings can be described more specifically, in relation to propositions 3a-3d: in Education, OM-MCS is characterised by a low emphasis on output management together with a high emphasis on predominantly organic, but mixed controls; in Human Services, OM-MCS is characterised by a moderate to low emphasis on output management together with a high emphasis on predominantly organic, but mixed controls. In both departments most controls were used organically. The specific implications of these findings for contextual fit are discussed in the remainder of this chapter.

13.5 Investigation of propositions 3a-3d

As developed previously, contextual variables are modelled as moderators between OM-MCS and MCS usefulness. Propositions 3a-3d and 4 (repeated earlier in this chapter) indicate that the relationship between OM-MCS and MCS usefulness will be moderated by contextual factors. Further, that where contextual factors and

OM-MCS fit (misfit), more (less) useful MCS will have positive (negative) effects on departmental performance.

In step one of the analysis of propositions 3a-3d (sections 13.2 to 13.4) it was established that output management was of little to no use in Education and of moderate to little use in Human Services. This analysis also showed that low emphasis on OM-MCS (that is, low emphasis on output management and high emphasis on mixed, but predominantly organic controls) was at least moderately useful in both departments. Step two examines how contextual factors are important in the relationship between OM-MCS and MCS usefulness. This section outlines the analysis and results of investigating data relating to the relationship between OM-MCS and contextual variables. Data coded to contextual variables is displayed in table 13.4.

Table 13.4 Contextual variables coded to nodes

<i>Contextual node</i>	<i>Data coded</i>
(3)/Contextual factors	
(3 1)/Contextual factors/External environment	
(3 1 1)/Contextual factors/External environment/Turbulence	26/357
(3 1 2)/Contextual factors/External environment/Hostility	33/591
(3 1 3)/Contextual factors/External environment/Diversity	32/746
(3 1 4)/Contextual factors/External environment/Technical complexity	No coding
(3 1 5)/Contextual factors/External environment/Restrictiveness	41/1 340
(3 1 6)/Contextual factors/External environment/Complexity	26/423
(3 1 7)/Contextual factors/External environment/Dynamism	26/589
(3 1 8)/Contextual factors/External environment/Competition	21/352
(3 1 9)/Contextual factors/External environment/Uncertainty	30/636
(3 3)/Contextual factors/Structure	
(3 3 1)/Contextual factors/Structure/Centralisation	37/1 538
(3 3 2)/Contextual factors/Structure/Formalisation	19/308
(3 3 3)/Contextual factors/Structure/Bureaucracy	24/374
(3 3 4)/Contextual factors/Structure/Standardisation	26/571
(3 3 5)/Contextual factors/Structure/Divisionalisation	20/257
(3 3 6)/Contextual factors/Structure/Distributive network	20/163
(3 3 7)/Contextual factors/Structure/Contextual interdependence	38/467
(3 4)/Contextual factors/Technology	
(3 4 1)/Contextual factors/Technology/Task difficulty	26/426
(3 4 2)/Contextual factors/Technology/Task variability	24/300
(3 3 7)/Contextual factors/Structure/Contextual interdependence	38/467
(3 7)/Contextual factors/Culture	
(3 7 1)/Contextual factors/Culture/Managerialist	37/833
(3 7 2)/Contextual factors/Culture/Traditional public sector	14/206
Total data coded to contextual nodes	46/10 477

*Number of documents coded to this node (out of a possible 46)

**Number of text units coded at this node

To investigate propositions 3a–3d perceived external environment, structure, technology and culture were examined as moderators between OM–MCS and MCS usefulness. Intersect searches within the database were run for data coded to each dimension of the contextual variables and the OM–MCS node, ascertaining which dimensions had a pertinent, obvious relationship with OM–MCS. An intersect search will result in finding all data common to two or more nodes.

In this case, numerous intersect searches were performed upon data coded to the OM–MCS node, in combination with each contextual variable node. The purpose of these searches was to find whether the relationship between OM–MCS and the moderating variables (perceived external environment, structure, technology and culture) had been important to MCS usefulness, as predicted in propositions 3a–3d. Table 13.5 below describes these data and search patterns, showing only those dimensions of contextual factors that did intersect with OM–MCS.

Table 13.5 Contextual and OM–MCS node intersects

Search combination	Data
Perceived external environment	12/92
(I 65)//Index Searches/OM+hostility	4/18
(I 66)//Index Searches/OM+diversity	5/15
(I 67)//Index Searches/OM+restrictiveness	7/26
(I 68)//Index Searches/OM+complexity	3/14
(I 70)//Index Searches/OM+competition	2/16
Structure	21/143
(I 72)//Index Searches/OM+restructure	4/28
(I 73)//Index Searches/OM+centralisation	7/45
(I 74)//Index Searches/OM+bureaucracy	3/14
(I 75)//Index Searches/OM+standardisation	2/12
(I 77)//Index Searches/OM+contextual interdependence	14/60
(I 77)//Index Searches/OM+structural alignment	44/4 950
Technology	21/733
(I 149)//Index Searches/OM+task variability	21/733
Culture	9/52
(I 86)//Index Searches/OM+managerialist	8/32
(I 87)//Index Searches/OM+traditional public sector	2/12
Total documents/text–units coded	46/1 423

Data were considered insufficient where there were no corroborating comments coded at the relevant node intersect (based on Yin 1994 and Miles and Huberman 1994). For example, in relation to the dynamism dimension (a sub–node of the perceived external environment node), the intersect of dynamism and OM–MCS did not contain data from at least two sources for a given department.

Dimensions other than dynamism for the perceived external environment node (variable) had corroboration from at least one other participant within a given department and are therefore included in the analysis. The importance of using corroboration with interview data was discussed in chapter ten. These dimensions are included on the basis that there was sufficient evidence. This process resulted in dropping several dimensions of the variables from the model. The remaining data are described in table 13.6. Therefore, while some dimensions were found not to be pertinent to OM–MCS, on each of the four moderating factors there was sufficient data on at least one dimension. This meant that there was sufficient data to investigate propositions 3a–3d, which had the potential to be supported on the dimensions reported in table 13.6, whereas, other dimensions (such as dynamism) could not be included in the subsequent analysis.

Table 13.6 Contextual variables coded to nodes that intersect with OM–MCS

Contextual node	Data coded
(3 1)/Contextual factors/ External environment	46/3 444**
(3 1 2)/Contextual factors/External environment/Hostility	33/591
(3 1 3)/Contextual factors/External environment/Diversity	32/746
(3 1 5)/Contextual factors/External environment/Restrictiveness	41/1339
(3 1 6)/Contextual factors/External environment/Complexity	26/423
(3 1 8)/Contextual factors/External environment/Competition	20/345
(3 3)/Contextual factors/ Structure	46/2 950
(3 3 1)/Contextual factors/Structure/Centralisation	37/1 538
(3 3 3)/Contextual factors/Structure/Bureaucracy	24/374
(3 3 4)/Contextual factors/Structure/Standardisation	26/571
(3 3 7)/Contextual factors/Structure/Contextual interdependence	50/571
(3 4)/Contextual factors/ Technology	39/1 077
(3 4 2)/Contextual factors/Technology/Task variability	39/1077
(3 7)/Contextual factors/ Culture	46/1 033
(3 7 1)/Contextual factors/Culture/Managerialist	37/833
(3 7 2)/Contextual factors/Culture/Traditional public sector	14/200
Total documents/text–units coded to contextual variables that intersect with OM–MCS node	46/7 831

*Number of documents coded at this node (out of a possible 46)

**Number of text units coded at this node

As a further validity test, data were not included if there was contradictory evidence, for example, if at least one other participant made contrary statements. This process is a rigorous version of the “looking for negative evidence” test recommended by Miles and Huberman (1994, 271) and places high importance on contradictory evidence. This process entails looking for evidence that disconfirms the findings. Miles and Huberman (1994) advise that one instance of disconfirmatory evidence

may be cause to require reconsideration of a hypothesis and the proportion of negative to positive evidence should also be considered. This approach to data analysis is not inconsistent with the methods adopted by Dent (1991) and Marginson (1999) in efforts to disconfirm explanations for the purpose of refining their results.

Data that passed the abovementioned tests were described in table 13.6. The organisational context for Education and Human Services will be described in the following section. The four moderator variables (perceived external environment, technology, structure and culture) modelled in the study were found to be pertinent to the relationship between OM-MCS and MCS usefulness. This section has reported an analysis of data that indicate which dimensions of the contextual factors are important to propositions 3a-3d. As noted previously, this is a necessary second step (following the OM-MCS and MCS usefulness analysis) to investigating the fit relationships proposed. The pattern-matching analysis in the following section reports the final step in investigating propositions 3a-3d.

13.5.1 Contextual fit and OM-MCS, pattern-matching

This section examines how the contextual factors characterising Education and Human Services moderate the relationship between OM-MCS and MCS usefulness. The results of this pattern-matching analysis are displayed in table 13.7. Table 13.7 displays the results of the analysis of context for the two departments and then indicates the ideal (predicted) MCS type to fit those contexts. This process was performed to ascertain whether departmental context suited more mechanistic, or more organic (or mixed), OM-MCS.

The results in table 13.7 relate to propositions 3a-3d, which investigate the fit relationship between OM-MCS and context. In general, the relationship between OM-MCS and MCS usefulness is moderated by the contextual factors, as proposed.

Table 13.7 Actual context of Education and Human Services and predicted MCS fit

Predicted MCS fit relationships	Actual contextual factors	
	Education	Human Services
Mechanistic	High restrictiveness High centralisation	High restrictiveness High hostility
Organic or mixed	High contextual interdependence High task variability High traditional public sector culture	High diversity High complexity Low competition High decentralisation, matrix High contextual interdependence High task variability High traditional public sector culture

Specifically, the results in table 13.7 indicate that Education is high in restrictiveness and high in task variability¹⁵⁹. It was proposed that high restrictiveness in the perceived external environment would fit mechanistic OM-MCS attributes (such as output management) and high task variability would fit organic, or mixed OM-MCS attributes. Therefore, the environment of Education is conflicting. Recall that Khandwalla (1977) suggested that organisations with competing perceived external environment attributes (for example, characterised by high hostility as well as high turbulence, and so on) can be best managed by initially using mechanistic controls to ensure initial survival, and then organic controls to effectively manage the environment in the long term, once the threats to short term survival have been overcome. This concept can apply where the competing variables represent the internal environment (technology variables) and external environment (perceived external environment variables). This argument was extended in chapter two, indicating that in situations where organic MCS is most appropriate, a mixture of organic and mechanistic controls may also be appropriate. This suggests that Education's context (characterised by competing variables of high restrictiveness and high task variability) would fit best with organic or mixed MCS (unless it is under short term threat).

Regarding structure, Education is relatively centralised, consistent with more

¹⁵⁹ It should be noted that the basis upon whether variables were classified as scoring 'high' or 'low' was management opinion. For example if a manager said "we are constrained by much regulation", their division was considered as scoring high in restrictiveness. This method of scoring was necessarily subjective.

mechanistic MCS. However, Education also experiences high levels of contextual interdependence, that suggests more organic, or mixed MCS would be most suitable. The predominance of a traditional public sector culture that was apparent in the Education data also suggests that more organic or mixed MCS is most suitable.

In order to investigate propositions 3a–3d, it is necessary to demonstrate that the relationship between the reported contextual factors and reported OM–MCS is indeed associated with MCS usefulness. The OM–MCS data indicated that Education has a mixed, but predominantly organic MCS and the context data indicated that Education's context is suited to organic or mixed MCS. Step one, where data analysis for OM–MCS and MCS usefulness was reported, indicated at least moderate MCS usefulness which supports the relationships predicted in propositions 3a–3d.

Human Services is high on the perceived external environment dimensions of diversity and complexity, experiences low levels of competition and in relation to technology variables is high on task variability, all attributes suited to more organic, or mixed MCS. Further, Human Services is also operating in a hostile and restrictive perceived external environment, attributes suited to more mechanistic MCS. Applying Khandwalla's (1977) competing attributes argument, this suggests that organic or mixed MCS would be most appropriate for Human Services.

Regarding structure, Human Services is highly decentralised, operating within a matrix structure and experiences high levels of contextual interdependence. These structural characteristics and the predominance of a traditional public sector culture, which were apparent in the Human Services data, also suggest that organic, or mixed MCS is most suitable.

As with Education, in order to investigate propositions 3a–3d, it is necessary to demonstrate that the relationships between the reported contextual factors and reported OM–MCS are associated with MCS usefulness. The MCS data indicated that Human Services has a mixed, but predominantly organic MCS and the context data indicated that Human Services is suited to organic, or mixed MCS. Step one, where data analysis for OM–MCS and MCS usefulness was reported, indicated at

least moderate MCS usefulness which supports the relationships in propositions 3a–3d.

Evidence suggests that Human Services faced a diverse and complex environment and utilised a mixed, but predominantly organic MCS, but that the organisation was in need of more mechanistic MCS attributes, because there was a lack of basic output data demonstrating what the department produced. Perhaps this need was apparent because of the high restrictiveness and high hostility experienced by Human Services. This need is consistent with the concept developed earlier in the study that an organisation that fits with organic MCS needs mechanistic MCS attributes also. The combination of organic/mechanistic MCS attributes is necessary to maintain control over emphasis of strategies and ensure that the strategies being developed are consistent with management strategies:

...Working more closely with them. And so this is why tools like a good output and performance information system can assist you at least in getting enough data there, and data in a reasonable format to have a look at the landscape and to ask difficult questions (T15).

This finding is important because it supports the earlier discussion pertaining to contingency literature, suggesting that organisations that fit organic MCS also benefit from mechanistic controls such as formal MAS. The excerpt from T15 above suggests that mechanistic attributes such as output management are necessary, "to at least get the data there...to ask difficult questions". Hence mechanistic control elements are perhaps useful for focusing management on potential problems, rather than for evaluation, indicating that informal communication and liaison are then useful.

The pattern-matching analysis summarised here suggests that both Education and Human Services will find organic MCS, or a mixture of organic/mechanistic controls most useful and performance will be enhanced when using organic or mixed MCS. This section has illustrated that organic, or mixed MCS is most useful because the context of both Education and Human Services across the period of study is better suited to a more organic, or a mixture of organic and mechanistic MCS attributes. Input (organic) control practices have continued to be emphasised in both departments and these practices are considered useful to managers. A low to moderate emphasis on output management (which is mechanistic) is evident and

these practices are considered to be of low usefulness to managers. The context of both departments at the beginning of the data collection period and at the end of the data collection period was static, as was the emphasis on mixed, but predominantly organic MCS attributes, used organically.

It is interesting that even though both departments had contexts suited to mixed controls, as distinct from organic controls alone, that adopted output management was perceived as not useful. This suggests that adopted output management was too rigid, not lending itself to organic use when required and, therefore, providing the potential for dysfunction if highly emphasised. The other mechanistic MCS attributes found in both departments' OM-MCS could be used mechanistically and organically. The moderate to low emphasis on output management evident in Human Services areas that had, and were suited to, more mechanistic controls, used output type controls in a more organic way than adopted output management would allow.

Evidence on the fit between OM-MCS and context provided in this study suggests that a high emphasis on output management could only have a positive effect on MCS usefulness if it is used organically, allowing departments to use the output targets flexibly, to assist management to better understand operational outcomes and to make output measures suitable for equitable performance measurement.

13.6 Investigation of proposition 4

Testing propositions 3a-3d involved investigating the factors that are contextually specific to Education and Human Services. This study has argued that OM-MCS only leads to MCS usefulness if it fits with contextual factors (investigated in propositions 3a-3d). It is further argued that enhanced departmental performance will only be achieved by OM-MCS if it leads to MCS usefulness. As shown in previous analysis throughout this chapter, OM-MCS leads to at least moderate MCS usefulness because there is a low emphasis on output management and a high emphasis on other mixed, but predominantly organic MCS attributes used organically, rendering OM-MCS as predominantly organic.

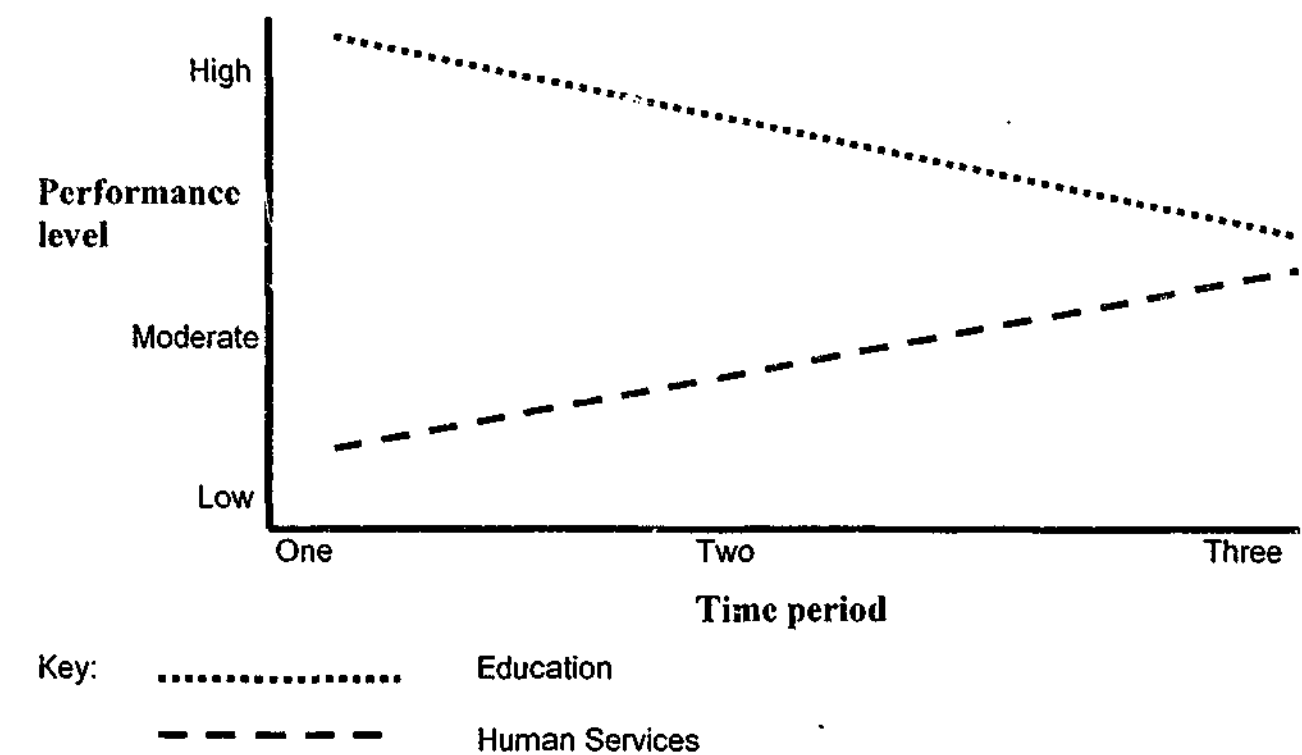
These observations reported in the analysis and results of investigating the

contingency arguments are consistent with the evaluation of departmental performance reported earlier, in chapter twelve. Recall that in chapter twelve results of analysing performance data were presented and discussed, for the purpose of investigating proposition 2. As indicated, it is logical in respect of the model to investigate proposition 4 after investigating propositions 3a-3d. Proposition 4 stated:

P4 Where a department's MCS is more (less) useful as a result of the fit relationships in propositions 3a-3d, there will be positive (negative) effects on departmental performance through efficiency gains (lack of efficiency gains).

Specifically, both departments were evaluated in chapter twelve as having at least moderate performance. Figure 13.3 summarises the results of the performance data analysis from chapter twelve.

Figure 13.3 Performance outcomes for both departments



In chapter twelve, section 12.2 assessed the performance of both departments across time, by analysing data from a variety of sources. Quantity, quality, timeliness and cost measures were assessed. Section 12.2 specifically (and chapter twelve generally) provided analysis and results which indicate that there has been change in departmental performance in each case. Specifically, Education has *high*

performance. Education was a higher performer than Human Services¹⁶⁰ in 1997-98, 1998-99 and 1999-00, however performance is *declining*. Human Services was assessed as a *moderate* performer. Human Services had lower performance than Education in 1997-98, 1998-99 and 1999-00, however, performance is *improving*.

The at least moderate performance of both departments is consistent with the fit relationships demonstrated in this chapter. That is, in both departments there is a fit between a low emphasis on output management, together with a high emphasis on a mixture of predominantly organic, with some mechanistic control practices. These organic and mechanistic control practices are predominantly used organically. In both departments there is also moderate to high performance. The data in chapters twelve and thirteen drawn upon in this section indicate support for proposition 4.

13.7 Summary and conclusion

It was argued in this study that OM-MCS will affect MCS usefulness depending on its fit with context and that MCS usefulness will in turn impact on departmental performance. Having established (in chapter twelve) that there have been changes in performance in both departments, an analysis was then reported, which showed that there has been a low emphasis on output management and a high emphasis on mixed, but predominantly organic MCS attributes, used organically in Education which is appropriate to its context. In Human Services, there has been a moderate to low emphasis on output management and a high emphasis on mixed, but predominantly organic MCS attributes, used organically which is appropriate to its context. Both departments had moderate to high performance also, which supported the fit propositions.

¹⁶⁰ That is, Education is a higher performer than Human Services when each department is evaluated against its own targets, not common targets.

The benefits of output management are negligible in Education because output management is not emphasised. That is, benefits are negligible beyond avoiding a misfit with context by being low in emphasis and therefore enabling dominance of more organic controls (and mechanistic controls that can be used organically when required) within OM-MCS. In Human Services, because areas that moderately emphasised output management had utilised output control practices previously, output management added little value to these areas (even though they are suited to a mix of organic and mechanistic controls). These areas already utilised similar output based control practices so output management was redundant. Further, the output based controls utilised could be used more organically than adopted output management would allow because of its immovable targets.

Essentially, while both departments are suited to a mixture of organic and mechanistic controls, the analysis and results presented here suggest that output management was *too* mechanistic. This seems logical when it is considered that both organic and mechanistic controls emphasised in the departments were predominantly used organically. This indicated that the mechanistic controls emphasised could be used organically, when required (and mechanistically, when required).

Chapter thirteen provided an analysis to explain that output management per se has had little to no effect on MCS usefulness (and as a consequence, MCS usefulness from output management alone has had little to no effect on departmental performance, through efficiency gains). However, the fit relationship between contextual factors and OM-MCS is consistent with the performance outcomes. That is, while output management per se has not impacted MCS usefulness, because of the low emphasis other MCS attributes have dominated. These attributes, while a mixture of organic and mechanistic controls, have been dominated by organic MCS attributes and mainly used organically. This explanation was provided by analysing moderating effects of contextual variables on the relationship between OM-MCS and MCS usefulness.

In summary, analysis and results from Education and Human Services data reported in this chapter, indicate that propositions 3a-3d and 4 are supported. These propositions together predicted that departments with contexts that both fit organic,

or mixed (mechanistic) OM-MCS attributes and have organic, or mixed (mechanistic) OM-MCS attributes, find MCS more useful and consequently perform more highly.

Earlier in the study, the concept of predominantly organic MCS also containing mechanistic control attributes for effective control in organisations with contexts that suit organic MCS was discussed. Further, the concept of using organic control attributes organically or mechanistically and using mechanistic control attributes mechanistically or organically was developed. The cases presented here both highly emphasise input and other organic control practices, lowly emphasise output management, but also moderately to highly emphasise some other mechanistic controls. Further, the mixture of organic and mechanistic controls found in both departments is predominantly used organically.

Interestingly, the analysis and results in chapter thirteen suggest that given a high emphasis on predominantly organic controls together with a moderate to high emphasis on some mechanistic controls was a fit with context, that a high emphasis on output management could have been appropriate, provided organic controls continued to dominate and output management could have been used more organically when required (or at least less mechanistically). This suggests that adopted output management is too mechanistic, risking dysfunction if highly emphasised. A potential insight into the low emphasis on output management is provided by the additional analysis in chapter fourteen.

Chapters eleven to thirteen reported analysis and results relating to the propositions developed in part two. These chapters complete the investigation and discussion of propositions 1a, 1b and 2 (the institutional path) and 3a-3d and 4 (the contingency path), which relate to the formal model developed in this study. These propositions were, overall, supported by the analysis and results presented. Chapter fourteen provides some additional, emerging propositions and reports on data relating to these. These emerging propositions extend the model beyond the initial, formal propositions.

CHAPTER FOURTEEN ADDITIONAL ANALYSIS: CONTEXT AND EMPHASIS ON OUTPUT MANAGEMENT

14.1 Introduction

This chapter provides a further, in depth, explanation-building analysis, that explains the relationship between perceived external environment, technology, structure and culture on output management emphasis. This explanation-building analysis indicates why there is a low emphasis on output management, whereas the pattern-matching analysis explained only that context fits with a low emphasis on output management without exploring why this occurs. The further analysis reported on in this chapter elaborates upon the relationships formally modelled in the study and represents an additional insight, beyond that of the contextual moderating effects between OM-MCS and MCS usefulness. This further analysis explores the importance of contextual factors to the level of emphasis on output management. Specifically, this further analysis uses data to explain that the contextual factors found in the cases reported upon in this study cause a low emphasis on output management.

Both the low emphasis on output management in Education and the moderate to low emphasis on output management in Human Services are explained by the relationship between output management and the contextual factors characterising the departments. This relationship is complementary to, and notwithstanding the moderating effects of contextual factors on the relationship between OM-MCS and MCS usefulness.

That is, following the investigation of propositions 3a-3d and 4 in chapter thirteen, where data were used to show that the proposed relationships are supported, this chapter reports an explanation-building analysis to provide reasons for the low emphasis on output management found in the two cases. Recall that at the inception of the study it was proposed that either a high or a low emphasis on output management could occur, post adoption. This explanation-building analysis extends the initial, formally proposed relationships.

14.1.1 Process for reporting the additional results

As indicated, an explanation-building analysis will be reported in this chapter, to explain why there is low emphasis on output management. This deeper analysis moves beyond the model, which is an accepted process in case study research. Indeed one of the stated benefits of case based research is that it has the ability to probe research questions more deeply than planned, through initial, formal propositions or hypotheses. Atkinson and Shaffir (1998, 53) state:

As the field research progresses, the researcher revises the initial hypotheses to reflect the new observations and acquired insight... (the) initial hypothesis, as both the focus and driver of field research, is what those in the positivist tradition call a working hypothesis. The conduct of field research is to continuously revise the working hypothesis as new data are recorded and analysed. The process is one of theory building with continuous small-scale observation that simultaneously results in hypothesis testing and revision. Although continuous testing of the working hypothesis is part of the process, the primary focus is on theory building. The initial hypothesis is important for two reasons. First, it signals the bias or perspective that the researcher brought into the study. Second, there is strong evidence to suggest that where the researcher ends up, in terms of the revised hypothesis, will be heavily determined by where the researcher started, in terms of the initial hypothesis.

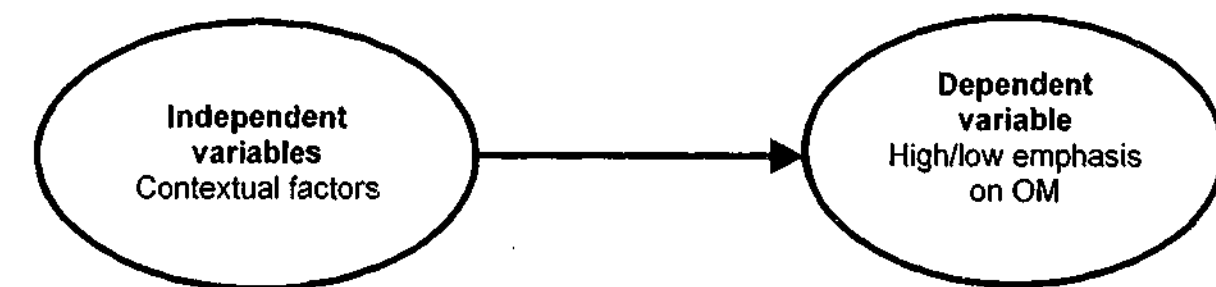
This excerpt highlights the close interrelationship between the formal research model and related additional data analysis that builds on this theoretical framework. In this study, the additional analysis builds on the contingency framework formally proposed, indicating that not only do contextual factors moderate the relationship between OM-MCS and MCS usefulness with implications for performance, (as established) they also act as independent variables related to the level of emphasis on output management. In chapter ten (research method), the intended scope of this study was highlighted, explaining that while the primary intention of this study was to test existing theory, a secondary intention was theoretical development. The approach to additional analysis adopted in this study is consistent with Atkinson and Shaffir's (1998) suggestion that case study research should initially test existing theory and then develop new (related) theory.

Consistent with Atkinson and Shaffir's (1998) comments on the interrelationship between investigating formal propositions and further analysis, the additional analysis reported upon in this chapter reflects an extension of the contingency arguments developed in the formal model. In particular it augments the investigation of the traditional contingency fit relationships (which used data to investigate propositions 3a-3d and proposition 4), to formulate new contingency based

propositions which indicate that contextual factors can also act as independent variables to the level of emphasis on output management. In essence, while investigation of the formal propositions explain how contextual factors moderate the relationship between OM-MCS and MCS usefulness, the additional 'emerging' propositions explain why there is a low emphasis on output management.

This additional analysis is important because results from investigation of the proposed relationships discovered that a low emphasis on adopted output management occurs in both cases¹⁶¹, therefore, output management is not a dominant MCS attribute in either case. Consequently, the fit relationship between a high emphasis on OM-MCS and MCS usefulness could not be investigated using the case study data. It could not be predicted in the design stage of the study that there would be little to no variation on output management emphasis in the cases. Contextual reasons for a low emphasis on output management can be explored using the case study data collected. Specifically, the results from the additional analysis describe the relationship modelled in figure 14.1.

Figure 14.1 Further analysis beyond the formal propositions



These relationships are described in the following, additional 'emerging' propositions:

P3e Conditions of certainty, competition, hostility, restrictiveness and technical complexity (uncertainty, diversity [heterogeneity], complexity,

¹⁶¹ This is where each case is considered as a whole. References to the moderate to low emphasis in Human Services relate to the evidence that there is a moderate emphasis on output management in some divisions only, but because these areas already used output type controls, output management was redundant.

dynamism and/or turbulence) in the perceived external environment will be positively associated with a high (low) emphasis on output management.

P3f Situations of mechanistic and centralised (organic, decentralised, matrix, structurally complex, differentiated and contextually interdependent) structures will be positively associated with a high (low) emphasis on output management.

P3g Task certain environments or in environments where technological interdependence is low (task uncertain environments and/or in environments where technological interdependence is high) will be positively associated a high (low) emphasis on output management.

P3h A managerialist culture (a traditional public sector culture) will be associated with a high (low) emphasis on output management.

This section has explained that the remainder of this chapter will report on an additional analysis, which provides insight into why a low emphasis on output management is evident in both cases. This further analysis, while adding to the formal model, still relates to contingency type relationships between contextual factors and output management.

14.2 Context and output management — an explanation-building analysis

The explanation for the low emphasis on output management in both departments is developed in this section. It is argued in this chapter that because output management is a mechanistic MCS attribute, a high emphasis on output management is difficult to accommodate with the operating context found in both Education and Human Services.

Conceptually output management could be emphasised and used more organically and therefore be utilised effectively in these departments. The form of output management adopted by the departments, however, was designed as a rigid system that does not permit flexibility in its measures. Output management is designed as a mechanistic control practice and process. That is, output management is a mechanistic control practice, which is designed to be used mechanistically. For example, targets set at the beginning of each quarter are expected to be met and are evaluated strictly against the original targets, irrespective of condition changes.

Further, the problem that original targets are often quite arbitrary and necessarily inaccurate in some areas (where external environment and technology type make planning difficult) suggests that inflexible, narrowly focused output management as a practice and process is inappropriate. Neither Education, nor Human Services is aided by rigid output management, because both departments are suited to predominantly organic, or mixed controls, predominantly used organically.

This section describes in detail how contextual variables, perceived external environment, technology, structure and culture, render a high emphasis on output management difficult. The final results presented here are those arising from the explanation-building analysis. Specifically, this analysis shows that perceived external environment and technology are critical in understanding why there is a low emphasis on output management. The analysis also shows the impact of structural and cultural misalignment with attempts to emphasise output management. Data relating to the relationship between output management emphasis and all four contextual variables reported upon in this chapter are comprehensively summarised in appendix 3m.

Data relating to perceived external environment and technology, contextual factors that are most critical to the level of emphasis on output management are summarised in tables 14.1 and 14.2. Specifically, earlier analysis (in chapter thirteen) showed that Education is high in task variability and Human Services is high in diversity, complexity and task variability, and low in competition. Further analysis reported in this chapter indicates that even moderately high levels of diversity and hostility and a moderately low level of competition, which are contextual attributes describing Education¹⁶², are important to output management emphasis. Earlier analysis indicated that both departments are suited to more organic, or mixed rather than more mechanistic MCS attributes because of moderating effects of contextual factors, so a high emphasis on output management is inappropriate. The analysis reported in this chapter indicates that as a consequence of these contextual factors, a low emphasis

¹⁶² Compared to Human Services, these contextual dimensions were not prominent in the pattern matching analysis.

on output management was evident in both Education and Human Services because these contextual factors render output management difficult to implement and use.

The particular importance of perceived external environment and technology in these data is a significant finding considering much of the contingency literature over past decades has focused upon these variables, often in preference to other contextual factors. The findings in this chapter demonstrate management's perceptions of causality in the relationships between perceived external environment, technology and emphasis on output management. These findings extend the model, suggesting that in addition to moderating, contextual effects, direct, independent contextual effects also occur in the studied context. Tables 14.1 and 14.2 summarise the analysis for these variables in relation to output management emphasis. These results are also discussed below to aid insight into these data. Data relating to structure and culture that are important to the emphasis on output management are discussed after reporting on the analysis relating to perceived external environment and technology.

14.2.1 Perceived external environment

Data relating to perceived external environment are summarised in table 14.1. As noted in section 14.2, perceived external environment is most critical to the level of emphasis on output management. The perceived external environment characterising both departments, while somewhat different to each other, rendered output management difficult to implement and use.

Table 14.1 Critical contextual factors for output management emphasis: perceived external environment (PEE)

PEE	Education	Human Services
Diversity	Outputs are very aggregated — you lose things in the aggregation (T4) Implementing outputs should be easier here than other departments because we've really only got two major businesses and one already has a concept of purchaser/provider (T33) Output management is less well suited to Education because there is great variability amongst schools about the specialist services that they provide. It suits well at a general level, like cost per student, but that masks the real picture — so there are problems with cost allocation (T39)	We're always going to provide less information than the DTF output model requires because the complexity of the service system doesn't allow for the full coverage of all outputs that you produce (T26) You can aggregate composite services up to do unit costs in Acute because we do purchase up at that high level with WEIS. In other programs we purchase at a very detailed level. We have 500 products so the aggregation gives you meaningless unit costs (T44) Problem is that you have to aggregate outputs so highly for government purposes and the 6000 outputs we have don't naturally roll up into the six output groups. It was okay (with quantity) until they introduced requirements for timeliness, quality and cost (T45)
Hostility	Output information is just free ammunition for the opposition, same as with PB — not helpful in this environment... Strong desire but you can't be completely rational in applying outputs because of the democracy (T7) OTFE can reject clients, Schools cannot. So OTFE can use student contact hours as a funding mechanism which won't work in schools (T34)	I've seen people put together logical business cases to have them thrown out because they don't suit the political flavour (T32)
Restrictiveness		A lot of our purchasing is a historical arrangement with a block granting process (T29) We have Commonwealth funding which is not subject to the same regimes as the state funding (T44) Conceptually you can apply outputs to anything, but it's more difficult where there's a legislative arrangement or a duty of care like in Child Protection (T46)
Complexity		So it's difficult when you're trying to weigh up what's an aged care bed versus an acute psychiatric bed versus a disability day program versus a hip replacement — how do you weigh them up? You don't pick up that detail with output management (T10) Developing outputs in ACMH is difficult because we've got complex service systems which vary across the state from small budgets to large networks (T32) Output management is a very discrete form of buying services. We don't want to buy a whole lot of discrete, separate things because that has major implications for who delivers our services and how they are delivered (T41) Welfare areas have many small agencies with low unit cost activities so you can't spend much on information systems, compared with health where there are high unit costs and big agencies (T42)

Table 14.1 Critical contextual factors for output management emphasis: perceived external environment (PEE) (continued)

Competition	You won't get the reforms to work because they are commercial and we are not. We are different to the private sector in our operations, our thinking and our accounting structures because we've made it different to fulfill our objectives (T6)	Two tools are inputs and outputs — you'd have to go for managing by outputs. But an output is only another way of wrapping together inputs where you are not in a competitive market (T15) There's no competition for most of our services anyway and we have to be careful in dealing with people's lives that we don't output fund health services and allow operators to go into the red. That's not in anyone's interest (T46)
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One perceived external environment dimension found to be related to output management emphasis was diversity. Diversity is defined as "heterogeneous, where the organisation's clientele or markets have variegated characteristics and needs" (Khandwalla 1977, 333–341). Human Services was featured at this node, together with output management emphasis:

...The complexity of the system doesn't allow for that full coverage of all outputs that you're going to produce. We just produce far too many to provide the level of information that the model would seem to require (T11).

...Detail do you publish and how many products do we have. Now we have 500 products, in this Department. That's the base of our tree at the moment. We could have even more than that if we defined them differently, because some of our products are aggregated even then (T44).

While Education is not as high in diversity as Human Services, even some diversity rendered output management difficult:

Implementing outputs should be easier here than other departments because we've really only got two major businesses and one already has a concept of purchaser/provider (but it is still difficult) (T33).

Output management is less well suited to Education because there is great variability amongst schools about the specialist services that they provide. It suits well at a general level, like cost per student, but that masks the real picture (T39).

Complexity is defined as "the number of factors taken into consideration in decision making" (Duncan 1972, 313). Human Services was coded to this variable as relating to output management emphasis. Human Services is highly complex:

(We have) the continuing requirement to negotiate, to take account of all the different sort of imperatives in all the different divisions, and all the political agendas of having three ministers (T14).

So it's difficult when you're trying to weigh up what's an aged care bed versus an acute psychiatric bed versus a disability day program versus a hip replacement — how do you weigh them up? We have a range of clients that cost us an awful lot of money to support. In the \$200K and \$300K dollar bracket for one person. And you don't pick up that detail (with output management). All that actually shows up is that in fact you're inefficient. When actually there is a real need because of the circumstances of that person. Not only that, but the community expects us to. If here's someone that's got all sorts of deviant behaviours, the community does not want this person walking around the streets... (T10).

Competition is another perceived external environment dimension considered as important to output management emphasis. Competition relates to the "intensity of competition from the existence/entry of an alternative provider". Human Services was coded to the intersection of this node and output management emphasis. It is the lack of competition that renders output management difficult for Human Services:

...To put it out to a competitive process is a nonsense. Because you know, there's only ever going to be one if you like — I would think we'd never have a competitive process for purchasing blood — certainly in the span that I can see forward to. That doesn't mean that we can't pursue value for money, and we would do that by benchmarking our blood products (T14).

...Naively think that output management will be a panacea for all ills. The reality is that if you don't operate in a competitive market place, if you're actually not buying and there's not competition, on price an output is just another way of wrapping together a series of inputs (T30).

The quote from T30 almost suggests that it is not possible to implement output management because regardless of efforts to manage by outputs, outputs are just a series of inputs in the absence of competition. Low competition was not as prominent a feature in Education, however, competition was sufficiently low (driven by Schools, as OTFE is a competitive service area) to render output management difficult:

You won't get the reforms to work because they are commercial and we are not (T6).

In further support of the conclusions drawn here regarding the external environment, the dimension of perceived external environmental uncertainty is explored. External environmental uncertainty is defined by Govindarajan (1984, 127) as "the unpredictability in the actions of the customers, suppliers, competitors and regulatory groups that comprise the external environment of the business unit". Consistent with this definition, Tymon et al. (1998, 26) specify that perceived external environmental uncertainty refers to top level managers perceived ability to predict an organisations external environment accurately¹⁶³.

Data relating to perceived external environmental uncertainty support the extended analysis, which indicates that there are direct links between contextual factors and level of emphasis on output management. Specifically, these data support the

¹⁶³ A separate, though partly related concept, is that of management's response to perceived environmental uncertainty.

emerging proposition that perceived external environmental uncertainty is directly related to level of emphasis on output management.

Specifically, both departments were found to be operating in uncertain environments on one level (regulatory/political) and relatively certain environments on another level (consumer demand). For example, in Education, the predictability of consumer demand is high:

Again talking about the major area schools, you've got predictability in terms of — we can project enrolments forward, we know how many kids reasonably closely are going to be in our schools in 2–3 years down the track, we can look at the ABS census figures on BERCs and things like that. Long term projections at the system level are pretty good. We get a fairly accurate picture. Projections for individual schools can be quite dicey. They are not worth much more than 2–3 years out.

Although, there are exceptions:

We have an advisory network of things called Industry Training Bodies which are industry led forums from which we purchase training needs forecasts. And they do reasonably well. They take account of demographic regional, employment and economy wide issues in I think 15 or 16 separate areas of training provision. And they would say that they do a reasonable job in forecasting. But if you get something like the South Eastern Asian Crisis it can change fundamentally overnight.

The ability to predict other elements in the external environment was low:

A reasonable amount of time is spent assisting what you might call putting out bush fires — most of them deliberately lit by the media and interest groups in education. So education is not so much a service delivery issue, it is a political issue. And so these bushfires are stoked up continuously. And the Minister needs to be supported with information, with analysis — to address these issues. In my division there's an important role in that kind of strategic positioning of the Minister so that he can deal with the public and the parliament and the media...there's always one or two that come out of left field, but we — it's a matter of having good market intelligence and one tends to have a pretty good idea of what the issues are in education. But there are always one off things that come up that one can't predict.

Human Services data show similar patterns, where consumer demands are mainly predictable, with some less predictable examples:

Health needs don't change very quickly. It's a very slow steady pace of change. We know what's happening around the population we've got an ageing population, a higher proportion of the population is ageing. We expect that to peak by about the year 2020. Predominantly it's reasonably easy to predict the growth patterns in the demand for us because there's no great catastrophe which will lead to a change in demand — its very slow change and reasonably easy to predict — if we've got data.

We need baseline services in some areas whether they're used or not. Say for instance, if there are particularly new strains of some disease. So say you need laboratory testing to identify that, and to develop new tests and things to respond to that threat. Now that threat may not happen in 1998 or 1999 or 2000, but suddenly it's there in 2001. And unless you maintain that baseline level of competence and capacity, you won't have anything there to respond when it happens. You can't run the risk of saying "oh well, look if we have a bad year..."

In Human Services, the regulatory/political environment was unpredictable:

Media, which I'm in charge of, is constantly moving — we're constantly on the defence of them trying to figure out what's coming next. So that's extremely dynamic. So I couldn't say from one day to the next. You can (try to) predict, but you can't say what the opposition members are going to come out with, or some other interest group or whatever.

Therefore, both departments experience uncertainty in their external environments, which makes a high emphasis on output management difficult to accommodate. That is, output management requires planning and does not allow alterations to those plans over time, as conditions change. Planning is difficult under conditions of perceived external environmental uncertainty. The implication of a high emphasis on output management under conditions of perceived external environmental uncertainty is that if departments have output targets set at the beginning of a period which are unlikely to be realistic at the end of that period due to condition changes (that could not be predicted in the planning stage) strict evaluation of departments by predetermined output targets (which is required by adopted output management) is likely to cause dysfunction.

14.2.2 Technology

Table 14.2 summarises data relating to the technology variable, because technology is also critical to the level of emphasis on output management. The particular technology dimension that was pertinent to the emphasis on output management, task variability, is defined as "the ability to measure outputs" (Ouchi 1979, 843). Task variability is shown in table 14.2 as the other major contextual variable to impact the emphasis on output management.

The inability to measure outputs is evident in both Education and Human Services.

For example:

Output management is not well suited to Education. It wrongly assumes that we can measure learning outcomes — (but) we are not building cans of corned beef (T38).

Our outputs are harder to define than other departments. Many outputs are difficult to quantify and have such long lead times before you see any outcome results (like literacy) that it's not suitable for output management (T36).

And for Human Services:

The variability of an intervention say from two hours to six months means you can't output cost it (T25).

Philosophically everyone should be suited to output management, but...because we don't make cars or hamburgers we can't apply output management perfectly (T40).

These quotes suggest that output management is difficult to apply in both departments because it is difficult to measure outputs in most areas. In both departments there are areas where outputs can be measured, and are indeed suited to output measurement. This means that output management is relatively easy to apply in these areas. Specifically these areas are Office of Training and Further Education, Acute Health and Housing. Interestingly, these three areas are the divisions that have the most sophisticated mechanistic controls within mixed MCS of any area within Education and Human Services, respectively.

Table 14.2 Critical contextual factors for output management emphasis: Technology

	Technology	Education	Human Services
Task variability		<p>Outputs are not going to be helpful unless we closely link them to the outcomes managers want; sometimes the outcomes are very difficult to score (T6)</p> <p>Reporting requirements are easy for OTFE to meet because we are actually buying what we record (T34)</p> <p>Our outputs are harder to specify than some other departments once below output group level. Even though we can cost outputs separately, they are not divisible upon provision to customers (T35)</p> <p>Many things we deliver don't fit within the notion of outputs. Our outputs are harder to define than other departments. Many outputs are difficult to quantify and have such long lead times before you see any outcome results that it's not suitable for output management (T36)</p> <p>Output management is not well suited to education. It wrongly assumes that we can measure learning outcomes — we're not building cans of corned beef (T38)</p>	<p>Output funding is fine except where there are pressure points which can't be widgetised (T12)</p> <p>Deriving unambiguous outputs is hard — it's based on an artificial construct...For non-institutional delivery it is easier to do output management (T13)</p> <p>Accrual accounting (required with adopted output management) is next to irrelevant to welfare areas — many people, few assets. Problems of measurement and defining outputs because social workers solve different problems (T15)</p> <p>The variability of an intervention say from two hours to six months means you can't output cost it (T25)</p> <p>Every bit of money cannot be output based — even in Acute (T27)</p> <p>WEIS is based on body parts and we are talking about mental health which is harder to define — dental is easy...There aren't really outcomes in Aged Care...Because ACMH is hard to measure we'd need long term, heavy investment to develop good measures and there's always a push for a quick fix in a political environment (T32)</p> <p>Philosophically everyone should be suited to output management, but...Because we don't make cars or hamburgers we can't apply output management perfectly, but just because we can't doesn't mean we shouldn't do it at all (T40)</p> <p>For our directly delivered services it's easier to count the inputs than the outcomes...Some of our services are broad in range and it's hard to define a human service in ways that allow you to put a cost and quality boundary around it. Also the benefit from that refined information has costs because we really want the focus of programs to be the service delivery not recording and reporting overloads of information...The DTF model (of output management) is flawed, especially for us by having an audit process attached when we don't report the 500 activities that we really do. We report on what we can meaningfully measure (T41)</p> <p>Not all funding can be output based, even in Acute but DTF don't understand that (T42)</p> <p>Some areas are very difficult to measure in an output sense...output management is easier in Acute where there is singularity of focus. In YAFS it is harder because we are disparate (T43)</p> <p>Suits areas like Acute that have taken a clinical approach to information bases. Other areas like Mental Health haven't...Quality is very difficult to measure in some of our areas...There's no doubt that we have greater complexity in measuring outputs than other departments (T44)</p> <p>Acute is well suited to output management because of their casemix system and they are a client service. Not to other areas like Public Health who are a research and quality control service...Housing is mostly easy because it's a simple, volume based business. Homelessness is very difficult to measure though (T45)</p> <p>Those with historical input funding like the welfare end are harder to apply outputs to than others...Even in areas where outputs fit well, there are exceptions like emergency department access...We have responsibilities that cost money which are not output relevant. The recent fire safety initiative in intellectually handicapped residences recently in a case in point...Very difficult to cost something like counselling generically. It ignores the complexity that counselling is practiced by a range of disciplines. Whereas for physiotherapy you can do it (T46)</p>

14.2.3 Structure

Structure was also important to the level of emphasis on output management, but less so than perceived external environment and technology. Specifically in relation to the emphasis on output management, misalignment between organisation and output structure is an important issue. Managers in Education described the inconsistency between output and organisation structure initially:

In real accrual output budgeting we should have all control over monies devolved to us — that won't happen (T6; 707-726; 730-764)¹⁶⁴.

Business units are unique and that's okay, but the problem is that the outputs and the organisational structure don't mirror image. So we've got the same problem as with PB that people need to be in charge of the outputs, but if we do that we have an additional matrix making the structure even more complex (T6; 1285-1357).

No structural change yet but under consideration perhaps an additional output matrix would work (T5; 699-710).

We were a program and now an output group — hasn't effected our structure although output groups are beginning to change over time, but it could (T1; 742-752)

And throughout the period of study:

Dilemma that outputs aren't aligned with the organisational chart, so who's going to drive the outputs — or do we hope that outputs are also key cost centres? There's only responsibility at output group level — very high (T22; 758-798).

Organisational structure and output structure are closely aligned, but not exactly (T20; 104-123). We've been constructing a draft list of managers to output responsibilities but that hasn't been ticked off (T20; 125-132). The draft output responsibility structure is just cosmetic over the top of the organisational structure (T20; 170-193; 213-224).

We've devolved the output budgeting process to the operational level because those responsible for producing the outputs need to be held accountable. We still need to refine the output structures though — early stages (T19; 141-165). The existing organisational structure was consistent with cash input based accounting and management concepts and appropriations. It doesn't really fit the output structure. Other departments have realigned their structures so you get a direct line relationship (T19; 305-312). Once below the Deputy Secretary level it's hard to tell who's responsible for outputs (T19; 314-350).

Education is not structured by output group. You can still have an organisational matrix with an output overlay on top (T17; 279-284).

Output identification is always difficult (T17; 359-362).

Reconciling the organisational structure to the definition of the output groups is difficult and therefore the issue of which line manager(s) are accountable and responsible. You've got to assign responsibilities for output groups across the corporate board structure (T17; 359-367).

¹⁶⁴ Transcript text unit numbers are also provided here because the excerpts are paraphrased, not quoted verbatim.

Output groups don't entirely match the organisational structure — they're more highly aggregated than the Divisions, but there are no shared ones between divisions (T17; 635-650).

There's a lot of people that can't be held accountable because management information systems are not currently structured that way (T39; 66-72).

We're looking at assigning clear accountabilities and responsibilities for outputs which will be hard because our outputs and organisational structure don't match. It will be more changing outputs than organisational structure, but both (T36; 148-228). There will be some structural changes in Education but minorly driven by output structure (T36; 212-228). We'll need to get responsibility to activity level (T36; 237-277).

Output and organisational structures are not yet aligned. We are in the process of trying to get those output accountabilities established so that we can apply output management (T35; 645-658). In some departments the output structure almost matches the organisational structure (T35; 695-703).

Problem to manage by outputs with management responsibilities not matching up with output lines (T33; 40-47; 79-81).

From the evidence provided above, it seems Education's output structure has remained misaligned from organisational structure across the period of study. This is problematic for emphasising output management, because the input funding lines are still relied upon for management control. Responsibility lines relating to outputs are necessary if output management information is to be used effectively, but senior management in the department consider structural alignment with outputs to be prohibitively expensive:

Until we've linked high level outputs through a value chain to low levels and link in all the managers contributing along the way output management won't be of value to managers (T18; 380-388).

There is definitely no thought to aligning Education's organisational structure to it's output structure. It would be far too costly (T39; 369-377). We are regionally structured not product based. It would be a huge cost to restructure along the output structure and managers wouldn't understand that anyway (T39; 151-160).

Human Services managers initially reported that:

Output groups basically reflect organisational lines. Debated with DTF about structure and if there is a better output structure but inconsistent with our delivery structure it's not worth changing (T15; 1169-1214). CEO has suggested he might prefer a "non-delivery" type structure (marketing, operational delivery etc.) different to what we have now and different to that of outputs (T15; 1480-1489).

Similarities across programs may be packageable as outputs, like counselling (T14; 1066-1082). However, discrete programs turned into output groups; given the speed of adoption we couldn't do anything more (T14; 1083-1092; 1113-1116). Output managers are very senior managers (T14; 1495-1497). Output structure doesn't have to reflect organisational structure (T14; 1504-1512).

Output groups mirror program structures (T10; 973-975).

Funding lines don't match outputs (only output groups which are very high level) (T9; 162-175).

And throughout the period of study commented:

We changed from two output groups to one for the division with five major outputs (T31; 197-208).

Output structure still reflects the organisational structure but there's been organisational and output restructure (T30; 121-125).

Outputs map to our divisional structure largely. We don't have people defined as output managers but I could point my finger to people. We still have cost centre managers (T29; 281-307). Currently questioning the consistency of size and complexity of output groups and may review this (T29; 404-426).

People view outputs as artificial because they don't understand how if we've got 135 services how can there only be seven outputs. It's about getting them to see holistically across the service similarities (T28; 313-324). Output groups are just a convenient amalgamation of some outputs and largely reflect the divisional structure (but at the high level only) (T28; 573-593).

It's better to have the output structure reflect management responsibilities for outputs to work. Especially with output management where management responsibilities are linked to output performance with DTF you wouldn't risk your funding (T26; 456-506). Internal restructurings to reflect a different output structure are driven by the need to review structures with the new output reporting system (T26; 508-520).

We had 29 activities to our two outputs within our output group last year. Refined this year to 21 activities and eight outputs — more meaningful (T25; 532-558).

Human Services has tried to emphasise output management with a minimum of disruption to their organisational structure:

Structure reflected programs and we've worked to ensure new output groups match programs for administrative convenience (T12; 1103-1107).

We still have a program structure which are now called output groups and correspond to ministerial accountabilities (T11; 1035-1038).

We reworked our outputs about two years ago more along client groups and product lines which are fairly easy to define (T45; 144-156). Our Housing outputs generally match our existing management structure (T45; 168-181).

However, Human Services still found some difficulty in accommodating outputs within their organisational structure:

There's arguments about what we should measure and report. We think we should measure how well regions sign off on their contracts as our outputs because we've been made the purchaser. The Minister wants to see measures reflecting that "Mrs Bloggs got her heart when she needed it". But we don't have anything directly to do with providing the heart (T46; 1329-1343).

YAFS division has restructured because they had to downsize and in doing so they have aligned their outputs to their significant internal units. In the rest of Human Services outputs are only broadly aligned with divisions (T43; 60-96; 134-150). Hard to allocate overhead to outputs at regional level because they work across the range of services divisions provide (T43; 107-114).

Welfare areas have many small agencies with low unit cost activities so you can't spend much on information systems, compared with health where there are high unit costs and big agencies (T42; 1018-1033).

This section has discussed structural characteristics of Human Services and Education in relation to emphasis on output management. Problems of structural alignment between outputs and departmental authority lines were highlighted, explaining why output management had low emphasis in Education and Human Services.

14.2.4 Culture

Culture was also important to the emphasis on output management. In Education and Human Services, the relationship between output management and culture was discussed. Consistent with the literature reviewed in chapter eight, there is evidence that the relationship between culture and output management represents a conundrum. Specifically, not only does culture act as an independent variable determining the level of emphasis on output management, but output management seems to impact upon culture as well. That is, for culture (and perhaps for structure as well), the emerging relationship between context and output management is two-way, not one-way as modelled in figure 14.1. In Education, the following was ascertained in relation to culture and output management:

There will be no cultural change until the output management reforms are embedded in Education. You get the reforms first and then the cultural change (T8; 698-708). Reforms have no effect yet. Too recent and very high level — so most managers would be unaffected (T8; 113-117).

Past developments make moving to accrual budgeting an easier task (T7; 435-438). The Office of Technical and Further Education (OTFE) is seen by Treasury as a leader in developing output type management approaches (T7; 565-572). In terms of output management OTFE staff are all aware of the concepts of college autonomy where we buy a service and expect a certain quantity and quality (T7; 607-622).

(There is) acceptance of outputs by OTFE because we were already doing it (T1; 703-719).

There is evidence that there is little cultural change:

There's a lot of work getting the necessary systems into place and a lot of change (needed) in the organisational culture to get the full benefit of output management (T5; 155-158). A lot of people here don't have the necessary commercial experiences to help them adapt to the changes (T5; 298-302).

Staff in the financial area of OTFE understand reform (T1; 688-691). Output budgeting in Education is no more than words at present — just definitions, no quantity and price debate (T1; 320-332).

(It is) taking a long time to sell reforms to the Corporate Board because they don't automatically understand that they are best practice. If they had a wider background they would just automatically accept it (T24; 136-164).

The MRP, including output management, is distant from managers — they've heard of it but it hasn't impacted upon them (T23; 283–288).

Operational managers don't know what the output management reforms are — it's all just words. The action isn't there yet — we're dragging our feet (T22; 99–111). It's not a failure but it's not going well — still early days (T22; 484–485). I'm not briefed on the changes and I'm meant to be a champion. Those driving output management internally don't know how to influence and inform people (T22; 495–517; 836–840).

All we've done is put our existing PIs into a common framework (T18; 245–248).

Overhead is only allocated to output group level because that's all Treasury requires of us (T38; 287–290).

Output management will embed once our now cash budgets are reframed then we'll have to work out how to use them, provided we can see benefit and it's not just for DTF requirements (T23; 289–295). When the structure and the funds we receive are on an accrual basis then it will have meaning. Sure it's important that we know about full costs, but the decision making processes haven't been changed to an accrual basis (T23; 158–168). So far the CFO and working group have done well in pulling the output management reform together. They understand and are comfortable with the reforms. But the critical stage is about to come, which is selling that message to the wider department. That is the hardest stage because you're committing and if you don't deliver people get disenchanted (T23; 297–320).

There is a plan for report development, committees and processes being put into place and target dates to get accrual and output reports happening (T22; 75–78).

Minor cultural shift has taken place in Schools (T20; 684–699).

The corporate board is fully across output management reform now and the general manager level is getting there. In Schools it's still business as usual but it's starting to change. There's a much more focused approach to the management of the fiscal responsibility (T19; 377–386).

Comprehension of output management for non-accountants in Education is not occurring because they haven't even seen an output management report. It's still just nice words (T38; 127–147).

Outputs are now part of the language at corporate board, which is a recent development (T33; 17–30; 73–74). I'm more optimistic that the output principles and their use is beginning to filter down a bit. More in OTFE than Schools but it's changing with things like Self Governing Schools (T33; 143–159).

There was a suggestion that there is still dominance of the traditional public sector service culture over the managerialist culture. It was also evident that managerial processes were considered a lower priority than service operations:

The Finance Group has been back room and process oriented and suddenly we've had to manage a change process around providing management information. We have been viewed as back room by the department, so credibility in driving the reform is an issue (T24; 170–180; 192–194). We are next on the CEOs agenda for a staff briefing session. We've left any training or general communication to closer to the time that people are going to use it. I don't want to waste resourcing on that when they'll forget by the time they're using the new information. We changed the budget process and had seminars for that. There's no appropriate departmental medium for communication (T24; 228–259). Resourcing has been a problem. We need hump resourcing to change from processing to higher value added people (T24; 170–171; 196–216). DTF has provided us with some resourcing which assisted us greatly, but internally it's been difficult to get resources (T24; 220–225).

If financial reform is a key strategy, the alignment is not there between the reform strategy and what we are doing (T22; 170–176). Outputs are not a reform in their own right but just a mechanism to

help us, whereas the Schools reforms have enormous impacts (T22; 234–247). There is a low level of commitment and enthusiasm compared to Schools reforms. The Minister was totally committed to Schools reform (T22; 346–363).

CFOs framework didn't quite work when you came to do the actual budget but it raised people's awareness of the relationship between their budget and outputs and to the departments outputs. It was new to a lot of people (T20; 296–307).

We need to train the operational managers in business concepts that we've now imposed on them — we don't have the resources to do that at the moment (T19; 176–189).

We have understanding of what's required to implement output management at the top level but other issues are always more pressing and urgent (T39; 186–197).

We used consultants to develop a plan for linking outputs to outcomes, but the Corporate Board didn't want to go ahead with it yet. The General Manager of Strategy is impressed with it and we may go forward with it again (T38; 808–816). CEO is keen to get output management information used for internal planning and management (T38; 1168–1181).

We've had people within Education experienced or learned about outputs who have taken on the reforms and have been willing to work it across Education which helps. But it's been seen as high level department connecting to central agencies and not connecting to people's day to day work (T36; 116–124).

Some managers think it's all nonsense. They want to go back to the old days of "give me a budget and I'll live with it" (T33; 147–149).

There seems to be confusion as to whether cultural change is needed to accommodate output management, or whether output management needs to be applied to precipitate cultural change. The relationship appears to be somewhat circular.

Culture in relation to emphasis on output management was discussed by managers in Human Services. There is some evidence that reform creates limited cultural change and vice versa:

Casemix background may be helpful to receptiveness (T9; 634).

We had a consultant who did a fair job of specifying the reports that we would need to imbue an output culture (T43; 119–122).

There is evidence of much change, however where change is evident it is not in-depth:

True output costing like casemix is a long way off (T16; 924–930). There's no output funding at the moment — only outputs (T16; 908–909).

Progressing well to be looking at our structure in only the second year (T14; 1093–1100). Initially done the outputs to appease DTF but people are starting to understand the new theory (T14; 1124–1136). Reviewed all the output groups and performance measures to refine (T14; 1116–1122).

People understand that we account on an output basis but not the concept of full output accrual cost (T13; 475–483).

The pressure to develop outputs and PMs has certainly influenced what we do here (T32; 13-16).

We've made real progress in unit costing Home and Community Care Services and Dental (T32; 133-139).

We call ourselves old hands at output management now. This is our third budget for output group management, much refined (T29; 384-395). We don't go below total output cost in this program. There are a couple of unit costs around within the programs but they are largely contrived (T29; 434-437). People are beginning to think in output and understand what it actually means (T29; 211-216). Traditionally people budgeted along fund lines and now they are putting it all together and beginning to develop some reasonable output budgets (T29; 217-222). People are accepting that they are going to get given output reports and that the figures will be full cost but it's still foreign for them (T29; 342-353). People are taking more responsibility for their budget monitoring — not just relying on a finance person to tell them (T29; 640-650).

More refinement in output definitions and people are thinking more about the nature of the business (T26; 508-520). Need to still refine further definitions and break down into components. Some areas have done better than others being innovative in reorganising the business. Others reflect historical ways of thinking about the business (T26; 520-527). The programs have been funding agencies more on an output basis (T26; 599-607).

We're much more conscious of output management now (T25; 494-498). There are no output costs in the budget papers (T25; 560-568).

Most people here have seen there's some advantages of outputs so there's acceptance that this is the way we are going (T46; 1349-1360).

We need good systems to do outputs and we need business manager type people in all divisions (T45; 126-129).

Our basis of funding has not changed (T44; 306-310). We've met the minimum requirements for output budget certification but there is some way to go in fulfilling the output spirit that we want to achieve (T44; 9-14).

Everyone is working on understanding what it costs to provide services (T41; 166-182).

We're not very far advanced with the output reforms. We've got the reporting part done and we're in the second stage of redefining outputs, questioning the validity of our output measures (T40; 27-48). The reality now is that output management is a way we should do business (T40; 66-77).

However, in some areas no change has occurred because output controls were already used:

Output management is not new to Housing which is a commercial operation (T16; 164-174).

In Acute output management is not new (T12; 956-968). We've done output based funding before DTF with casemix (T12; 139-141).

DTF learned output management from us. We've had casemix and their reform has had no effect on us (T27; 258-273).

Acute is much more advanced with outputs than DTF is (T42; 922-925).

There is evidence of a predominance of a traditional public sector service culture over a managerialist culture, although there is some change toward a managerialist culture:

Divisions will probably need business managers (T16; 944-948).

There is a lot of attitude about the MRP. People are skeptical about whether it will help the real Human Services problems. There is a sense of seen it all before with PB (T15; 973-986).

Some managers don't understand the relevance of the reforms to their work (T11; 717-719). We haven't got understanding that accountability needs translating into information systems linking to accountable people (T11; 724-734). The culture of general output accountability is accepted (T11; 719-724). Output based funding has been committed to for a long time in Human Services (T11; 866-867).

The Corporate Services Group understand the output budgeting/output management process, their area of expertise so we don't need to know (T10; 642-648).

Output management needs commitment at all levels but doesn't get it because in finance areas most have an old school approach (T9; 621-624, 626-629).

There's general agreement that outputs are a good idea but it's seen as a driven ideology, it's hard to get commitment because it doesn't really change anything on the ground and in ACMH measurement is fraught with problems (T32; 358-389). There are business world things we find useful and I wouldn't want to lose them, but I think there's been a real belief in if we just put business principles in place things will be fine, which is blind (T32; 1247-1251).

A lot of our purchasing is a historical arrangement with a block granting process (T29; 444-446). People don't find outputs exciting. They think it's modern speak of accountants (T29; 365-369). We need someone here who can think in terms of output budgeting but also has the accounting and communication skills to be able to give people a vision of outputs that's policy relevant (T29; 386-392).

People are skeptical that quality won't be retained. The output management reforms seem linked with going for the cheapest (T46; 260-271). There's a general recognition now that outputs is the way we are going. In the agencies there's a sense that they want to know how much things cost and why they do things. The problem is how to make the transition without sacrificing quality of care and losing the unmeasured value added extras that we have always been given by health professionals and volunteers (T46; 234-281).

Culturally in the human services field people have difficulty in being definite about what's trying to be achieved (T43; 43-52). We still need a degree of professionalism and understanding that the social good can have some intellectual performance based system around it without it being undermined (T43; 592-595).

We used a consultancy to aid people in programs to redefine their output structures and PIs for this budget process (T26; 557-568).

There's been resistance in the field and in head office about how we were implementing outputs and whether in fact all this information was worthwhile or nonsense (T40; 227-231). When we first spoke I thought output management was a waste of time, but now I support it (T40; 368-372).

Overall, it appears that there is some limited evidence of cultural change arising from output management in Human Services. It is also evident that the traditional public sector culture in both departments made it difficult to apply output management.

This section has explained why a low emphasis on output management occurred due to culture in Education and Human Services respectively. Preceding sections reported an analysis of perceived external environmental uncertainty, technology and structure which also helped to explain that the low emphasis on output management occurred because it was difficult to apply under the contextual conditions of Education and Human Services.

14.3 Conclusion and summary

Notwithstanding the moderating effects of contextual variables detailed in chapter thirteen, the additional analysis reported on in this chapter indicates that contextual variables also have direct, independent effects on emphasis on output management. The low emphasis on adopted output management in Education and in Human Services is explained by a direct relationship between the contextual factors characterising the departments and output management.

While contextual factors were not identical in the two departments, they were broadly similar when considered overall. The perceived external environment of the departments explained why planning, a fundamental aspect of output management was difficult. The technology of the departments explained why outputs were difficult (if not impossible) to measure and measurement of outputs is necessary for application of output management. The structure of the departments made output management difficult to apply because either output management and organisational structures were misaligned, or organisational structures needed to be changed (at great cost of resources and the demise of structural arrangements appropriate for operations) to accommodate a high emphasis on output management. Further, the traditional public sector service culture evident in both departments made it difficult for managers to apply output management, because they could not link output management to their work in a meaningful way.

The additional analysis and emerging propositions presented in this chapter argued that for a high emphasis to occur, managers must perceive that output management is able to be applied in their departments in some meaningful way without causing major disruption, which they do not because of the contextual factors characterising

their departments.

PART FOUR

CONCLUSIONS, LIMITATIONS AND FURTHER RESEARCH POSSIBILITIES

Part four (chapter fifteen) contains a summary of the main arguments and results of the study that were reported in full in parts one, two and three. Chapter fifteen also draws together the main conclusions arising from the study. Part four (chapter sixteen) outlines the limitations inherent in the study, suggesting a further research path.

CHAPTER FIFTEEN

SUMMARY AND CONCLUSIONS

15.1 Introduction

This chapter represents the final comments pertaining to the research presented in this study. Section 15.2 will summarise the study. Section 15.3 will draw together overall conclusions from the study.

15.2 Summary and contributions of the study

The purpose of this study was to explain why government departments might adopt specific technical control practices irrespective of whether adoption leads to improved performance through efficiency gains. That is, to explain that institutional forces may render the decision to adopt output management rational, even in the absence of expected subsequent efficiency gains. Furthermore, this study intended to provide contextual explanations as to why adoption of output management would — or alternatively, would not — result in efficiency gains through MCS usefulness. Section 15.2.1 will present a summary of the arguments and propositions underlying the study and the method used to investigate these. Section 15.2.2 will summarise the results of investigating these propositions as well as results from further analysis relating to emerging propositions.

15.2.1 Summary of the arguments and propositions underlying the study

In essence, this study argued that: (1) institutional forces would cause the adoption of output management in government departments; (2) adoption of output management would lead to improved, or at least sustained departmental performance sufficient for survival, through legitimacy gains; (3) contextual factors would moderate a relationship between OM-MCS and MCS usefulness; and (4) MCS usefulness would effect departmental performance through efficiency gains (lack of efficiency gains), depending on the fit (misfit) between context and OM-MCS.

A model designed to address these research questions was introduced in chapter one. Chapter two specified the importance of output management to the research model and explained that output management, as a mechanistic technical control practice, operates within the broader MCS of government departments and cannot, therefore, be researched in isolation of MCS. It was argued that the broader MCS might contain any combination of organic and mechanistic attributes. It was further argued that mechanistic MCS attributes can be used either mechanistically or organically and that organic MCS attributes can be used either organically or mechanistically. Output management within the broader MCS was labeled as OM-MCS. Chapters three to nine provided the theoretical framework underpinning the model and its propositions. This theoretical framework was based on institutional and contingency theories.

Specifically the study argued that government departments would adopt output management because the coercive and mimetic forces in their institutional environment would provide pressures to do so. Adopting output management would enhance the legitimacy of government departments with powerful players in their institutional environment. Enhanced legitimacy would lead to positive or at least neutral effects on departmental performance through either increased resources or authority to continue in a substantially similar form (survival) to that experienced before the adoption of output management. This argument was termed the institutional path in the research model.

This study also argued that once government departments adopt output management, that they might or may not emphasise this practice. Output management was identified as a mechanistic technical control practice that would function within the broader MCS, which may be dominated by other mechanistic MCS attributes, organic MCS attributes, or a mixture of both. Specifically, if there was a fit between high/low emphasis on OM-MCS and contextual factors (perceived external environment, structure, technology and culture) there would be a positive effect on MCS usefulness. A negative or positive effect on MCS usefulness from output management by itself, can only occur where there is a high emphasis, because a low emphasis indicates that output management is of little to no importance to a government department. Where a low emphasis on output management occurs,

clearly other MCS attributes must be important to managers.

A distinction was drawn between output management as a mechanistic technical control practice, and output management as a process. As a process, theoretically output management (while it is a mechanistic practice) can be used in either a mechanistic (rigid) way, or an organic (flexible) way. That is, theoretically output management may be used organically and mechanistically. As noted, this argument extended to all MCS attributes.

The method used to investigate these arguments in the form of specific propositions was reported in chapter ten. A longitudinal, qualitative research design and method was employed to gather evidence from interviews and documents obtained during site visits to departments to support or refute the propositions.

15.2.2 Summary of results of investigating initial, formal and emerging propositions

Analysis and results arising from investigating the formal propositions were reported in chapters eleven to thirteen. Chapter eleven presented analysis and results for investigating propositions 1a and 1b (adoption of output management due to institutional forces). Chapter twelve presented analysis and results for investigating proposition 2 (performance relating to institutional arguments) and for later investigation of proposition 4 (performance relating to contingency arguments). Chapter thirteen presented analysis and results for investigating propositions 3a-3d (contingency effects on the relationship between OM-MCS and MCS usefulness) and reported on investigation of proposition 4. These chapters completed reporting on the analysis and results for investigating the formal propositions related to the model. Chapter fourteen presented an additional analysis and emerging propositions that were different but complementary to the formal model.

15.2.2.1 Institutional path, propositions 1a and 1b

Chapter eleven reported analysis and results relating to the institutional path. Investigation of the institutional propositions indicated that whilst both coercive and mimetic forces are antecedents to output management adoption, it is only coercive forces that are directly related. Mimetic forces are also causal, but indirectly.

Mimetic forces caused the Victorian State Government to adopt output management, which then caused the individual departments to adopt output management by coercion. Therefore, overall, propositions 1a (and 1b, albeit indirectly) were supported by the analysis presented in chapter eleven.

Interview questions were designed to elicit responses to ascertain whether institutional forces caused the adoption of output management. As discussed in chapter eleven, overwhelming support was found for the proposition that output management was adopted because of institutional forces.

15.2.2.2 Institutional path, proposition 2

Chapter twelve reported evidence relating to the performance of the departments to investigate proposition 2. Performance was examined subsequent to institutional forces because the first path (the institutional path) in the model, leads from antecedents (institutional forces) to the independent variable (adoption of output management), then directly to performance.

The analysis and results in chapter twelve reported that Education had high performance at the beginning of the study and its performance level decreased during the remainder of the study period. Human Services had moderate performance at the beginning of the study and its performance level increased during the remainder of the study period. That is, throughout the period of study, both departments had at least moderate performance, sustaining both departments.

In relation to proposition 2, the remaining institutional proposition, it was evident that Education and Human Services had survived, retaining substantially the same structural form that characterised them at the beginning of the study period. This factor provided evidence to support proposition 2 which predicted that departments adopting output management, irrespective of any subsequent emphasis, will achieve legitimacy gains that will lead to improved, or at least sufficient sustained departmental performance for survival.

15.2.2.3 Contingency path, propositions 3a-3d and 4

This study has argued that OM-MCS can only lead to MCS usefulness if it fits with contextual factors. It is further argued that enhanced departmental performance (through efficiency gains) will only be achieved by MCS usefulness.

Chapter thirteen reported on analysis and results relating to the contingency path. Specifically chapter thirteen reported on: (1) emphasis on MCS organic and mechanistic attributes and MCS usefulness at the beginning of the study period (coinciding with the time of, and shortly after output management adoption, before any emphasis on output management had occurred); (2) emphasis on MCS organic and mechanistic attributes including output management (that is, OM-MCS) and MCS usefulness throughout the study period (across nearly two and a half years post output management adoption) — a period where a level of emphasis on output management could certainly have occurred; (3) contextual, moderating effects on the relationship between OM-MCS and MCS usefulness; and (4) performance through efficiency gains as a result of MCS usefulness, arising from the relationship between OM-MCS and MCS usefulness, moderated by contextual factors. Steps (1) to (3) provided analysis and results to investigate propositions 3a-3d and step (4) reported on investigation of proposition 4, drawing on the analysis and results of data relating to the performance variable in chapter twelve.

Results indicated that output management had a low emphasis (that is, little to no emphasis) in the case of Education. Output management had a moderate to low emphasis in some divisions in the case of Human Services, although it is not used mechanistically in these areas or to replace other control practices. That is, output management is a mechanistic control practice designed to replace the input control practices (which are more organic) predominantly used in government departments. Where it has moderately emphasised output management, Human Services has done so in a somewhat organic way, and retained a high emphasis on input and other organic control practices within MCS, simultaneously. Whilst Human Services data indicate a moderate emphasis on output management in some divisions, overall (that is, in the department as a whole), emphasis on output management was low.

To meet the stated objectives of output management under the 1997 Financial

Management Improvement Program (the output management mandating device), both departments were to highly emphasise output management, *as well as* de-emphasise input control practices within their broader departmental MCS and use output management mechanistically. Education and Human Services have produced different outcomes to each other in relation to emphasising output management. Education had a low emphasis on output management and Human Services had a moderate to low emphasis on output management. That is, in Education there was evidence of a high emphasis on input and other organic controls, together with an emphasis on some mechanistic controls and a low (little to no) emphasis on output management. In Human Services, there was evidence of a high emphasis on input and other organic controls, together with an emphasis on some mechanistic controls and a moderate to low emphasis on output management. In both departments, the mixed OM-MCS was predominantly used organically.

Chapter thirteen provided analysis and results to investigate propositions 3a-3d and 4 which investigated the contingency relationships. The contingency evidence explained that there was a misfit between context in both departments with output management per se, because both departments were suited to organic, or mixed MCS attributes. Analysis and results explaining contextual fit and OM-MCS were reported using a pattern-matching analysis.

The four moderator variables (perceived external environment, technology, structure and culture) modelled in the study were found to be pertinent to the relationship between OM-MCS and MCS usefulness. To investigate propositions 3a-3d, which were designed to investigate the moderating effect of contextual factors on the relationship between OM-MCS and MCS usefulness, a pattern-matching analysis was used. The results indicated that the relationship between OM-MCS and MCS usefulness was moderated by some dimensions of all four contextual factors modelled.

These results indicated that Education was high in restrictiveness and high in task variability. It was proposed that high restrictiveness in the perceived external environment would fit mechanistic MCS attributes (such as output management), and that high task variability (from the technology variable) would fit organic, or

mixed MCS attributes. Therefore, the environment of Education was reported as conflicting. It was argued in the study that organisations with competing contextual variables are best suited to organic MCS or a mixture of organic and mechanistic MCS attributes. This suggested that Education's context (found to be characterised by competing variables of high restrictiveness and high task variability) would fit best with organic MCS or a mix of organic and mechanistic MCS attributes.

Regarding structure, Education was relatively centralised, consistent with more mechanistic MCS. However, Education also experienced high levels of contextual interdependence, which suggested that more organic or mixed MCS would be most suitable. The predominance of a traditional public sector culture that was apparent in the Education data suggested that more organic or mixed MCS was most appropriate.

Human Services was high on the perceived external environment dimensions of diversity and complexity, low on competition and high on task variability, all attributes suited to more organic or mixed MCS. Further, Human Services was also operating in a hostile and restrictive perceived external environment, attributes suited to more mechanistic MCS. Applying the competing context argument, this suggested that the context of Human Services would fit with more organic MCS, or a mixture of organic and mechanistic MCS attributes.

Regarding structure, Human Services was highly decentralised, operating within a matrix structure, and experienced high levels of contextual interdependence consistent with more organic, or mixed MCS. The predominance of a traditional public sector culture that was apparent in the Human Services data suggested that more organic or mixed MCS was most suitable.

In summary, the pattern-matching analysis suggested that both Education and Human Services would perform highly when using organic or mixed MCS. Specifically, the context of both Education and Human Services across the period of study was better suited to a more organic, or a mixture of organic and mechanistic MCS attributes, predominantly used organically. Therefore, input control practices have continued to be emphasised in both departments and low (Education) or moderate to low (Human Services) emphasis on output management was evident.

Input control attributes fit with departmental context because they are organic. Notwithstanding the argument that a mixed MCS is appropriate in both departments, data showed that output management is a misfit with departmental context because it is designed to be used only mechanistically, whereas other mechanistic MCS attributes were able to be applied organically when required. The context of both departments at the beginning of the data collection period and at the end of the data collection period was static. OM-MCS was also substantially similar at the end of the study period to that of the beginning, because whilst sufficient time had passed to provide an opportunity for an emphasis on output management (nearly two and a half years) it was evident from data that there was only marginal change in MCS from output management (or any other MCS attribute).

Output management could not contribute to MCS usefulness and then to departmental performance through efficiency gains in Education because there was a low emphasis on output management. In Human Services, output management could contribute moderately, at most, to MCS usefulness and then to departmental performance through efficiency gains, because there was a moderate to low emphasis on output management.

There was a fit between OM-MCS and context for both departments, leading to at least moderate MCS usefulness. The fit observation was consistent with the evaluation of departmental performance reported in chapter twelve. Specifically, both departments were evaluated as having at least moderate performance, which was consistent with the fit relationships demonstrated. This supported propositions 3a-3d and 4, which predicted that departments with contexts that both fit organic, or mixed (mechanistic) MCS attributes and have organic, or mixed (mechanistic) MCS attributes, find MCS more useful and consequently perform more highly. The cases presented here both highly emphasised input control practices (which are more organic) and overall had predominantly organic MCS, also containing some mechanistic control attributes for effective control. Organic and mechanistic control attributes were also predominantly used organically, which explains how some mechanistic control practices can be used in contextually appropriate ways.

The arguments in this study suggested that mechanistic controls used mechanistically

alone, would be suited to organisations that had homogeneous contextual dimensions that fit mechanistic MCS. As the cases presented here indicate mixed contextual dimensions, it might be expected that a high emphasis on output management would be appropriate providing that organic MCS attributes were also emphasised. Results from the analysis suggested that there was a mixture of organic and mechanistic MCS attributes in both cases. Some of these mechanistic attributes were found to be used somewhat organically. Output management was emphasised lowly in Education and was perceived as an inflexible control practice. Output management was emphasised moderately to lowly in some areas of Human Services, however, as these areas already used other output type control practices, output management was redundant. Further, output management was perceived as an inflexible control practice and it was evident that the output controls used in these areas were of greater use than output management, because they could be used either mechanistically or organically.

It is argued in this study that output management is a mechanistic MCS attribute and if highly emphasised, is therefore a misfit with the operating context found in both Education and Human Services. Conceptually output management could be used more organically and therefore be utilised effectively in these departments. The form of output management adopted by the departments was designed as a rigid system, however, that was not intended to permit flexibility in its measures. Results suggested that inflexible, narrowly focused output management is inappropriate in both cases. Evidence on the fit between OM-MCS and context provided in this study suggested that output management can only have a positive effect on MCS usefulness if it is used organically, allowing departments to use the output targets flexibly, to assist management to better understand operational outcomes and to make output measures suitable for equitable performance measurement.

Data showed that managers do not find output management useful. The results in chapter thirteen showed that notwithstanding the low level of emphasis on output management, managers were still only moderately satisfied with OM-MCS. It was evident from these data, however, that managers perceived that a potentially high emphasis on output management would render OM-MCS less useful and possibly dysfunctional. These findings suggest that a variety of organic and mechanistic

control practices that are able to be used mechanistically and organically as required, are optimal in the case of Education and Human Services.

15.2.2.4 Additional contingency analysis, emerging propositions

After the formal contingency propositions were discussed, finding overall support for propositions 3a-3d and 4, further analysis, beyond the formal model was undertaken and reported on in chapter fourteen. This analysis was complementary to the support found for the relationships predicted by the formal propositions. This in depth, explanation-building analysis investigated additional, emerging propositions on the relationship between perceived external environment, technology, structure and culture on output management emphasis. This analysis focused only on output management, not on OM-MCS. The emerging propositions suggested that contextual factors have independent, direct effects on the level of emphasis on output management. The additional analysis explained why there was a low emphasis on output management.

Low emphasis on output management in both departments was apparent from analysis and results reported to investigate the formal contingency propositions. The additional analysis explained why output management was not highly emphasised and why it did not contribute positively to MCS usefulness in the case of Education, and contributed little, if at all in the case of Human Services. While beyond the scope of the study, because neither case showed evidence of a high emphasis on output management, it seems plausible that both departments would have used output management organically, in order to accommodate it appropriately with departmental context. Certainly, the way in which other output based controls were used in some Human Services divisions suggests that this would indeed be likely. That means adopted output management would have had to be modified, because it is designed to be applied mechanistically. Immovable output targets are fundamental to adopted output management.

The explanation-building analysis described in detail how contextual variables, perceived external environment, technology, structure and culture, render a high emphasis on output management difficult (to use and implement) in particular

conditions, and as a consequence low emphasis is apparent. Specifically, this analysis showed that perceived external environment and technology are critical in understanding why there is a low emphasis on output management. The analysis also showed the perceived impact of structural and cultural misalignment with a high emphasis on output management.

Education is high in task variability and Human Services is high in diversity, complexity and task variability, and low in competition. Overall, therefore, the emphasis on output management is low in both departments because these attributes of perceived external environment and technology make planning difficult and outputs hard to measure.

The importance of perceived external environment and technology in these data was a significant finding considering much of the contingency literature over past decades has focused upon these variables, often in preference to other contextual factors. The findings in chapter fourteen demonstrated management's perceptions of causality in the relationships between perceived external environment, technology and OM-MCS. These findings extended the model, suggesting an added complexity in relation to contingency modelling from moderating contextual effects on the relationship between OM-MCS and MCS usefulness alone (as investigated in the formal analysis), to these moderating effects *as well as* independent, direct contextual effects on output management.

In more detail, the perceived external environment dimension, diversity was found to be important to output management emphasis. Evidence in Human Services explained that diversity, complexity and low competition in its perceived external environment made a high emphasis on output management difficult. In Human Services, high diversity made a high emphasis on output management difficult because output management did not allow for the full coverage of all outputs that were going to be produced. Human Services produced far too many output types to provide the level of information that the output management model would seem to require.

High complexity made a high emphasis on output management difficult when managers were trying to prioritise and compare the value, for example, of an aged care bed versus an acute psychiatric bed versus a disability day program versus a hip replacement. Human Services has a range of clients that cost a lot of money to support, often in the \$200K and \$300K dollar bracket for one person and output management does not allow that detail to be identified. Because of this the Department looks inefficient using output management (because it shows unit costs). The detail (and meaningfulness) is lost that there is sometimes a real need to spend so much on a single case because of the circumstances of that person. Further, the community expects the Department to provide sufficient services for that person. For example, if that person has deviant behaviours, the community wants that person institutionalised, which is much more expensive than a community care arrangement. In addition, Human Services has a continuing requirement to negotiate widely, to take account of all the different sorts of imperatives in all the different divisions and all the political agendas of having three ministers. Output management does not recognise, or assist this decision process.

In Human Services, to move most services out to a competitive process is considered *a nonsense* by managers because it is known that there is only ever going to be one provider for some products. Low competition in Human Services makes a high emphasis on output management difficult because essentially, low competition means that outputs are really just another way of wrapping together a series of inputs. That is, the 'outputs' that are measured are really only re-packaged inputs.

In further support of the conclusions drawn here regarding the external environment, the dimension of perceived external environmental uncertainty was explored. The data supported the emerging proposition relating to the relationship between perceived external environmental uncertainty and emphasis on output management. Specifically, both departments were found to be operating in uncertain environments on one level (regulatory/political) and relatively certain environments on another level (consumer demand). For example, in Education, while the predictability of consumer demand was high because of the ability to project enrolments forward with some accuracy, the ability to predict other elements in the external environment was low. Unpredictable elements were generally political — from education interest

groups and the media. Output management information could not be applied in managing this, because it requires rigid planning. Strategic information was useful such as good market intelligence and knowledge of what the issues are in education.

Human Services data showed similar patterns, where consumer demands were mainly predictable using factors such as statistics on the ageing population, with some less predictable examples such as threats to public health from random disease outbreaks. In Human Services, the regulatory/political environment was also unpredictable. The media (and consequent fall-out from media coverage) was perceived as extremely dynamic. Human Services was constantly trying to ascertain what was coming next. Managers could not predict what would require action from one day to the next in response to opposition members or interest groups. Therefore, both departments experienced uncertainty in their external environments. Rigid planning such as that required under output management is difficult under conditions of perceived external environmental uncertainty, and therefore a high emphasis on output management did not occur.

The particular technology dimension that was pertinent to emphasis on output management was task variability. High task variability was evident in both Education and Human Services. Output management requires that Education can measure learning outcomes as easily if it were building, for example, cans of corned beef. Education outputs are hard to define. Many outputs are difficult to quantify and have very long lead times before any outcome results are available (for example, literacy outcomes). In Human Services the variability of an intervention with a client could be from two hours to six months, which means the department cannot output cost it in any meaningful way. It is because Human Services does not make, for example, batches of cars or hamburgers that it cannot apply output management easily. As output management requires that outputs be measured, high task variability would seem to make the application of output management almost impossible, because high task variability by definition means the inability to measure outputs.

In both departments there were some areas where outputs could be measured. These areas were the divisions that had the most sophisticated mechanistic type MCS of any area within Education and Human Services, respectively.

Managers in Human Services described output management as difficult to apply to their organisational structure because if they have to report the large range of information required by output management, then they have to pursue a large range of information from all levels in the organisation. For example, in deciding how many appendectomies, or how many units of X and how many units of Y, managers in Human Services deliberately devolve the decision process to the hospital and the clinicians who are better able to make relevant judgements and trade-offs. Therefore, output management information is burdensome to apply in the department. Furthermore in health type programs, each program director is responsible for a region covering service delivery in all program areas, so there is no direct line responsibility to match up to output lines.

In Education staff at the operating level have to purchase 'widgets' at a price, but in choosing which widgets and what price, do exercise considerable judgement. So there is considerable freedom at that level, but within a constrained sort of an environment. The nine general managers had a fairly high degree of autonomy, but there are certain policy decisions that are made at only the highest level.

Data suggested that Human Services was more decentralised than Education. The organisational charts confirmed that Education was far less decentralised than Human Services. Education has some regional bodies for the Office of Schools operations (Education's largest division), however these regional offices have very limited authority both in the scope and importance of the decisions. Most aspects of operations were controlled by head office, which subsequently advises regions of decisions. The Office of Technical and Further Education had no regional structure, however, the service providers it contracts with had considerably more autonomy than did the Schools providers.

Human Services was more decentralised than Education, and functioned within a matrix structure, where divisions and regions intersect. The largest division, Acute Services, operated through large, autonomous, decentralised bodies termed networks. The rest of the departmental divisions delivered services through the regional structure, which had a considerable degree of autonomy in choosing service providers.

Specifically in relation to the emphasis on output management, misalignment between organisation and output structure is an important issue. Managers in Education described the inconsistency between output and organisation structure both initially and throughout the period of study. The problem was that the outputs and the organisational structure do not mirror image. So Education experienced the same problem as they had with program budgeting, that specific managers need to be responsible for the outputs, but if they assign that responsibility they have an additional matrix making the organisational structure even more complex. The dilemma that occurs when outputs are not aligned with the organisational chart is that it is unclear who is going to ensure agreed output targets are met. There is only clear responsibility at output group level, which is very high.

Education's output structure remained misaligned from its organisational structure. This was problematic for emphasising output management, because the input funding lines were still relied upon for management control. Responsibility lines relating to outputs were necessary if output management information was to be applied, but senior management in the department considered structural alignment with outputs to be prohibitively expensive.

Human Services managers initially reported that output groups basically reflected organisational lines, and that output groups mirrored program structures, but that at lower levels, funding lines did not match outputs. Throughout the period of study Human Services reported that output structure still reflected the organisational structure but there had been organisational and output restructure. Outputs mapped to their relevant divisional structure largely. They did not have people defined as output managers but could point to relevant people. Human Services still had cost centre managers. Overall, Human Services seemed to accommodate the output structure with less difficulty than Education. Human Services decided it was better to have the output structure reflect management responsibilities for outputs to work (superficially or otherwise). This was especially important with output management where management responsibilities were linked to output performance assessed by external funding agencies. There was evidence of restructuring within Human Services to accommodate outputs. One area had 29 activities to two outputs within

its output group and refined this to 21 activities and eight outputs to make the groupings more meaningful.

Human Services had tried to emphasise output management with a minimum of disruption to their organisational structure. Structure reflected programs and Human Services worked to ensure that new output groups matched programs for administrative convenience and that these corresponded to ministerial accountabilities. However, Human Services still found some difficulty in accommodating outputs within their organisational structure. There were debates about what it should measure and report. One view was it should measure how well regions sign off on their contracts because it been made the purchaser. Another view was that Ministers want to see measures reflecting the specific, underlying service at the coal face but the Department did not directly provide the coal face service. Further, the department found it hard to allocate overhead to outputs at regional level because they worked across the range of services that divisions provided.

Consistent with the literature reviewed in chapter eight, there was evidence that the relationship between culture and output management represents a conundrum. The Education data for example, indicated that there was an expectation that it would get the output management reforms first and then the cultural change. However, the traditional public sector culture was part of the reason for low emphasis on output management.

In essence, there was evidence of little cultural change. It was reported that operational managers did not know what the reforms were. Comprehension of output management for non-accountants in Education was not occurring because they had not seen an output management report. Output management was still just terminology, not management accounting practice. Outputs were just becoming part of the language at corporate board level toward the end of the study period. There was still dominance of the traditional public sector service culture over the managerialist culture. It was also evident that managerial processes were considered a lower priority than service operations, particularly evident in the difficulties faced by corporate support areas for obtaining funds for output management

implementation. It was evident that there was a low level of commitment to output management reform compared to school operational reforms.

Culture in relation to emphasis on output management was discussed by managers in Human Services. There was evidence that output management reform created limited cultural change and vice versa. There was evidence of superficial change, indicating that true output costing was a long way off. There was no output funding at that stage, only outputs. Late in the study period, Human Services reported that they then called themselves old hands at output management. At that stage they were at their third budget for output group management, which while much refined, still did not go below total output cost in this program. There were a couple of unit costs around within the programs but they were perceived as largely contrived. People were accepting that they were going to be given output reports and that the figures would be full cost but it was perceived as akin to providing reports to monolinguals in a foreign language.

However, in some areas no change had occurred because output control practices were already used. For example, output management was not new to the Housing division, which was a commercial operation. Similarly in Acute Services output management was not new. They had done output based identification, costing and funding before, with casemix.

In Human Services there was evidence of a predominance of a traditional public sector service culture over a managerialist culture, although there was some change toward a managerialist culture, with the recognition by some managers that divisions would probably need business managers in the future. However, there was a rebarbative attitude toward output management. People were skeptical about whether it would help the real Human Services problems and some managers did not understand the relevance of output management to their work.

In summary, the explanation-building analysis explained contextual reasons why a low emphasis on output management occurred in Education and Human Services respectively. This finding was complementary, not contradictory to the results found from investigating the formal propositions.

15.3 Conclusions

The main conclusions reached in this study provide support for propositions derived from both institutional and contingency frameworks. Chapter eleven and twelve demonstrated that institutional forces caused adoption of output management by departments and that adoption leads to moderate legitimacy gains evident in the survival of Education and Human Services.

Contingency arguments were supported, demonstrating in chapter thirteen that output management by itself (beyond avoiding dysfunction from an alternate high emphasis on output management and allowing more appropriate controls to dominate) does not contribute to MCS usefulness, and therefore to performance (through efficiency gains) in either of the cases, because there is a low emphasis on output management overall. Even in Human Services where in several divisions, a moderate to low emphasis on output management exists, output management has not contributed to greater performance in these areas because they already utilise comprehensive output based control practices which are able to be used mechanistically or organically, as required. The moderate (to high) level of performance in both departments is consistent with the fit between low emphasis on output management, together with a high emphasis on mixed but predominantly organic controls (used organically) and contextual factors, which moderated the relationship between OM-MCS and MCS usefulness.

This chapter has provided a summary of the study and the main conclusions arising from analysis and results relating to both the formal and the emerging propositions. Chapter sixteen concludes this thesis, noting some limitations of the study and identifying some further research possibilities.

CHAPTER SIXTEEN LIMITATIONS AND FURTHER RESEARCH POSSIBILITIES

16.1 Introduction

This chapter outlines the major limitations evident in the study in section 16.2. Section 16.3 provides ideas for further development of the research presented here, in addition to a number of other research avenues inspired by data collected for the two cases.

16.2 Limitations

Notwithstanding the conclusions reached in this study, several limitations should be considered. Main limitations relate to the time period covered by the study (section 16.2.1), the generalisability of the results (16.2.2) and the strength of the findings in support of the propositions developed (16.2.3). A discussion of limitations related to modelling combined institutional and contingency relationships is then presented (section 16.2.4).

16.2.1 Time period of the study

Data collection for the study commenced within a month of the launch of the output management reform, which was important as it enabled the study to evaluate the effects of output management from its beginning. The time period for data collection (spanning 27 months), however, may be considered too short to investigate the effects of a reform such as output management. It may well be argued that reform processes take longer time periods. However, the predominant drivers of the Victorian output management reform process, Treasury, expected that:

The full impact of management reforms (including output management) will take effect over the next three to five years as they are refined (DTF 1997b, 3; emphasis added).

This comment suggests that certainly within the first *two and a half years* Treasury expected that at least some emphasis on output management would occur. In support

of this, comments made by a manager in Treasury during time three data collection serve to illustrate:

(How do you think departments are coping with output management in an operational sense? Are they as far progressed as what people in Treasury expected them to be by now, or are they lagging behind?)

I would think from reading the documentation at the time there would have been an expectation, that right down to the program manager level, accrual information would be available, accrual budgeting and so on, would be available from probably a year ago at least. I suspect in most departments that hasn't occurred. So I think we've been flexible in the past. I think we're going to be probably less flexible in the future, and there'll be an expectation that departments should be able to deliver on a lot of the things that are covered by the (reform) plan....I can't see what the problem is. Their argument is that they're having difficulty allocating corporate costs. Well, corporate costs are a pretty small element of their budget, so even if it was way out — or 3 per cent or something like that — I would have thought it would have very little effect on the overall price. So I think their problem is more that they are not as committed to it as they should be. They haven't put the effort in at this stage (T37).

Further support of the claim that there was a Treasury expectation that departments would be well progressed in emphasising output management by this stage is evident from informal note data. One of the two executives heading the Management Reform Program within Treasury commented informally to the researcher that he was "astonished at how slowly the implementation of output management was progressing in most departments". While low emphasis can be explained by resistance to change independent of contextual issues, the evidence provided in this study (in the additional analysis) suggests that contextual factors in Education and Human Services provide at least a partial explanation.

Another approach to ascertaining whether the 27 month data collection period provided sufficient opportunity to observe change in Victorian government departments, is a comparison of the output management time frame with other major reform programs. For example, in Education, major reforms have recently taken place in a much shorter time frame:

...And I look at the sort of things that we've done well in the past, and what we did to do them well, and I think the change from — the emphasis of the Schools of the Future Program and the School Global Budget, I think we did reasonably well as a department, and I don't need to say, I think we're pretty much world leaders in the devolution of financial management for schools. Now it's one thing that we did well, but why did we do it well. I'll tell you why we did it well, because the department was totally committed. The Minister at the time had come in, with a new government, with a new election, and he was totally committed and introduced this new Schools of the Future Program. He drove it from the Secretary to his Deputy Secretaries to his managers. Committees were set up, focus groups were set up, everyone was aligned in all doing their own little patch, all working towards the development of a school global budget and a school of the future framework. Now I

look back, and what we achieved over that two year period, to put something like 1 800 schools through extensive training programs, through extensive system changes, and extensive financial management reform at school level, and information technology networks, over two years time I don't know how the bloody hell we did it. The way we did do it is that the organisation was very much committed and aligned to doing that project. Now I can relate to that because it wasn't all that far back. And I'm looking at the buzz and the enthusiasm and the drive that was happening there, with the financial reform (output management etc.) that's happening now, and you can't relate it. There's talk, but it doesn't have the same impact, the same drive, the same will, and so therefore it can't have the same impact and achievement (T22).

The above excerpt clearly indicates that other major reforms such as the Schools of the Future Program were successfully implemented within a shorter time frame than the data collection period covered in this study. Similarly in Human Services:

It was amazing how quickly ACMH implemented the huge mental health reforms. They were operational reforms and people wanted them to happen (T46; 1791-1801).

The excerpt demonstrates that it was not unreasonable to expect to see output management emphasis outcomes within the study time frame. A longer period, however, would allow more conclusive findings.

16.2.2 Generalisability

Another limitation is the low generalisability of the findings, which relate only to Victorian government departments. However, it is argued that theoretical generalisability has occurred. Further, the usual criticisms of qualitative studies apply. Qualitative data were gathered in a longitudinal research design. Whilst this approach cannot attain the reliability and validity properties of large sample, quantitative studies, efforts were made in this study to ensure that wherever possible, controls for validity and reliability were utilised. Further, the approach adopted here was necessary to gain the insights presented, which are beyond the capability of cross-sectional, quantitative studies.

Clearly the method applied in this study is not as objective as that used in quantitative, large sample, statistically analysed studies. However, this study has attempted to provide a precise methodological framework to render the study at least replicable.

16.2.3 *Strength of the findings*

The use of a formal model and propositions based on institutional and contingency literature is somewhat problematic in relation to the qualitative method applied because there is a propensity to focus on the proposed relationships and limit the use of rich data. Except where stated throughout the analysis and results section, data generally support the propositions — more convincingly for the contingency propositions than for the institutional propositions — however, the deeper analysis presented in chapter fourteen suggests that these findings are limited in providing an explanation as to the level of emphasis placed upon OM-MCS.

The investigation and reporting of results relating to the model is important to provide guidance for the main contribution in this study, which is the application of a qualitative method and deeper analysis to the research questions that demonstrates analytically, and methodologically the possibilities and problems of using a contingency approach and findings “to provide an ordered way to integrate thinking about sociological processes effecting MCS in action” by combining insights from the deeper analysis with a conventional contingency approach (Chenhall 2003, 161).

16.2.4 *Link between institutional and contextual effects on performance*

This study argues that institutional and contextual effects are complementary, not mutually exclusive. As previously noted, and demonstrated empirically, adoption of output management for institutional reasons was expected, notwithstanding any change in departmental performance that is attributable to technical efficiency gains. However, the Department of Treasury and Finance (1997b, a major player in applying coercive forces) asserts that a high emphasis on output management will enhance departmental performance.

Indeed, enhancement of departmental performance is suggested as the major benefit from output management, argued to occur because output management will provide managers with better information on their operations. This study investigated Treasury's claim, evaluating whether a high emphasis on output management leads to enhanced departmental performance, using contextual factors to explain why OM-MCS does (or does not) lead to MCS usefulness.

To investigate and explain the relationship between the independent and dependent variables, OM-MCS and MCS usefulness were explored and an analysis of data pertaining to these variables was reported. A limitation of this study in relation to the combined effects of institutional and contingency variables is that, while it is easy to conceptualise the distinction between legitimacy gains and efficiency gains, it is difficult to measure these distinctly, in measuring performance.

16.3 *Further research — possibilities leading from this study*

This study has been exploratory. Other jurisdictions worldwide are experiencing similar attempts at reform. A further, quantitative study could target Australian jurisdictions, perhaps at the divisional level only, using a survey instrument developed from the current study. Such data could be used to find if there is support for the contingency patterns illustrated here, utilising a technique such as structural equation modelling. A subsequent study of this kind could contribute to existing literature by exploring whether the insights from the qualitative study are more widely generalisable.

Alternatively, using data collected for this study, an extension of the deeper analysis presented could be undertaken without the constraints of the model. Adoption of this approach could lead to further insights into the relationship of contextual variables and OM-MCS that are restricted by the use of a combined approach of traditional contingency modelling and the further analysis. This less structured approach may allow greater emergence of constructs from the data where “new relationships, new orientations, or new phenomena that current theory and theoretical perspectives have not captured” are apparent (Ahrens and Dent 1998, 11).

The study identified that culture in particular is a problematic variable, suggesting that its relationship with OM-MCS warrants further investigation. A further, in-depth analysis which avoids “over-filtering” of the data through application of “explicit theoretical constructs” (Ahrens and Dent 1998, 11) could focus on these variables, in order to provide a richer account of the ways in which culture and MCS relate. A study of this nature could carefully explore subtle nuances, with careful attention to the chronology of changes and events.

This study has argued and established that output management has been adopted in two Victorian government departments because of institutional forces. The emphasis on output management, however, has been limited. Results suggest that output management did not contribute to MCS usefulness but that there was moderate MCS usefulness anyway, because of emphasis on other MCS attributes that were mixed but predominantly organic, and used organically. These results suggest that output management can be a useful MCS attribute where there is contextual fit with more mechanistic MCS. It is likely that some public sector organisations have contexts suited to output management. Further analysis indicated that there was a low emphasis on output management because of the context of the departments studied.

A combination of the results relating to the formal and the emerging propositions suggests that the contingency relationship between the contextual factors and OM-MCS is more complicated than the moderating effects modelled. This presents a research opportunity to further investigate the two contingency effects reported here, to ascertain whether they are indeed complementary as this study suggests. These relationships could be tested empirically in relation to other innovative MCS practices than output management, to ascertain whether contextual factors can have both an independent direct relationship with the MCS attribute in question and act as moderators in the relationship between the MCS attribute and MCS usefulness.

APPENDICES

Appendix 1a Glossary of terms

<i>Term</i>	<i>Definition</i>
<i>Accrual accounting</i>	The accounting basis where the assets, liabilities, equity, revenues and expenses are recognised in the financial years to which they relate, regardless of when cash is received or paid.
<i>Allocating costs</i>	Assigning costs to anything for which a cost measurement is required. Can be an output, group of outputs, activity, process, project, or cost centre, etc.
<i>Average cost</i>	Derived by dividing the total cost to deliver the outputs by the volume of outputs.
<i>Coercive isomorphism</i>	Results from both formal and informal pressures exerted on organisations by other organisations upon which they are dependent and by cultural expectations in the society within which organisational function. Such pressures may be felt as force, as persuasion, or as invitations to join in collusion. In some circumstances, organisational change is a direct response to government mandate.
<i>Competitive neutrality</i>	The principle that government business enterprises should not have any net competitive advantage or disadvantage simply by virtue of government ownership.
<i>Cost allocation base</i>	The basis for allocating costs. That basis may be the cost driver or a different basis altogether. For example: staff numbers, office floor space.
<i>Cost attribution (allocation)</i>	The allocation of costs between the various expenditure categories which are employed.
<i>Cost driver</i>	An event or factor that triggers the occurrence of a cost. In some circumstances it may be impossible or impractical to measure the triggers, so a surrogate is used instead. The surrogate is something which has a strong correlation with the activity being measured.
<i>Customers</i>	People, organisations and departments who purchase, use or consume products or services provided by the department.
<i>Deliverables</i>	Components of outputs that merit separate reporting and performance measurement. Major projects are one example where the output policy advice may be separated into deliverables.
<i>Direct cost</i>	A cost item that can be assigned specifically to the production of an output.
<i>Fixed cost</i>	A cost that does not change with varying activity levels. This is only relevant in the short term, as in the longer term all costs become variable.
<i>Full cost</i>	The total cost of all resources used in the production of an output. The total of direct and indirect costs. It is better known as full absorption costing as per the Australian Accounting Standards.

<i>Functional budgeting</i>	The principle of basing budget expenditure categories upon functions: that is, upon specific work tasks.
<i>Indirect cost</i>	A cost that contributes to the production of an output, but is not incurred exclusively for that one output.
<i>Inputs</i>	Labour, materials and other resources used to produce outputs.
<i>Isomorphism</i>	Isomorphism is a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions.
<i>Line item budgeting</i>	Line items were the 'traditional' budget expenditure classification. Most line items were input categories. That is there would be separate line items for salaries, telephones etc. (Some line items represented, however, other categories such as grants to bodies outside government). For this reason, line item budgeting is sometimes referred to as 'input budgeting'
<i>Management control systems</i>	The spectrum of control mechanisms used to motivate, monitor, measure and sanction the actions of managers and employees in organisations. Management accounting is the process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information that assists executives in fulfilling organisational objectives. It is a formal mechanism for gathering and communicating data for the ends of aiding and coordinating collective decisions in light of the overall goals or objectives of an organisation. Management accounting is also about control in its broad sense. That is, other related administrative devices which organisations use to control their managers and employees. Strategic planning systems, standard operating rules and procedures, as well as informal controls such as charismatic leadership and the fostering of clan-like atmosphere are examples. This is control in the large. (Macintosh 1994, 3).
<i>Marginal cost</i>	The change in total cost resulting from a one unit change in output produced.
<i>Mechanistic controls</i>	Controls that rely on formal rules, standardised operating procedures and routines; Controls that are flexible, responsive, rely little on rules and standardised procedures and are rich in data (Chenhall 2003).
<i>Mimetic isomorphism</i>	Modelling. Uncertainty is also a powerful force that encourages imitation. When organisational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic certainty, organisations may model themselves on other organisations.
<i>Organic controls</i>	Controls that are flexible, responsive, rely little on rules and standardised procedures and are rich in data (Chenhall 2003).

<i>Organisational (unit) budgeting</i>	The principle of basing budget expenditure categories upon organisational units. To the considerable extent that organisational units are based on function, organisational unit budgeting is coincident with functional budgeting. However, the two diverge where organisational units are based on principles other than function (e.g. on regional locus).
<i>Outcomes</i>	Government's desired or intended impacts/effects on the community.
<i>Output categories</i>	Classification of outputs according to the type of output delivered. Examples include: provision of products and services; policy advice, ministerial services; and administration of legislation and regulations on behalf of Government.
<i>Output groups</i>	Outputs which have common characteristics aggregated into groupings for budget submission and reporting purposes.
<i>Output management</i>	A "process of linking funding, reporting and monitoring of clearly defined outputs to government strategic priorities or outcomes", and is designed to provide public sector managers with better management information (Department of Treasury and Finance 1997b, 3). The main feature of output management is that it focuses upon outputs and output controls (such as quantity of services provided).
<i>Output proposals</i>	Departments' annual output proposals will list outputs they are able to deliver, include strategic justification of outputs through links to government outcomes, and specify price and performance targets or service delivery levels for each output.
<i>Outputs</i>	Products and services produced or delivered by a department/agency for external customers.
<i>Performance measures</i>	Measures of quantity, quality, timeliness and cost used to describe how many, how well, when or how frequently, and at what cost outputs will be delivered.
<i>Phase up/phase down analysis</i>	The name given to a form of zero-based budgeting which was outlined in the original program budgeting documentation, but which was essentially never implemented.
<i>Program</i>	A grouping of activities to achieve a particular goal.
<i>Program budgeting</i>	A budgetary system in which spending is classified according to the purposes (objectives) to be accomplished. Program budgeting requires departments to examine their activities to determine the goals they are trying to achieve and how best to achieve them. This requires, in turn, the establishment of priorities to guide resource usage. Specification of objectives enables the government to hold departments to account for specific aspects of performance, thereby giving the government greater control over departmental activities.

<i>Program performance evaluation</i>	Assessment of appropriateness, effectiveness, efficiency and economy of a budget program or activity. Program performance evaluations are undertaken by government organisations in accordance with a methodology and guidelines developed by the relevant treasury/public management type department.
<i>Resources</i>	Labour, materials and other inputs used to produce outputs.
<i>Semi-variable costs</i>	Changes in costs relate to a range in volume levels, as there is a stepped relationship. These costs have both fixed and variable elements which are partly affected by changes in output volume.
<i>Shared resources (inputs)</i>	Refers to resources which contribute to the production of more than one output — for example, a staff member who divides his/her time between two programs, or who provides an "overhead" service (such as departmental accounting) which contributes to a number of programs. Shared resources may or may not be joint costs.
<i>Stakeholders</i>	People, organisations and departments whose interests are affected by the provision of outputs.
<i>Targets</i>	Intended delivery levels expressed in terms of quantity, quality, timeliness and cost of outputs.
<i>Unit cost</i>	Derived by dividing the total cost to deliver the outputs by the volume of outputs.
<i>Variable costs</i>	Costs that change in proportion to volume levels, as there is a direct relationship.
<i>Zero-based budgeting</i>	Zero-based budgeting was originally a concept of total review of all programs each budget year. Hence the name. In practice, however, it was quickly scaled down to an analysis of the implications and best ways of achieving a range of defined incremental changes (increases or reductions) in expenditure on each program. The Victorian phase up/phase down analysis concept was typical of these, in that it envisaged analysis of 5, 10 and 15 per cent increments or decrements in expenditure on each program.

Sources: Australian Accounting Standards Board (1999). Department of Treasury and Finance (1996a,b,c,d,e); DiMaggio and Powell (1983); Nicholls (1991).

Appendix 1b

Precursors to public sector budgeting models

1b.1 Budgeting history in the Victorian institutional field

Historical developments in public sector budgeting models are precursors to the antecedent, institutional factors in this study, because they highlight problems related to current budgetary developments. Current budgetary developments exist due to the failure of prior systems. However, lessons remain from unresolved problems related to the existence and use of prior systems, that may be relevant to current budget system initiatives.

1b.1.1 Public sector expenditure classification models

Models of expenditure classification can be input based, output based, functional, organisational, and outcome. The traditional line-item budgeting system, used in Victoria (and many jurisdictions besides), was an input based model that reported on each resource expended such as salaries and office materials. The more recent program budgeting system, that partially replaced line-item budgeting in the 1980's reported on the cost of the good or service provided and was classified as an output based model (Nicholls 1991, 177; Robinson 1992, 17)¹⁶⁵. While program budgeting was initially designed as an output system, its emphasis and use rendered it more an input model, with line-items simply split by program (Commission to Review Public Sector Finances 1993; Department of Premier and Cabinet 1993; Economic and Budget Review Committee 1989; Economic and Budget Review Committee 1990).

The concept of program budgeting is well established, having been practised in many jurisdictions since the 1960's (Schick 1990; Weller 1991; Robinson 1992). Indeed, Hirsch (1966, 259) notes "the early beginning of program budgeting in the US can be traced back to the Controlled Material Plan of the War production Board during World War II". Program budgeting can be defined as "a budgetary system in which

¹⁶⁵ This is not to be confused with the current initiative, output management, which Treasury claims is not program budgeting re-labelled.

spending is classified according to the purposes (objectives) to be accomplished" (Nicholls 1991, 322).

Robinson (1992, 17) reports that program budgeting in Victorian practice was a hybrid between organisational and functional expenditure classifications. Victorian program budgets included expenditure classified by input types (line-item), organisational units, and by program (output budgeting). In practice, Victorian program budgeting is a hybrid of various methods of expenditure classification:

program budgeting is supposed to be about classifying expenditure as far as possible according to the particular services to the public to which that expenditure contributes. Yet even within the Victorian public sector, program budgeting principles appear too frequently to be confused with other expenditure classification principles — in particular, with expenditure classification by responsibility or organisational unit (Economic and Budget Review Committee 1990, xii).

According to the Economic and Budget Review Committee (1990) the mix of expenditure classifications used should be in accordance with principal budgeting imperatives rather than by adherence to an inappropriate classification. The difference between output, functional and organisational classification is not as clear as that between input and output. For example, a function is an activity in the production of an output. Many functions exist simultaneously, and may correspond to a number of outputs. Management of a program is a function that may contribute to several outputs. Organisational classification will usually reflect functional elements, but may differ. A regional office may perform quite varied functions (Economic and Budget Review Committee 1990). Hence, expenditure classifications based on these principles will differ.

The view of the Economic and Budget Review Committee by 1990 was that the focus should be on budgeting in the way best suited to the budgetary environment. This can be described as a budget broadly based on program budgeting principles (Robinson 1992). Hence, in practice this was quite different to the program budgeting model introduced in 1982–83:

In this context, the use where appropriate of the program budgeting principle of expenditure classification by output can be very valuable as a policy-development and priority-determination tool (Economic and Budget Review Committee 1990, xiii).

1b.1.2 Line-item and program budgets

As management tools, input budgeting is useful for controlling waste in terms of cost efficiency and ensuring that overspending from budget has not occurred. Forms of output budgeting such as program budgeting, are more useful for providing information that allows a selection between alternative projects (Hirsch 1966; Peterson 1972; Midwinter 1984; Economic and Budget Review Committee 1990; Nicholls 1991; Jones and Pendlebury 1996). The program budgeting output model aims to provide information useful for decisions about effectiveness of service delivery. The input model does not provide effectiveness information.

The notion behind program budgeting is that expenditure classification by outputs relates closely enough to the purposes of government activities to show the policy choices implicit in the budget formulation. Whereas, classification by inputs only indicates the purpose of the expenditure (Economic and Budget Review Committee 1990; Nicholls 1991; Corbett 1992).

Program budgeting involves classifying proposed government agency expenditure by types of goods or services produced. That is, by program objectives. For example *provision of legal aid services* may be a program in the Department of Justice, *mental health respite services* may be a Department of Human Services program. As noted, program budgeting is a form of budgeting by outputs (Economic and Budget Review Committee 1990; Nicholls 1991). Line-item budgeting does not provide information useful for making decisions to introduce new policies or to change existing programs/activities (Economic and Budget Review Committee 1990; Jones and Pendlebury 1996).

1b.1.3 Program and output budgets

Conceptually, a difference between program budgeting (the previous, so called output budgeting system) and output budgeting (the current output budgeting initiative) is that the program budgeting expenditure classification principle relates to outputs, whereas the output management expenditure classification principle relates to outcomes.

Output is not quite the same thing as classification according to the "objective" or "outcome" of that expenditure. A particular public sector output may have a number of rather different objectives or types of outcomes (Economic and Budget Review Committee 1990, 23).

An output is a product/service produced or delivered by an agency for external customers. An outcome is government's desired impact on the community (Department of Treasury and Finance 1996c)¹⁶⁶.

A further difference between program budgeting and output budgeting is the basis of appropriation. Line-item amounts are still provided under program budgeting, initially on a per program basis. More recently global budgets¹⁶⁷ have been introduced in Victoria. However, the amounts were still appropriated on an input basis to be split by departments amongst programs. Output budgets are expected to be funded on the output unit cost¹⁶⁸ rather than the sum of the inputs expressed as line-items.

The accrual basis of output budgeting introduced in the 1998-99 budget year, represents a vast difference to the cash basis used under program budgeting. However, this change to accrual based budgeting is separate to the adoption of output budgeting. Had the government wished, an accrual basis of budgeting and appropriation of funds could have been overlaid upon program budgets. Output budgeting is not a necessary requirement for changing the underlying basis of budgeting measurement from cash to accrual.

Pallot and Ball (1996) also draw a distinction between appropriating and budgeting by outputs, rather than by objectives or programs in a New Zealand context. However, historical program budgeting literature seems couched in very similar terms to the current discussion of output management.

¹⁶⁶ Output budgeting here refers to the latest form of budgeting adopted by the Victorian government in 1997. This should not be confused with the fact that program budgeting was originally classified as a type of output budgeting.

¹⁶⁷ Global budgets allow agencies to swap funds between expenditure categories with great freedom provided they stay within their total budget allocation (Nicholls, 1991).

¹⁶⁸ Unit cost is derived by dividing the total cost of output delivery by the volume of outputs (Department of Treasury, Victoria 1997d).

A discussion of the US Planning-Programming-Budgeting System (hereafter program budgeting) serves as an example (Banks and Kotz 1966; Greenhouse 1966; Hirsch 1966; McGilvery 1966; Schick 1966; Wildavsky 1966). To illustrate, Schick (1966, 243) notes that proponents of program budgeting claim that with prior budgeting systems:

"decisions on how much to spend for personnel or supplies were made without real consideration of the purposes for which these inputs were to be invested...(program budgeting means) refinements in work measurement, productivity analysis, and other types of output measurement".

And,

"in performance budgeting, work and activities are treated virtually as ends in themselves, in program budgeting work and services are regarded as intermediate aspects, the process of converting resources into outputs...a performance budget carries the program budget one step further: into *unit costs*" (251-253).

Wildavsky (1966, 302) provides suggestion to similar effect:

Program budgeting...the general idea is that budgetary decisions should be made by focusing on output categories like governmental goals, objectives, end products or programs instead of inputs like personnel, equipment, and maintenance".

Program budgeting during the 1960s in the US was designed as a multiple purpose budgeting system, providing information at the strategic planning, management control and operational control levels. The characteristics of current Victorian output budgeting initiatives seem to parallel original program budgeting initiatives closely. This suggests that problems experienced in the adoption and emphasis of program budgeting are likely to be pertinent to output budgeting.

1b.2 Origins of program budgeting

Program budgeting originated in the US, with the initial concept dating back to pre World War II. Indeed, program budgeting can be traced back to the 1920's in the US (Jones and Pendlebury 1996). The "planning, programming and budgeting system" was tested in the Department of Defense, post World War II, and formally introduced to all Federal departments by President Johnson in 1965 (Economic and Budget Review Committee 1990; Corbett 1992; Robinson 1992).

In 1971, US Federal program budgeting was abandoned (Schick 1973). Overall, Schick (1973) notes:

PPB died because of the manner in which it was introduced, across-the-board and without much preparation. PPB died because new men of power were arrogantly insensitive to budgetary traditions, institutional loyalties, and personal relationships. PPB died because of inadequate support and leadership with meagre resources invested in its behalf...good analysts and data were in short supply...(it was a) debacle.

Other reasons for failure provided by Schick (1973) are problems with structure and information usefulness. These issues are discussed more fully in section 2.5. Glynn (1987) notes that program budgeting while somewhat successful in the US Defence Department, failed in other departments because it was too arduous, demanding much information.

Consistent with this arduosity, in Victoria impediments to the success of program budgeting largely stemmed from unrealistic expectations about the amount of data that could be processed. The program budgeting system adopted was substantially more comprehensive than that attempted elsewhere, so that it was not a practical alternative. It was envisaged that agencies would compile information on all competing alternatives' marginal costs and benefits, so that allocation of resources could be made on that basis. However, it was not possible to collect, process and analyse this amount of information (Economic and Budget Review Committee 1990; Robinson 1992).

Despite the claim of Wildavsky (1978, 82) that program budgeting "does not work anywhere in the world it has been tried" and Schick (1973, 148) that "PPB died of multiple causes", others are more positive. In the US Federal government while formal, structured program budgeting was abandoned in the 1970s, program classification and evaluation remained in use (Economic and Budget Review Committee 1990; Jones and Pendlebury 1996), and the Department of Defense continued to find it of some use (Glynn 1987). Weller (1991) indicates that benefits of public sector financial management reforms will never meet the claims of proponents, but that there will be some lasting benefits.

One example provided is that the process of consultation and drafting for corporate planning has been informative. According to Robinson (1992) Victoria's program budgeting had some success also. He notes that Victoria's program budgeting system had strengths in expenditure appraisal, budget estimation and planning at the sub-central level (Robinson 1992). However, Considine (1990) provides empirical evidence from interviews with public sector managers in several Australian jurisdictions, that benefits from program budgeting have arisen, but few relate to original goals, all have been marginal, and the system was "wildly oversold".

Numerous public administration studies have investigated the extent to which the emphasis of structural budgeting reforms such as program budgeting change budget processes meaningfully. Specifically, they maintain that the format of the budget is a significant determinant of parliamentary discussion (Mosher 1954; Fenno 1966; Hirsch 1968; Skok 1980; Grizzle 1986; Hammond 1993; Pettijohn and Grizzle 1997). Their argument is supported empirically (see for example, Pettijohn and Grizzle 1997). However, this research is conducted above the organisational level of analysis, and therefore does not address whether budgetary reforms such as program budgeting increase the effectiveness of individual organisations.

In addition to Australia and the US, in past decades Britain, Canada, France and Sweden all implemented a form of program budgeting. In Britain this was termed "output budgeting". The US has since the 1970's also tested alternate forms of program budgeting such as "Management By Objectives" (MBO) (identification of program objectives) and "Zero Based Budgeting" (ZBB) (development of decision packages to enable total cost analysis for programs annually, a method similar to Australia's "Phase-up, Phase-down Analysis"¹⁶⁹.

¹⁶⁹ Phase-up, Phase-down analysis is a shortened form of ZBB. Instead of totally reviewing all programs each budget year from zero (as with ZBB), Phase-up, Phase-down is an analysis of incremental increases and reductions in program expenditure (Economic and Budget Review Committee, 1990, 86).

As in Victoria, ZBB did not work in the US and a change of government in 1981 saw it abandoned (Economic and Budget Review Committee 1990). According to Corbett (1992) American states, one after another, and Canada's national government, tried program budgeting and abandoned it as too difficult.

1b.2.1 Australian federal experience with program budgeting

Commonwealth developments in budgetary reform began in Australia in the 1960's with experimentation of functional classifications of expenditure, and forward estimates (Corbett 1992). In 1973-74, broad functional expenditure classifications were included in the budget, while forward estimates were extended and program analysis was improved. This stemmed from a review by Federal treasury officials into program budgeting overseas. This review, involving literature analysis and international visits to government organisations utilising program budgeting, concluded that emphasis problems world wide largely related to problems with short term budgets, leading them to advise that a forward estimates approach to budgeting was necessary (Novick 1973).

The Coombs Report (1976) and recommendations for budgetary reform from various parliamentary committees provided the impetus for the introduction of a complete program budgeting system. This program budgeting system was pilot tested in the 1984-85 budget year in several Commonwealth government departments. The announcement for full adoption was made in 1985 and implemented in most agencies in 1987-88.

Consistent with program budgeting initiatives, the "Financial Management Improvement Program" (FMIP) was introduced in 1983-84, with the objective of achieving more effective and results oriented management (McAuley 1993; Securities Institute Education 1997). This was intended to give managers greater autonomy, establish greater accountability, and ensure more relevant financial control. Program budgeting was consistent with the FMIP, with emphasis on its properties as a management as well as a budgeting tool.

Major goals of the program budgeting system were to improve resource allocation by classification of expenditure by programs and use of performance indicators in program evaluation. However, the Commonwealth program budgeting system does not appropriate to programs. It uses line-items for this purpose so that departments are not restricted in flexibility to allocate across programs as they see fit, according to changing demands. Portfolio explanatory notes are also produced, giving information on program appropriations and performance indicators. No phase-up, phase-down analysis is attempted.

In the Commonwealth, detailed program performance information is included in Departmental Annual Reports. In the "Portfolio Budget Measures Statements" the Commonwealth reports program and sub-program objectives, budget measures affecting programs, and explanations of variations in budgeted to actual figures (Financial Resource Management Improvement Division 1995).

In 1983 the program budgeting model was planned to allocate the costs (gradually) of central services to operational programs (Economic and Budget Review Committee 1989, 35). By 1990 the Economic and Budget Review Committee was endorsing the use of a mixed approach to budgeting, incorporating program budgeting alongside some line-item and organisational unit type expenditure, as more appropriate than pure program budgeting. More recently, the Federal Government has planned to move from cash budgeting to accrual budgeting. It was expected that the change from cash to full accrual budgeting would be completed in the 1999-2000 budget (COA 1999). This does not however, constitute output budgeting.

1b.2.2 Australian state experience with program budgeting

All state governments in Australia have adopted forms of program budgeting. South Australia formally introduced program budgeting in the early 1980's, Victoria in 1982-83, New South Wales in 1983-84, Queensland in 1988-89, Tasmania in 1991-92 and West Australia in 1992-93. It should be noted that informal introduction had occurred in some of these jurisdictions prior to the stated date. For

example, Queensland developed program classifications and planning procedures in 1987.

South Australia produced "program estimates" in a program format, with appropriation by line-item. (Economic and Budget Review Committee 1990; Financial Resource Management Improvement Division 1995). In South Australia program objectives, issues and trends, significant initiatives, improvements and achievements, and qualitative and quantitative targets have been included in the program estimates since 1983-84.

New South Wales generated "consolidated fund estimates" in a program format, with appropriation by line-item¹⁷⁰ (Economic and Budget Review Committee 1990; Nicholls 1991; Financial Resource Management Improvement Division 1995). In terms of program performance information, New South Wales had been active with 1986 amendments to their Annual Reports Act, providing that departments must include qualitative and quantitative performance indicators from 1987. Program performance reviews have been put in place, and since 1986 five year plans relating to program evaluation must be generated (Economic and Budget Review Committee 1990). Phased emphasis of accrual budgeting began in the 1990-91 budget year (Treasury Department of New South Wales 1990). By 1995, information on program objectives, descriptions and activities was included in the Annual Budget Estimates, and central agencies had begun developing quantifiable output and outcome measures linked to inputs absorbed. It is expected that this would eventually be reported in program statements.

Since 1989-90 Queensland has published program goals, descriptions, outlook for the budget year and performance for the past year. In Tasmania program roles, objectives and key issues have been published in the budget since 1991-92¹⁷¹ (Financial Resource Management Improvement Division 1995). Similarly, Western Australia has produced statements of program and sub-program objectives and

¹⁷⁰ Another source indicates that New South Wales appropriated on a program basis by 1986-87 (Treasury Department New South Wales, 1985, 71).

¹⁷¹ Separate program statements are not included though.

strategies, broad descriptions of program and sub-program activities and key indicators of program performance (Financial Resource Management Improvement Division 1995; Treasury Department of Western Australia 1996a,b; Parliament of Western Australia 1993-96).

In Victoria, qualitative program information was published in 1983-84. Since 1993-94 program objectives and quantified program outputs have been reported in the Budget Estimates (Financial Resource Management Improvement Division 1995). The following section onwards, discusses Victoria's adoption, emphasis, and use of program budgeting in some detail.

1b.4.3 Program budgeting and budgetary reform in Victoria

Adoption of Victorian program budgeting began in 1982, and it was expected to be fully implemented by 1986. The government of the day indicated a commitment to improved economic and financial management in the 1982-83 budget papers that involved the development of an improved budget system.

Prior to the 1982-83 official adoption of program budgeting under the Cain (labour) Government, emphasis of program budgeting had begun under the Hamer (liberal) government taking the form of a pilot program within two departments. The 1982-83 adoption was the extension of program budgeting to all budget sector agencies along with the other budgetary reforms (Economic and Budget Review Committee 1990).

1b.2.3.1 Objectives and characteristics of budgetary reform

The aims of program budgeting reforms were to:

- improve the ability of the government to allocate public sector resources in line with government priorities; to be done by transformation of budgets to relate inputs to outputs, to enable a budget process focussed on policy priorities; use of prioritising tools (phase-up, phase-down analysis) would provide a more suitable basis for making cuts — much less arbitrary than universal cuts;
- improve coverage of the budget to include "all" forms of resources;

- improve accountability to parliament and the public with more rigorous accountability from public sector managers to achieve objectives and provide a vehicle for making expenditure priorities more visible to parliament and the public;
- provide more meaningful information about resources aiding selection of the right programs and the right mix between programs; and,
- provide public sector managers greater freedom to utilise resources toward achieving agreed objectives.

This would allow managers to make choices between programs and service levels (Government of Victoria 1982-83; Department of Management and Budget 1983; Economic and Budget Review Committee 1989; Economic and Budget Review Committee 1990).

The expectation was that:

Provision of significant discretion in agencies with concomitant responsibility and accountability will aid the achievement of the objective of the (new budgeting) system (Government of Victoria 1982-83, part 2:3, 1).

The basic characteristics of the program budgeting system included a movement away from the compliance emphasis on line-item cash budgets. Program budgeting was a major feature in the budgetary reform, altering the budgeting form to focus on objectives and results of government activity rather than input requirements, and to do this along program categories. This was a more complete resource management system, covering more types of resources than under previous systems.

Program budgeting was advocated, first, as a tool able to enhance budgeting and management decisions because of the increased focus on objectives inherent in the technique. Second, as a better basis for priority planning to aid policy directions of government. Third, as providing a strengthened management orientation toward the administrative process due to increased focus on management responsibility for performance. This goes together with increased management flexibility.

Other characteristics of the system involved department management performance evaluation on the basis of prior agreed financial and non-financial indicators and

targets. A phase-up, phase-down analysis was to be generated by agencies when competing for their annual budgets so that increases or reductions in funding could be assessed on a more informed basis. Agencies were classed as inner or outer budget sector, the former having greater reliance on the budget for viability. This was to enable greater or lesser control over an agency depending on its past performance and degree of business activity undertaken. Program budgeting was considered to have greater relevance and to provide more timely information. The forward looking nature of program budgeting covering more than the following year provided a better focus for planning.

There are two other practices that were included alongside the program budgeting reforms. These are program priority assessment (including zero-based budgeting) and forward estimates. Forward estimates could just as successfully be introduced in a line-item system, but program budgeting is necessary to assist the other practices (Economic and Budget Review Committee 1990).

1b.2.3.2 Progression of the Victorian program budgeting model

Program budgeting has not progressed according to the specifics of the Department of Management and Budget Manual (1983) (Economic and Budget Review Committee 1989). The intended Victorian program budgeting system had a six level structure. These were defined as: broad functional classifications above the ministry level, ministries, programs, sub-programs, components and activities.

Expenditure breakdowns of at least the program and sub-program levels were expected to occur with budget estimates reported to the Department of Management and Budget on that basis. Appropriation was expected to be program based, and this did occur. However, by 1990 (seven years after the emphasis process of program budgeting began) the budget papers included only program level expenditure information as opposed to the more detailed sub-program information recommended by Department of Management and Budget (Parliament of Victoria 1989-90; Economic and Budget Review Committee 1990). Program descriptions, outlining the rationale, nature and performance indicators of each program, along with program statements indicating details of activities, were supposed to be provided along with

sub-program information of this kind. Instead, what was reported included a statement of program objectives and annual projected developments (Economic and Budget Review Committee 1990).

1b.2.3.3 Characteristics of Victorian program budgeting

Program expenditure classification was expected to be used as the basis for program analysis via performance evaluation and priority assessment. Performance evaluation was to occur by applying six types of quantitative performance indicators, and qualitative measures to periodically review specific programs (Economic and Budget Review Committee 1990; Victorian Commission of Audit 1993a,b).

Phase-up, phase-down analysis was the tool introduced to assess program priority. Phase-up, phase-down analysis was a method of reviewing all programs each year. Sub-program, and subsequently program managers, were supposed to provide decision packages outlining possible expansions and reductions relating to each sub-program and program, resulting in a report for recommendations of overall departmental expansions and corresponding reductions of lower priority programs. This report was to be used by cabinet and the central agencies in forming the annual budget. However, the proposed analysis was not even partially conducted in this form (Economic and Budget Review Committee 1990).

The forward estimates of the budget were expected to occur for the following three to six year period. In Victoria, forward estimates were produced for a three year period, forming the basis for each new budget (Economic and Budget Review Committee 1990; Victorian Commission of Audit 1993a,b).

As part of the introduction of program budgeting, Victoria was expected to produce figures giving an overview of total expenditure. This process contrasts with prior disclosure of annually appropriated expenditure. The overview of total expenditure included a breakdown into special appropriations (permanent), trust funds (external to the consolidated fund), and trading revenues (earmarked revenues) that go directly toward the cost of the activity that generated them; hence, they are automatically appropriated.

Consequently, two sets of estimates were produced in the budget papers: one for budget authorised expenditure, and one for all the categories discussed above (Economic and Budget Review Committee 1990). It is interesting that the Economic and Budget Review Committee recognises that no one expenditure classification system is able to accommodate the range of budgetary goals. This is reflected in the Victorian system where program budgeting is used, but with input, functional, and organisational elements mixed in.

1b.3 Outcomes of Victorian program budgeting

As noted, despite reports of program budgeting failure, the system, even in the United States, is reported as having had some value. Program budgeting aided decision making by raising issues that were otherwise not apparent, and focused managerial attention on the link between resources and objectives (Botner 1970). In a Victorian context, Robinson (1992) notes that the strength of program budgeting is its use in expenditure appraisal, budget estimation and planning at the sub-central level.

Whilst the level of success of program budgeting in Victoria is arguable, it is claimed as somewhat successful compared with the previous system of pure line-item budgeting (Corbett 1992). Line-item budgeting is deemed an unsatisfactory basis for resource allocation because of its inability to provide targeted financial information by way of government objectives (Hopkins 1983; Jones and Pendlebury 1996; Victorian Commission of Audit 1993a,b). Hence, government spending decisions were only made on the basis of an across the board funding cut. Program budgeting at least related to specified areas of government policy, allowing the same total to be cut from a budget, but with greater precision. Further, signals to managers from government were arguably made clearer with program budgeting, because a link exists between the policy objectives and resource allocation decisions.

Further, in terms of relative success of program budgeting, the Economic and Budget Review Committee (1989) claimed that modifications applied to the program budgeting model by Victoria had overcome problems that were evident where program budgeting had not been successful in other states and countries. These

features include appropriation on the basis of programs rather than departments, objectives specified in output terms, clear and measurable performance indicators, and program evaluation (Economic and Budget Review Committee 1989). It should be noted however that performance indicators that accompanied program budgets were largely input measures. Further, in 1994, appropriation changed to a global departmental basis for reasons of greater management flexibility (Department of Treasury and Finance 1997b). Hence recognition of these benefits seems somewhat premature and misplaced.

Indeed, even five years after inception, the program budgeting model had been only partially implemented (Economic Budget and Review Committee 1989; Economic Budget and Review Committee 1990). In some cases objectives had not been specified in output terms, quantitative performance indicators were thin, qualitative performance indicators were still under development, monitoring was not rigorous, and program evaluations ad hoc.

With regard to the objective that Parliament and the public would have enhanced participation in budget decision making and be better informed, the achievement was not met. Although from a management perspective it appears that program budgeting was more useful than line-item budgeting. At the sub-program level, greater results have been achieved in informing the public and the ministry (Economic Budget and Review Committee 1989; Economic Budget and Review Committee 1990).

In summation, the Economic and Budget Review Committee (1989) concluded that program budgeting had not facilitated better information and that participation in budget decision making by parliament was not increased. There had been positives for management development and performance indicators, as well as an improvement in timeliness and reliability of information for ministers in priority setting. However, it is unclear whether the latter benefit was caused by program budgeting. The following sections will identify and discuss reasons why program budgeting had limited success.

1b.3.1 Emphasis issues of program budgeting

Successful emphasis of program budgeting requires extensive organisational change (Midwinter 1984). An example of a relatively successful emphasis of program budgeting was found in the then, Department of Agriculture, with less successful emphasis in the Department of Labour, and poor emphasis in the Education and Health departments. The Economic and Budget Review Committee (1989) study into program budgeting indicates that departments that had more adequate staffing involved in budget management, financial control and performance monitoring areas made faster progress in emphasis.

Other factors that appear to have effected emphasis of program budgeting are structure, culture, employee behaviour, planning and performance information, technology, and technical issues (Baines 1992; Economic Budget and Review Committee 1989). These factors are consistent with some of the moderating variables in this study. These factors are discussed here because it is likely that problems encountered in implementing one output control model (program budgeting) may effect another output control model (output management), therefore impacting upon current Victorian government department MCS.

1b.3.1.1 Organisational structure

Organisational structure refers to internal patterns of an organisation's relationships (Bruns and Waterhouse 1975). Structure was re-organised in the Victorian Department of Agriculture at the same time as the program definitions and boundaries were established.

Existing regional management structures were jointly given program management responsibility and individual regional managers had specific responsibility of at least one sub-program. There were also a small number of directors whose responsibilities related to a specific program as a whole. Hence, whilst still really using a matrix structure, the boundaries were by program and sub-program. This was consistent with program budgets instead of physical regions. Four directors existed at the top,

whose responsibilities coincided with the four programs¹⁷². This compatibility of structure with programs appears to have aided Agriculture's emphasis of program budgeting (Economic and Budget Review Committee 1989).

However, Considine (1990, 173) reports that Agriculture, whilst having a relatively successful emphasis of program budgeting, experienced structural conflict "the clean lines of program structures remain compromised by regional management functions that pull in a different and often contradictory direction", noting that the programs tend to be artificial boundaries. More generally, Considine reports that across departments most program structures and their budgets did not resemble actual departmental activities. Staffing, funding and co-ordination systems cross the program boundaries constantly, and programs have identities only in annual reports.

Baines (1992) indicates that a lack of consistency between organisational and program structure was a reason that both United States government organisations and the State Electricity Commission of Victoria abandoned program budgeting. The structural inconsistencies created evaluation problems with performance criteria, partly relating to non-controllable costs. Similarly, in the United Kingdom, the GLC recognised that structure needed to be adjusted before emphasis for successful program budgeting. This was done partly to establish clear accountability for programs (Peterson 1972).

In the Victorian Department of Labour there were problems of dual accountability and an arbitrary allocation of costs until structure was changed to fit program boundaries. This change saw resources allocated to programs and accountabilities retained within program boundaries because these then reflected divisional structure (Economic and Budget Review Committee 1989).

Less successful emphasis was identified in the Department's of Health and Education respectively. The Health Department spent years revising its structure. It sought to fit programs into its structure instead of allowing the structural changes to

¹⁷² These programs were: Corporate services and management support, agricultural development, policy and rural affairs and special community services (Parliament of Victoria, 1989-90).

arise as a product of implementing the program budgeting strategy. Further, there were conflicting accountabilities with regional managers responsible to numerous program and sub-program managers. It was identified that program budgeting had not fully penetrated the Health Department because so far their funding had been on an historic basis¹⁷³ and by line-item.

As in Health, the Department of Education had put existing organisational structure first, with program boundaries overlaid upon this. Their plan was to blend organisational change with program change after adoption of program budgeting. Education eventually defined its programs along functional lines. However, Education was not successful in its emphasis of program budgeting for a variety of reasons, discussed subsequently.

It should be noted that Baines (1992) studied the Education Department as an example of the success/failure of program budgeting in Victoria. The Education Department had been identified by the Economic Budget and Review Committee (1989) as one of the less successful implementers of budget reform amongst Victoria's government departments, and further noted that the Departments of Education and Health had been operating under intense pressure for other change over the previous five years, the same time period as program budgeting emphasis. Given that organisational turbulence had occurred alongside program budgeting, it is not surprising that Baines (1992) found little positive about program budgeting emphasis in Education.

Jones and Pendlebury (1996) indicate that program structure should clearly identify inputs related to the program, and this requires correspondence between program structure and organisational structure. In the United Kingdom experience it was sometimes necessary to cut across departmental lines of responsibility in classifying outputs, making structural consistency difficult. In aligning programs to divisional structure, the output oriented nature of programs may become function oriented (Economic Budget and Review Committee 1989).

¹⁷³ An historic basis refers to the process of taking last years appropriation figure and adding or subtracting a percentage of this universally.

Another structural impediment to program budgeting highlighted by the Economic and Budget Review Committee (1989, 1990) is that the Westminster system of government in Victoria is conducive to programs bounded by ministries. The model of program budgeting adopted was supposed to cross ministry boundaries. The outcome of this was conflict between the program management structure and the organisational management structure. As a consequence, the crossing of ministry boundaries did not eventuate.

Examples of structural changes to accommodate program budgeting are the delineation within departments on the basis of programs with a program manager heading each; although this could have been taken further with programs extending beyond ministry boundaries. All functions were related to a program that meant that administrative/corporate services type costs were frequently a program of their own.

It is apparent that various elements of structure effected the emphasis and success of program budgeting. As discussed, these elements largely relate to the level of consistency between organisational structure and program structure. Structural consistency had implications for conflicting accountabilities at both management and ministerial levels, and the threat of programs becoming function oriented rather than output oriented.

In addition to structure, there were other important elements effecting the successful emphasis of program budgeting such as planning and performance information, organisational culture, and technical concerns. These elements will be discussed subsequently.

At the time of program budgeting emphasis, it was recognised by the government that changes to organisational structures, management skill and style development, and management information systems would be necessary to facilitate better resource allocation via program budgeting. Awareness was also evident that time was needed for the program budgeting process to be understood and deemed credible (Parliament of Victoria, 1983-84).

1b.3.1.2 Planning and performance information

It has been claimed that corporate planning¹⁷⁴ and program budgeting must be compatible for successful program budgeting and should be developed as a single process (Economic Budget and Review Committee 1989; Economic Budget and Review Committee 1990; Hardman 1982). However evidence provided by the Economic Budget and Review Committee (1989) indicates that in some Victorian agencies, the program budget was perceived as an impediment to the corporate plan. Corporate planning has been more accepted by agencies than program budgeting for several reasons (Economic and Budget Review Committee 1989). One reason given for greater acceptance of corporate planning, is that it has the participation and commitment of employees, according to the Ministry of Consumer Affairs. Feedback about achievements appear to be measured against the corporate plan.

The corporate plan is developed from the bottom up, allowing "ownership" of the plan, through participation in decision making. The difficulty of ownership in regard to program budgeting and related performance indicators has been indicated in a local government context. It is suggested that the level of involvement in developing performance indicators is relevant to the success of emphasis (Economic and Budget Review Committee 1990; Meekings 1995; Kluvers 1997).

Feedback in Victoria was given on the basis of performance compared to corporate plan objectives, rather than by performance indicators linked to program budgeting. Once corporate planning was introduced, some resources needed to be diverted from program budgeting emphasis. Corporate planning has been easier to implement than program budgeting, perhaps because corporate planning is developed from the inside outwards; whereas, program budgeting operates from the outside inwards emphasis (Economic and Budget Review Committee 1989). Corporate planning is seen by managers as superior due to its private sector origins. Whereas program budgeting originates from the public sector (Economic and Budget Review Committee 1989).

¹⁷⁴ Even though departments are not corporations they commonly use business terminology.

It is argued that program budgeting and corporate planning should be a single, complimentary process. If they are not complimentary then unsatisfactory outcomes might result. These outcomes may include inefficient use of resources, threats to the power of individuals, accountability problems, and information de-coupling. Resources may be wasted due to overlap, duplication and protection of jobs, and conflicts may arise between the program budgeting and corporate planning processes due to inward versus outward and upward accountability (Skelcher 1980; Economic and Budget Review Committee 1989; Corbett 1992). The Economic and Budget Review Committee recognised that these outcomes were not necessarily negative. The power issue for example may signify internal competition leading to greater job performance, and such internal accountability may be as good or better than external accountability.

As with corporate planning, performance indicators and program evaluation were also factors limiting the successful emphasis of program budgeting. Performance indicators for program evaluation were difficult to develop and some perception exists that these measures were a threat to agencies because of improved performance scrutiny from outside the agency (Economic and Budget Review Committee 1990; Mascarenhas 1993).

Further, performance indicators in the Health Department for example, were mostly statistical input indicators, reflecting much of the information already collected. Given that program budgeting is an output oriented strategy the performance indicators were not conducive to successful emphasis. Hence there was a lack of relevant performance information, largely because of the retention of an inadequate information system (Economic and Budget Review Committee 1989).

The Education Department produced a wide range of quantitative performance indicators. However, qualitative assessment of programs was inadequate (Economic and Budget Review Committee 1989). Hardman (1982) notes the difficulty in collecting data relating to qualitative aspects of service delivery outputs compared with input information. He suggests that qualitative aspects of service delivery are often ignored or de-emphasised because of the tendency of managers and operators to strive for reports of positive information. Hardman (1982) suggests that qualitative

aspects of performance are likely to be de-emphasised because of the behavioural effects of the measures. Qualitative measures are more difficult to design than quantitative measures. These measurement problems cause a lack of qualitative performance measures. Managers then focus on the quantitative aspects of performance so that they can fulfil their desire of demonstrating good performance. That is, their behaviour becomes dictated by the types of measures applied to performance. The consequence of this is that qualitative aspects of work are ignored.

Baines (1992) identified problems in the Education Department as a lack of central level evaluation criteria, although there was regional evaluation. The Education Department altered its organisational structure in order to manage the evaluation problem. Participation in setting objectives and evaluation criteria was evident (Economic and Budget Review Committee 1989).

In the Department of Labour, program evaluations were performed on an ad hoc basis, and did not follow any particular guidelines. These reviews were performed by program managers and staff, suggesting that reports may not have been objective. The Department of Labour also reported that they collected masses of information for performance indicators but were not ready to publish these (Economic and Budget Review Committee 1989).

A need to re-process management information was also apparent. An observation relating generally to program budgeting in Australian jurisdictions was that the program budgeting process was more arbitrary than under line-item budgeting (Considine 1990). Considine (1990) reports that departmental imperatives have required both old and new systems to be used simultaneously, with programs viewed as secondary. This results in decisions on estimates occurring on an item by item basis, and staff subsequently converting information to express it as program data.

1b.3.1.3 Organisational culture, power and support for change

Attention to corporate culture is necessary to underpin successful change of systems in government organisations (Duffy 1989; Economic and Budget Review Committee 1989; Metcalfe and Richards 1983; Dent 1991; Baines 1992). The Economic and

Budget Review Committee (1989) note that success of program budgeting emphasis was at the mercy of volatile interpersonal relations.

Specifically, change champions are viewed as important for successful emphasis of management systems in government (Peterson 1972; Bebb 1987; Gray, Jenkins, Flynn, and Rutherford 1991). With respect to change champions, the Economic and Budget Review Committee (1989) reported that the Department of Management and Budget, the advocates of program budgeting, appeared to have lost enthusiasm for the reform, possibly because over time it became apparent that transition was difficult. This observation was made six years into the emphasis process. It is also apparent that the major change champions were external to departments. Peterson (1972) reports the importance of an emphasis team involving internal and external parties from a variety of levels in the GLC's emphasis of program budgeting.

Emphasis of program budgeting in Victoria was the joint responsibility of the individual department's and the then Department of Management and Budget. This could suggest an enhancement of power to the latter agency. Particularly given that it established a special "Budget Development Division" for that purpose. The agency was the advocate of program budgeting offering training, consulting services and written advice. Interestingly, remuneration decisions were made by the Premier's Office, which may have been a potential source of conflict. Another threat to power was noted within the Department of Education, where management reportedly resisted changes to responsibilities (Economic and Budget Review Committee 1989; Baines 1992). Midwinter (1984) notes that public sector managers see budgetary reform as a potential threat to their power because it means disclosing facts about policies and exploring alternatives.

A further issue that may have impeded the emphasis of program budgeting relates to management attitudes (Gray et al 1991). In some quarters there was a perception that program budgeting was an initiative designed to reduce funding (Economic and Budget Review Committee 1989). Other problems related to management unwillingness to use performance indicators in personnel appraisal in order to avoid fear and hostility among subordinates (Economic and Budget Review Committee 1989).

1b.3.1.4 Technology

It has been noted in the literature relating to program budgeting, that a major problem with output based management control models is that some government activities are easily measurable, and others are less so (Glynn 1987). In the organisational design literature Perrow (1967) defines the technology concept of task variability as the (in)ability to measure outputs. Glynn (1987, 40) provides the example that "the National Health service could produce useful output measures such as the number and cost of various treatments...(but) what appropriate output measures could meaningfully be produced to measure, for example, a police force's community liaison programme".

Doh (no date) empirically examined the relative success of three US government agencies emphasis of program budgeting. Doh recognised that the three departments studied were likely to differ in ability to be output measured. Doh argues that in some agencies, such as NASA, there is no output distributed to the community. Further, Doh argues that other reasons make outputs hard to measure. For example, most public programs have multi-dimensional objectives; it is often impossible to isolate the benefits of a program from contributions made by other factors; where there is no private market for goods or services, value in dollars is hard to specify. For example, NASA cannot quantify the value of their civil space program, but note the benefits include "the retrieval and advancement of US prestige, the enlargement of scientific knowledge...". The study reports that interviews with 40 public servants over the three departments led to the conclusion that none of the departments were considered to be highly output measurable, but that NASA and Health, Education and Welfare were considered 'less susceptible' to output measurement than Agriculture.

Even strong proponents of reforms involving performance monitoring in the public sector acknowledge that measurability of outputs is problematic in some areas. Wholey and Hatry (1992) report that increased use of performance information is worthwhile, yet note that for some programs, meaningful performance monitoring is extremely difficult, sometimes impossible. They note that regular monitoring of research programs, for example, is not feasible, partly because of time lags between task performance and outcomes. They note that numerous areas are easily

measurable however (for example, street cleanliness, school student withdrawal rates).

This concept of the varying ability to measure outputs in the public sector is consistent with the management accounting research of Hofstede (1981). He argues that in public sector organisations, where outputs are ambiguous and difficult to measure, and the effects of management intervention are not well known, the adoption of mechanistic, rationalistic, techniques driven management systems may have unexpected, undesirable effects.

1b.3.1.5 Technical issues and practicalities

Whilst contextual emphasis problems of program budgeting were major factors in its limited success, there were also technical characteristics inherent in the system itself that did not aid government management. For example, program budgeting was not as useful as line-item budgeting for expenditure control, or for use in determining budgetary allocations. It was also costly, and the information generated was more arbitrary (Robinson 1992).

Another issue effecting the emphasis of program budgeting was that the phase-up, phase-down analysis was in practice, able to occur under the conventional line-item budgeting system. Whereas initially, it was considered that only program budgeting was conducive to phase-up, phase-down analysis. Further, bids for funds were not made on the basis of programs, which was part of the initial reform intention, but rather a lump sum was decided upon in negotiations with the relevant minister to be subsequently allocated amongst programs. This problem occurred due to timing of the budget's tabling in parliament. The Estimates Committee had to make assessments about funding without information about where monies were to be spent. This occurred because details of outcomes in sub-programs resulting from final budget allocations could not be made in time for tabling the budget.

It was also evident that line-item budgeting had some other advantages over program budgeting. Line-item budgeting permitted greater flexibility to changes, enabling monies to be diverted from one activity to another, provided departments did not

switch between line-items in total (McAuley 1993). Allocations to programs and sub-programs had prevented this (Robinson 1992). Line-item budgeting was more consistent with corporate planning because of this greater flexibility. Under program budgeting, funds were restricted to line-items within program boundaries until the advent of global budgets.

Further, budgeting within a line-item system enabled all details to be tabled in parliament simultaneously. This suggests perhaps that there was less control over the appropriation process under program budgeting than under line-item budgeting. A line-item budget gives tight fiscal control because there are distinct allocations made. According to McAuley (1993) line-item budgeting was used by some agencies as an internal control alongside a program budget. This conclusion is in contrast to the objectives of budgetary reform outlined in the 1982-83 budget papers, noted earlier.

Certain practical and technical reasons render the classification of all expenditures by final output impossible in any meaningful or reliable way (Economic and Budget Review Committee 1990; Robinson 1992). In particular it is noted that many overhead expenses fall into this category. However, there are also instances where items included in these generic programs could be allocated to an output program (Economic and Budget Review Committee 1990). The definition and determination of final outputs is itself difficult, because it is influenced by policy goals and departmental missions (Economic and Budget Review Committee 1990).

Even without difficulties of a technical nature, the characteristics of program budgeting information have been questioned. It is argued that past budgetary reforms have resulted in information that lacks usefulness. These reforms have provided: too much information (Thompson 1991); misleading information (Hartley 1974) and information of a managerialist nature that would be more useful if it was of a political kind (Midwinter 1984).

1b.4 Lessons for current budgeting/management reforms

In some cases, program budgeting has taken a decade to implement and there is not a single example of complete emphasis of "pure" program budgeting in Australia. History of governmental budgetary reform is a precursor to the antecedent factors in this study because it suggests that a similar, yet more invasive budgeting reform such as accrual based output budgeting, together with output management, may have emphasis problems and will not necessarily attain the stated objectives.

It is apparent from governmental reports into program budgeting that the specific problems pertaining to both emphasis and characteristics of the system were largely unresolved (Victorian Commission of Audit 1993a,b; Economic and Budget Review Committee 1989; Economic and Budget Review Committee 1990; Management Advisory Board 1992; Robinson 1992; Management Advisory Board 1997). The lack of problem resolution has implications for output budgeting, output management and resulting MCS.

First, the failure of program budgeting and management (the old output system) has indirectly led the government to adopt output budgeting/management (the new output system). Second, the problems encountered in the emphasis of program budgeting still exist¹⁷⁵. At this early stage of output management emphasis it is unclear how the unresolved issues of prior systems will be addressed.

In particular, Robinson (1992), discussing program budgeting in Victoria, claims that adoption of an output based expenditure classification is costly, impractical, and of limited use in government. The underlying output expenditure classification principles of the new system are markedly similar to those of the old system. Indeed in the UK civil service, the term output budgeting was used to describe the program budgeting adopted in the 1960s and 1970s (Glynn 1987). Further, it is unclear

¹⁷⁵ Although, technological advances may be a factor that is resolved due to the passage of time. For example, Lee (1991, 259) reported that US state governments were able to cope with accounting information discrepancies between program and organisational boundaries because of better computing systems in the early 1990's which had previously been a problem. Hence, in the late 1990's, technological advances can be expected to enable rather than hinder systems development.

whether necessary technical, organisational, and political preconditions to governmental financial management change (Gray et al. 1991) now exist.

Therefore the history of program budgeting is considered to be an important precursor to the antecedent factors in this study. History has shown that external and organisational factors such as technical problems, structure, planning and performance information, managerial attitudes, organisational culture, technology, technical issues, power and support for change, are important considerations in the emphasis of governmental budgeting reforms.

Some of these factors (amongst others) are modelled as moderating variables in this study (technology, structure, and culture), and will be discussed in sections two and three. Elements of other factors relate to the usefulness of MCS, modelled in this study as the dependent variable.

It is apparent from the above discussion that a rationalist/managerialist focus, evident in the adoption of program budgeting, has been the recent historical direction of government preceding mandated output management practices. It is argued here that the adoption of program budgeting previously in Victorian government helps to explain the adoption of the current public sector management control practices, output budgeting and management. In effect, the history of Victorian government budgeting practices is a precursor to the institutional forces modelled as antecedents to current MCS design. Chapter three discusses these antecedent, institutional forces: coercive and mimetic isomorphism.

Appendix 1c List of departments approached for data

Department	Type of agency	Status in this study
Education	Operational	Complete access; analysed
Human Services	Operational	Complete access; analysed
Infrastructure	Operational	Complete access; not analysed
Justice	Operational	Partial access (beginning only); not analysed
Natural Resources and Environment	Operational	Complete access; not analysed
Premier and Cabinet	Policy	Complete access; not analysed
State Development	Operational	Partial access; not analysed
Treasury	Policy	No access; not analysed

Appendix 1d List of divisions within departments

Department and number of divisions	Division titles ¹⁷⁶
Education (5)	Office of Schools Office of Strategic Planning and Administrative Services Office of Training and Further Education Office of the Secretary Office of Higher Education
Human Services (10) Heads of all these divisions (excepting Aboriginal Affairs) also head at least one region.	Corporate Resources Acute Health Aged, Community and Mental Health Disability Services Youth and Family Services Public Health Housing Aboriginal Affairs Corporate Strategy Portfolio Services
Infrastructure (5)	Contracts, Regulation and Compliance Services Organisational Development and Corporate Support Local Government, Planning, and Market Information Services Strategic Planning and Economic Services Corporate Finance
Justice (6)	Justice Operations Correctional Services Corporate Management Office of Women's Affairs Office of Fair Trading and Business Affairs Legal and Policy
Natural Resources and Environment (10)	Portfolio Management Performance Evaluation Regional Management Water Agencies Catchment Management and Sustainable Agriculture Primary Industries Minerals and Petroleum Forests Services Parks, Flora and Fauna Land Victoria

¹⁷⁶ It should be noted that it is common for divisions to have other organisations attached to them also. For example, Department of Premier and Cabinet is also responsible for Museum Victoria, State Library of Victoria, etc. However, these entities are not included in the divisional structure. Similarly, there are entities which report directly to the minister(s) of departments, without passing through the Departmental structure, such as the Ombudsman's Office and the Victorian Auditor General's Office. These examples are illustrative of all departments, operational and policy. It is also notable that some of the operational divisions have enormous organisations under their jurisdiction. For example, in the Department of Infrastructure, the Public Transport Corporation is an arm of the Contracts and Regulation Division.

Premier and Cabinet (5)	Arts Victoria Cabinet Office Office of State Administration Multicultural Affairs Unit Special Projects
State Development (10)	Business Services and Marketing State Development Policy Employee Relations and Employment Executive Support and Co-ordination International Investment and Facilitation Business and Rural Development Sport Recreation and Racing Tourism Victoria Small Business and Regulation Reform Multimedia Victoria
Treasury (6)	Budget and Resource Management Economic and Financial Policy Privatisations and Industry Reform Financial Management Energy Projects Strategic Management

Source: Departmental annual reports.

Appendix 1e
International, Australian and Victorian reform in general and output budgeting and management

1e.1 International financial reform

The Australian economy has to survive in an environment of increasing global competition (Corbett 1992; Clark 1996). As a consequence, both public and private sector organisations seek ways to improve their operations. The impetus for Victoria's Management Reform Program has partly been the necessity to compete for funds in global markets. Recent credit downgrades in the 1990s by international credit rating organisations (for example, Moody's) for Victoria have impacted on the ability for the Victorian public sector to compete for funds internationally and to attract business to the state. Hubbard (1997) notes that due to globalisation forcing deficit reduction and greater accountability, no country will be able to buffer itself against the massive changes underway in the public sector.

To understand the context of Australian reform it is necessary to consider international developments. Not only do these developments provide benchmarks for Victoria's reforms, they have also partly acted as determinants. This is because Victoria has adopted the global reform trend apparent in several other western countries. Whilst public sector reforms are apparent in many countries (see for example Pirotta 1997) this review will concentrate on Canada, the United Kingdom and New Zealand. These countries are recognised as relatively analogous to Australia in their approach to reform and have been influential models for Australian initiatives (Rabinovitch 1996).

1e.1.1 Structural, strategic, policy and market based reform

In order to rationalise government spending in response to the demands of the public, various structural, strategic, policy and market based reforms have been applied internationally.

In Canada reform has occurred in both provincial and Federal government. With respect to planning, the Ontario civil service in 1987, produced agency strategic

plans on an ad hoc basis. All ministries are expected to produce business plans. An evolutionary change strategy has also been adopted in Ontario. This change is dramatic, but expected to be successful because of the existing public service that has been described as mature and professional (Barnes 1997). This change reflects community demand for government to concentrate on strategic public policy and programme setting, leaving operations to a cost effective provider. This means in many cases, the adoption of outsourcing or privatisation activities. Departmental and governmental policy has been reformed. Strengthening of Federal departmental policy has occurred in Canada to increase capacity for more responsiveness to societal needs (Barnes 1997; McIntosh 1997; Smith 1997).

Structural change has been widespread. In Canada during 1993, a major restructure of the federal public service occurred to reduce the number of departments by a third and enhance development of coordinated policies (McIntosh 1997). In 1995 the Ontario government announced plans to downsize the public service by approximately 25 per cent as part of their cost cutting strategy (Barnes 1997). The Canadian Federal government announced staff cuts of 20 per cent in 1995 as part of a restructuring to support change (Hubbard 1997).

In the United Kingdom major reform measures have been adopted along managerialist lines, decentralising government functions (Kaul 1997). Features of the United Kingdom reforms include restructuring via creation of largely autonomous executive agencies to separate policy formulation from emphasis (Rayner 1995; Mountfield 1997). Devolution of authority to those held accountable for output delivery was also introduced (Kaul 1997).

In New Zealand significant devolution of authority to chief executives has occurred (Schick and Wilson 1996). New Zealand departments have autonomy in respect to acquisition, utilisation, mix and disposal of human resources, capital and other inputs within an agreed budget (McCulloch and Ball 1992; Victorian Commission of Audit 1993a,b; Kaul 1997; McGrath 1997).

Efforts to contain cost have taken place. In Canada major budget cuts occurred to welfare and other areas. Cost containment is a major feature of Canadian deficit

control, with program spending set to decline by 12 per cent of GDP each year until 1999 (Barnes 1997). Utilisation of alternative program delivery where appropriate, from direct service delivery has been introduced, consistent with the "program review" activity in 1994 to prioritise budget cuts (McIntosh 1997; Smith 1997).

Market reforms including major privatisation and outsourcing initiatives are on the Canadian agenda (Rayner 1995; Barnes 1997). Competition has been introduced in the United Kingdom between service providers, purchaser/provider arrangements, market testing, contracting out and development of partnerships with non-government organisations (Kaul 1997). The structural, strategic, policy, and market based reforms discussed in this section have often been accompanied by financial management initiatives. These reforms will be discussed in the next section.

1e.1.2 Financial planning, budgeting and control reforms

Underpinning the structural, strategic, policy and market based reforms are changes to financial planning and control systems. These changes have been necessary as decision support systems for the new type of management regime. In the United Kingdom, these initiatives include budgeting on the basis of outputs, accrual accounting and the introduction of capital charges (Kaul 1997). In New Zealand the State Sector Act (1988) and Public Finance Act (1989) have provided for a changed government financial management system based on GAAP,¹⁷⁷ and modified slightly for the public sector.

The New Zealand legislation requires that both the Crown and individual departments report via business-type accrual based financial statements. Additionally outputs are to be accounted for on an accrual basis and performance measures linked to these (Laking 1994). Managers are responsible for delivery of outputs whilst demonstrating efficient asset management, meeting amounts sufficient to cover a capital charge levied on the assets. A capital charge was imposed on departments in 1991 to ensure that the pricing of outputs reflected their full cost, and

¹⁷⁷ Business-type, generally accepted accounting principles set down by the New Zealand Society of Accountants.

to focus management on the real cost of assets to encourage better decisions about purchasing and holding fixed resources (McCulloch 1991; Lally 1995). Interest is now earned on cash balances by individual departments in New Zealand (McCulloch and Ball 1992; Victorian Commission of Audit 1993a,b; Kaul 1997; McGrath 1997). It should be noted that New Zealand has already implemented a system of accrual based output budgeting. By 1995 the New Zealand budget reported details of output classes to be purchased by government from Departments (and external parties) to achieve government's outcomes¹⁷⁸.

In Canada performance pay and performance contracts were introduced in 1986-87 (Barnes 1997). Management salaries have been more closely linked to performance (Barnes 1997). Agency chief executive's now report against specific performance criteria in New Zealand (Schick and Wilson 1996).

This section has outlined international initiatives in public sector reform, indicating that structural and financial changes are a global phenomenon. Particular attention is given to New Zealand as having an international reputation for rapid and comprehensive public management reform (Mulgan 1996). Although, the distinction may not be entirely deserved (Schick 1996), the New Zealand output management model has important implications here, because the Victorian model for financial reform is not dissimilar, despite fundamental differences in context. These implications will be discussed in chapter two.

1e.1.3 Australian Commonwealth financial reform

In the past decade the Australian public sector has adopted structural, industrial, human resource management, commercial, planning, reporting, financial management and budgeting reforms (Management Advisory Board 1992).

Broadly, in the Australian Commonwealth public sector, major changes have been made in financial management such as emphasis of forward estimates in budgeting.

¹⁷⁸ New Zealand did not report on a program basis previously.

Other reforms include the introduction of program budgeting (Sedgwick 1994), along with the establishment of performance indicators, and greater performance evaluation of outcomes (Stewart 1995). A focus on business management has been instigated with the occurrence of privatisation, competitive tendering and contestability, as well as devolution (Beazley 1995), allowing managers much greater control over resources. Consequently, there has been more direct accountability for outcomes. Output management has not been attempted.

1e.1.4 Australian state financial reform

Similarly, at the Australian state level, reform has been plentiful. The accounting profession's promulgation of standards for accrual-based reporting in government departments was answered by parliaments and treasury departments in Victoria, Western Australia and New South Wales (amongst other states). These jurisdictions mandated the standards by including in their respective legislation a requirement (with minor exceptions), to follow professional accounting standards¹⁷⁹ (see Financial Management Act 1994; Financial Administration and Audit Act 1994; and Annual Reports (Departments) Act 1985).

The idea behind such legislation was to begin the process of providing improved management information. This was to be achieved by ensuring, via external reporting requirements, that full cost data were collected, whilst simultaneously enhancing accountability by the change in both form and content of the external financial statements. This was radically different to the cash-based, fund-type reporting that had previously been used. These requirements have resulted in those jurisdictions reporting a set of business type financial statements for each department as well as whole of government reports.

¹⁷⁹ Standards issued by the Australian Accounting Research Foundation on behalf of the Australian Society of Certified Practicing Accountants, and The Institute of Chartered Accountants in Australia. In particular AAS29 "Financial reporting by government departments".

From a management perspective, a cornerstone reform was program budgeting¹⁸⁰, that replaced the traditional line item type budgeting that focused on inputs alone. Program budgeting provided a method of enabling performance evaluation of agency activities by linking inputs to outputs for a given objective (Economic Budget and Review Committee 1990). Hence, it was goal oriented. Program budgeting was introduced by South Australia in 1981 (Strickland 1981; Pugh 1984), and subsequently by other Australian state jurisdictions as well as the Federal government. Program budgeting is subsequently discussed at length in chapter two because of its importance as a precursor to output management.

New South Wales has introduced financial management reforms since the late 1980's. These include three year forward estimates, the use of Government Finance Statistics (GFS) budget format, and the Comprehensive Accounting and Budgeting (CAB) reforms for managing total resources. Also introduced was departmental flexibility of budget savings and net appropriations (Victorian Commission of Audit 1993a,b). Queensland has adopted a three year forward estimates system, efficiency dividends and global annual budgets (Victorian Commission of Audit 1993a,b).

Western Australia, having previously adopted similar reforms to New South Wales and Queensland, introduced output based management in 1996. Output based management was to be implemented by the 1998-99 budget year (Treasury Department of Western Australia 1996b). Empirical results from a survey of Western Australian state government officials conducted in October 1997, shows that MCS showed little output information, compared with program information (Neilson 1998).

This section has broadly outlined the contemporary reform environment of the public sector overseas and in Australia. This study is particularly concerned with the financial management reforms of the Victorian state budget sector. The specific Victorian financial management reforms of interest will be discussed subsequently.

¹⁸⁰ Program budgeting is the classification of expenditure according to the different outputs produced.

1e.2 Recent and forthcoming financial and budgeting developments in the Victorian public sector

The Victorian public sector is in a period of great change, consistent with that being experienced in other Australian state jurisdictions, as well as that of the Commonwealth. Specifically, the Victorian public sector has undergone substantial change with the introduction of accrual accounting for external reporting, global budgets, changes to the timing of the budget and the introduction of three year forward estimates (Department of Treasury and Finance 1997b). This is in addition to numerous non-accounting reforms such as the amalgamation of departments in 1996 (McKinsey and Company and Department of Human Services 1996). The Victorian public sector is now experiencing even greater transformation with the introduction of the Management Reform Program including output management and output funding arrangements. Table 1e.1 presents a chronology of Victorian budget sector financial reforms for the past 15 years, and future initiatives proposed.

These reforms have been considered necessary to ensure that benefits gained through severe budget cuts in the early 1990's are able to be sustained. This action is necessary in an environment of limited revenue growth with corresponding sustained or increasing demand for services (Department of Treasury and Finance 1997b).

*Table 1e.1 Victorian financial management reforms***Past**

1982-83 Introduction of program budgeting. Reduction of trust accounts. Amendments to Public Account Act 1958. Establishment of Budget Paper "Budget and Victorian Economy". Three year budget viability program introduced. Explicit budget process approved by Cabinet.

1983-84 Introduction of Annual Reporting Act 1983. Four volume Program Budget published.

1984-85 Introduction of Single Appropriation Bill. Program appropriations formally introduced in budget papers. Requirement to establish and maintain fixed asset registers. Presentation of three year forward estimates for recurrent and capital funds.

1985-86 Process to reduce the number of line items in appropriation. Sub-program information produced. Introduction of 1 per cent productivity improvement in service delivery costs. National accounting budget data produced. Public authority policy and rate of return reporting information paper produced.

1986-87 Budget paper five introduced containing detailed program and performance information. Centralisation of budget sector debt. Productivity improvement set at 1.5 per cent and applied to service delivery costs in aggregate for each ministry. Capital works supplementary budget paper. Budget day moved from September to August. Supply period reduced to end October 1987. Consolidated statement on the State's debt position.

1988-89 Government Finance Statistics time-series data introduced to budget papers.

1989-90 Three year agency plans developed.

1990-91 GFS national basis used as the accounting budget presentation system. Rental payments moved to relevant agencies from Property and Services.

1991-92 Monthly statement of financial transactions of the budget sector on GFS basis with supplementary consolidated fund information. Policy adopted to introduce accrual reporting.

1992-93 Victorian Commission of Audit Report.

1993-94 Budget published with three year forward estimates.

Global departmental budget appropriations (with current and capital separate funding).

Inclusion of rent and other costs to departmental budgets.

Publication of detailed departmental budget estimates.

New Financial Management and Audit legislation.

1995-96 Asset management policy and asset valuation program.

Trial whole of government consolidated financial statement.

Introduction of a capital charge for 1994-95 budget.

Integrated management cycle.

Outsourcing and contract management guidelines.

Investment evaluation policy and guidelines.

1997-98 Tabled single budget in Parliament.

Presented audited whole of government financial statements.

Current-Future

1998-99 Output based management on an accrual basis featuring:

Linked output delivery with government outcomes.

Replacement of current and capital appropriations with global appropriations for departments.

Full costs including cost of capital and financing charges.

Funding based on deliverable outputs. Accrual financial statements for monitoring and reporting.

Victorian Commission of Audit (1993a, Vol. 1 163-4); Department of Treasury and Finance (1997b, 6).

1e.2.1 Budget timeframe

A major Victorian financial reform initiative implemented is the replacement of the bi-annual budget system for reporting to Parliament, with a single budget based on accrual accounting, to occur in April/May each year.

The new budget timetable was implemented for the 1997-98 budget aggregates (Department of Treasury and Finance Victoria 1997b). This change was expected to aid agency managers enormously from a planning perspective. Previously the budget was presented to Parliament in September, resulting in agencies having to "manage" for several months within a financial period, without being sure what their (appropriated) resources were.

In addition, due to the so called Victorian "fiscal crisis" over the past few years (Victorian Commission of Audit 1993a,b), a dual budget system had been temporarily introduced, that created additional workload for agencies, as well as restricting their planning to half yearly periods (Office of the Treasurer 1996; Department of Treasury and Finance 1996a).

1e.2.2 Output management and output funding arrangements

Output management can be described as a system of operating that focuses upon outputs in order to link departmental activities to the achievement of specific outcomes. This system requires the use of full accrual based information so that all outputs are calculated on a full cost basis¹⁸¹ (Department of Treasury and Finance Victoria 1996d). This is different from the previous approach of the public sector that focused upon inputs. Previously, there was little concern for the way inputs related to desired outcomes set down by policy makers.

Program management when introduced in 1983 was expected to improve MCS to a great extent by moving away from line item budgets toward budget items grouped by objectives. Program budgeting however, was still an input based measure. Program budgeting was partially implemented however, with departments using a hybrid system of program budgets and line items.

¹⁸¹ Full cost is the cost of all direct and indirect resources used in the production (both cash and non-cash) of an output including depreciation and financing charges. It is noteworthy that at least the first output based budget in Victoria was not full cost. Generally, departments reported outputs on a cash basis with some accruals mixed in.

Output budgeting and management is expected to replace the hybrid program/line item budgeting and management used in practice. Arguably, the attempt at program management has introduced a conceptual foundation for output management (Treasury Department of Western Australia 1996a) by helping to link the provision of outputs more explicitly to government policies. Output management conceptually follows from program management by providing detailed identification, specification, and measurement of outputs (based on full costing however), along with demonstrating the link between outputs and outcomes.

An important aspect of output management is output costing. The purpose of output costing is to provide managers with meaningful product cost information; to provide a basis for choosing between alternative suppliers of outputs; and to form a basis of funding through the budget process (Treasury Department of Western Australia, July 1996a,b). Figure 1e.1 (overleaf) shows the recommended steps of output management, and the types of information required for its use. Figure 1e.2 provides an example of how the steps in Figure 1e.1 can be taken for a department using output management, to specify and group outputs.

For management the changes to output budgeting and management are important because the full costing of outputs will affect government funding. Output budgeting means departments will be funded for external outputs only. Internal outputs, such as internal support branches (e.g. finance, human resources) will be included as part of external output funding via cost allocation processes. This approach is new to Victorian public sector managers.

Figure 1e.1 The Information Framework of Output Management

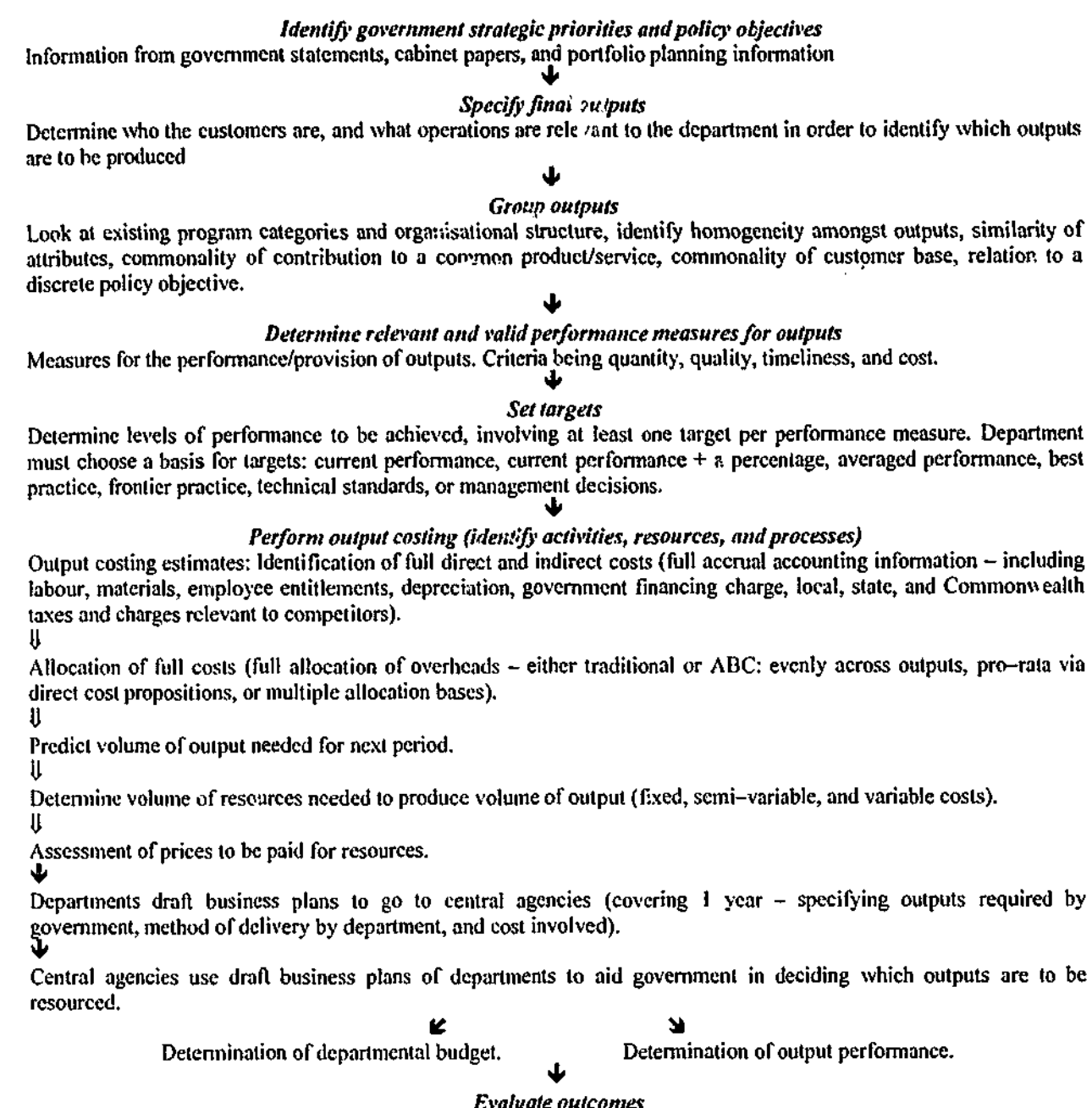


Figure 1e.2 Specification and grouping for Output Management — Example

Identify government strategic priorities and policy objectives

The Justice Department's Enforcement Management Unit obtained the latest Corporate Plan from Department of Premier and Cabinet, along with the Treasurer's Economic Statement. From this it was ascertained that the government strategic priority relevant to the department was: "Victoria's Constitution, Government and legal system will provide a secure basis for a progressive, fair and well managed community within the Australian Federation".

The unit then decided that the government policy objective relevant was to "execute all warrants within the civil and criminal jurisdiction in a timely, effective and fair manner".

Specify final outputs

The unit identified various customer groups such as the courts, police, local government and the community. Also identified was the range of intermediate operations carried out by the unit, deciding that finalised warrants was a final output its main customer (the courts) wanted.

Group outputs

In deciding which output group finalised warrants was to go into, the unit concluded that it was homogenous with a range of other outputs arising from legal processes because they contributed to a common service and customer. In reviewing existing program categories, departmental policy objectives and organisational structure "courts and tribunal services" was selected as a suitable output group.

Determine relevant and valid performance measures for outputs

Suitable measures for the performance/provision of finalised warrants were listed. Selected measures were revenue received, number of warrants finalised, time period (days) from issue to finalisation, and number of complaints about the unit compared with number of finalised warrants.

Set targets

Using current performance figures of itself and similar units interstate, as well as information on existing resources and staffing levels, the main target set was "to achieve an output of 350,000 finalised warrants for the year".

Perform output costing (identify activities, resources, and processes)

Output costing estimates: Identification of full direct and indirect costs using full accrual accounting information. For the Department of Justice this includes employee costs (including workover premiums, staff training and retrenchment packages), supplies and services (including capital charges, bad debts and resources received free of charge), donations and industry contributions (including resources provided free of charge to other agencies), depreciation and amortisation, and written down value of assets sold.

Allocation of full costs on the basis of activity. For finalised warrants this may mean including the activity "actioning and finalising warrants", then allocating all the direct, indirect, and overhead costs that relate to that activity.

Predict volume of output needed for next period — probably how many warrants will be finalised.

Determine volume of resources needed to produce X number of finalised warrants.

Assessment of prices to be paid for resources. How much will be paid for each resource pertaining to finalised warrants.

Justice Department drafts business plan to go to central agencies covering 1 year — specifying outputs required by government (of which one is finalised warrants), method of delivery by department, and cost involved.

Central agencies use draft business plans of departments to aid government in deciding whether finalised warrants (as well as the other outputs) are to be resourced.

Determination of departmental budget.

Determination of output performance.

Evaluate outcomes

(Figures 1e.1 and 1e.2 are constructed from Department of Treasury and Finance, Victoria 1996c, 1996d, and Department of Justice, Victoria 1996).

Previously, departments received separate funding for programs linked to outside objectives, and organisational support services (Department of Treasury and Finance Victoria 1996c). The division of capital and current appropriations are to no longer exist. Output groups are to include provision for both, and are to be funded on that basis.

Two other (minor) reform steps complement the full costing initiatives. First, the introduction of a government financing charge on assets, as well as provision for "competitive neutrality", a system where the full costs of outputs are to include taxes and charges relevant to external providers (Department of Treasury and Finance 1996c). Competitive neutrality requires that, wherever an agency is competing with the private sector, it is to take the full cost of the relevant output and then adjust for any competitive advantages or disadvantages that are associated with the output due to government ownership (Department of Treasury and Finance 1997a). Agencies are responsible for implementing competitively neutral pricing principles and each agency CEO must acknowledge compliance with the policy¹⁸², by stating in the annual report that compliance has occurred.

Examples of competitive advantages arising from an agency's government ownership include the opportunity cost of capital, exemptions from taxes, duties, rates, regulations and government charges. Such exemptions and a return on assets (or a return on cost if an output is very labour intensive) must be added to the cost of the output. This approach could be explained as similar to tax equivalence.

Another cost to be included in outputs is that associated with goods/services received free of charge. This refers to the use by a department of goods/services provided by another department and not paid for either by money or exchange. This practice is common amongst departments, and could perhaps be equated with the notion of transfer pricing. An example of resources received free of charge can be found in the Operating Statement for Department of Natural Resources and Environment, year ended 30 June 1996, showing nearly \$2M in revenue for resources received, and

¹⁸² This policy is entitled "Competitive neutrality: a statement of Victorian government policy".

nearly \$120K in expenses for resources provided free of charge. These items have been accounted for and reported in accordance with the Financial Management Act 1994 (which incorporates requirements from Australian Accounting Standards).

Whilst the upheaval for public sector managers is great; indeed, far greater than they have recently experienced with the introduction of accrual reporting, it is envisaged by Treasury that the switch to output management and output based funding will produce positive results both in terms of accountability and effective total resource management¹⁸³. This is consistent with government policy outlined by both the Treasurer and the Minister for Finance who have indicated that the Management Reform Program signifies a commitment to a new way of operating the business of government. The broad goal of the reforms is to achieve "enduring, improved management of the state's resources" (Stockdale and Hallam in DTF 1997c, 1).

1e.2.3 Objectives of the reforms

Reasons for the output budgeting and management reforms are enhanced performance by focusing management attention on their full complement of resources, forcing them to link the usage of all resources, ultimately (and specifically) to outcomes. This means there should be no outputs that do not relate to specific outcomes, and accordingly there should be no corresponding waste of inputs.

For example, if inputs relate to outputs that do not relate to specified outcomes, the CEO of an agency will have to justify the misuse of these resources. It is expected that this is undesirable to management, and will consequently ensure that all inputs ultimately link to outcomes. With respect to fixed resources, accrual accounting will show a shift from fixed assets to cash, for example in the event of a sale of assets for short term gain. It is an important change that all assets must now be recorded and accounted for. Previously for example, asset sale proceeds could be receivable to an agency, when there was no record of a corresponding decrease in fixed assets. This is

¹⁸³ This reflects the opinion of the Director of Government Financial Reporting at the Department of Treasury and Finance, Victoria, in mid 1997.

because the fixed assets were not initially recorded. Therefore, it would appear as a gain, as opposed to a transfer of assets.

A further example is that of unfunded liabilities such as employee entitlements. These must now be reported. Previously, they were only considered when the time came for payment. Hence, previously, liabilities were understated. Further, provision for unfunded liabilities must somehow be made in order for agency budgets to avoid showing an operating deficit.

The accrual budgeting component is expected by Treasury to provide a reporting tool that makes hiding wasted resources (arguably) more difficult, as did the introduction of full accrual external financial statements. Similarly, it makes the shuffling of fixed resources for short-term gain obvious, and shows any unfunded liabilities that were previously not apparent. Furthermore, it means that the full cost of all resources must be considered.

Output management forms the basis for output based budgets. The output budgeting form adopted by Victoria's Treasury mandates full cost, accrual accounting, and activity based information from which performance indicators are developed. In broad terms, it is envisaged that these initiatives will result in better management of resources, more effective and efficient achievement of outcomes, and a more competitive state sector. It is expected that problems of intergenerational equity will be solved because provision must be made to meet full costs to avoid leaving a state of unfunded disrepair and debt to the community of the future¹⁸⁴. Further, communication within the public sector, and between government and the community is expected to improve. So not only are the reforms expected to achieve better results in actuality, it is also envisaged that the public sector can be seen to be achieving better results for the community through more effective communication.

¹⁸⁴ It should be noted that this is the expectation of several state governments and Australian accounting standard setting bodies; and that the issue is hotly contested by Ma and Mathews (1993), and Aiken (1994).

Throughout the period of study, the Victorian public sector (budget sector component) consisted of eight departments¹⁸⁵, and approximately 500 agencies. These departments were the product of a recent restructure, where 22 departments were amalgamated. All departments were expected by Treasury to initiate the reforms simultaneously. The 1996-97 budget demonstrates that Department of State Development and Treasury and Finance had begun basing their budgets on output groups rather than programs (Parliament of Victoria 1997-98). This represents early adoption of output management which was expected to be fully implemented by all departments for the 1998-99 budget year. This output management mandate provides a significant forum for management accounting research within Victoria, although it should be acknowledged that the reforms within departments are much broader in scope than output management. The breadth of public sector reforms was outlined in the previous section, and are beyond the scope of this study.

¹⁸⁵ A list of departments is shown in Appendix 2.

Appendix 1f
Variable definitions

Variable	Dimensions	Definition and/or Explanation	Source
Antecedents Institutional forces	Isomorphism	"Isomorphism is a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions."	DiMaggio and Powell (1983, 150-151)
	a) Coercive	Results from both formal and informal pressures exerted on organisations by other organisations upon which they are dependent and by cultural expectations in the society within which organisational function. Such pressures may be felt as force, as persuasion, or as invitations to join in collusion. In some circumstances, organisational change is a direct response to government mandate.	
Moderators Perceived external environmental conditions	b) Mimetic	Modelling. Uncertainty is also a powerful force that encourages imitation. When organisational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic certainty, organisations may model themselves on other organisations.	Govindarajan (1984)
	a) Uncertainty	"The unpredictability in the actions of the customers, suppliers, competitors and regulatory groups that comprise the external environment of the business unit."	
	b) Turbulence	Dynamic, unpredictable, expanding, fluctuating environment, marked by changes. Opposite of stable. (Degree to which the environment is either stable, or dynamic/discontinuous. Dynamic refers to a high but predictable rate of change; discontinuous refers to a high and unpredictable rate of change. Amigoni 1978, 282-283).	
	c) Hostility	Risky, stressful and dominating. The opposite of benign. ("Condition of perceived threat to the organisation's primary goals". Khandwalla 1972b, 307)	Khandwalla (1977, 333-341)
	d) Diversity (heterogeneity)	Heterogeneous, where the organisation's clientele or markets have variegated characteristics and needs. (Heterogeneity: How numerous are relatively homogenous segments of the organisation's markets, whether at the input or the output end. Khandwalla 1972b, 304)	
	e) Technical complexity	Where the information needed for making strategic decisions is technically highly sophisticated.	
	f) Restrictiveness	Complex. Many constraints on the organisation: legal, political, economic, or cultural.	Duncan (1972, 313)
	g) Complexity (simple-complex)	"The number of factors taken into consideration in decision-making."	
	h) Dynamism (static-dynamic)	"The degree to which these (external environmental) factors...remain basically the same or are in a continual process of change." (Level of stability and predictability in consumer demand. Where high, the technology required to produce goods/render activities remains the same as time passes and competitors behave in a predictable fashion with respect to their product market orientations. Gordon and Miller 1976, 60).	
	i) Competition (adapted)	"Competition is essentially strife in the market place" Intensity of competition from existence/entry of alternative provider.	Khandwalla (1972a, 276-277)

Moderators Structure	a) Centralisation, decentralisation and matrix	Extent to which (actual not just formal) authority has been delegated to appropriate senior managers for development of new products/services, hiring and firing of management personnel, selection of large investments, budget allocations, pricing decisions; operating decisions are made at senior executive or lower managerial level. (Locus of authority to make decisions before legitimate action is taken, notwithstanding routine confirmation later by a chairman or committee. Pugh et al. 1968, 72-79). (Delegation of authority: The extent to which the CEO has delegated (actual not just formal) authority to individuals or groups to make decisions. Khandwalla 1977, 651-653). Matrix (matrix management structure) where bureaucracy is organic-clear lines of accountability do not exist.	Gordon and Narayanan (1984, 46); Macintosh (1994); Khandwalla (1977, 495-497)
	b) Differentiation	How elaborately specialised are an organisation's activities.	Khandwalla (1977);
	c) Structural complexity (distributive network)	Structural complexity: Number and degree of interdependence of business units; number and type of organisational units. (Number of organisational locations, structural and occupational differentiation). (The extent to which the firms operation's are geographically dispersed, a form of spatial diversification and decentralisation).	Amigoni (1978); Rosenzweig (1981).
	d) Interdependence with context e) Mechanistic and organic	Use of consultants, service agencies, experts from head office. A(n) mechanistic (organic) structure is one (not) characterised by highly specified and delimited job descriptions or highly formalised procedures.	Pugh et al. (1968, 72-79) Burns and Stalker (1961, 119-122)
Moderators Technology	a) Task uncertainty: Task difficulty Task variability	The actions employed to transform inputs into outputs, with or without mechanical or other aid. Knowledge of the transformation process. Ability to measure outputs. (Routine technology is consistent with low TD, low TV; Non-routine technology is consistent with high TD, high TV).	Perrow (1970)
	b) Interdependence	The extent to which departments depend upon each other and exchange information and resources to accomplish tasks. Classified, from least to most interdependent as: pooled, sequential, reciprocal and team, respectively.	Thompson (1967); Van De Ven et al. (1976)
Moderators Culture	<i>Culture</i>	"The broad constellation of interpretive structures through which action and events are rendered meaningful in a community".	Dent (1991, 707-708)
	a) Managerialist	Symbols, rituals and language which emerge to celebrate an economic rational for organised activity.	Adapted from Dent (1991) and culture literature generally.
	b) Traditional public sector	Rituals, symbols and language which emerge to celebrate the primacy of the production (technical) orientation".	

Independent OM-MCS	<i>Organic and Mechanistic</i>	Controls that rely on formal rules, standardised operating procedures and routines are mechanistic. Controls that are flexible, responsive, rely little on rules and standardised procedures and are rich in data are organic.	Chenhall (2003)
	<i>Output management</i>	A process of linking funding, reporting and monitoring of clearly defined outputs to outcomes. A mechanistic control.	DTF (1996a)
	a) Input control	The specification of resources that are allocated to the department and that may be used during the accounting period, but no attempt is made to specify required outputs in financial terms.	Ouchi (1977 112); Ouchi (1979, 843-845); Otley (1987, 10)
	b) Output control	Records of output, rather than supervisors observations of behaviour, form the basis for evaluations.	
	c) Behaviour control d) Clan control e) Integrative liaison devices	Supervisors observations of behaviour, rather than records of output, form the basis for evaluations. Ritual and ceremony are used to subtly control groups of organisational members. Interfunctional structural arrangements including the use of committees, task forces and teams for control.	Khandwalla (1972b); Gordon and Miller (1976, 62).
Dependent MCS usefulness	MCS usefulness	Whether the components in the MCS are reported as useful to management for internal use; or are used even though they are not very useful, due to an absence of preferred information components.	Developed from contingency literature in general.
Outcome Department performance	Departmental performance (efficiency gains)	Whether the effectiveness targets set by the departments themselves are met, and government, ministerial and community expectations of the departments are fulfilled.	Suggested by Chua (1986); Otley and Wilkinson (1988).
Outcome Department performance	Departmental performance (legitimacy gains)	Whether the organisation survives in substantially the same form.	Developed from the institutional literature in general.

Appendix 2a
Institutional studies

Study and setting	Method and framework	Factors	Outcomes
Abernethy and Chua 1996 CAR Australian Public teaching hospital	Field study Resource dependence and institutional	Institutional environment value systems Dependence on economic gain Technical environment	Control system design choices Strategic responses to institutional pressures
Ansari and Euske 1987 AOS US Department of Defense military facilities	Field study Technical-rational, socio-political and institutional	Information use – roles of accounting	Legitimacy Internal control
Austin 1998 CJAS Canadian universities	Field study Institutional	Cognitive and normative isomorphism International standards US practices	Form of management education and research practices Legitimacy
Bealing and Riordan 1996 SJSG Virginian universities	Case study Institutional	Legislative forces	Operations/program restructuring Legitimacy leading to resource gains
Blum, Fields and Goodman 1994 AMJ Georgian private sector organisations	Survey and field study Resource dependence and institutional	Emphasis on development and promotion procedures Women in non-management positions Management salary Difficulty attracting/retaining employees Race of managers Annual management vacancies Professional/skilled employees Company age, industry type	Both pressures on resources and for institutional isomorphism lead to management position gender breakdown
Boland and Pondy 1983 AOS University of Illinois and a Chicago school district	Case studies Rational models (including contingency) and natural models (including institutional)	Climate of limited growth and decline Power, control, standardisation	Role of budgeting process in securing and allocating financial resources Role of accounting as rational and natural
Carpenter and Feroz 1992 AOS State of New York	Case study Agency, traditional-rational, political-power and institutional	Adoption of GAAP Institutional isomorphism Power relations and organisational politics	Legitimacy Financial management practices
Clark and Soulsby 1995 Czechoslovakian State manufacturing organisations	Field study Contingency and institutional	Technical and institutional pressures for change	Process of change from state to private Isomorphism: divisionalised structures, decentralisation Legitimacy
Covaleski and Dirsmith 1986 AOS Hospitals	Field study Institutional	Complicity of budgets in performing management roles: Liaison, leader, spokesperson, disseminator, negotiator, resource allocator	Budget related activity is largely explained by power and politics for legitimising actions

Covaleski and Dirsmith 1988a AOS State and University of Wisconsin	Field study Theories of power and control and institutional	Institutional and societal forces	Accounting as a social convention or a rational reflection of technical reality
Covaleski and Dirsmith 1988b ASQ State and University of Wisconsin	Field study Institutional	Balance and crisis in institutional environments Extraorganisational relations Organisational decline	Adoption and support of budgetary practices Legitimacy Coercive power
Covaleski and Dirsmith 1991 JAPP Health care organisations	Theoretical Institutional	Accounting as an establisher and perpetuator (not just a supporter) of legitimacy	Accounting for public sector management legitimacy and for influencing policy and public sector decision making
Covaleski, Dirsmith and Jablonsky*1985 JAPP Pennsylvania Department of Aging	Action research Traditional and institutional	Budget related behavior Use of budgeting information Advocacy role of budgets	Emphasis of a computerised budgeting system
Covaleski, Dirsmith and Michelman 1993 AOS US Hospitals: case-mix funding	Historical event Institutional	Power and decoupling	Legitimacy
Covaleski, Dirsmith and Samuel 1996 JMAR	Theoretical Contingency, interpretive and critical	Organisational and sociological perspectives are reviewed in a management accounting context.	Insights these theories provide compared to traditional perspectives for understanding multiple roles of management accounting.
Dacin 1997a AMJ Finnish press sector	Archival Economic and institutional	Institutional and market forces	Characteristics of new organisations
Deephouse 1996 AMJ US commercial banks	Archival	Organisational isomorphism Strategy Organisational age size, performance	Organisational legitimacy
Dent 1991 AOS UKs Euro Rail	Field study Theoretical development but draws on constructionist and institutional	Role of accounting Power and influence Legitimacy	Creation and maintenance of culture Change from railway to business culture
DiMaggio 1988 Book chapter	Literature review	Issues of interest and agency	Tasks most suited to institutional theory; need to use political models in conjunction
DiMaggio and Powell 1983 ASR Organisations and organisational fields	Theoretical Institutional	Isomorphic mechanisms: coercive, mimetic, normative	Isomorphic change Legitimacy

Dirsmith 1986 AOS International organisations and societies	Theoretical Contingency and institutional	Social expectations Organisational completeness Goal certainty and time horizons Indeterminate input/output transformation processes Routinisation Loose coupling National society Accounting Societal rationalisation	Structure: accounting, standardisation, hierarchical authority, bureaucratisation, control internalisation Legitimacy
Dobbin, Edelman, Meyer, Scott and Swidler 1988 Book chapter US various public and private sector organisations	Archival Classical, self- interest and institutional	Due process arrangements: grievance procedures and affirmative action structures Internal: employee rights administration Organisational: size, unionisation, skill level, technology Environmental: proximity to public sphere	Formalisation: expansion of employee rights
Dobbin, Sutton, Meyer and Scott 1993 AJS Internal labour markets in US public and private profit and non- profit organisations	Archival Event-history Survey	Equal employment opportunity law Size of employment Sector of operation Federal contractor EEO status reporter Affirmative action officer Union contract	Spread of formal promotion mechanisms (personnel practices)
Edelman 1990 AJS Various public and private sector San Francisco Bay organisations	Field study and archival Institutional	Civil rights mandates Personnel professionals Societal expectations of justice Cost of inattention to due process Proximity to the public sphere Size Personnel offices	Attention to due process Legitimacy Institutional isomorphism (coercive and normative) Diffusion of due process protections
Geiger and Ittner 1996 AOS US Federal government agencies	Archival (survey database developed previously by US GAO) Contingency and institutional	Legislative cost accounting requirements Competition and extent of funding uncertainty: revolving funding	Uses of cost accounting data Cost system elaborateness Costing methods
Gopinath, Siciliano and Murray 1994 MAJB	Case studies Agency, resource dependence, stakeholder and institutional	Role of boards of directors	Institutional interests are the best justification for a boards role in organisational strategy
Greening and Gray 1994 AMJ	Survey and archival Contingency approach based on resource dependence and institutional	Institutional: public interest group pressure, media exposure, crises Organisational: size, top management commitment	Adoption/development of certain issues management structures: formalisation, resources, committee use, integration with planning and line functions

Greenwood and Hinings 1988 OS	Theoretical development but draws on contingency, power and control and institutional theories	Interpretive schemes and structural arrangements lead to design archetypes	Organisational track How and why organisations retain and transform their design
Greenwood and Hinings 1996 AMR	Theoretical Institutional	Merging old and new institutional perspectives	Development of neo- institutional theory
Gupta, Dirsmith and Fogarty 1994 ASQ US General Accounting Office audit teams	Field study Contingency and institutional	Institutionalisation of the environment Size Task variability, task difficulty, work unit interdependence	Structures adopted for coordination and control to improve audit team performance: bureaucratic, personal, group
Haunschild 1993 ASQ Various large firms which had acquisition/merger activity	Archival Institutional (although terms framework "imitation theory")	Mimetic isomorphism Director ties to other firms Size	Acquisition activity: horizontal, vertical or conglomerate
Haverman 1993 ASQ Californian savings and loan associations	Archival Organisational ecology and institutional	Competition Mimetic isomorphism: similar and successful organisations	Rate of market entry: process of diversification Legitimation
Hinings and Greenwood 1988 Book chapter UK local government organisations	Field study? Institutional	Organisational operations: domain, form, criteria for evaluation Diffusion Networks and authoritative organisations	Institutionalisation Legitimacy
Hinings, Thibault, Slack and Kikulis 1996 HR Canadian amateur sport organisations	Survey and Field study Culture, archetypes and institutional	Organisational culture Structure: archetypal form or no archetypal form	Values of the elite: congruence, unanimity, non-unanimity
Holm 1995 ASQ Norwegian fisheries	Event-history Institutional	Creation, legitimation and decline of the mandated sales organisation (law sanctioned cartel)	Institutional action: guided by institutions and aimed at changing of defending institutions
Kalbers and Fogarty 1998 JMI Firms	Survey Agency and institutional	Ownership and board membership: management or outside directors Financial leverage Size Level of agency costs Audit committee attributes Demands for monitoring	Investment in effective audit committees Organisational bases of power for audit committees
Kamens and Lunde 1988 Book chapter	Archival Social- constructionist and institutional	Institutional forces: authority of the state (state size) Expansion of both mass and higher education Economic, cultural and political dependence	Expansion of national states in the world polity Size of central state organisation and states in developed and undeveloped countries

Kimberley 1975 ASQ US sheltered workshops	Survey Early institutional arguments (not termed so however)	Social structure: External environment provides constraints	Organisational structure: production oriented or rehabilitation oriented
Kirby, Sebastian and Hornberger 1998 JHM US Managed care organisations	Survey and archival Technical and institutional	Normative institutional environmental forces Technical requirements	MCO conformity MCO performance: enrollee satisfaction and disenrollment
Kurke 1988 Book chapter MBA students posing as managers	Experiment Institutional	Adaptation and adaptability Environmental uncertainty and frequency of change	Strategy used to exploit the environment: generalist, specialist Institutionalisation of strategy choice
Lamertz and Baum 1998 CJAS Canadian firms	Event-history and archival Institutional	Form and content of media reports: change over time	Legitimation and institutionalisation of business practices: management downsizing
Leblebici, Salancik, Copay and King 1991 ASQ US Radio broadcasting industry	Archival or theoretical? Institutional	Mechanisms of institutional change: analogy, private agreements, conventions Interdependence of broadcasters and listeners	Institutionalised medium of transaction: general broadcasting, sponsored programs, advertising time, listener exposure Dominant players: manufacturers, advertising agents, networks, local stations Legitimacy, diffusion, further institutional change
Meyer 1994 Book chapter US Mental health system	Theoretical Institutional	Crisis Environment: visibility, collective goods Goals Technology Resources Sovereignty	Centralisation Standardisation Fragmentation
Meyer and Rowan 1977 AJS	Theoretical Institutional	Institutional forces Rationalised institutional rules Control and coordination leading to conflict Level of institutionalisation	Formal structure: expansion of rationalised structure Legitimacy increasing resources and survival Structural decoupling Displays of confidence Minimisation of evaluation
Meyer, Scott and Strang 1987 ASQ US Public school districts	Archival Institutional	Environmental complexity: fragmentation, formal structuring, reporting requirements Centralisation Funding sources Size	Structure Administrative complexity and expansion Instructional role complexity

Meyer, Scott, Strang and Creighton 1994 Book chapter US Public school system	Empirical Archival Longitudinal Process Institutional	Federal government power expansion: centralisation	Bureaucratisation: formalisation, rationalisation, scale of units, homogenisation, levels of authority, size
Mezias 1990 ASQ US Various non-financial, Fortune 200 firms	Archival Economic, power and institutional	Economic: Amount of tax credits, income variability, size, managerial control, debt covenants, incentive compensation plans Institutional: Method prohibition by Accounting Board, regulation by Commissions, previous method used, auditor affiliation, variability of tax credits, management turnover	Adoption of tax credit practices Change in institutional environment over time: increase in collective organisation and professionalisation
Mezias and Scarselletta 1994 ASQ US Financial Accounting Standards Board	Survey and archival Garbage can and institutional	Pressures arising from institutional fragmentation and the professionalisation of accountants Institutional change	Decision processes (orderly and disorderly) and outcomes (resolution, flight and oversight)
Monahan, Meyer and Scott 1994 Book chapter Employee training programs in US organisations	Theoretical	Organisational models: market, technical, citizenship	Prevalence of employee training Level of employees trained Scope of training programs
Montgomery and Oliver 1996 OS US, AHA registered, non-federal, acute-care, general hospitals (public and private)	Survey and archival Professional dominance and institutional	Institutional pressures: constituents' beliefs and diffusion of rules	Existence, content and adoption process of formal AIDS policies and practice behaviours
Oliver 1991 AMR	Theoretical Resource dependence and institutional	Cause Constituents Content Control Context	Strategic responses
Oliver 1997 SMJ Firms	Theoretical Resource based and institutional	Centrality of resources to firm Effectiveness evaluation Employee turnover Consistency of resources with personnel programs, culture, management support and power Trust between management and staff, incentive systems Regulatory environment imposition of rules, intra-industry alliances, networks, personnel mobility, benchmarking and imitation	Likelihood of acquisition and optimal use of valued resources Firm heterogeneity
Pouder 1996 PAQ US local governments	Survey and archival Transaction cost and institutional	Cost efficiency Institutional norms: coercive, normative and mimetic isomorphism Public or local government as service user	Privatisation of services Efficient structures or institutionally acceptable structures

Powell 1988 Book chapter US Book publishers and public television organisational fields	Case studies and archival	Environmental variation: patterns of association, congruence of external demands Structural complexity: size, control systems, decentralisation Fragmentation Internal and external demands conflict; Public criticism	Types of organisational embeddedness in social structure Consequences of institutional environments: structural and administration complexity
Roberts and Greenwood 1997a AMR	Theoretical Transaction cost and institutional	Development of an integrated theory into a unified constrained-efficiency framework	Adoption of organisational design
Rowan 1982 ASQ Californian Public school system	Archival Institutional	Growth in size and complexity Balanced and imbalanced institutional environments Isomorphism	Organisational structure: Diffusion, stabilisation and retention of various types of administrative practices
Scott 1987 ASQ	Literature review	Various paths of institutional literature	Criticisms and contributions of institutional theory
Scott 1995 Book	Literature review	Various paths of institutional literature	Criticisms and contributions of institutional theory
Scott and Meyer 1994a Book chapter US Public and private schools	Empirical Outcome Institutional	Differences in public and private school systems Complex environment Complex administration	Elaborate organisational structure of public schools Tall private structure but simpler administrative structure
Scott and Meyer 1994b Book chapter Training programs in firms and agencies	Theoretical Outcome and process Technical (contingent), control, polity and institutional	Institutional agencies (state, professions): legal requirements, professional ideologies Institutional processes: diffusion of beliefs	Training expansion Training focus
Stinchcombe 1965 Book chapter Social structures and organisations	Theoretical External relations of organisations (institutional but not so termed)	Social structure Political competition Organisational arrangements	Rate of foundation of new organisations Foundation of new kinds of organisations or structures Relations between social classes and community sense
Tolbert 1988 Book chapter US Law firms	Survey and archival Institutional	Rules and practices Organisational socialisation Background Institutionalisation Size, complexity and growth	Organisational culture
Tolbert and Zucker 1983 ASQ US Municipalities: civil service reforms	Historical Empirical Technical and institutional	Immigration Socioeconomic factors Scope of city functions City age and size	Early/late adoption of civil service reform Legitimacy

Westney 1993 Book chapter Multinational corporations	Theoretical	Conditions under which MNCs respond to isomorphic pressures MNC influence on society and deinstitutionalisation	Resistance to state pressure Structural differentiation Ritual conformity
Westphal and Zajac 1994 ASQ US Industrial and service corporations	Archival Political and institutional	CEO influence Performance Institutionalisation Early/late adoption	Adoption and use of long term incentive plans Alignment between CEO and shareholder interests Legitimacy
Zinn, Weech and Brannon 1998 HSR Pennsylvania licensed nursing homes	Survey and archival Resource dependence and institutional	Perceived and real competition Influence of the Medicare Program	TQM adoption
Zucker 1977 ASR	Experiment Institutional	Degree of institutionalisation	Degree of generational uniformity, maintenance and resistance to change of cultural understandings Cultural persistence
Zucker 1987 ARS	Literature review Institutional	Reviews the current theoretical approaches; identifies central concepts; reviews empirical research	Intersection with other organisational theories and new institutionalism
Zucker 1988 Book chapter	Literature review Institutional	System coherence, stability, structuration, entropy, decay of institution, self-interest, power, institutionalisation, social elements, legitimacy, institutionalising agents	Development of an institutional model

Appendix 2b
Contingency studies

Study and Context	Data Collection	Variables	Analysis
Abernethy and Brownell WP 1996 Research and development departments in a US and an Australian firm	Questionnaire (Mahoney et al. 1963, 1965 and a self constructed measure; Withey et al. 1983 for NE and TA; Hopwood 1972 for AC; adapted Hage and Aiken 1967 for BC and PC) Interview	Managerial performance Number of exceptions Task analysability Accounting control Behaviour control Personnel control	Corroborative interviews Factor analysis Cronbach alpha Reliance on prior testing
Abernethy and Guthrie AF 1994 Two large diversified Australian firms – SBU managers	Questionnaire (Miles and Snow 1978 for SBU S; adapted Chenhall and Morris 1986 for MIS S; Govindarajan and Gupta 1985 for SBU E)	SBU strategy MIS scope SBU Performance (Effectiveness)	Pilot testing Reliance on previous testing Cronbach alpha Chi square
Abernethy and Lillis AOS 1995 Victorian manufacturing firms	Semi-structured interviews (self constructed questions for MF; based on Van de Ven et al. 1976, McCann and Galbraith 1981 and Mintzberg 1983 for ILD; based on Kaplan 1983a, Howell and Soucy 1987 and Chase 1990 for MPM; Khandwalla 1972 for P) Archival data	Strategy Manufacturing flexibility Integrative liaison devices (structural arrangements) Manufacturing performance measures Performance	Follow up questioning Taped and transcribed interviews Corroborative coding of data Inter-rater coefficient
Abernethy and Stoelwinder 1991 Australian not-for-profit hospitals	Questionnaire (Fertakis 1967 and Swieringa and Moncur 1975 for B; modified Van de Ven and Ferry 1980 for TU; Abernethy 1988 for SGO; Govindarajan for E)	Budgeting Task uncertainty System goal orientations Effectiveness	Cronbach alpha Factor analysis
Ansari and Euske AOS 1987 14 US public sector military facilities	Longitudinal field study On site inspections (studies of the cost systems) Observation – physical walk through (retracing physical work to its supporting paper work in the cost system) Open ended interviews (attitudes to cost system) Archival data	Patterns of information use Usefulness of data Culture	Corroboration of verbal and archival data Report to research site for agreement/correction
Berry et al. AOS 1985 UK public enterprise (National Coal Board)	Interview schedule Archival data Detailed observation	Culture	Report to subjects for corroboration/further discussion Documentation
Brownell AR 1981	Questionnaire (Rotter et al. for LOC)	Locus of control Budgetary participation Performance	Pilot testing Reliance on previous testing

Brownell JAR 1982a Large San Francisco manufacturing firm (cost centres)	Questionnaire (Hopwood 1971 for ES; Hofstede 1967 and Milani 1975 for BP; Mahoney et al. 1963, 1965 for P; Weiss et al. 1967 Minnesota Satisfaction Questionnaire for JS)	Evaluative style Budgetary participation Performance Job satisfaction	Correlation Factor analysis Reliance on previous testing
Brownell AR 1982b Large San Francisco manufacturing firm (cost centres)	Questionnaire – experiment and survey (administered in lab situation) (See Brownell 1981 for measures of LOC; Brownell JAR 1982 for measures of P, JS and BP.)	Performance Job satisfaction Budgetary participation Locus of control	Preliminary meetings Lab administration – surety that respondents were managers Reliability coefficients Factor analysis Multiple regression
Brownell AOS 1983a Large manufacturing firm – middle level cost centre managers	Questionnaire (Stogdill 1963 Leadership Behaviour Description Questionnaire for LS; Milani 1975 and Hofstede 1967 for BP; Mahoney 1963, 1965 for MP; Wess et al. 1967 MSQ for JS)	Leadership style (consideration and initiating structure) Budgetary participation Managerial performance Job satisfaction	Cronbach alpha Regression ANOVA Reliance on previous testing
Brownell JAR 1983b Several firms, various functions – middle level managers	Questionnaire (adapted Lawler and Suttle 1973 for M; self constructed for MBE; Milani 1975 and Hofstede 1967 for BP)	Motivation Management by exception Budgetary participation	Correlation Reliance on previous testing
Brownell JAR 1985 US parented multinational firm	Questionnaire (adapted from Duncan 1968, 1972 for perceived environmental uncertainty; Hopwood 1972 for RAI in SES; Milani 1975 for BP; Mahoney et al. 1963, 1965 for performance) Unstructured interviews	Environmental uncertainty Role of accounting info in superior's evaluative style Budgetary participation Performance	Single-item correlation comparing with an alternate instrument Cronbach alpha Reliance on previous testing (BP and P)
Brownell AF 1987 Australian subsidiary of a US parented multinational firm	Questionnaire (adapted from Duncan 1968, 1972 for perceived environmental uncertainty; Hopwood 1972 for RAI in SES; Milani 1975 for BP; Mahoney et al. 1963, 1965 for managerial performance; abridged version of Smith, Kendall and Hulin 1969 Job Descriptive Index for job satisfaction) Unstructured interviews	Job satisfaction Job performance Perceived environmental uncertainty Use of accounting based controls	Same as 1985 study

Brownell and Dunk 1991 AOS Manufacturing firms in Sydney Australia	Questionnaire (Milani 1975 for BP; Van de Ven and Delbecq 1974 for TU, TD, TV; Hopwood 1972 for BE; Mahoney, Jerdee and Carroll 1965 for MP)	Budgetary participation Task uncertainty Task difficulty Task variability Budget emphasis Managerial performance	Cronbach alpha Reliance on past testing
Brownell and McInnes AR 1986 Two electronics firms and steel manufacturer – middle level managers	Questionnaire (Milani 1975 and Hofstede 1967 for BP; Lawler and Suttle 1973 for M; Mahoney et al. 1963, 1965 for P)	Budgetary participation Motivation Performance	Cronbach alpha Correlation for multicollinearity Regression Reliance on previous tests
Brownell and Merchant JAR 1990 Electronics firms	Questionnaire (self constructed for performance, static targets and PS; Swieringa and Moncur 1975 for BP; Inkson et al. 1970 for PA)	Departmental performance Budget participation Use of budgets as static targets Process automation Product standardisation	Preliminary interviews Factor analysis Reliance on previous tests
Bruns and Waterhouse JAR 1975 US and Canadian firms	Interviews Questionnaire (modified Pugh, Hickson, Hinings and Turner 1968, 1969 for OSandC; self constructed for C of CS; adapted Fertakis 1967 and Swieringa and Moncur 1975 for BRB; Tannenbaum 1968 for PC) Archival data	Organisation structure (centralisation, lack of autonomy, and structuring of activities) and context (size, dependence and workflow integration) Complexity of control systems Budget related behaviour Perceived control	Factor analysis Reliance on past testing
Chenhall and Brownell AOS 1988 Large manufacturer, profit centres, middle level managers	Questionnaire (Rizzo et al. 1970 for RA; Milani 1975 for P; Weiss et al. 1967 MSQ for JS; self constructed for P)	Role ambiguity Participation Job satisfaction Performance	Cronbach alpha Reliance on previous tests
Chenhall and Morris AR 1986 Manufacturing firms in Sydney Australia	Interviews using structured questionnaires (abbreviated version of Inkson et al. 1970 for D; Duncan 1972 and Sathe 1974 for perceived environmental uncertainty; modified Pugh et al. 1969 for OI; self constructed for IC of MAS)	Decentralisation Perceived environmental uncertainty Organisational interdependence Information characteristics of MAS	Preliminary discussion with managers, academics and accountants Cronbach alpha Factor analysis
Chenhall and Morris O 1995 French, German, UK and US firms	Questionnaire (developed from Miller and Friessen 1982 for strategy, Khandwalla 1977 for structure and performance; these were also used for use of MAS, together with Simons 1987)	Strategy Structure Use of MAS Performance	Pilot testing Factor analysis Cronbach alpha

Chong and Chong ABR 1997 WA manufacturing firms	Survey (Miles and Snow 1978 for S; Gordon and Narayanan 1984 for perceived environmental uncertainty; Chenhall and Morris 1986 for MAS; Govindarajan 1984 for P)	Strategy Perceived environmental uncertainty Broad scope MAS SBU performance	Cronbach alpha
Colignon and Covaleski AOS 1988 A decentralised high technology firm	Longitudinal case study Interviews Observation Archival data	Power Information use	
Collins, Lowensohn, McCallum and Newmark BRA 1995 Large US religious not-for-profit charitable organisation	Questionnaire (Hopwood 1972 for BMS; Rizzo et al. for RA and RC; self +constructed for OC; Mowday et al. 1979 for OC)	Budgetary management style Role ambiguity Role conflict Organisational crisis Organisational commitment	Pre testing Factor analysis Cronbach alpha
Covaleski and Dirsmith AOS 1986 US hospitals	Interviews Archival data	Budget related activity	Corroborative interviews with different staff types Documentation
Covaleski and Dirsmith AOS 1988 US universities	Interviews Archival data	Budget related activity	Corroboration of data Cross validation with interviews in agencies
Daft and Macintosh CMR 1978 Large organisations – multinational food preparation firm, public utility, industrial metal manufacturer, sugar manufacturer	Case studies (method unclear)	Work unit technology (task variety, task knowledge) Information systems (information amount, information ambiguity, information use)	Unclear as to whether any tests of reliability and validity were carried out
Dent AOS 1991 UK Euro-rail public sector organisation	Longitudinal field study Observation Unstructured interviews	Accounting practices Organisational culture Organisational change	Notes Transcripts Corroboration
Duncan ASQ 1972 Manufacturing and research and development organisations	Interviews Questionnaire (extended from Duncan 1971; self constructed)	Perceived environmental uncertainty	Corroboration of responses on construct Reliance on tests in Duncan 1971?
Ewusi-Mensah AOS 1981	Theoretical	External organisational environment (controllable and uncontrollable) Strategy Information characteristics Organisational survival	
Giroux, Mayper and Daft AOS 1986 Municipal governments in Texas	Unstructured interviews Questionnaire (based on Tannenbaum 1968 and Salancik and Pfeffer 1974 for BRP; self constructed for U of BI) Archival data (S)	Budget related power: Organisation context (budget cycle, hierarchical level, size) Strategic contingencies (uncertainty, centrality, dependency) Use of budget information	Preliminary interviews

Goddard ABR 1997a UK municipal government	Questionnaire (Reynolds 1986 and self- constructed for WC and OC; Fertakis 1967 modified by Swieringa and Moncur 1974 and Merchant 1981, 1984; Williams et al. 1990 for BRB)	Workplace culture Organisational climate Budget related behaviour	Factor analysis
Goddard IJA 1997b UK and Canadian municipal governments	Questionnaire (See 1997a for C and BRB)	Culture (corporate, professional, hierarchical, national) Budget related behaviour	Reliance on previous tests
Gordon, Haka and Schick AOS 1984 Various, unspecified organisations	Archival (47 case studies from previous literature analysed and coded)	Information requirements Information processing capabilities Emphasis of ZBB	Double-blind case rating procedure – inter- rater reliability
Gordon and Miller AOS 1976	Theoretical	Environment (dynamism, heterogeneity, hostility) Structure (decentralisation, differentiation, integration, bureaucratisation) AIS characteristics Resource availability Decision making styles	
Gordon and Narayanan* AOS 1984 US firms	Interview using structured questionnaire (adapted from Khandwalla 1972, 1977 for perceived environmental uncertainty and structure; self constructed questions for information system)	Perceived environmental uncertainty Structure	Taped interviews for verification Factor analysis Cronbach alpha
Gosselin* JMS 1985 Canadian public hospital	Open ended interviews Questionnaire Observation of events Archival data	Interdependency between units	Corroboration?
Gosselin 1997 AOS Canadian firms	Questionnaire (Snow and Hrebiniak 1980 for Strategy; adapted Pugh et al. 1968, Khandwalla 1972, Gordon and Narayanan 1984, Hull and Hage 1982 for C; Robbins 1983 for F) Archival data (also used annual reports for Strategy; VD)	Strategy Structure (centralisation, vertical differentiation, formalisation – operationalised organic/mechanistic) Adoption of activity management Emphasis of activity management	Cross validation – correlation with hard data Cronbach alpha Factor analysis

Govindarajan* AOS 1984 US firms	Questionnaire (based on Miles and Snow 1978 for perceived environmental uncertainty, self constructed for SES and performance)	Perceived environmental uncertainty Superior's evaluative style Effectiveness	Inter item reliability correlations
Govindarajan DS 1986a Responsibility centres – various functions	Questionnaire (Swieringa and Moncur 1974 for BP and BU; Duncan 1972 modified by Downey 1975 and Michlitsch 1983 for external environmental uncertainty; Mahoney, Jerdee and Carroll 1963 for MP; Onsi 1977 for BS; Hofstede 1967 for BA and BR; Dermer 1975 for BM) Archival data (for MP)	Budgetary participation Perceived environmental uncertainty Management performance Management attitudes and motivation (budgetary slack, budget usefulness, budget attitude, budget relevance, budget motivation)	Reliance on previous testing Factor analysis Correlation Cronbach alpha
Govindarajan AMJ 1988 SBU general managers and their superiors in 24 varied Fortune 500 firms	Questionnaire (Gupta and Govindarajan 1984a, 1984b, 1988b for SBU E; self-constructed based on Porter 1980, 1985 for CS; Hopwood 1972 for BES; based on Rotter 1966 for LOC; Vancil 1980 for D) Archival data (Size and Strategy)	SBU effectiveness Competitive strategy Budget evaluative style Locus of control Decentralisation Size	Correlations for convergent and construct validity Cronbach alpha for internal reliability
Govindarajan and Gupta AOS 1985 58 SBUs from large US industrial firms	Interviews Questionnaire (based on build, hold, harvest and divest for S – was this developed by Miller and Friesen 1982?; self constructed for E, RP and RFS) Archival data (Current market share for S)	Business unit strategy Incentive bonus system Effectiveness (of strategic business unit) Relative importance of performance criteria for bonus determination Reliance on formula v subjective approaches towards the determination of incentive bonus	Pre-testing Corroborative archival data Pearson correlations
Gresov et al. OS 1989 Public sector US Employment Security Offices	Questionnaire (Van de Ven and Ferry's 1980 organisational assessment instrument)	Task uncertainty Task design Unit morale Structural design of unit	No assessment made

Griffin AMJ 1991 US bank workers	Questionnaire (Longitudinal 6,24,48 month intervals. Tests taken before and after the emphasis of job redesign) (Hackman and Oldman 1975 JDS for TP; Weiss et al. 1967 MSQ for JS; Porter, Steers, Mowday and Boulian 1974 for OC; self-constructed for P; Seashore, Lawler, Mirvis and Cammann 1982 for TP) Archival data (for A)	Task perceptions Job satisfaction Organisational commitment Performance Absenteeism Turnover propensity	Reliance on previous tests Factor analysis
Gul ABR 1991 Light engineering small business organisations in Queensland	Survey (Govindarajan 1984 for perceived environmental uncertainty; Chenhall and Morris 1986 for MAS; Mahoney et al. 1963 for P)	perceived environmental uncertainty MAS Performance	
Gul and Chia AOS 1994 Managers of various Singaporean firms	Survey (Duncan 1972 and Sathe 1974 for perceived environmental uncertainty; Chenhall and Morris 1986 for MAS; Burns and Stalker 1961 and Gordon and Narayanan 1984 for D; Mahoney et al. 1963 for P)	perceived environmental uncertainty Decentralisation MAS Managerial performance	Factor analysis Cronbach alpha
Haka AOS 1987 Various publicly traded firms – capital budget preparers	Interviews Questionnaire (Miles and Snow 1978 for FS; does not specify for others – indicates that they are from “some” of the previously mentioned sources, but not which ones) Archival (market returns for P)	Internal factors (Decentralisation, Information system, Reward structure, Tools, Short v Long term rewards) External factors (Environmental predictability, environmental diversity, Firm strategy, Organisational stability)	Preliminary testing Pilot study Factor analysis Coefficient alpha
Hayes AR 1977 US manufacturing firms	Questionnaires (self constructed)	Internal factors Interdependency factors Environmental factors Departmental effectiveness	Factor analysis (this was used for processing data though – rather than for validation of constructs)

Hirst JAR 1983 Tertiary education institutions in Sydney Australia	Questionnaire (self constructed for RAPM; Van de Ven and Delbecq 1974 for TU; Duncan 1978 for EU; Hopwood 1972 for tension (actually developed by Institute for Social Research at Uni of Michigan; Bowers and Seashore 1963 for social withdrawal)	Reliance on APM Task uncertainty Tension Social withdrawal	Cronbach alpha Inter-item correlations Reliance on previous testing
Hopwood ERA 1972 Manufacturing division of large Chicago firm (cost centres)	Questionnaire (self constructed for SS of E and SCT; based on Kahn et al. 1964 for JRT Interview (for manipulative behaviour)	Supervisor's style of evaluation Job related tension Specific cost tension	Tau statistic to show separateness of JRT and SCT dimensions
Hopwood AR 1974 Manufacturing division of large Chicago firm (cost centres)	Exploratory interviews Questionnaire (Hopwood 1972 (and 1973?) for AMS of E; Ohio State Leadership Behaviour Description Questionnaire for DSLS	Area manager's style of evaluation Departmental supervisor's style of evaluation Departmental supervisor's leadership style	Control for contagion – two levels included Preliminary interviews for construct validity Kendall's Tau statistic for independence of dimensions
Jones AOS 1985 UK firms involved with acquisitions	Structured interviews (self constructed)	Style of acquisition/pre-post acquisition Importance of management accounting techniques Size Organisational change	
Kenis AR 1979 New Jersey manufacturing plants	Questionnaire (Fertakis 1967, Searfoss and Monczka 1973 for BIP; self constructed and adapted Steers 1976 for TGA; Smith et al. 1969 Job Descriptive Index for JS; Lodahl and Kejner 1965 for JI; Kahn et al. 1964 for JRT; Swieringa and Moncur 1975 for BRA; Hackman and Lawler 1971 for BM; self constructed for performance)	Budgetary goal characteristics: budget induced pressure task goal attributes (participation, goal clarity, feedback, goal difficulty, budgetary evaluation) Job related attitudes (job satisfaction, job involvement, job related tension) Budget related attitudes (attitude toward budgets, budgetary motivation) Cost efficiency job performance Budgetary performance	Interscale correlations Cronbach alpha Factor analysis Reliance on previous testing
Khandwalla JAR 1972a US manufacturing firms	Questionnaire (self constructed)	Competition Use of controls	Pilot testing Cross validation of responses Product-moment correlations

Khandwalla ISMO 1972b	Theoretical	External environment (uncertainty, heterogeneity, hostility) Communication, authority; participative management; structural devices; norms, values, goals; MCS	
Khandwalla ASQ 1974 US manufacturing firms	Archival data (Size) Questionnaire (similar to Woodward 1958 for T; self constructed for VI, D of A, and OC)	Technology Organisational controls Delegation of authority Vertical integration	Pilot testing Interviews Corroboration Correlation
Lal MIR 1991-92	Survey (Burns and Stalker 1961 and Gordon and Narayanan 1984 for structure; Khandwalla 1972 for CandISS) Archival data for size	Structure Size Control and information system sophistication	Cronbach alpha
Lillis AOS 2002 Victorian manufacturing firms – profit centre managers	Semi-structured interviews (Use of PM's) Questionnaire (Swieringa and Moncur 1975 for RAPM, and adapted for RNAPM; Govindarajan and Fisher 1990 based on Porter 1980 for MS; self-constructed based on ideas from Flamholtz 1979 for PMSE)	Manufacturing strategy Reliance on cost variance reports – RAPM Reliance on non-financial quantitative performance measures RNAPM Performance measurement system effectiveness	Taped and transcribed interviews Reliance on previous testing Cronbach alpha Factor analysis Cross validation
Macintosh and Daft AOS 1987 Public and private sector organisations	Interviews (using Van de Ven, Delbecq and Koenig 1976 for interdependence; self constructed, also?) Archival data (budgets, statistical reports, standard operating procedures manual)	Departmental interdependence Control systems	Pilot testing Reliance on previous testing
Mak JBFA 1989 NZ publicly listed manufacturers	Questionnaire (Adapted from Khandwalla 1977 and Gordon and Narayanan 1984) Archival data (ratios for FP)	Perceived environmental uncertainty Operational control system Management control system Strategic planning Financial performance	Cronbach alpha Standardisation of performance indices
Markus and Pfeffer AOS 1983 Two firms – large US chemical manufacturer, decentralised manufacturer	Case studies Interviews Archival data (internal memo's, task force minutes)	Information system based power Organisational power relationships (hierarchical and interdepartmental) Organisational culture	Corroboration Several researchers – notes taken (Seems to report on other studies – unclear who did the research – i.e. Locke 1980? in a hospital)

Merchant AR 1981 Electronics firms	Interviews (Number of employees for S; based on Gordon et al. 1978 for I; Hackman and Porter 1968 and self constructed for SS) Archival data (Divisional revenue for diversity) Questionnaire (adapted Pugh et al. 1969 and Inkson et al. 1970 for D; modified Swieringa and Moncur 1975 for BRB; Hackman and Porter for M; modified Swieringa and Moncur 1975 (and Bruns and Waterhouse 1975) for A; self constructed for P)	Size Diversification Decentralisation (D) Information Systems supports Budget related behaviours Motivation Attitudes Performance	Initial interviews Cronbach alpha Factor analysis
Merchant AOS 1984 electronics firms	Questionnaire (Inkson et al. 1970 for automation of production processes; Thompson 1967 for product standardisation; self constructed for market factors; Kimberley 1976 for size; adapted Pugh et al. 1968 and Inkson et al. 1970 for functional differentiation; modified Swieringa and Moncur 1975 and Hackman and Porter 1968 for budget related behaviours; self constructed? for performance)	Production technology Market factors Departmental size Functional differentiation Budget related behaviours	Factor analysis Cronbach alpha
Merchant AOS 1985a Two decentralised firms	Unstructured interviews (used for questionnaire construction) Questionnaire (self constructed for I of C, EP, S; E of C, AT of E; revised LBDQ Stogdill 1963 for R with IS)	Use/Impact of controls (financial, procedural and personnel controls) Relationship with immediate superior Economic performance Strategy Effect of the chairman Accounting treatment of expenditure Discretionary decision making	Cronbach alpha
Merchant 1985b AOS Electronics firms (US?)	Questionnaire (Onsi 1973 for propensity and ability; Hackman and Porter 1968 and Merchant 1981 for Importance; Merchant 1981 for P; Thompson 1967, Inkson et al. 1970 for T)	Propensity to create slack Importance of meeting budget Participation Technology Ability to detect slack	Preliminary interviews Cronbach alpha

Mia DS 1987 Two firms (NZ?)	Questionnaire (Milani 1975 – based on Miller 1934 and Bergen 1939 for EA; Milani 1975 for BP; Van de Ven and Delbecq 1974 for TD; Rotter 1966 for LC)	Employee attitude Budgetary participation Task difficulty Locus of control	Cronbach alpha Split half reliability Reliance on previous testing
Mia AOS 1988 Large diversified Australian publicly listed firm, profit centres, lower to middle level managers	Questionnaire (Milani* 1975 for BP and MATJ; Lawler and Suttle 1973 for MM; self constructed for performance – superior rating) *This instrument was based on Miller 1934, and Bergen 1939	Budgetary participation Managerial attitude toward job Managerial attitude toward company Managerial motivation	Preliminary meetings Cronbach alpha
Mia and Chenhall AOS 1994 Australian manufacturing firms	Site inspections Interviews (assessment of task uncertainty based on Perrow 1970) Questionnaire (Chenhall and Morris 1986 for MAS; self constructed for performance)	Functional differentiation Task uncertainty Extent of use of broad scope MAS information Managerial performance	Factor analysis Chi-square tests
Mia and Goyal FAM 1991 NZ public hospitals	Questionnaire (adapted from Van de Ven et al. 1976 for task and Chenhall and Morris 1986 for usefulness) Hospital staff records	Task interdependence Usefulness of MAS information	Pilot testing Inter-item reliability correlations
Miah and Mia FAM 1996 Central government departments in New Zealand	Questionnaire (adapted Gordon and Narayanan 1984 for decentralisation; adapted from Khandwalla 1972 for M use of ACS; self constructed for P)	Extent of decentralisation Extent of managerial use of accounting control systems Performance	Cronbach alpha Factor analysis
Milani AR 1975 Large heavy equipment manufacturer	Questionnaire (Milani 1972 for BP, ATJ, ATC) Archival data (for FP)	Budgetary participation Foreman performance Attitude toward job Attitude toward company	Preliminary interviews Noted that “several statistical tests were performed prior to analysing the data” but did not specify/report on these

Miller and Friesen ASQ 1980 Large, varied Canadian firms	Questionnaire (self-constructed all variables except C of Str and Tenure) Archival data (all variables)	Environmental (dynamism, hostility, heterogeneity) Organisational (scanning, controls, internal communication systems effectiveness, centralisation of authority for strategy making, delegation of operating authority, technocratization, resource availability, differentiation, traditions) Strategy making (proactiveness, risk taking, product/market innovation, analysis, multiplexity, integration, futurity, consciousness of strategies, adaptiveness, industry expertise) Organisational success	Cross validation of data Factor analysis
Miller and Friesen AMJ 1982 Canadian and Australian firms	Questionnaire (Structural change: March and Simon 1958, Burns and Stalker 1961, Aguilar 1967 and Mintzberg 1973 for UR; Thompson 1967, Khandwalla 1972, Lawrence and Lorsch 1967, Burns and Stalker 1961, Perrow 1970 for D; Galbraith 1973, Likert 1961, Wilensky 1967 for I) Archival data (Structural change)	Changes in structure-structural variables: Uncertainty reduction Differentiation Integration Change strategies	Archival data for cross checking
Moore and Sharma AP 1998 Large, public, NZ retail firms (sub-units)	Preliminary interviews Questionnaire (GandN 1984 for perceived external environmental uncertainty; Hopwood 1972 for PES; Govindarajan 1984 for P)	Style of evaluation Perceived environmental uncertainty Performance	Factor analysis

Otley JAR 1978 Large UK manufacturing firm (profit centres)	Interviews Questionnaire (Hopwood 1973 for S of E and Smith and Tannenbaum 1963 for influence; Institute for Social Research at University of Michigan (Kahn et al. 1964?); Read 1962 for T in GM; Kahn et al. 1964 for JA) Archival data (P)	Style of evaluation Influence on setting budget Job related tension Budget related tension Trust in superior Job ambiguity Ambiguity in evaluation Feelings of fairness of evaluation Performance	Pilot testing Reliance on previous testing
Otley AOS 1980	Theoretical	Environment Technology Structure Organisational design AIS design Organisational effectiveness	Provides an "improved" contingency model
Rayburn and Rayburn AAAJ 1991 US hospitals (public; not-for-profit; proprietary)	Published data (ownership) Questionnaire (self constructed?)	Hospital ownership Perceived environmental uncertainty Importance of the accountant Uses of financial data Job performance evaluation style Job satisfaction	Pilot testing
Reynolds JMS 1986 International fast food chain and computer firm employees	Questionnaire (elf-developed from review of OC literature)	Organisational culture	Correlation coefficient reliability tests
Simons AOS 1987 Canadian manufacturing firms	Questionnaire (Miles and Snow 1978, Snow and Hrebiniak 1980 for S; based on Khandwalla 1977 and Miller and Friesen 1984 for ID) Interviews (semi structured for S; previous typologies (7 cited) for CSA and questions from Khandwalla 1972, 1977) Archival data (ROI)	Control system attributes Business strategies Industry (environmental) dynamism Profitability	Corroborative interviews Pilot testing Cronbach alpha
Simons AOS 1990 16 US firms – two reported on	Longitudinal field study In depth interviews (Miles and Snow 1978, Mintzberg 1973, Porter 1980, Utterback and Abernathy 1975 for S) Archival data Observation (meetings)	Business strategy Strategic uncertainties Organisation learning Choice of interactive MCS	Development in two initial firms

Smith and Tannenbaum (in Tannenbaum Book) 1968 Varied US profit and non-profit organisations	Questionnaire (Tannenbaum 1968 for OE and C; various others for OE in profit organisations)	Organisational effectiveness Control (amount exercised by each hierarchical level) Member loyalty to organisation Actual v ideal control	No testing
Spreitzer AMJ 1995 – US employees of industrial organisation and an insurance firm	Questionnaire (based on Tymon 1988, Jones 1986, Hackman and Oldham 1985, Ashforth 1989 for E; self-constructed for A to I; Denison et al. (in press) for PE; Coopersmith 1967 for SE; Nowicki and Strickland 1973 for LOC; Jackson 1967 for SD)	Locus of control Self-esteem Access to information about an organisation's mission Rewards Empowerment Perceived effectiveness (managerial) Innovation Social desirability Stability across time	Cronbach alpha Factor analysis
Tannenbaum Book 1968 US non-profit league's	Questionnaire (self-constructed for OE and C)	Organisational effectiveness Control (amount exercised by each hierarchical level)	Study supported by National League President Non-response bias tests (Evidence of existence – significant differences in correlation between response rate of effective and ineffective leagues)
Williams and Hinings AOS 1988	?	Internal complexity of organisations: Tasks performed Hierarchy Systems used Benefits of ZBB emphasis Attitudes/culture	
Williams, Macintosh and Moore 1990 AOS Various Canadian public sector organisations across levels – lower level managers	Questionnaire (based on Fertakis 1967 modified by Swieringa and Moncur 1975, Bruns and Waterhouse 1975, Merchant 1981, 1984 for BRB; Van de Ven and Ferry 1980 for DP)	Budget related behaviour Task interdependence Departmental performance	Factor analysis Non-response tests
Young, Beekun and Ginn HSR 1992	Questionnaire (Miles and Snow 1980 for S; Gini index – see Kaufman et al. 1979– for OD) Archival data (S, OD, MSR, SM, P)	Strategy Size Occupational diversity Medical staff representation System membership Performance	
Zupanov and Tannenbaum (in Tannenbaum 1968 Book) 1968 Yugoslavian Communist industry workers	Questionnaire (Tannenbaum 1968 for C)	Actual v ideal control	

Appendix 3a
DTF letter to Departmental Reference Group representatives

[Department of Treasury and Finance Victoria letterhead]

14 November 1997

Name of contact
 Department address

Dear

A researcher from Monash University and PhD candidate, Helen Mignot, is conducting research on the topic of budget sector financial management reform with a specific focus on departmental operations. She has approached me to facilitate her project in the terms set out below.

The project focuses on factors associated with implementation issues surrounding output management, and the usefulness of both financial and non-financial information provided for managers. In your role as a key participant in changes to financial management in Victoria, would you please assist in the research and nominate a further seven people in your department who could participate also. It is envisaged that participants would be any mix of senior resource, budget or finance managers chosen according to your discretion.

Helen advised that the demand placed upon you and your people will involve:

1. an interview with each participant individually at a time and place suitable to that person, within the next two to three months.
2. two further interviews with participants at six monthly intervals.
3. access to non-confidential information used by management such as management reports and computerised data. (The purpose of this is to ascertain specifically what types of information are available to managers in departments).

The research is to be conducted across time in this manner to follow the progress of output management implementation, and to gain insight into the usefulness of available information to departmental managers. All information collected will be held in the strictest confidence, and participants need only be known to yourself and the researcher. Results of the research will be published in aggregate only.

I have reviewed the research protocol in the context of our reform environment. I believe that the project is valuable and warrants our assistance, notwithstanding the multiple demands of time and information already on us. Your participation as well as assistance in providing the names and contact details of those you nominate would be greatly appreciated.

These can be sent directly to:

Helen Mignot
 Department of Accounting and Finance
 Faculty of Business and Economics
 Monash University, Clayton Campus
 Wellington Rd
 Clayton, Victoria, 3168
 E-mail: helen.mignot@buseco.monash.edu.au

It would be extremely helpful if notification of your willingness to participate in nominations were sent by Friday 5th December, 1997 so that appointments can be coordinated for the coming months. Please call Helen Mignot directly on 9905 5407 (or e-mail to the address above) if you or your nominees have any queries.

I am also available if you wish to discuss DTF's support for this project.

Yours sincerely,

Adrian Nye
 Director, Management Improvement

Appendix 3b
Consent form and explanatory statement to participants

Informed Consent Form

Project Title: Impact of management control systems on effectiveness: Victoria's government departments

I agree to take part in the above Monash University research project. I have had the project explained to me, and I have read and understood the Explanatory Statement, which I retain for my records.

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party.

I also understand that my participation is voluntary, that I can choose not to participate, and that I can withdraw my participation at any stage of the project.

Name: (please print)

Signature:

Date:

Date:

Project Title: Impact of management control systems on effectiveness: Victoria's government departments

My name is Helen Mignot and I am studying for my PhD at Monash University. A significant research project is the requirement of the course and I am undertaking my research project under the supervision of Professor Robert Chenhall and Professor Graham Peirson in the Department of Accounting and Finance.

The aim of this research project is to explore the relationship between output management, management control systems, organisational characteristics and organisational effectiveness. As you are aware, output management is becoming a major part of public sector management practice and it is important to be able to measure it and research its effectiveness. I hope that the findings of this research project will be useful in contributing to knowledge in these areas.

I am seeking senior public sector managers who are prepared to provide responses in an interview session on their organisation's management practices and organisational characteristics. The procedure will take approximately one hour of your time, on three separate occasions, and will be undertaken at your convenience across the next 18 months.

No findings which could identify any individual participant will be published. Access to data is restricted to my supervisor and to me. Data are stored for five years, as prescribed by University regulations.

Participation in this research is entirely voluntary, and if you agree to participate, you may withdraw your consent at any time. You may also decline to participate in any section of the procedure by declining to answer.

If you have any queries or would like to be informed of the aggregate research finding, please contact telephone 9905 5407 fax 9905 5475.

Thank you.

Helen Mignot

Phone: 9905 5407

Should you have any complaint concerning the manner in which this research is conducted, please do not hesitate to contact The Standing Committee on Ethics in Research on Humans at the following address:
The Secretary
The Standing Committee on Ethics in Research on Humans
Monash University
Wellington Road
Clayton Victoria 3168
Telephone (03) 9905 2052 Fax (03) 9905 1420

Appendix 3c
Interview Protocols

**INTERVIEW PROTOCOL FOR BUDGET SECTOR MANAGERS
AT TIME ONE**

External factors

1. External environmental uncertainty

To what extent in your department is there unpredictability of change in the needs of consumers, and/or service technologies? (*e.g. does demand for your services alter, both with the public and agencies?*)

What demographic trends are affecting your capacity to deliver services? Does your organisation suffer from regulation, shortages of resources (such as quality staff, funding) and unfavourable demographic trends? (*e.g. ever increasing demand on services with less time and money?*)

Are there variations in your organisation's environment that require different marketing, service provision, and administrative practices to properly service your consumers? (*e.g. alternate methods of fulfilling demands?*)

Any recent government initiatives that may have assisted/hindered service delivery problems?

How fierce is competition for funds between departments? How do you improve your chances? To what extent has reporting to parliament been the vehicle for you to lobby for, secure, or justify additional resources? Do you think there is structure, order or reason in the allocation of resources by government between departments?

Has there been a change in technology in your department (or planning for change e.g. investment in new technology)? Describe this change?

2. Economic forces

How has a poorly performing economy created pressure on your department for cost containment and greater accountability? (*e.g. need to show financial recovery in the state?*). Has there been pressure on your department from the government's need to compete internationally for credit? How do you see the connection between the AAA credit rating goal and departmental operations? (*e.g. Moody's credit rating integral in your ability to obtain debt funds?*).

Is there any economic threat to the delivery of services by your department which has led your CEO to change management practices?

3. Political forces

Has there been a change in the balance of budget sector control between the executive and the legislature due to output based funding?

Has a change of state government been important in the decision to introduce output based funding?

Has there been federal government pressure for more contemporary and private sector accounting practices?

4. Ministerial forces

Has the minister been instrumental in the direction your department has taken in adopting reforms? In the types of information generated by your accounting systems?

5. Historical factors

In what way has the history of public sector financial management been the impetus for current changes such as the management reform program?

Internal factors

1. Size

In what way does the size or geographical dispersment of your department affect your operations?

2. Task uncertainty

How easy is it for you, the manager to know whether you do your work well? How often are you aware of the outcomes of your work?

How much time would you spend attempting to solve problems that have no immediate or apparent solution?

How much the same are day to day situations, problems, or issues you encounter in performing your main tasks?

3. Structure

a. Interdependence

To what extent (if any) are tasks exchanged back and forth between sections within your organisation? Information exchanges? Examples of this? (*e.g. between your area and others*)

To what extent (if any) do people from different sections work on projects/tasks together?

b. Hierarchy, centralisation, formalisation of authority, and bureaucratic characteristics

How would you characterise your current organisational structure? What has been the nature of recent organisational re-structuring? What are the main objectives, outcomes and effects of this re-structuring?

How much delegation of authority exists in your organisation for decision making? At what level are the majority of operating decisions made? (*e.g. at what level would management accounting information become useful?*)

How clearly specified are tasks in your organisation? (e.g. Do written procedures exist for ways to perform most tasks?)

4. Culture

a. Organisational characteristics

How would you describe the culture of your division? Does this differ from the rest of the department? If so, in what way is it different?

b. Empowerment, commitment

To what extent are your subordinates permitted and capable of making autonomous decisions in their work?

Do you feel an obligation to communicate the reforms to your staff? Have they been communicated? How deeply do you think they will permeate and why? Is there a commitment on behalf of your subordinates to embrace the reforms?

c. Change leadership

To what extent did the Secretary and senior managers encourage change (in culture, systems and the like) in order to foster the emphasis of output management?

Are there "change champions" for the emphasis process of output management and the associated elements? (e.g. *Human Services have a change management team in their corporate services division*). If so, at what level are these change champions (project teams) in your organisation?

5. Power

Since the emphasis of output management, in what way has the involvement of budgeting/accounting staff and managers in the evaluation of departmental services changed? In what way has there been any shift in authority to make decisions?

Who has influence on operationalising the budget? (e.g. staffing, job and program scheduling?)

Who inside or outside the organisation has influence on setting budgetary goals and objectives? (Besides BERC, who has influence on the final budget numbers submitted to Parliament?)

How have influences on the final budget submission to BERC changed since the introduction of output management? In what way? (e.g. *Broader influence – input from junior managers, private service providers, importance of costing arrangements or capital development programs*).

Managed processes

1. Strategy

a. Strategic orientation

If you make changes is it generally after another department (or jurisdiction) has pioneered new services or new management techniques to improve operations?

In your department, is the main focus on efficiency and cost containment, or on innovation in providing the best services? How do you balance cost containment v innovation?

Has the introduction of output management, or other reforms such as competitive tendering created a need for strategic change (corporate direction) in your organisation?

To what extent is your organisation involved in competitive tendering and contracting out, competitive service delivery, private financing of public infrastructure and purchaser/provider arrangements?

Do you see contestability, CTC etc. as helpful to your organisation for achieving objectives? Do you get involved voluntarily or is it because of compliance with government policy?

b. Process improvement

What benchmarking initiatives are undertaken in your organisation? What re-engineering initiatives are undertaken in your organisation compared to other departments?

2. External relations

What external relations exist in your organisation? (e.g. With customers, suppliers, other agencies, unions, competitors, consultants, educational institutions and the like).

Do you have a change strategy? To what extent were external parties/bodies (e.g. consultants, unions and the like) involved in the development of the overall change strategy to accommodate the introduction of output management? (e.g. *consultants used to design budget management system*).

Are you involved in output delivery with another agency?

3. People management

a. Performance evaluation

To what extent are budgets and targets used in your performance evaluation and that of your staff?

Are rewards linked to budgets and targets solely, or are there intangible factors considered?

b. Labour relations and training

In what way is enterprise bargaining used in your organisation?

To what extent have individual and collective performance agreements been entered into by your organisation?

How consistent are these performance agreements with your organisation's business plan? With the budget?

Outcomes

1. Performance/Effectiveness

a. Departmental

How would you describe the performance of your organisation? Can you demonstrate performance?

What assessment would you make of your organisations' achievement of targets relating to government objectives?

b. Managerial

How would you describe your performance in each of the following areas of managerial activity:

- Planning
- Investigating
- Co-ordinating
- Evaluating
- Supervising
- Staffing
- Negotiating
- Representing

2. Existence and usefulness of management information

What types of information does your management control system consist of?

Turn to MCS inventory

Which of these are useful for management decision making (planning, controlling, operating, evaluating)? Indicate extent of usefulness.

3. Overall output management clarification questions

Why did your department adopt OM? Why did the Victorian government/central agencies decide to adopt OM?

Have your internal systems/has your internal information changed due to OM? How (in what way)? If so, are they improved or not?

Inventory of management information/activity in your department

Which of these management practices/information items are in existence in your department? Of those in existence, which do you find useful?

Long term planning:

- Formal strategic planning
- Capital budgeting techniques (NPV, IRR, PP)
- Strategic plans developed together with budgets
- Strategic plans developed separate from budgets
- Long range forecasting

Detailed budgeting systems for:

- Controlling costs
- Evaluating managers' performance
- Compensating managers
- Co-ordinating activities across programs/units
- Linking financial position, resources and activities (e.g. activity based budgets)
- Planning day to day operations
- Planning cash flows
- Planning financial position

Product/Service costing:

- Service/output costing
- Absorption costing

- Variable costing
- Activity based costing
- Target costing

Performance evaluation based on:

- Budget variance analysis
- Controllable surplus/deficit
- Divisional surplus/deficit
- Non-financial measures (e.g. statistics)
- Team performance
- Employee attitudes
- Qualitative measures (e.g. performance indicators)
- Balanced scorecard (mix of financial and non-financial measures)
- Customer satisfaction surveys

Decision support systems:

- Breakeven analysis
- Activity based management
- Benchmarking of service characteristics
- Benchmarking of operational processes
- Benchmarking of management processes
- Benchmarking of strategic priorities

Benchmarking carried out within the wider organisation

Benchmarking carried out with outside organisations

Management innovations and technology:

Work-based teams

Cross-functional teams

Management training

Worker training

Integrating information systems across functions

Flattening of formal organisational structure

Downsizing the organisation

Reengineering (e.g. restructuring of processes in service delivery against good practice elsewhere)

Establishing enterprise bargaining agreements

Establishing participative culture (e.g. workers and management participating in decision making)

Outsourcing services

Competitive neutrality information

Examples of documents to collect/borrow/view (if possible)

Organisational structure chart

Operating procedures manual

Employees manual

Reports to the Minister

Statistical information

Performance reports on target achievements

Management reports for decision use (such as those above)

On-line management/accounting/information system or database

Daily, weekly, monthly management information

**INTERVIEW QUESTIONS FOR BUDGET SECTOR MANAGERS
AT TIME TWO**

Have there been changes since we last spoke in the following factors (probes to recap on description of each item in relation to the department and describe any changes).

☒ **external environmental uncertainty** levels (consumers; service technologies; demographics; marketing; funding; technology)?

☒ **economic forces** creating pressure on your department?

☒ **political forces** (relating to management reform)?

☒ direction your **minister(s)** has taken in adopting the reforms?

☒ **size** or geographic dispersion of your department?

☒ **task environment** (problem solving; repetition; range of skills required)?

☒ **organisational structure** (task exchanges; work groups; centralisation; delegation; procedures)?

☒ **organisational culture** (divisional and departmental; subordinate autonomy)?

☒ **senior management initiatives** to foster emphasis; or other **change champion** efforts?

☒ **permeation/acceptance** of reforms amongst the staff?

☒ **involvement of budgeting/accounting staff** in the evaluation of departmental services or setting budgetary goals?

☒ **strategic direction** (cost containment/innovation; competitive tendering; purchaser/provider; policy setter/operator)?

☒ adoption of **change management** practices (re-engineering; benchmarking; change strategy adopted)?

☒ involvement with **external parties/bodies**?

☒ use of budgets/targets in **performance evaluation** (consistent with budgets and business plan; link to rewards; intangible factors)?

☒ use of **enterprise bargaining** (individual/collective performance agreements; union involvement)?

☒ **effectiveness/performance** (organisational; managerial)?

☒ information generated by your **financial/management information systems** (support for output management – full-accrual; costing data; performance indicators)?

☒ any other **effect of output management** (emphasis; use; usefulness)?

Follow up from previous interview

INTERVIEW QUESTIONS FOR PUBLIC SECTOR MANAGERS AT TIME THREE

Have there been changes since we last spoke in the following factors (probes to recap on description of each item in relation to the department and describe any changes).

☒ **external environmental uncertainty** levels (consumers; service technologies; demographics; marketing; funding; technology)?

☒ **economic forces** creating pressure on your department?

☒ **political forces** (relating to management reform)?

☒ direction your **minister(s)** has taken in adopting the reforms?

☒ **size** or geographic dispersion of your department?

☒ **task environment** (problem solving; repetition; range of skills required)?

☒ **organisational structure** (task exchanges; work groups; centralisation; delegation; procedures)?

☒ **organisational culture** (divisional and departmental; subordinate autonomy)?

☒ senior management initiatives to foster emphasis; or other **change champion** efforts?

☒ **permeation/acceptance** of reforms amongst the staff?

☒ **involvement of budgeting/accounting staff** in the evaluation of departmental services or setting budgetary goals?

☒ **strategic direction** (cost containment/innovation; competitive tendering; purchaser/provider; policy setter/operator)?

☒ adoption of **change management** practices (re-engineering; benchmarking; change strategy adopted)?

☒ involvement with **external parties/bodies**?

☒ use of budgets/targets in **performance evaluation** (consistent with budgets and business plan; link to rewards; intangible factors)?

☒ use of **enterprise bargaining** (individual/collective performance agreements; union involvement)?

✕ effectiveness/performance (organisational; managerial)?

✕ information generated by your **financial/management information systems** (support for output management – full-accrual; costing data; performance indicators)?

✕ **overall output management clarification questions**

Why did your department adopt OM? Why did the Victorian government/central agencies decide to adopt OM?

Have your internal systems/has your internal information changed due to OM? How (in what way)? If so, are they improved or not?

How well suited is your department to output management? Why? What organisational characteristics are important to the suitability, emphasis and usefulness of OM?

Are other Victorian departments more or less suited to OM?

What impediments/assists to emphasis of OM have been apparent in your organisation?

Has effectiveness changed over the last two to three years? If so is it better/worse?

Has OM aided departmental effectiveness?

✕ any other **effect of output management** (emphasis; use; usefulness)?

Follow up from previous interview

Interview protocol for meeting with Ms Karen Batt, Branch Secretary, State Public Services Federation Victoria, Community and Public Sector Union.

Items For Discussion

- a) The level of unionisation: central agencies have low levels of membership and operational departments have higher levels.
- b) Department specific staff related agreements. For example DOIs certified agreement (successful); DNREs certified agreement (failed then succeeded).
Activity related to this in each department in the last two/three years
Reasons for level of success/failure
- c) Relevance and relationship between the industrial relations climate and the financial reforms. Possibility that workplace conflict has led to a lack of interest in the management reform program. Other reforms that may have had an effect.
- d) Satisfaction levels of staff generally in the sector over the past few years and specifically related to individual departments.
- e) Approach to people management. Descriptions of each department if different, with respect to people management approaches. The HR approach is characterised by individualistic people management, a focus on individual careers, enterprise-specific training, self-management and personal responsibility, inactive or ineffective unions and managerial prerogative over human resources. The IR approach is characterised by collectivist people management, active unionisation and enterprise bargaining based on trade-offs between potentially conflicting groups.
- f) For each Victorian department:
Level of union membership?
Approach to people management: human resources/industrial relations?
Level of conflict between staff and management over employment issues?
Level of union involvement in the workplace?

Approaches To People Management

	<i>Industrial Relations approach</i>	<i>Human Resources approach</i>
<i>Management methods</i>		
Structure	Movement from centralised and authoritarian to devolved and collaborative managerial structures involving employees in decision making	Centralised and hierarchical but moving towards a work place where individuals are encouraged to participate
Consultative arrangements	Joint union-management consultative committees are active in decision making (on for example enterprise bargaining, OHandS policies, workplace reforms)	Joint union-management consultative committees do not have power to make influential decisions
Relationship with trade unions	Ongoing, established, collaborative relationships with unions	Unions are tolerated but play little role in consultative arrangements or workplace change initiatives
Management/work or status	Status difference between workers and management reflected in different remuneration systems and facilities	Communication and motivational tools are used to synchronise managerial and employee values and objectives
<i>Employment practices</i>		
Bargaining structures	Federal awards have been the traditional regulator of employment conditions; involvement in award restructuring and certified enterprise bargaining agreements	Federal awards have been the legal instrument guaranteeing minimum employment conditions; award restructuring has not impacted and enterprise bargaining agreements have not been struck; management fix additional employment standards
Compensation	Remuneration policies are mainly set by award rates but enterprise agreements are also likely to specify salary arrangements and productivity linked increases	Compensation (for example gainsharing) is used as a tool to improve organisational effectiveness
Employment security	Evidence of reduction in employee numbers	No evidence of reduction in staff; limited rules governing job security or redundancy
Training	Training in both technical and communication skills is linked to industry wide competency frameworks or award restructuring	Much organisation specific training in both technical and communication skills but not linked to industry wide competency frameworks
Equity issues	Policies on EEO and AA have been developed but do not play	Policies on EEO and OHandS are featured

Ms K Batt
Branch Secretary
State Public Services Federation Victoria
Community and Public Sector Union
Box 99, 54 Victoria Street
Carlton South Victoria 3053

27 September 1999

Dear Ms Batt

Further to a conversation with your office recently, I write to ask permission to obtain information. I am a PhD candidate at Monash University, currently conducting a research project in Victorian government departments. My project is about financial reforms within the sector, and in order to inform my project fully I have attempted over the past two years to gather much information relating to the environment departments operate in.

One of those environmental factors of great interest to me is the level of union membership relating to Victorian government employees currently and over the past two years, as well as any information about CPSSU involvement in employee agreement negotiations.

I would be very grateful if you would allow me to meet with a relevant member of your staff to discuss the above issues and to either view or borrow relevant documentation. My contact telephone number is 0409 107 326 and facsimile 9764 2614.

Yours faithfully

Helen Mignot

Appendix 3d

List of measurement instruments (or at least items included) in the contingency theory literature that were considered in developing the interview protocol

Study	Variables that measures are available for
Abernethy 1988	Task difficulty and variability Task interdependence Goal orientations Management control strategies Budgeting Standard operating procedures Statistical performance reports Supervision Mutual adjustment Group co-ordination
Abernethy and Lillis 1995	Manufacturing flexibility Structural arrangements Performance measurement system
Abernethy and Stoelwinder 1995	Administrative and professional controls
Ansari and Euske 1987	Cost and production reporting system Organisational factors regarding information
Bachman, Smith and Slesinger 1968	Control over office Interpersonal control Office manager's power Satisfaction with office manager Salesman performance
Bachman and Tannenbaum 1968	Control Satisfaction with control system
Bowers 1968	Hierarchical control Organisational effectiveness
Brownell 1982a	Job satisfaction
Brownell 1983	Management by exception
Brownell 1985 and 1987	Environmental complexity
Brownell and Hirst 1986	RAPM Budget related behavior Task difficulty and variability Performance Budgetary participation Innovative behavior Environmental uncertainty Structuring of activities
Brownell and Merchant 1990	Performance Budgetary participation Static budgeting Process automation Product standardisation
Bruns and Waterhouse 1975	Budget behavior

Chenhall (no date)	Job satisfaction Job ambiguity Budgetary participation Performance
Chenhall 1997	Reliance on measures of manufacturing Total quality management Divisional performance
Chenhall and Langfield-Smith 1998c	Strategic priorities Management techniques Management accounting practices
Chenhall and Morris 1986	Management accounting information scope
Chenhall and Morris 1995	Organic decision and communication processes Management accounting systems Innovation Risk taking Performance
Drennan 1997	Asset specificity (task analysability) Uncertainty (work related ambiguity) Reliance on: explicit controls, implicit controls, measurement of inputs, measurement of outputs, financial units, non-financial units
Duncan 1971	Environmental uncertainty
Duncan 1972	Internal environment External environment
Giroux, Mayper and Daft 1986	Budget related power: vertical and horizontal
Goddard 1997a	Organisational culture Organisational climate
Gordon and Narayanan 1984	Perceived environmental uncertainty Organisation structure Information characteristics
Govindarajan 1984	Organisational performance
Govindarajan 1986a	Budgetary participation
Govindarajan 1988a	SBU effectiveness Competitive strategy Budget evaluative style Locus of control Decentralisation Size
Govindarajan and Gupta 1985	Strategy Organisational performance
Gupta, Dirsmith and Fogarty 1994	Institutional environment Audit team efficiency
Gupta and Govindarajan 1984a	Intended SBU strategy Tolerance for ambiguity

Hage and Aiken 1967	Participation in decision making Hierarchy of authority Job codification Rule observation Professional activity Professional training
Haka 1987	Internal variables: decentralisation, information system, rewards structure, tools, short v long term rewards External variables: environmental predictability, environmental diversity, firm strategy, organisational stability
Hirst 1983	Reliance on accounting performance measures
Hofstede 1968	Management control systems Performance appraisal Staff attitudes
Hull and Hage 1982	Centralisation Formalisation
Inkson, Pugh and Hickson 1970	Workflow integration Dependence Structuring of activities Formalisation of role definition Concentration of authority
Ittner and Larcker 1997	Strategic controls
Kahn, Wolfe, Quinn, Snoek and Rosenthal 1964	Role conflict Role ambiguity Public image Job-related tension Job satisfaction Confidence in organisation Personality
Kenis 1979	Budgetary goal characteristics: participation, goal difficulty, evaluation, feedback, goal clarity
Khandwalla 1972a	Competition Profitability Use of controls
Khandwalla 1974	Vertical integration Delegation of authority Use of sophisticated controls

Khandwalla 1977	Firm data: main industry type, sales/revenues, growth rate, market share Industry characteristics of size, customer demand, product diversity, competition, innovation, labour productivity Competitiveness of firm Technology and operations of the firm Environment, corporate policy, goals Change methods
Kogan and Wallach 1964	Confidence in judgement
Langfield-Smith and Chenhall 1998c	Management accounting practices
Lawrence and Lorsch 1969	Environmental demands (environmental certainty, timing of feedback on job performance, functional integration) Departmental attributes (structure, time orientation, goal orientation, degree of differentiation, integration) Organisational performance (departmental influence, hierarchical influence, perceived reward/performance criteria) Actual/ideal conflict resolution
Lillis 2002	Reliance on performance targets Competitive priorities Performance measurement system effectiveness Strategy: low cost and differentiation
Lorsch and Morse 1974	External environment (clarity of information, time span for performance, feedback, programmability, characteristics of external environment, tolerance for ambiguity, attitude toward authority, attitude toward being and working alone or with others) Internal environment (formal structure, perceptions of IE, supervisory style, influence, co-ordination of work activities, conflict resolution, goal and time orientations)
Macintosh and Daft 1987	Workflow interdependencies
Mahoney, Jerdee and Carroll 1965	Management performance
Merchant 1981	Information Systems supports Budget related behavior
Merchant 1984	Budget related behavior Performance
Merchant 1985a	Impact of control types (headcount controls, financial controls, procedural controls, meetings) Effect of controls on different types of decisions
Mia and Chenhall 1994	Use of management accounting systems Technology Performance

Mia and Goyal 1991	Perceived usefulness of management accounting systems
Miah and Mia 1996	Decentralisation of decision making Accounting control systems use
Miles and Snow 1978	Perceived environmental uncertainty
Miller, De Meyer and Nakane 1992	Strategy Competitive ability Performance Manufacturing's objectives and plans
Miller and Friesen 1980	Environment Organisation Strategy making
Miller and Friesen 1982b	Uncertainty reduction Differentiation Integration
Mohr 1971	Work situation (subordinate participation, manageability, task interdependence, noise level, job satisfaction, motivation, liking of and approval of supervisor, effectiveness, innovativeness)
Mowday, Steers and Porter 1979	Organisational commitment
O'Connor 1994	Preferred manager style Budget emphasis and participation in evaluation Budget participation
Onsi 1973	Budgetary slack (attitude, manipulation, institutionalisation, detection) Attitude to top management control systems Attitude to subordinates Budget (pressure, autonomy, participation and communication, supervisory uses, attitude, relevance)
Otley 1978	Evaluative style Performance
Otley and Fakiolas 1997 ¹⁸⁶	Reliance on accounting performance measures
Parker and Price 1994	Empowerment Managerial support
Perera, Harrison and Poole 1997	Advanced management practices Advanced manufacturing technology Performance
Pope and Otley 1996	Evaluative style
Pugh, Hickson, Hinings and Turner 1968	Structure: functional specialisation, role specialisation, standardisation, formalisation, centralisation, configuration

¹⁸⁶ Otley and Fakiolas (1997) reproduced the RAPM instruments used by Brownell (1982a, 1985, 1987); Brownell and Dunk (1991); Brownell and Hirst (1986); Dunk (1989, 1990, 1993); Harrison (1992, 1993); Hirst (1987); Hopwood (1972, 1973); and Otley (1978).

Rayburn and Rayburn 1991	Accountant's importance and involvement Use of financial data for control Job performance evaluation Job related satisfaction
Reynolds 1986	Organisational culture
Rimmer, Macneil, Chenhall, Langfield-Smith and Watts 1996	Strategy Structure Technology Process improvement Measurement and control systems People management External relations Change leadership Employee empowerment
Rizzo, House and Lirtzman 1970	Role ambiguity Role conflict Satisfaction Leadership Organisational/management practices Anxiety
Rotter 1966	Locus of control
Salancik and Pfeffer 1974	Subunit power Resource importance Subunit contribution (resources)
Searfoss and Monczka 1973	Perceived budgetary participation Effort to achieve the budget (goal directing effort, evaluative effort) Need for independence (degree of autonomy) Authoritarianism
Seashore and Bowers 1963	Emphasis on work groups Supportive behavior Employee participation in decision making Interaction and influence among work group members Employee satisfaction
Shortell and Zajac 1990	Strategy
Simons 1987a	Accounting control systems
Simons 1990	Top level management control systems
Smith and Jones 1968	Communication Adequacy of information general influence (actual/desired) Specific influence
Snow and Hrebiniak 1980	Strategy
Spreitzer 1995	Empowerment (meaning, competence, self-determination, impact)
Swieringa and Moncur 1975	Managers' budget-oriented behavior Predictor variables (e.g. locus of control, sociability, demographics) Managers' attitudes toward job

Tannenbaum 1968	Organisational effectiveness Hierarchical control
Tannenbaum and Smith 1968	Member activity Member loyalty
Utterback and Abernathy 1975	Strategy
Van de Ven and Delbecq 1974	Task difficulty Task variability
Van de Ven, Delbecq and Koenig 1976	Task uncertainty Task interdependence Unit size
Van de Ven and Ferry 1980	Job design Unit design Interunit relations Macroorganisation design
Williams, Macintosh and Moore 1990	Budget related behavior Departmental interdependency Departmental performance
Withey, Daft and Cooper 1983	Number of exceptions Task analysability
Zupanov and Tannenbaum 1968	Hierarchical control

Appendix 3e
List of all documents collected within departments and analysed

Documentation received from Department of Education time one

Summary Statistics For Victorian Schools 21-01-98
Performance Report/Plan 29-05-98
Organisation Structure Chart
Management Report From General Ledger 27-05-98
Briefing : VPS Performance Management 05-03-98
Monthly Business Report Of The Department Of Education 30 November 1997 12-11-97
TAFE Performance Indicators Report
Budget And Expenditure Report To 30 April 1998 01-05-98
OTFE Victorian Government Funded Training Places 1998 Tender Specification And Information
EMIS Education Management Information System
Executive Services Information Manual
Project Tracking System
Summary Statistics For Victorian Schools 21-01-98
Department Of Education School Global Budget 13-12-97 19-02-98
Monthly Report - Schools
Financial Management For School Personnel
Manual For The Purchase And Disposal Of Goods And Services
Asset Management Series
Managing School Emergencies
Supply Policies And Guidelines
Schools Services Officers' Handbook
Individual School Drug Education Strategy Guidelines
Executive Services Information Manual
Framework For Student Support Services In Victorian Government Schools
Victorian Public Service Staff Information Package, Department Of Education, Victoria
Organisation Structure Chart
Office Of Schools Detailed Expenditure Report
Office Of Schools Summary Expenditure Report
Office Of Schools Cost Centres
Notes from KP; DC; JM; JC

Documentation received from Department of Education time two

Strategic Impact Review, Office Of Review, Department Of Education November 1998
Summary Statistics For Victorian Schools
Oracle Monthly Financial Report, November 1998
Quarterly Business Report To Department Of Treasury And Finance, September 1998, 1st Quarter 98-99
Priority Education And Training Program Tender Documentation 1999
Victorian Government Funded Training Places Tender Specification And

Information 1998
Performance Agreement For Sample Institute Of TAFE, Department Of Education Victoria (Draft)
Memo On New Apprenticeship Funding For 1999
Memo On Underdelivery Of Services
Memo On Revised Forward Estimates
Memo On Growth Through Efficiencies
Memo On Financial Position Of TAFE's
Monthly Report On Staffing Numbers To Premier
Monthly Expenditure To Budget Report To 31 October 1998, 06-11-98
Pay Information As At 22 October, 06-11-98
OTFE Expenditure Statement, October 1998, 05-11-98
Cash Expenditure Report, October 1998, 05-11-98
Cash Management Trust Income For 1998-99, 31-10-98
Cash Management Trust Statement Of Income And Expenditure 31 October 1998, 05-11-98
Division Summary Report October 1998, 05-11-98
Division Detail Report October 1998, 05-11-98
Cost Centre Detail Report October 1998, 05-11-98
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Quarterly Business Report To Department Of Treasury And Finance September 1998, 1st Quarter 1998-99, Draft, 05-08-98
Office Of Review, Victorian Certificate Of Education, Benchmarks 96
Office Of Schools Total Budget Summary March 1998 23-04-98
Memo Of March 1998 Monthly Report
Oracle Monthly Budget/Expenditure Report March 1998
Memo Of Office Of Schools Staff Savings
Briefing 1997-98 Budget Office Of Schools 26-05-98
Monthly Business Report Of The Department Of Education May 1998 12-06-98
Briefing On March 1998 Business Report 28-04-98
Monthly Business Report Of The Department Of Education March 1998 23-04-98
Monthly Business Report Of The Department Of Education 31 January 1998 11-02-98
Department Of Education Business Report As At 30 June 1997
Schools Business Report As At 30 June 1997
OTFE Business Report As At 30 June 1997
Non School Based Summary, Non School Based Financial Report As At 30 June 1997 09-07-97
Office Of The Secretary And Office Of Higher Education, Non School Based Financial Report As At 30 June 1997 09-07-97
Office Of Schools, Non School Based Financial Report As At 30 June 1997 09-07-97
Office Of Strategic Planning And Administrative Services, Non School Based Financial Report As At 30 June 1997 09-07-97
Office Of Review, Non School Based Financial Report As At 30 June 1997 09-07-97
Non School Based Financial Report As At 30 June 1997 From The Nine Regions 09-07-97
Written Report On 1997-98 Budget Outcome For The Office Of Schools

Financial Reports Including Trust Accounts
Monthly Business Report For The Department Of Education Office Of Schools For The Twelve Months Ended 30 June 1998
Monthly Business Report Of The Department Of Education June 1998 27-07-98
Notes from JC; DC; NN;
DOE Business Plan 1997-1998, September 1997
DOE Corporate Plan 1996-1998
ANTA, Australian Recognition Framework Arrangements, January 1998
DOE Office of Strategic Planning and Administrative Services, Business Plan 1998-1999
DOE, Corporate and Business Plan 1998
Office of Review, Benchmarks 1996, Retention Years 11-12
Office of Review, Benchmarks 1996, School Management
Office of Review, Benchmarks 1996, Years Prep-10 Curriculum and Standards Framework
Office of Review, Benchmarks 1996, VCE

Documentation received from Department of Education time three

NCVER, Australian Vocational Education and Training Statistics 1998, Financial Data
NCVER, Australian Vocational Education and Training Statistics 1998, At a Glance
Directorate of School Education, Schools of the Future Information Kit

Documentation received from Department of Human Services time one

H&CS Hospital Services Report, December 1995
Human Services, Hospital Services Report, December 1996 Quarter
Human Services, Hospital Services Report, June 1997 Quarter
National Public Health Partnership, News, Issue 2, December 1997
H&CS, A New Framework for Quality in Victoria's Public Hospitals, Final Report Volume 1, November 1995
HS, Positive Ageing, Newsletter of the Aged Care Branch, August 1997
HS, Victoria - Public Hospitals Policy and Funding Guidelines 1998-99
Notes from

Documentation received from Department of Human Services time two

Memo of may 1998 financial statements 15-06-98
Financial reports human services to end may 1998
The redevelopment of Victoria's youth and family services 23-02-1998
Memo on performance measurement
Principles of restructure December 1996
New departmental structure
Quarterly regional report to executive 11-11-97
Hospital highlights report for period ended June 1997, 03-10-97
AIMS public hospital user manual

Acute health organisational chart
Office of housing performance report September 1998
Aged, community and mental health division business plan 1998-99
Aged, community and mental health division purchasing framework 1998-99
Human Services, Hospital Services Report, December 1997 Quarter
Human Services, Hospital Services Report, March 1998 Quarter
Human Services, Hospital Services Report, June and September 1998 Quarters
Human Services, Hospital Services Report, December 1998 Quarter
HS, Victorian Ambulatory Classification and Funding System - VACS
DHS 1998-99 Departmental Plan
DHS 1998-99 Departmental Plan Executive Summary
DHS, The Redevelopment of Victoria's Youth and Family Services, Strategic Directions, November 1997
DHS, Business Management System and Integrated Business Cycle
Notes from GL; LW; BF; BP; RB; RH

Documentation received from Department of Human Services time three

Hospital Services Report, September Quarter 1999
Hospital Services Report, December Quarter 1999
Hospital Services Report, June Quarter 1999
Hospital Services Report, March Quarter 1999
Hospital Services Report, March Quarter 2000
Hospital Services Report, June Quarter 2000
DHS Budget Information Kit 1999-2000
HS, Summary of Housing Assistance Programs 1997-1998
HS, Victoria - Public Hospitals Policy and Funding Guidelines 1999-2000
HS, Departmental Plan 1997-1998
HS, A New Deal for Health, 7 September 1998
Health Services Commissioner, Annual report 1997-1998
HS, Victoria's Mental Health Service, The Framework for Service Delivery, Better Outcomes Through Area Mental Health Services, July 1998

Appendix 3f Analysis Protocol		
Time 1 (repeat for 2,3)	Education	Human Services
Variables	Narrative	Narrative
<u>Institutional forces</u>		
Coercive		
Mimetic		
<u>Perceived external environment</u>		
Uncertainty		
Turbulence		
Hostility		
Diversity		
Technical complexity		
Restrictiveness		
Complexity		
Dynamism		
Competition		
Structure		
Centralisation		
Formalisation		
Bureaucracy		
Standardisation		
Divisionalisation		
Distributive network		
Interdependence with context		

Appendix 3f Analysis Protocol continued

Technology: Task uncertainty:		
Task difficulty		
Task variability		
Culture		
Managerialist		
Traditional public sector		
MCS		
Mechanistic		
Organic		
Mechanistic used organically		
Organic used mechanistically		
MCS Usefulness		
Useful		
Non-useful		
Departmental performance		
High performance		
Low performance		

Appendix 3g Participant Data Sheet

Transcript X (repeat for each)	Time 1	Time 2	Time 3
Variable	Narrative	Narrative	Narrative
<u>Institutional forces</u>			
Coercive			
Mimetic			
<u>Perceived external environment</u>			
Uncertainty			
Turbulence			
Hostility			
Diversity			
Technical complexity			
Restrictiveness			
Complexity			
Dynamism			
Competition			
<u>Structure</u>			
Centralisation			
Formalisation			
Bureaucracy			
Standardisation			
Divisionalisation			
Distributive network			
Interdependence with context			

Appendix 3g Participant Data Sheet continued

Technology: Task uncertainty:			
Task difficulty			
Task variability			
Culture			
Managerialist			
Traditional public sector			
MCS			
Mechanistic			
Organic			
Mechanistic used organically			
Organic used mechanistically			
MCS Usefulness			
Useful			
Non-useful			
Departmental performance			
High performance			
Low performance			

Appendix 3h Other information used in preparing external performance measures

Used Productivity Commission Report on Government Services 2000

Ch2 School Education 143p

Ch3 Vocational Education and Training 69p

Ch4 Public Hospitals 95p

Ch5 General Practice 48p

Ch6 Health Management Issues 83p

Ch10 Emergency Management 64p

Ch11 Aged Care Services 104p

Ch12 Disability 82p

Ch15 Housing 112p

NCVER Statistics 1998 At A Glance

NCVER Statistics 1998 Financial Data

(To verify Office of Technical and Further Education parts of the Report on Government Services)

Appendix 3i: Analysis of external documents on performance
Externally generated publication analysis: comparison with counterparts in other jurisdictions (six states/two territories)

<i>Education</i>	<i>Rating compared to counterparts</i>	<i>Human Services</i>	<i>Rating compared to counterparts</i>
	<i>1=poor, to 5=excellent</i>		<i>1=poor, to 5=excellent</i>
Second lowest proportion of full time students (66.2%) enrolled in government schools	May mean good efficiency, less educated by the public sector (3)	Percentage of beds in public hospitals accredited by the ACHS 1996, 1997, 1998 third highest.	Very good, quality, third highest and better than the national percentage (4)
Fall in number of govt. schools from 1994 to 1998 with corresponding increase in non-govt schools until 1997. Midpoint on scale.	Less access to government schools; average loss of schools (2)	Percentage of patients reporting that they were at least fairly satisfied with hospital, 1997 96%, 87% as excellent or very good.	Very good, effectiveness, most patients very happy with hospital. Not comparative to other jurisdictions (4)
Participation rates second highest for 16, 17 and 18 year olds. Midpoint for 19 year olds.	Very good participation rates, higher than national average (4)	Separation rate, 1997-98 midpoint.	Good, access, equal to national rate (3)
Retention rates of secondary students for all schools 1996, 1997, 1998 to year 12, and from year 10 to year 12 third highest.	Very good, better than national average (4)	Separation rate, same day separations, 1996-97, 1997-98 third highest*.	Very good, access, higher than national rate (4)
Estimated completion rates for year 12, third highest	Very good, better than national average (4)	Percentage of people seen within accepted emergency waiting times: Resuscitation, highest 100%. Emergency, second highest 81%. Urgent, highest 75%*	Very good, timeliness, although less than could be considered optimal (4)
In-school govt. expenditure per primary and secondary student (govt. schools) was lowest for 1997-98 and second lowest for out-of-school costs	Very good, efficient (4)	Recurrent cost per casemix adjusted separation, equal lowest on one scale, midpoint on another measure.	Good, efficiency (3)
Level of expenditure increased second least from 1994-1998	Very good, contained cost better than other jurisdictions (4)	Total cost per casemix adjusted separation 1997-98, lowest.	Excellent, efficiency (5)
Expenditure per school student 1997-98 was lowest, previously had been about the midpoint.	Excellent, achieved improved efficiency to become lowest cost (5)	Average length of stay, midpoint.	Average, efficiency (3)

Student to teaching staff ratio (all schools) is around the midpoint.	Average, but slightly better (lower) than the national ratio (4)	Average length of stay for the five most common separations against national: 1994-95 lower 1995-96 higher 1996-97 lower 1997-98 lower	Very good, better than national average in last two periods (4)
Student to non-teaching school staff ratio is second highest.	May mean very good efficiency, low rate of administration and less qualified teaching staff to number of students (4)	Commonwealth government expenditure on unreferred consultations per 1000 people, 1996-97: 2 nd highest 1997-98: 2 nd highest 1998-99: 3 rd highest	Poor, efficiency, improving but higher (worse) than the national average (2)
Teaching to non-teaching staff ratio is highest in govt. schools and second highest in all schools.	Excellent, reflects higher quality of staff (5)	Proportion of children under 12 months totally immunised, 1997: Second highest 1998: Equal highest 1999: Fourth highest	Very good, effectiveness, becoming less effective but in all years higher than national proportion (4)
Commonwealth specific purpose payments for schools 1997-98, second highest per student.	Very good, reflects more money provided for innovation, improvement or maintenance (5)	Proportion of children under 24 months totally immunised, 1998: Third highest 1999: Third highest	Good, effectiveness, higher than national average (4)
Total government expenditure on govt. schools, lowest per student	Excellent, reflects most efficiency (5)	Notifications of whooping cough per 1000 people >14 years, 1996: Second highest H 1997: Midpoint L 1998: Midpoint, L 1999: Second highest =	Average but worsening, effectiveness, currently second highest but equal to national rate; previously lower than national rate (3)
Total government expenditure on out-of-schools, second lowest per student.	Very good, reflects efficiency (4)	Notifications of measles per 1000 people >14 years, 1996: Midpoint 1997: Equal lowest 1998: Equal lowest 1999: Midpoint	Poor, effectiveness, higher than national rate and much worse than previous good performance that was lower than national rate (2)
Number of schools down 3.4% but numbers of students up by 1.8%	Very good in terms of efficiency; Poor in terms of access (2)	Participation rates of women in cervical cancer screening 1997-98, midpoint	Good, effectiveness, higher than national average (4)
Vocational education and training (VET) locations, second highest.	Excellent, far ahead of all other jurisdictions (despite geographic compactness) except Queensland which has less than 1% more (5)	GP ordered scripts for anti-depressants per 1000 people 15+ years, 1996-97: Midpoint+ 1997-98: Midpoint+ 1998-99: Midpoint	Good, effectiveness, average but not as good (higher) than national rate, and higher growth than national also (2)
Government VET expenditure (recurrent) per person, lowest	Excellent, most efficient (5)	GP ordered scripts for anxiolytics per 1000 people 15+ years, 1996-97: Midpoint 1997-98: Midpoint 1998-99: Midpoint	Good, effectiveness, average but better (lower) than national rate, but higher growth rate than national (3)

Net assets of public VET providers per person, fourth lowest	Average, midpoint but slightly lower than national average suggests less developed infrastructure therefore lower quality (2)	Benefits paid for selected referrals by GPs Dollars per person, 1998-99 midpoint	Good, efficiency, average but lower than national average (4)
Government funding to private providers, second highest proportion of state total and greatest increase	Very good, efficient and competitive, moving more to private providers consistent with government strategy (4)	Proportion of GPs with vocational registration, 1996-97: Equal lowest 1997-98: Second lowest 1998-99: Equal lowest	Poor, quality, lower than national proportion (1)
Use of competitive tendering for funding, second highest	Very good, greater efficiency and greater choice/access to VET (4)	Percentage of practices registered for accreditation, 1999, second highest	Very good, quality, higher than national percentage (4)
Total participation rates of 15-64 year olds, highest	Excellent, effective, attracts the most people (5)	Proportion of bulk billed attendances by recognised GPs, 1996-97: Midpoint 1997-98: Midpoint 1998-99: Third highest	Good, access, average and improving, but below the national average (2)
Module load completion rates 1998, midpoint	Average, moderately effective, just lower than the national average (2)	Proportion of bulk billed unreferrred attendances, 1996-97: Midpoint 1997-98: Midpoint 1998-99: Third highest	Good, access, average and improving, but below the national average (2)
Participation rates for target groups, non-English background, highest	Excellent, effective, best participation rate for this target group (5)	Average annual growth rate in recurrent expenditure for mental health management 1994-1999 per person, lowest	Excellent, efficiency (5)
VET participation by region, target group rural and remote areas, highest	Excellent, accessibility, much higher in remote and highest in rural areas (5)	Average targeted real expenditure on mental health services, dollars per person, 1994-1997, highest	Poor, efficiency, consistently most expensive but improving via lowest growth rate (1) 77
Module load completion rates for target groups, midpoint for non-English, remote and rural	Average, effectiveness (3)	Participation rates of women all ages years in breast screening 1997-98, second lowest	Midpoint, effectiveness, below Australian average (2)
Employer satisfaction survey results, second lowest number with 6+/10	Poor, effectiveness, many fewer satisfied employers than the national average (1)	Participation rates of women 50-69 years in breast screening 1997-98, midpoint	Good, effectiveness, higher than national average (4)
Overall employer satisfaction survey results, midpoint	Average, midpoint but slightly lower than the national (2)	Detection rate of small diameter breast cancers per 10000 women all ages 1998, second highest	Very good, effectiveness (4)

Employer satisfaction, course content relevance, at leading edge of industry needs, highest; directly relevant to industry needs, midpoint; most relevant and useable to the industry, lowest.	Average, extremely innovative in specific areas, but overall insufficiently relevant (3)	Detection rate of small diameter breast cancers per 10000 women all ages 50-69 1998, third highest	Good, effectiveness (3)
Employer satisfaction, flexibility of course delivery, midpoint	Average, equal to national average (3)	Mortality rates of breast cancer per 10000 women, all ages, second highest	Poor, effectiveness, higher than national rate (2)
Graduate survey, course helped to achieve main reason, midpoint	Good, demonstrates average effectiveness, but higher than national average (4)	Recurrent expenditure on mental health services growth rate, lowest	Very good, efficiency, (5)
VET graduates employed, third highest	Good, above average effectiveness, higher than national average (4)	Recurrent expenditure on mental health services per person, second highest	Poor, efficiency, higher than national (2)
Relevance of VET course to main employment, midpoint	Good, average effectiveness but higher than national average (4)	Average per person real government expenditure 1996-97: Hospitals, lowest; Co-located units, second lowest; Community services, highest	Appropriateness, hard to assess (3)
Benefits of course undertaken, midpoint	Good, average effectiveness but higher than national average (4)	Mortality rate from suicide, per 100000 people aged 15-24, 1996, second lowest 1997, third lowest 1998, third lowest	Good, effectiveness, lower than national rate (4)
Government recurrent expenditure per hour of delivery, lowest	Excellent, efficiency, by far the lowest cost provider in 1997 and 1998 (5)	Weighted average cost per day for mentally ill inpatients, 1996, second highest 1997, midpoint	Poor, efficiency, higher than national average but greatly improving (2)
Government capital expenditure per hour of delivery, lowest	Excellent, efficiency, lowest cost provider in 1998 (5)	Ambulance response times, 50 th percentile 1997-98, third highest 1998-99, third highest	Poor, effectiveness, (2)
		Ambulance response times, 90 th percentile 1997-98, third lowest 1998-99, third lowest	Average, effectiveness (3)
		Recent patients very satisfied with ambulance services, 1998-99, midpoint	Good, effectiveness, higher than national average (3)
		Ambulance expenditure per person, 1997-98 midpoint 1998-99 midpoint	Good, efficiency, becoming less efficient, equal to national then higher (3)

		Combined aged care residential and community care packages places per 1000 people over 70, 1996, lowest 1997, lowest 1998, lowest 1999, lowest	Poor, access, no improvement (1)
		Aged home and community care hours delivered per 1000 70+ people, per month, capital city, 1996, 2nd highest 1997, 2nd highest 1998, 3rd highest	Very good, access, higher than national but becoming less good (4)
		Aged home and community care home meals delivered per 1000 70+ people, per month, rural areas, 1996, highest 1997, highest 1998, highest	Excellent, access, higher than national (5)
		Aged home and community care hours delivered per 1000 70+ handicapped people, per month, 1996, highest 1997, highest 1998, 2nd highest	Excellent, access, higher than national but becoming less good (5)
		Average days waiting period between approval and entry to permanent residential care, high-care clients, 1998-99, 3rd lowest	Good, timeliness, lower than national average (4)
		Average days waiting period between approval and entry to permanent residential care, low-care clients, 1998-99, 2nd lowest	Very good, timeliness, lower than national average (4)
		Residential care complaints per 1000 residents, 1998-99, second highest	Poor, quality, much higher than national average (1)
		Commonwealth government expenditure on residential services per person 70+, 1995-96 3rd lowest 1996-97 3rd lowest 1997-98 middle 1998-99, second lowest	Good, efficiency, average but lower than national average, improving (4)

		Comm/state government expenditure on HACC services per person 70+, 1995-96, 3rd highest 1996-97, 3rd highest 1997-98, 3rd highest 1998-99, 3rd highest	Poor, efficiency, higher than national average (2)
		Needs not fully met of older persons needing assistance with at least one daily activity, 1998, second highest	Poor, effectiveness, (2)
		Accommodation clients receiving community based care or support, 1996, 3rd highest+ 1997, middle+ 1998, middle+ 1999, middle+	Average, effectiveness, higher than national average (3)
		Labour force participation rate of disabled people, 1998, middle	Average, equal to national average (3)
		Overall client satisfaction of services, 1999, Accommodation, middle= Employment, 2nd lowest+ Coordination, 3rd highest=	Average, equal to national rate but higher for employment services (3)
		Families waiting for services, 1999, Accommodation, higher range+ Respite, lower range	Average, better (lower) than national waiting numbers for respite, worse (higher) for accommodation (3)
		Proportion of disability clients making unassisted choices in accommodation services, 1999, Choice of residence, middle Choice of other residents, lowest	Poor, quality, lower than national proportion in both cases (1)
		Disability clients views about employment services, 1999, middle	Good, effectiveness, higher than national scores (4)
		Clients who exercise basic rights in accommodation services, 1999, middle	Average, quality, lower than national proportions on money access and bedroom privacy, higher on general privacy (2)

		Administration costs as a proportion of total disability expenditure, 1995-96, 3 rd highest 1996-97, 3 rd lowest 1997-98, middle- 1998-99, 3 rd highest+	Average, efficiency, worsening, moved from lower than national to higher (3)
		Proportion of estimated potential disabled population using support services, 1999, middle	Good, higher than national average (4) 177
		Government expenditure on public housing per person, 1997-98, 2 nd lowest 1998-99, 2 nd lowest	Very good, efficient, lower than national average but becoming less efficient in more current year (4)
		Condition of housing stock, 1998, 2 nd highest 1999, 2 nd highest	Good, quality, higher than national average (4)
		Public housing tenant satisfaction, proportion very satisfied 1998, 2 nd lowest 1999, 3 rd lowest	Poor, effectiveness, lower than national average, improving (2)
		Moderately overcrowded public housing dwellings, 1998, 2 nd lowest 1999, 3 rd lowest High overcrowding, 1998, equal lowest 1999, equal lowest	Very good, quality, lower than national average (4)
		Provision of public housing as a proportion of agreed level, 1997-98, 3 rd highest 1998-99, 2 nd highest	Very good, access, higher than national proportion, improving (4)
		Waiting time per cent of applicants for public housing, Less than 6 months: 1998, 2 nd lowest 1999, 2 nd lowest Five+ years: 1998, 2 nd highest 1999, highest	Poor, access, below the national average in the shortest period, above in the longest period (1)
		Return on assets, 1998, 2 nd highest 1999, 2 nd highest Return on equity, 1988, highest 1999, highest	Very good, efficiency, higher than national average (4)
		Rent in arrears, 1998, highest 1999, highest	Poor, efficiency (1)

		Government expenditure on public housing, 1998, 2 nd lowest 1999, 2 nd lowest	Very good, efficiency (4)
NB. DOE has the highest proportion of ESL students (govt. schools) and second highest (all schools).	Points: 134 divided by 35 measures: Score: 3.82/5 or (76.5%) good		Points: 205 divided by 66 measures: Score: 3.10/5 or (62%) satisfactory
An independent samples t-test was applied to the scores in the table resulting in statistically significant difference between DHS and DOE effectiveness: t-value = 2.484; p-value = 0.005.			

*These measures are not really comparable – different measures used.

Appendix 3j List of documents used in preparing table relating to audit of internal to external departmental reports

DHS 3

Acute Health Services Quarterly regional Monitoring Report for period ended March 1998 (May 29 1998) No, disaggregated

Hospital Highlights report for period ended December 1998 (February 26 1999) Yes

ACMH Regional performance Indicators - EMIS Regional Executive Set Fourth Quarter 1998-99 (5 August 1999) No, disaggregated

ACMH Executive report quarter 1 1998-99 Yes

Executive agenda item 2.3 BERCC Quarterly Report June 1999 Yes

DHS Regional Executive Set Performance Measures: March Quarterly Report, 10 May 1999 No, disaggregated

DHS EMIS, All indicators for all output groups (16 December 1999) No, disaggregated

DHS 2

ACMH Division Business Plan 1998-99, Yes

Hospital highlights report for period ended June 1997 (3 October 1997), Yes

DHS 1

Office of Housing Performance report, November 1997 No external data

DOE Folder 1

Summary Statistics for Victorian Schools January 1998, Yes

DOE 2

Monthly Business Report of the Department of Education June 1998 (27 July 1998), Yes

DOE 3

Public Accounts and Estimates Committee estimates Questionnaire 1999-2000 Yes

DOE Corporate and Business Plan 1999 No external data yet

*Appendix 3k
Departmental performance reported in interviews*

	Human Services			Education		
	Poor	Average	Good	Poor	Average	Good
Time one	So the rules are restricting but there are ways around it. You can manipulate the circumstances so that you beat the rules and achieve what you want as well. But there are far too many rules and far too little flexibility, which means we spend quite a bit of time working out how we can achieve things. Whereas if you have a much more free hand, you just go ahead. So it shows there's a lot of navel gazing that goes on in the department. A lot of social workers and people like that. (Regarding) contractual arrangements between ourselves and service agencies. It became reasonably obvious that that wasn't very well received because of all the ministerial correspondence that came in about it. (We benchmark with) other states occasionally. We've tried with the private sector but whenever they try and benchmark with the private sector the report will be shredded because we look so bad. Because we don't have the	The only thing is the recognition that we need to do things more efficiently, and at a lower cost. To do more with lesser cost. (To fix things) quickly which mightn't be the most desirable result to fix the problem but is a good result and is reasonable because it's acceptable. There is a central public affairs group within the department who are responsible to coordinate part of that (PR), and they probably do a reasonable job considering the circumstances. Which is probably an uphill battle in the health and community services area because there's a lot of negative feeling about what's happening. Particularly when you've got budget cuts flying through in the sector, it's become quite an issue publicly, within the media. Overall the department performs reasonably alright - average performance. There's certainly parts of the department which perform badly and parts which perform better. Areas like housing perform reasonably well. I'd	Now what that means is we've got very good technical efficiency by running down the price on those, but our allocative efficiency isn't as good because the marginal return on doing an extra heart bypass as opposed to an endoscopy is probably different. Okay, but we've actually said, better for the doctors at the Alfred to make a clinical decision on whether we do an extra compared to the rest of Australia. And in Human Services we've done reasonably well in terms of outputs as well as meeting the financial. Disability services...some of the stuff that we've seen comparing us to other states shows that Victoria has actually done quite well in a climate of fiscal restraint... Without wanting to boast, I'd have to say I think in my experience of the other states, Victoria leads Australia in the provision of disability services. Significantly way ahead of NSW, much better off than Queensland, Tasmania, South Australia's	Not enough time spent on planning ahead. Unfortunately not enough. It goes back to the resourcing issue. Like most people I'm so busy with the day to day of fighting fires, that I'm not thinking ahead and doing the planning. And it's a trap that I've fallen into as most of us do. The intray becomes the killer, so that you become very transactional rather than strategic or thinking ahead. Not a lot of time. I mean there's a long way, we could do a lot more if we had more money. I don't think the place is perfect and I think there's a lot of teachers out there who would say the place is a disaster. I don't think you can say the quality's diminished greatly but if they want improvement in quality then now because we are at the low end of the scale across all the states and there is investment required. A bit of a mess. There is some duplication of functions across areas, particularly in the finance area. Well, it's always very difficult	I think at the education level...if you look at literacy, numeracy and all of the other stuff, we're at least at the level of other states. It's a question of how you mean performing - at a financial level we're probably less well funded than other places on a per capita basis. So you could say we're not performing as well, but government policy is that we are where we are because that's where they want us to be. The departments done, and is doing a fairly good job. I mean on more objective measures, it's made fairly big strides in devolving it's responsibilities to the schools, schools have got a lot more freedom now. It's handling a lot of education of kids with disabilities under great difficulties in areas of low socio-economic need reasonably well. We've gone a long way down the track in closing a lot of inefficient schools. (We) are making strides. I mean there's a long way, we could do a lot more if we had more money. I think by and	With VET we are far ahead in consumer choice and we're cheaper. What we've got is a significant number of smaller private providers who are very responsive. They deliver work based training at any hour of the day, and they've probably forced some of the bigger institutes into behaviours that they wouldn't have got to for some time. Individuals (DOE people) themselves are all very good. We have a thing called the Purchasing Model and we have had for a number of years. It sort of arose at about the same time as the concept of purchaser provider and output, but I think in a sense by accident, but it's given this place a tremendous opportunity to leap ahead. And I think we're very much used as an example for other service providers of what is possible through a purchase model, a purchase schedule, a quality regime, a performance monitoring regime. (We're able to move) more quickly through use of private

<p>capacity within the health service system to basically pick you up when we think maybe we should, it actually means that we have to wait until something goes wrong more often than not to get into the system. It's just an unfortunate part of life in our business.</p> <p>And there have been instances where people have fallen through the cracks because your client's have been duckshoved back and forth between the program areas. That stuff happens. Now within that (disability) program we get consumers writing to us all the time with problems – you name it they seem to be able to write them. I don't like where I live, I don't like my carer, on it goes. (The) technology to do it was obviously difficult and then it's coincided with some pretty bad management of the ambulance services at the time etc and that's been obviously a huge problem to the public confidence then.</p> <p>We're slow at making decisions, we're slow at communicating decisions. Also I think we're not good at corporate solutions. Staff are concerned about quality, I think the rhetoric's there, but I don't think our systems are in place...like</p>	<p>say we perform reasonably well too, but we have had some political difficulties in the last twelve months or so since the amalgamation. That has changed our strategy somewhat in the way we're dealing with a lot of the financial issues now. So we've learnt a bit in the last twelve months.</p> <p>What we've done is cut across that and said your son or daughter will get a service only if they're the highest priority on the waiting list...and that's...just been implemented in the last six months.</p> <p>(Take for example) a full time day program. Now in terms of cost, that's sixty to seventy thousand dollars per person, a year. Instead what we try and do is say well here's some respite, or here's some outreach in-home support – whatever and try and...develop a package that might cost us three or five thousand dollars per person. As their needs increase, we try and sort of put in place the provisions...but the expectation is always at one end, and our capacity to deliver is at the opposite end. Like when we say we think we struggle to provide a reasonable quality of care within our institutions, it's</p>	<p>not too bad and so is Western Australia. (I mean that) at a management level, at a service system level, at an operational level, at a policy-procedure level...we're much better off. Recently South Australia just set up their own units services department pretty much modelled on here, in an effort to try and again drive the ability integrate services. It's certainly easier to tackle the problem when you're together than if you are totally separate departments and you're dealing with each other over even greater distance.</p> <p>You'd expect (hospital) throughput to cut by 10%, when in fact what we got was throughput increase by 8–10% you know with a 10% reduction in funding which is pretty impressive. And it might have shown how much fat there was...</p> <p>We sort of try and put in the best practices that will enable us to get us to what we think are benchmark levels. (Considering material from the) interstate benchmarking group that compares costs across the states...I guess we've come from way above the average in 1991–92 way down to virtually being the lowest cost per casemix adjusted separation, or WEIS, other than WA.</p>	<p>to measure quality in Education because you get a lot of people like, you get say the Federal minister criticising Victoria and the Victorian minister saying "no, we've got high standards in literacy as shown in our Lap tests".</p>	<p>large, given the constraints we have on us as a whole community we are holding our end up anyway.</p> <p>We're probably not as efficient in some ways as the smaller departments.</p> <p>That's been one of the prime things to actually get up the quality of the organisation. The AGs office did a report recently on the Schools of the Future and they're quite, reasonably complimentary of the programme.</p> <p>Well literacy and numeracy programme: that we have a look at and certainly there's no suggestion that we're any worse than NSW or Queensland and we're all pretty much on a par.</p>	<p>providers, but TAFE's a bit like a big ship trying to turn around, because of their asset base and their inability to move quickly. So...we use the private providers in TAFE to fill the training gaps that emerge from year to year. And it's given us great flexibility. Because we're the lowest cost provider we get a lot of people visiting us.</p> <p>My budget is \$657 million dollars, so it's a lot of money, and I think they would sack me if I went much over. But in reality it's very well managed so that doesn't happen.</p> <p>In terms of Vocational Education and Training, I think this state is ahead of the other states in terms of the concept of consumer choice and contestability and purchaser provider. Victoria's very much ahead there. But again, we are the cheapest cost producer and that can be seen either to be a very good thing, or that you're just very mean and won't spend money on education. So overall, I think Education is at least as good as other states, and in some areas much better given the level of resources that it's got at the moment DC. (DOE does) very well. On a whole range of performance measures. Those measures are out in the public domain so, it's not really for</p>
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<p>quality's there in the background rather than at the forefront.</p>	<p>because we spend \$43,100 as opposed to NSW \$64,200. So we're much more efficient than NSW – but they would argue that our service quality is pathetic. (With respect to quality) it's probably not as great as they would imagine it. And is service quality having a squillion carpenters and plumbers and whatever walking around ripping off stuff left, right and centre? (And we're improving) like if you live in Footscray, are you actually getting the same level of opportunity to access services as someone who lives in Balwyn. Now our evidence from some of the work we've done says no, you're not. What we're driving towards is greater models of funding equity.</p> <p>Some areas, some regions exercise that flexibility more creatively than others, more responsibly; in some program areas they still have a sense that they need to be more controlling over what sorts of services are being provided – that's an unfinished symphony really.</p> <p>It takes a lot longer to move from a decision of, "we want to do this and have this kind of service", to actually then have it operational. And we have to get better at being able to move quickly from A to B.</p>	<p>No, and in fact the opposite. The opposite is being done in both Disability and Mental Health and people said hang on, those conditions aren't acceptable, we'll move to community health. So it's more expensive but it's a more acceptable outcome. Certainly not in Acute, and probably not in other areas as well. I think we're pretty comfortable. I mean if you look at the interstate cost comparison, we used to be way above the other states, and now NSW is 30% above the other states...I think that's pretty telling. We've been able to close hospitals and move them to outer suburban areas, while Sydney basically went on strike when that happened. So they're not a set of indicators that you could always tick.</p> <p>Most people who know what they are talking about would agree that Victoria does pretty well.</p> <p>There's a limit to the number of premiere medical and public health research departments or institutes you could have. Now Victoria's pretty much captured the lion share of the funding.</p> <p>We rate very highly on some things – like I think the budget management probably would rate very highly. I think the actual – the being clear about</p>		<p>me to make a subjective comment. The measures speak for themselves. (On the) efficiency side there are well developed performance measures and we come up well, very, very well.</p> <p>Well I think we claim to be the most efficient in terms of all the measures we can get out of school costs, Commonwealth Grants Commission sort of costings, of spending on education. It shows us to be the lowest spending state in terms of out of school costs and per capita of Victorian head of population. And in that sense we claim to be the most efficient. Then you get, especially in the Schools area, you get the question (what about quality)...We can point to some indicators, we've got the highest retention rate in Victoria, well second highest now but it's been highest or second highest for a long, long time, so we get a high rate of participation in education, we've more 15–19 year olds participating in education or training than in any other state and have done for a while. So they're sort of quality indicators.</p> <p>We gave schools money for them to contract in cleaners and that was another area where we saved money, as well as cut the bureaucracy.</p>
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		are placed, whether you have one big factory doing – that specialises in burns versus you know – just that whole industry structure whether that is optimal, and also whether we've got the public relations management thing done right. We would basically say that we believe the service is at quite a reasonable standard given our exit polling and other material that we can get and other quality indicators that we've got empirically. We believe that the price is tight – it's a debate as to whether it is too tight. Whether we're just paying too less, I think there is some argument for that, and we have a community perception problem. And our view is probably is that it is more of a marketing issue than anything else. But there is no doubt that in addressing that marketing, additional funds would be a positive step in trying to address it. So, if it really come push and we're asked do we think that things are you know, we've just bled too much money out of the system and it's off the rails. The answer would be that most of our empirical evidence that's not really our conclusion, very finely poised, but that's it. To put it diplomatically we're trying to get our house				the lowest cost provider amongst all the states in Australia. So, I would say that's most probably a feather in the government's cap really. And the department's cap.
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		perfectly in order so we don't have any ambulance service repeats...Housing is fairly well run.				
Time two	The Department's obviously had a lot of problems in the hospital area...and has struggled to work through those problems and deal with them. But it is difficult to know to what extent that is a unique problem for this Department in this day, or a broader problem of all similar departments. Basically, we've recognised that as (hospitals) financial viability has been eroded after the last four or five years, one of the things that goes is funding equipment. So we've actually provided, I think it's \$31M of that money is going into improved equipment. (The Public Health Director) felt that we weren't responding well on that healthy community type aspect, where you put health promotion, radiation, safety, food safety, water quality all (together). So we're still getting increasing numbers of child protection placements and child protection notifications, and much of that is social structure issues and communication.	We've had an ongoing issue of what do we do with people with a dual disability? We've always said that they've got a psychiatric disability which is their main problem, and an intellectual disability which is their secondary problem. And ACMH would say, no, no, no, they've got a psychiatric disability which is their secondary problem, and an intellectual disability which is their key problem. Often they can literally fall between the cracks. So now that the challenge is for us to work together. Particularly in Disability where we have a fairly high level of unmet demand, very, very substantial, that we do need to work hard at trying to drive every dollar we've got. To know how can you actually meet these drivers of cost, or community expectations. I suspect that we've probably done as well as most. I'm not conscious of any jurisdiction that has a more favourable sort of press in that sense. I think that the problems that we've seen are not uncommon. In	(Before we) would have said (to a disability client) "well, you have to go straight into an adult training support service, a day placement", and we fund those people at – it used to be two rates – \$9,000 and \$12,000 per annum. We now say to these people that are coming out of school "what do you want to do? How can we help you out?" And they say to us, "I want to go and do a TAFE course", and we say "great, well help you book in and do whatever else it is that we do to facilitate the placement". The client gets what they want, the cost to us of that TAFE course may only be \$1,500, and everyone comes out a winner. I think we'd probably kill most other disability programs...In terms of knowing what we get for our money. In terms of having unit prices, in terms of our engagement with the sector and our contract management role. I mean I think we're much further advanced than any other jurisdiction is.	In terms of internal structures and politics and all that, you could be critical. But...it's what happens at the School or the TAFE level that's important. VCE performance information – our Office of Review has been doing work on all those things and is able to show that there are some schools that are under performing. We've been criticised, quite rightly I think, that in the strategic planning area, we're focusing on reporting and documenting...We haven't fulfilled a function of longer term strategic thinking and Central agencies have a view of our performance, which would be different to ours. They've probably got some concerns about the way we run things. But I think that's improving though. In terms of our student outcomes, I don't think that we're the best. Though things might be viewed fairly negatively in some ways, like for example school closures. The thing is – professionally, with a lot of	Certainly the external perception in the area that I'm working in, in TAFE, is that we are not efficient, but cheap in that we sacrifice the quality in order to get the lowest price...And to give you an example, in our tendering process in the OTFE, where we tender out public training, we certainly have been criticised correctly I suspect, for allocating the dollars to the lowest cost provider, and not paying attention to quality. I think we do pretty well in most areas, although we all have weaknesses. One of the areas we've probably fallen over a bit is actually having the longer view about where we want to head. Well most of the performance indicators and the benchmarks – we're very competitive with other states. (There's) Ministerial meetings every week. Formal ones with some of the senior members. And that's the working relationship, and I think he's generally pretty happy with the Department's performance.	I would evaluate the performance of the Department overall as fairly high. We concern ourselves a lot with structural issues, and how they do or don't work, and accountabilities and how they're good or they're bad. But if you look at the product delivered, that is the Education of the student in the school system, or the education of the student in the TAFE system, in terms of measurable achievement and customer satisfaction, I think Education is getting better and better at educating the community. I rate it pretty highly actually. I think it's not easy working in government these days...resources are fairly tight, it's pretty lean...Compared to both (other education departments and other Victorian departments), yeah. It (DOE) does a fairly good job for what it does. Certainly it's...from what I can understand, it's certainly well up there with the other states for what it does and it's certainly doing things that

	<p>There's a whole lot of duplication that could basically be gotten rid of.</p>	<p>August, the headlines were pretty much the same there in terms of the National Health Service. And we've certainly recovered from the period of the great reduction in (funding). I think (synergy between programs) is where we think we haven't achieved as much as we would have liked. But I think we probably only need to visit Sydney to get a dose of reality, that what would it be like if we were actually still separate departments. The problems would be even greater. But I think it's always going to be that sort of mixed sense of it's probably doing quite well, given the (size) difficulty. There's a bit of money for reduced waiting lists. So that's the other one – the \$12M to reduce waiting lists. Because we've taken the category (two) waiting list, that's the urgent waiting list, waiting more than 30 days, down. Okay so we, in the metropolitan area, quite explicitly, we bypass regions and go straight to the networks. Now in the rural regions, I think we've constrained the responsibilities of the regions as well. Or we've defined it and said, "here's your input, this is what you need to have input in, and</p>	<p>Effectively we've reorganised something like \$100M worth of funds over the last two budget periods, through a combination of some straight savings, but other efficiencies in the way we did business. And some of those are one off savings, but in total they've enabled us to do a lot more within the organisation that we'd never have been able to get through Treasury. A lot of the heat over the Medicare renegotiations was about the Commonwealth were actually going to do more than they'd previously done. In a sense match the fact that we'd been pulling more than our share of weight, certainly in the last few years. So I think that's one thing in our favour, that the effort has been made to get the resources back into the area. And that with casemix funding, we probably do better than most in terms of getting value for that money. NSW, which is the one we compare ourselves with most, had cost them at least \$500 more on average for every patient they see, to provide basically the same service, and that's a huge – our average is about \$2,200 or something per hospital patient, but in NSW it's pushing \$3,000. Demonstrably there's no measurable real difference in</p>	<p>small schools that don't have – you can't provide the... breadth of the program because they're small, and there's another school close by, rationalisation makes a hell of a lot of sense, even though it's a very unpopular decision for the community.</p>		<p>many other states don't do. Yeah, that (as in the literacy program), but (also) the accrual accounting approach, and the sorts of ways of going about things. I think we're at the leading edge of some of these things. Now the Premier sees this department very, very highly and rates it very highly... I think generally we – for the workforce we have – we do a damn good job. On efficiencies of driving the dollar, we're certainly doing the best. In terms of our student outcomes, I don't think that we're the best. In terms of our creativity and innovativeness in school funding I think we're miles – in fact Peter Allen was telling me there is a book that's been written in the US on school funding throughout the world and there's a chapter devoted to Victorian education as being the leading light. It's an excellent department... if you look at the Report on Government Services, I think you'd have to say that Victorian Education was in good shape. Certainly it could be improved, but comparatively it's up there amongst the top. Education certainly we're the lowest cost provider and I think some of the initiatives</p>
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		<p>have it in this time frame". Now in terms of efficiency, I think that works very well. It means you don't have another layer of bureaucracy, or the Department between us and the agency. Which in most cases, and even in rural areas, are quite big agencies. Now other programs still go through that regional split, and that causes delays in getting budgets. One of the things that the extra funding from ACCA has really done, is enabled us to look a touch beyond the hand to mouth environment. And I think we're trying to say look that's – you've got to look at the hospitals in terms of being efficient in the medium term, rather than the short term. And I think that's a real issue, they're not all run the same. So you'll find some hospitals more forward looking than others, and others who are catching up on past sins, because they were a bit slow dealing with that. So we can generalise, but you've got some agencies who are still catching up, still trying to balance their books. You've got others who've done that. In terms of efficiency and our ability to meet demands, I think... unless we can do... some of those significant reforms, in what I call the</p>	<p>the quality of services in NSW. They have the same... criticism of waiting lists, and that's the challenge I think for the hospital administrations and the Department's that fund them. NSW is a good example where they have separate departments of Health or Disability or Aged Care and Community Services, and they can't even get them to sit around a table together. (We are an improvement on that). The money if you like is flowing straight through to hospitals rather than being trawled at the Treasury end or the Department end, and I think that that is appreciated. (Look) how far down the track we are in terms of bonus schemes for elective and emergency, or indeed privatisation. And I think on most measures, we're ahead of the other states. We are fairly much achieving targets set. I think it's a very, very difficult area, this area. There is a great deal of need, the need is growing, the Department faces tough choices... (it is) facing some fairly difficult challenges, and meeting them reasonably well. I think overall performance is fairly good. And I think that has been reflected by DTF. DTF and Premier's formally</p>			<p>that have been undertaken here are certainly on the leading edge in terms of the world and what's happening. So I'd say that certainly Victoria is most probably applauded more outside, which often happens, outside Victoria than it does inside Victoria in terms of the achievements that it's made in terms of the quality of public sector education. In terms of cost, and a number of other dimensions. It has done quite a lot of things and quite a lot of things to try and strengthen educational outcomes and provide them at a value for money service.</p>
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		<p>non-acute hospital area I think that the budget is just about as close as it can get and still meet what I call a respectable range of social needs. Disability needs, drug needs and a whole lot of other needs...and we'll never fully meet because that's the nature of the system - but I think we're meeting, we're not meeting what I call a respectable level of need in some of those areas now. People say the quality has been sacrificed. People are staying shorter and being churned through. But on a cost effectiveness basis, I'm pretty sure we're at the...there. We're on average with quality as assessed by national customer surveys. On costs we're probably about second best. Financially we're stable compared to some others, on a balance sheet basis. It's pretty well run.</p>	<p>assessed the Department's performance and my understanding of our feedback supports that situation. We're at the forefront, particularly in the Hospital sector, and that is thanks mainly to the introduction of casemix funding...On a cost efficiency basis. We're (housing) a pretty good performer, if not one of the best overall in Australia...(On) performance indicator benchmarks. I think we fare fairly well. There's a bit of cheating on some definitions and applications of definitions, but we're pretty good. On both (a quality and costliness basis). Definitely on both... We're much better on quality. The Minister's agreed to target those most in need. On reflection of that is how many people you put through on a priority system. We're running - we've reached 50% of our allocations of people to houses as based on a priority or urgent needs basis. The next closest is in the 20s, that's NSW, and some are 2, 3, 4%. So that's a measure of quality. Mental health did pick up an international award recently that Jennifer (ACMH Director) went to accept in Beijing. The difference is if you go to NSW you will find there are three extremely renowned</p>			
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			<p>mental health services, but down the road can be one that is appalling, because it (their mental health structural reform) was driven from the bottom up rather than the top down. Whereas in Victoria, it was driven top down, so that it did get the change happening across the entire state.</p>			
Time three	<p>The quality trade off of that is it's not clear. Hospitals in all states are in trouble one way or another. They all struggle to meet the cost of increasing demand on them that's made from the ageing of the population. I think our planning is a little bit ad hoc.</p>	<p>I think we're quite effective. But sitting in here looking internally, there are things that we can do to enhance our effectiveness, and they would revolve around things such as trying to break down program silos, so that a client is able to access the suite of services that they need to mend whatever problem or issue that they have. Rather than having to deal with Disability Services and then YAFS and then ACMH. You know, we can do those sorts of things, but that is finessing more on where we are now. The financial position of the hospitals taken in aggregate was - that's much improved over the year because of money coming in, as well as by getting the laggards to perform. So that's been pretty important. And the other states. You've got to argue the growth, and I guess the number of people who are treated per head of population - we're at the</p>	<p>If I compared us to other states, then I would think in most areas we probably lead the way. And I know everyone loves to get up and use rhetoric around how cutting edge we are and whatever, but the reality is that if you interviewed by counterparts in other states and took any sort of objective look around who's where, then really we leave them for dead in most areas of the department. I'd probably say, in general terms if you looked at the public perception of the area, I think you'd probably say it's performance has improved, because some of the issues that were running very hard and hot in the press, that indicates major stresses out there in terms of ambulance services and hospital services, have subsided in the last 12-18 months. (Using) objective measures the management of the hospital system is obviously more effective here, in that we get</p>	<p>The opposition has seized on that in terms of our cost efficiency, and said that we don't put enough dollars against that. We're cheap and nasty. Whereas we would argue that we are efficient. If you ask the parent in the street about the Department, they'd still say with the cost cutting, not enough resources. We would still be seen in that light rather than promoting educational achievement I think. I might be wrong, but I'm pretty sure from - we always get the letters of complaining. The corporate services area wasn't providing the level and quality of certain services. (Management are) inbred, narrow, lacking proper management skills and experience, divisive...not really working together as a team.</p>	<p>There's a long way to go - but I think there is more of an intent to address the bigger, broader policy issues, rather than educate little kids and train apprentices. To work out, as I've said before, of that cohort of kids between five and twenty, where are they all, and who are we missing. Rather than concentrating on running a school system or the TAFE system. And the linkages between Education and the other areas of government are becoming stronger. The Education portfolio is now thinking more broadly about science, engineering and technology. Its linkages with training, its linkages with employment, and higher education, than it was doing a couple of years ago...and that's a good thing. So you'd probably say that some things have improved and some things maybe haven't changed much at all. My general view is that the improvement's in the right</p>	<p>Put it this way Victoria is the most cost efficient state across Australia for vocational education and training. So we deliver more student contact hours per dollar that we spent. So we are the most efficient across any state or territory in Australia. But the opposition has seized on that...The good thing is the same group of people, the Australian National Training Authority that found that we were the most efficient, found that we were the most effective as well. We had the highest quality of all states and territories through other measures. For example participation rates and employer and student satisfaction. So that has enabled us to substantiate our lower price that we pay for our training. And then this is expenditure per student contact hour (SCH), based on efficiency, how much we are paying per student contact hour that's delivered. And in Victoria it's</p>

		<p>national average, so it's not like we're treating everyone that walks past the hospital door. The increased demand is the one... Financially, clearly they (hospitals) have (improved). Waiting lists they still manage the most urgent. There is real pressure on the less urgent. And that was our issue with the demand. I think over the last two to three years you would say it's (performance) has tended to improve. It's still essentially a group of separate companies (though).</p> <p>The Secretary has just completed this week his performance review for the last financial year. That's a two stage review, the Secretary at Premiers and the Secretary at Treasury do the first stage review, then Ziggy Koslowski does the second stage review, and that was only yesterday. Yeah the feedback that I got from the Secretary was that that went well, and the Department is seen as performing reasonably well (on quantity output and reasonable quality assurances) in a difficult climate. And I think if you had a look at the last twelve months compared to the previous twelve months, we have fared much better in that (political, front page news) sense.</p>	<p>better value to the dollars that we put into the hospital system, per hospital admission we make.</p> <p>In Acute... we can say that we are the lowest cost state, even if the data is 1996-1997 which is a bit old when you're talking about 1999-2000 budget. We've done quite a bit of work on that (quality measurement), because I guess we're saying okay on the quality side it's hard to satisfactorily measure. We have had some patient satisfaction stuff that says 96% or 97 % of people are satisfied or very satisfied.</p> <p>Are we forward looking? I think we reckon we're pretty good, in terms of we've implemented, certainly on the purchasing side, we implemented casemix before the other states. We're probably still purer and pushing ahead with casemix. I think we reckon our financial monitoring is pretty good because our costs are below those of other states. (We had) very powerful unions flexing their muscle in a pre election context, trying to actually break out of that policy position. And I think there's no doubt that the secretary and others believe that we managed a fairly difficult situation fairly well. The Australian Health Care</p>		<p>direction, but I couldn't sort of point to things.</p> <p>Say if you take a central agency view, I think you'd say we've improved, we're more effective than we were. We're better at thinking through the WOG issues that apply to our operation, but they'd still say we have a long way to go. Over the last 12 months there's been a number of groups running inquiries into education. The VCOS one, Council of Social Security, the Anglican Church, the Uniting Church. There's a group called People Together Project, they're in the process of writing up their report now. And probably with the exception of the Uniting Church one, which was sort of much more Department friendly, you know the tack they're going to take before they start, and it's all part of the political process as well. You know, the timing of the People Together one is going to be right about when they judge the lead up to the election will be. You know it will come out during the election campaign. So those things get reinforced all the time, and even though we've now got more money into schools than we had in 1992, the perception is still, and it's fostered by the unions and the</p>	<p>\$11 per SCH, this is on an accrual basis, and it's more expensive in NSW. Three dollars per hour. So we are the cheapest or the most efficient... That's just funding provided by the State government's of each state or territory. We get \$441M from the state. This is in 1998. NSW received double in their state, but they've only got 40% greater than us, not 100%. Our revenue from commercial type activity is far higher than NSW, it's double, yet they are 40% bigger than us. And they've dropped again there in 1998. And I think it's all to do with the SCH. It's how much we pay per employee per hour. There's only one state which is a bit lower than us, that's Queensland. And that's only in the last year. Participation rates, this is how - participation rates of the 18 to 64 year olds in Victoria, there is a higher participation rate of the Victorian population as compared to any other state or territory in vocational education. We've got the highest rates of education participation of 15 to 19 year olds in school education. We've got the highest rates of participation in TAFE. We've got the highest rates of participation in university education for a</p>
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					<p>Department of Education out of ten you get eight, right. So he actually gives it a score. And that score translates itself into the level of executive bonuses that are able to be given...So DTF has to rate like their number one. But Education rates pretty high too, because we said that we would have our two bobs worth and all that, and if you think about just delivering our budget over the last number of years, I mean, delivery of our budgets mean massive productivity cuts, as you know. Massive closures of schools. Massive reforms like School's Global Budget, SOTF, SGSs - I mean they were all things that were on the agenda. We'll they've all happened. Staffing flexibility, new ways of employment, the PRP principal performance structures...we've done all those.</p>
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Appendix 31
Problems with measuring performance matrix

	Time one	Time two	Time three
Political	<p>Intangible, totally. Which is all about the political perception of how well you've done I guess. So that you've managed to get through and deliver the tasks that you're required to do during the year without causing too many adverse political consequences. That's a sort of overriding constraint.</p> <p>(Is there benchmarking against health departments in other jurisdictions? There doesn't seem to be. I really haven't seen any myself. There probably is some benchmarking which occurs at SCAM which is the Committee of Departmental Secretaries, certainly there would be some discussion of that. The Premier certainly has an interest in benchmarking against other areas, but then again if Victoria comes out as an adverse, an adverse result with benchmarking we're unlikely to see it - it would be in the Premier's interests. It would be something for his eyes only, or scam.</p> <p>...but we've got a lot more constraints on us too in terms of the way we operate and the community that we have to answer to. By and large we are doing reasonably well.</p> <p>I think it's extremely difficult for governments, because of our democratic system, to be too up front on.</p>	<p>...an election, because the rural voters in Victoria did not swing against a coalition government in the federal election. So they are the sorts of things one thinks about as a public servant, because if next year is an election year...</p>	None

Interpretation	<p>(So, if it was something good there might be a media release about it?) It would be but then again the media would put a reverse slant on it. So if we were benchmarked as performing very well but having very low staff numbers to do that, which is basically increased staff productivity, the media are most likely to focus on the reduction in the public service and how it has effected services to the public. So there's a lot of concern about the release of this sort of material because of the way the media manipulate it.</p> <p>DRG or two DRGs for burns, so the suburban hospitals have the easy cases but the hard cases go to The Alfred, which aren't quite reflected in the DRG and it's a significant amount of money.</p> <p>I mean health and welfare are strained - I mean do you ever meet the objectives? Have you got zero priced output?</p> <p>(In a) budgetary sense yes, because they've met the budgetary targets. I think one of the problems in an Education context is that the government's targets or objectives are more in the motherhood range and that they're not set targets in terms of for example, participation rates or literacy rates.</p> <p>Then where do we go? If it tells them for example that our cost of educating a child is the lowest in Australia and perhaps one of the lowest in the western world... (Then the media will probably tell you we're not doing a good job. Bad quality.) Exactly. So that wasn't a good idea. Now you could read that another way, so we are very efficient, and one of the most efficient organisations because we can run an excellent education process with less dollars. But if I was arguing at the other end I'd say yeah, you're the cheapest too so Jesus the quality you've given me must be pretty bad. And therefore we run into quality, which is not as measurable as us accountants can put together in figures. You know, have we got a better system or a worse...</p>	<p>We do unit costing on our community based houses, and we say, "this house costs \$210,000 for five people and this one costs \$180,000". Now we actually have no way of knowing whether the \$210,000 is fair and reasonable, and the \$180,000 is too cheap, or the \$180,000 is just right and the \$210,000 is excessive. We don't know.</p> <p>You have to prepare a series of achievements and things like that, and we produce updated benchmarking things for that as well. Apparently they'd had some discussion, but everyone talks about it, but I don't think anyone's ever found a very effective use for it yet, because it's so big and you can't really do it.</p> <p>They had 2000 calls in an hour. So the other thing about Human Services I think is that it will also be judged on people's perceptions of it. And also I think, a bit like Education as well, by people's personal experience of it. So if your kid's doing okay at school and they're in the public system, then you'll think the public system is alright.</p> <p>But again getting the measures right would be - you know you worry that people will come in and say 'well you spend this much money, let's divide it by the EFT you've got and then work out that Acute costs a lot less than ACMH'. One of the dangers of that is it may be more difficult to manage complex services that are hard to manage performance, than it is to manage a hospital where the funding formula is clearly worked out. And so then people say things like "well all you have to do is get the funding formula right in ACMH". But it's not as easy.</p>	<p>Yeah. We've done quite a bit of work on that, because I guess we're saying okay on the quality side it's hard to satisfactorily measure. We have had some patient satisfaction stuff that says 96% or 97 % of people are satisfied or very satisfied. In a way it helps the polities, but it doesn't actually help you improve the service.</p> <p>They may not have as many. So even when we get the numbers up, there's going to have to be a lot of Education of politicians, the media play an important role in the community in interpreting those numbers. (And not doing it mischievously?) Well it may not even be a matter of mischief, it's misguided.</p> <p>A good or bad thing. It's the government, the Treasury and that was what was needed to achieve the AAA rating for the government and get the cost pressures back under control. In terms of service within our schools, one might argue it's not been good. The other side is the Commonwealth Grants Commission...</p> <p>positives I think. But are children smarter? I don't know. Are children - and that's the part I can't answer. And until someone can convince me or tell me otherwise that we're performing from a - then I don't think we've done much, and jeez, that's a hard one.</p>
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Confidentiality	So there is probably quite a lot of benchmarking that goes on at that level and certainly review about performance in various sectors but it's not something which is generally made public, even within the senior level of the public service. Because we leak like sieves - even the senior members. AMHSI	None	None
Lacking information	<p>...predictable and we can plan on the basis of it. But in a whole lot of other areas it's more difficult just because the nature of the needs isn't as well documented and we don't have an ABS database necessarily... Some sensible decisions in the future about whether is that really worth continuing? Is that the best way to use that money for that purpose? At the moment, in many areas it's very difficult to say that because you just don't have that transparency or clarity of link between the money going in and the outputs being achieved.</p> <p>...you went in and did a specific project that looked at it, there's no routine data that can be managed in any sort of regular way, to say, "well, we put in x amount of money into this area last year and this is what we seem to be getting from it". When we have these discussions every budget time activity levels in the system still. So you can't really say that if you put more money into this area, this program, what sort of outputs would increase, because there's half a dozen outputs underneath that, and they may all go to one area and not into others. That is still stuff we are trying to finesse and develop and then again it perhaps reflects...</p> <p>...outputs and output groups. So I think people - staff are concerned about quality, I think the rhetoric's there, but I don't think our systems are in place to actually understand what quality is and to then be measuring and monitoring and ensuring in our various industries. Certainly innovation...</p>	They work with social workers who are more interested in doing what they do, rather than measuring for some other party. (Yes, so it's a real cultural issue that they've got to handle if they wanted to implement a different kind of a system?) Yes. Hence the SAP, Supported Accommodation Program, it's a nationally funded program in the states. They're the social workers who look after the homeless and so forth. That national data collection was lucky to get what it got. It still hasn't got half of what it should get. So I think it's the industry they work in, and the people that work in that industry... Social workers are a profession, and no professional enjoys measurement. But if you take the hospital sector, they understand fully why they need to be measured. Their whole funding is determined on measurement under casemix. Whereas that's not the case with the social workers under YAFS. They tend to get their recurring grants.	And the Commonwealth, they commissioned a report, and they almost bagged every one of those quality indicators that were used, because in some circumstances it... I'd say two things on that. Firstly, if you look at that indicator framework, which has got effectiveness measures and efficiency measures. If you look at it and open up the chapter on Education, you'll find that most of the effectiveness measures have yet to be developed. So there aren't numbers to compare one... Well, we don't have very many measures at the moment. I mean in terms of student outcome measures, in terms of quality of learning, you don't really have anything. You've got surrogates like the amount of money spent per student, or retention rates in schools, or participation rates in education, student destinations. I mean you've got those surrogate ones, and we do pretty well...

Comparability	<p>Compare sector by sector - how do we compare in terms of what we've done and what haven't we done ??? electricity, water, you almost have to go sector by sector.</p> <p>Then you get, especially in the Schools area, you get the question of well what are the outcomes, what's the quality like and until recently there's been no sort of comparable quality measures in terms of student outcomes of literacy or whatever like that - all the states have different measures. We can point to some indicators, we've got the highest...</p> <p>Now, it's again, it's difficult to know whether you've got an exact comparison about the sort of measures that you can really, that you can really use. The difficulty also is once you start looking at international comparisons you get issues between the layers of government and the complexity between commonwealth and state jurisdictions and even local government and what is done where. Some of the New Zealand comparisons are difficult because they're one way of government. Some of the US comparisons also can be difficult because of the layers of government and actually where costs reside within government, and to get comparisons it's very hard without either rolling up to some sort of national level to make sure you're counting equivalents.</p> <p>Well I've got an idea of housing because there's a comparison. Natural Resources - there's no comparison. State development - very little comparison. Arts - too hard to compare and I don't want to. Justice, yes there is comparison there but I don't know what the outcomes are.</p>	<p>...putting state's in competition, or co-operation, so that you can assess them. Otherwise it's actually hard to assess them in any real way. We've got these comparisons of cost per separation, that the Productivity Commission put out, that's one thing. The Acute Health sector is actually organised differently in different states, and I think that's really important, you know. We've got networks, we've devolved responsibility, while NSW keeps much closer tabs. But in terms of most measures, like Medicare...</p> <p>I'm not sure how you compare performance, vis a vis other departments, because we're all in different businesses. So the only ones that you could mention is how effectively we control budgets and things like that.</p>	<p>Yep. So hopefully, when I talk about what's an accommodation place, then my colleagues in other states are talking the same language. And how do I count it, what money is in, where does management fit, what about corporate overheads, what about salary on costs, workcover, super etc. are they all in? Yeah, we've developed a framework to be able to allow us to report. Again it's not perfect. It's probably a long way short of perfect, but either we wait five years while everyone comes onto an accrual accounting basis and we engage some sort of \$400,000 consultancy to do the work, or we say "shit, let's have a go".</p> <p>Productivity Commission has done is actually tried to look at pulling together a consumer satisfaction survey. Which for people with an intellectual disability...</p> <p>...than not have nothing to compare anything against. You know, you may be in the shittiest service in the world, but if it's the only one you've ever known, then in actual fact you'll think it's probably okay. And one of the things that we found was that crappo services got basically the same scores as services that we felt were fantastic. There you go. So there's a range of difficulties involved in...</p> <p>But if you look in the Productivity Commission Report, you'll find the quality indicators are sparse, and not uniform across the states. And that reflects that it's hard to get agreement across the profession, that they actually measure what they...</p> <p>Open up the chapter on Education, you'll find that most of the effectiveness measures have yet to be developed. So there aren't numbers to compare one state to another. We're starting that process. We're developing for the first time, nationally comparable measures of literacy and numeracy between states. But one will need to be very careful when you look at those numbers, once they're ultimately prepared and published. Because just because one state has got a higher number than another, doesn't mean to say that it's performing better than the other. It may actually be performing worse, and that's because you have different systems in Education in each state. You've got different environmental conditions, one state as compared with another state, may have more students that have come in from non-English speaking backgrounds, and those sorts of things. They've got different cultural backgrounds, so you wouldn't be expecting in overall terms those people to be achieving the same as a state.</p> <p>It's just a simple thing like moving the date, you can now actually say that all kids are tested in the same time period as opposed to not having five months learning in between - like we do ours in April and everyone else does there's in August, you can't really compare them because those kids have had five more months in school. So just a simple thing like moving the date is not worth...</p> <p>We're dealing with children, and children's learning abilities. And that is somewhat difficult to measure. And the educationalists, and I work with them, they debate this until they go blue in the tongue. So they can't agree amongst themselves. Not only in Victoria, but I would imagine...</p>
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Measurability	<p>...of quality indicators that we're providing a service that the Victorian public wants. In terms of outcomes of student learning then that's much more difficult and immeasurable.) Yeah, that's right virtually yeah. And they're talking about now JME1</p> <p>...hospitals worldwide who share information on quality standards. I think it's fair to say that people still are, worldwide, struggling with really solid measures for some of the softer Health and Social sort of areas, and Child Protection - how do you really assess reasonable standards. ...performance benchmarks against other providers. And, as I said, whilst one has to have a healthy skepticism about these indicators, there about what you can use to try and measure your performance amongst others. And it is difficult again, the commercial equivalent - you'd be talking about market share, you'd be talking about overall profitability, profitability per staff member - that type of thing. And I think when we look at ourselves we can only look at peers. It's difficult, like LWHS1</p> <p>We're leading Australia. And they are - all these measures are proxies, but they are three, what you'd see as being three reasonably important measures for what we are doing. NSE1</p>	<p>...achievement of some demonstrable quality criteria. The answer is that you have to build quality criteria in as a threshold step, in the allocation of the dollars. That is not easy, because the quality frameworks that are around are generally warm and cuddly, rather than specific things that you can use as a way of, for example, excluding people from the receipt of public dollars. And you really have to take the warm and cuddly quality concepts, and use them in a fairly ruthless way, in terms of saying to a provider you are in or you're out. DCE2</p> <p>Now, we're going to put \$50M to that program. We've thought it through, we're going to put teachers, we're going to give them this sort of curriculum, we're going to train them, we're going to do all that, this that and the other. At the end of the day, your question is, how do you know that's worked? Well the only way you are going to know that's worked, is if that standard, that benchmark we've set, has been achieved. (And that's not going to be this year though is it? Or next year?) 2002. (Right that's the target is it?) (Nino nods). So at the year 2002, let's talk again and see whether we've reached standard 4 for all kids, or for 95% of kids or whatever the target may be. NNE2</p> <p>...that you probably, if you saw some increase in the health status it would be minimal. And all you could draw is correlation between the health centre and the local region, but there may be 50,000 other factors that impacted on health improvement. So I think people would like to make those leaps of faith. RHHS2</p>	<p>Productivity Commission has done is actually tried to look at pulling together a consumer satisfaction survey. Which for people with an intellectual disability in particular is very difficult. Because generally speaking, and we did a consumer satisfaction a while ago, well consumers have limited intellect, they more often BFHS3</p> <p>This is in Acute because we can say that we are the lowest cost state, even if the data is 1996-1997 which is a bit old when you're talking about 1999-2000 budget. DAHS3</p> <p>Department in terms of performance, there are very long lead times involved. So we're trying to improve literacy and numeracy standards in our schools. IHE3</p> <p>Senior Secondary Education. You know, retention rates and VCE pass rates. I mean they are things you can influence over time, but potentially that's driven by the economy. So I mean it's a measure, it's a descriptor if you like of how we're going, but it's not something you can really set a target for. JME3</p> <p>...could make sure that we buy even more contact hours this year than we did last year, particularly in a lot of the social areas, but is that actually giving us an outcome that we require? At the other end the debate is gaining sophistication all the time, at the outcome end, when the Minister starts talking about health and social well being as our broad departmental outcomes, what we find is that there are so many influences. And one of the difficulties we have is separating things that we are responsible for from other things. So for example, in nearly every area that we look at, socioeconomic condition is a huge correlation to health status and social well being. We've got reasonable assurances about quality. Quality is very, very difficult to measure in some of our particular areas. Also we've got major projects which we're empirical. Now having said that, we've done a lot of good work on working on quality initiatives in the health sector, trying to measure and grapple with those things, and there's a tremendous amount of work going on, but I don't think it's ever going to (produce) a very clear set of issues to monitor. LWHS3</p> <p>Yeah, you might say we've got standard testings now. No doubt you've heard all the publicity of it. But at the end of the day even the standard testing is very much wishy wash, and very much really flawed with a lot of - we're dealing with people's children's intellectual capacities and that's influenced by lots of factors. NNE3</p>
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Various goals	<p>...continuing requirement to negotiate, to take account of all the different sort of imperatives in all the different divisions and all the political agendas of having three ministers. And then the speed of communication of the decision has such...</p> <p>...citizen, you believe the you should have access to it, regardless of the cost. I don't say that they're unreasonable expectations, but the difficulty is, if you stand back and look at global economics and you look at Australia's overall of the things that we notice is that there is a very, very major drive for efficiency and alternative models of delivery in trying to actually make existing dollars spread further to try and minimise the impact of that sort of problem. So they're the sorts of factors. The other factors which I'd just briefly mention also is the community expectation factor which I touched on, probably is the one that we most acutely aware of at the moment is since the fire at Kew residential services.</p> <p>Actually when I say since the fire - well before that - we had a program of improving our fire upgrades and much of the building fabric was built in another...</p> <p>Well, that's part of the answer isn't it? Part of the ambiguity of government. And it may have something to do with triple A rating. In many of these things there's reality and rhetoric. You don't necessarily, you know they're saying all these things, and they give a report to Moodys and Standard and Poors, whoever, and they say "oh fantastic". Then they go along to the government and we're all good boys and girls, and they go along and say "yes, oh yes we're doing all this stuff whatever, fantastic". Well we get a Triple A rating. But it doesn't necessarily mean - so there's a number of objectives in there as to...I've been fairly frank here.</p>	<p>(How effective, against what you are measured against? I mean how does the government measure Human Services?) I don't know - how department's ought to be assessed in that way. In terms of public accountability, and I probably distinguish between performance in terms of public expectations however defined. But I guess as expressed through our budget papers and commitments, and expectations which are mostly in terms of government I guess, just in terms of very general goals that the government has, social goals for providing high quality services, or services close to where people live, is probably about the only other explicit goal which we would fit into. Then there's a general sort of efficiency of use of public monies, which the government is obviously interested in as well. In terms of public expectations...</p> <p>Well it's hard to define the measure by which you'd evaluate it because depending on who you are, and the perspective you have, there are different ways of evaluating. Whether they're political, financial, educational, or whatever. I would evaluate the performance of the Department overall as fairly...</p> <p>He's evaluated by the Premier, because his contract is with the Premier, and I think it would be a combination of...and I don't know what's in his contract, but I imagine his evaluation would be in terms of delivery of educational outputs within budget, in a way that can be measured as adding value to Victoria. Having said that I don't know how he's evaluated or what he's scored. I find it very hard to judge the performance of the department. Central agencies have a view of our performance, which would be different to ours.</p> <p>...one of the things that is difficult for us to really ascertain, is whether we're making an overall impact. You know we're actually fixing to a certain extent, the symptoms of the problems, and the cause of some of the social stresses are broader government issues, which we have a contribution towards. But many others have a contribution towards too. So it is still a very difficult area.</p> <p>(How does Human Services perform as a whole?) How would I know (both laugh)? On what front? How would I assess the Department? From a public perspective? Probably the best - a good place to start isn't it? Yeah, I'd be looking at just a number - not too many - of key output measurements. Hospital waiting lists and times has to be...</p>	<p>(Do you think the performance of hospitals as a whole has improved in the last 12 months, or not?) Well I guess that's where you say, how do you measure performance? Financially, clearly they have. Waiting lists they still manage the most urgent. There is real pressure on the less urgent. And that was our issue with the demand.</p> <p>Because they cost us \$15 a SCH, but what we can deliver for you is business studies that cost us \$7 a SCH. So at the end of the day, it wouldn't be a good result for Victoria, if we ran out of plumbers and these trades people. So I just think that the government needs to be aware that it could have a situation where it hasn't got the right skills.</p> <p>We do now. There's a tendency to ignore, if the wheel is not squeaky. That's a real danger.</p> <p>Well, that's a difficult question to answer because there's no - DOE is not like Telstra or Southcorp, where there's a single bottom line performance measure. And also Helen, with the things that we're trying to do in the ...range of information. But you've got to identify what are the critical things that the Premier - the Premier is obviously one of the key stakeholders. When you look at stakeholder groups for any organisation, you ask the question "how is an organisation tracking". That will depend on what stakeholder is asking the question. You can get four general groups of stakeholders, the owners of an...</p> <p>...whole range of things, and each Department does a self assessment of how it's tracked over the last 12 months. How we've gone in terms of implementing government policy, how we've gone in our key service delivery areas, how we're going in terms of managing our resources, managing our people, managing our finances, managing our assets, those sorts of things.</p> <p>...overall performance is measured in a number of ways. One way is actually delivering the deliverables that we've been asked to do, so have we delivered the outputs, have we got reasonable assurances about quality. Quality is very, very difficult to measure in some of our particular areas. Also we've got major projects which we're progressing and how reasonably have those major projects progressed are the sorts of measures that we're looking at. The second level, is the political level, is have we stayed off the front page. Because nobody ever says anything nice...</p>
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Appendix 3m
OM-MCS and MCS usefulness in relation to context across the period of study: summarised analysis
Department of Human Services

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T46		<p>Those with historical input funding like the welfare end are harder to apply outputs to than others (32-53)</p> <p>Conceptually you can apply outputs to anything, but it's more difficult where there's a legislative arrangement or a duty of care like in Child Protection (64-75)</p> <p>Even in areas where outputs fit well, there are exceptions like emergency department access (76-97)</p> <p>There's no competition for most of our services anyway and we have to be careful in dealing with people's lives that we don't output fund health services and allow operators to go into the red. That's not in anyone's interest (518-529)</p> <p>We have responsibilities that cost money which are not output relevant. The recent fire safety initiative in intellectually handicapped residences recently in a case in point</p>	<p>There's arguments about what we should measure and report. We think we should measure how well regions sign off on their contracts because we've been made the purchaser. CS argue that the Minister wants to see measures reflecting that "Mrs Bloggs got her heart when she needed it". But we don't have anything directly to do with providing the heart (1329-1343)</p>	<p>People are skeptical that quality won't be retained. The reforms seem linked with going for the cheapest (260-271)</p> <p>Most people here have seen there's some advantages of outputs so there's acceptance that this is the way we are going (1349-1360)</p> <p>There's a general recognition now that outputs is the way we are going. In the agencies there's a sense that they want to know how much things cost why they do things. The problem is how to make the transition without sacrificing quality of care and losing the unmeasured value added extras that we have always been given by health professionals and volunteers (234-281)</p>	<p>Output definitions, measures and costs were developed by us in ACMH (1242-1248)</p>	<p>We report outputs to DTF but they don't cover all of the business (16-18; 443-447)</p> <p>Cost measures are very aggregated and don't reflect what it costs for patient X to get a service (21-24)</p> <p>Good to have people thinking about how much things cost, good for the taxpayer and it also means we can tender services out (57-62; 489-496)</p> <p>Outputs are good for DHS because we are so big it makes us more accountable and less perceived as being at the "soft" end. More able to cope with the microscope. Paradox is that we can come across to the providers as too business like in an industry of caring, underpaid people and meet resistance in them being unwilling to provide all the unpaid extras (166-198)</p> <p>Outputs are good but the way we've done it doesn't allow people to make a costing mistake and tell us (497-502)</p> <p>Having clear, enforceable</p>	<p>We tend to measure quantity rather than quality, timeliness and real service cost (17-21)</p> <p>Progress in community area where they've developed unit costs for service packages (54-56)</p> <p>Progress in dental area with unit costs but haven't yet grappled with how to build maintenance and capital into those costs (98-149)</p> <p>ACMH has so far used data we collected anyway to report to DTF as output information. We had already got this in place because we had decided to tender out the system (338-361)</p> <p>Some of the quantity targets we set two years ago, based on historical figures were way off beam. That's forced dialogue between DHS and the agencies to get it right (597-612)</p> <p>To create the output costs you've got to manipulate the finance systems and there's only certain information you can get out of Oracle on our services. So we are limited by that and we may develop</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
		<p>(557-568)</p> <p>Very difficult to cost something like counselling generically. It ignores the complexity that counselling is practiced by a range of disciplines. Whereas for physiotherapy you can do it (929-945)</p> <p>The welfare agencies have said that they are not ready to move down the output line yet, that they need more time to prepare. The acute side is willing because hospitals can work out how to make money out of it, whereas in the welfare areas it's more difficult (913-920; 922-940)</p> <p>YAFS have failed to sell the output to the welfare agencies in that YAFS wanted the changes more quickly than the industry was ready for. Acute and ACMH were ripe for the selling of outputs because the hospitals were already doing something similar for themselves (1086-1098)</p> <p>We've had problems in convincing our ACMH programs that it's necessary to report</p>				<p>contracts with providers is not a bad thing, whether we make it around outputs or whatever (663-666)</p> <p>Possible problems with quality if things run by the numbers. For example employing graduates instead of top professionals to make savings (942-956)</p>	<p>a new system for ACMH because there are new purchasing arrangements. But that takes years so in the interim we have to cobble together information (1249-1261)</p> <p>Finance's concern is that if you change the outputs like we did last year then that impacts the chart of accounts and sometimes we didn't give finance enough time to manage that (1319-1328)</p> <p>We are questioning whether the measures we report are right. We initially reported output information from what we already collected just to be practical (344-349; 373-375)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
		<p>outputs and trouble getting them to develop measures. We've been under pressure because DTF said they'll take money away from us if we get it wrong (1262-1275)</p> <p>Dental and Drug Treatment have done well in developing output measurement and unit costs but that was precipitated by structural reforms in the sector, not financial reforms. Other ACMH areas haven't progressed much (1715-1726; 1766-1773)</p>					

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T45		<p>Acute is well suited to output management because of their casemix system and they are a client service. Not to other areas like Public Health who are a research and quality control service (58-62; 96-113)</p> <p>Problem is that you have to aggregate outputs so highly for government purposes and the 6000 outputs we have don't naturally roll up into the six output groups. It was okay (with quantity) until they introduced requirements for timeliness, quality and cost (62-69)</p> <p>Housing is mostly easy because it's a simple, volume based business. Homelessness is very difficult to measure though (149-161; 412-422)</p> <p>We've had a detailed look at our output definitions and measures in the last year. Tried to really think through how to get meaningful, measurable information, with awareness that the businesses vary (58-90)</p> <p>Outputs are hard for us but an output model is always better than an input model (92-102)</p>	<p>We reworked our outputs about two years ago more along client groups and product lines which are fairly easy to define (144-156)</p> <p>Our Housing outputs generally match our existing management structure (168-181)</p>	<p>We need good systems to do outputs and we need business manager type people in all divisions (126-129)</p>		<p>You can't just unit cost six outputs and come up with the total budget. They may only represent 60-70% so there's an inbuilt problem (71-94)</p> <p>Output measurement is a positive thing setting up your internal management systems and providing greater accountability externally - better than of old where there's no measurement and the objective was to just spend the money. But it's flawed in the rigidity and the oppressive detail of its application (992-1014)</p>	<p>Even in areas where output management suits, quality is hard to measure (106-107)</p> <p>Housing already had to record measures for Productivity Commission requirements so it was easy to do output measurement (130-136)</p> <p>Housing's internal systems have not changed at all due to outputs. Oracle has been developed centrally though which is linked to outputs (199-225)</p> <p>Financial report to the executive is just changing to include an output listing (389-394)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T44	We have commonwealth funding which is not subject to the same regimes as the state funding 310-313) Ministers didn't want the output costs in the budget papers because of the lack of robustness of the data and the adversarial nature of our environment where data is purposefully blurred (370-388)	Suits areas like Acute who have taken a clinical approach to information bases. Other areas like Mental Health haven't (45-51; 129-145) There's no doubt that we have greater complexity in measuring outputs than other departments (92-102) Quality is very difficult to measure in some of our areas (266-267) You can aggregate composite services up to do unit costs in Acute because we do purchase up at that high level with WEIS. In other programs we purchase at a very detailed level. We have 500 products so the aggregation gives you meaningless unit costs (393-434) Conceptually we are to pay back DTF if we don't meet the relevant output target. Last year we had to argue with them over \$10M that they wanted back but it didn't happen due to mitigating factors which we raised. In most of the areas to date there is enough uncertainty in the throughput targets that the debate wouldn't arise (344-359; 362-368)		Our basis of funding has not changed (306-310) We've met the minimum requirements for output budget certification but there is some way to go in fulfilling the output spirit that we want to achieve (9-14)		Quarterly output material is being tabled for our executive for review and discussion. It's more begging questions about data quality at the moment than driving decisions (31-42) Prior to outputs we were mounting sophisticated cases for increased funding which are usually demographically driven. The output debate hasn't become sophisticated enough to have an impact on resource allocation and frankly the politics are the basis of decisions not outputs (313-325) Outputs have improved accountability though because there is a target at the other end which links to the extra money at the beginning now (325-342) Huge overheads for Y2K which will inflate our output costs. Next year they will then drop so that provides convoluted information (434-447)	Unsophisticated sector in terms of MCS and those that do the counting are not our staff often. Can't meet quarterly time lines with hard data, we need to report estimates (16-29) Different areas in DHS are all at various stages of systems development from very sophisticated to not very (42-57) Still big under achievements of outputs because the data sets and the budgeting are not sophisticated enough, and issues with quality measures (359-362) There's a new management reporting suite, developed over the past year being launched very soon that moves us further on accruals, has a better interface between financials and outputs and has some purchasing information. We still need to add KPIs and measures to it though (643-661)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T43	One of our ministers openly admitted that there is a conflict between the political environment and the systemisation of output planning and reporting. Concern over opposition picking up on any unmet targets. Ministers are just realising the ramifications of their decision to adopt outputs (260-286)	Some areas are very difficult to measure in an output sense (53-60) output management is easier in Acute where there is singularity of focus. In YAFS it is harder because we are disparate (197-212) In regions people think in terms of a client service or a purchased service rather than in terms of outputs (81-88) In YAFS we want to run our business by outputs. At the DHS level though forward estimates are only done at the output group level not at the output level (102-108; 158-160) There's still an adherence in DHS to archaic fund source accounting. It will be another two years before lower level managers think in terms of outputs. On the other hand we've made some progress. Most people here know what our seven divisional outputs are (122-132)	YAFS division has restructured because they had to downsize and in doing so they have aligned their outputs to their significant internal units. In the rest of DHS outputs are only broadly aligned with divisions (60-96; 134-150) Hard to allocate overhead to outputs at regional level because they work across the range of services divisions provide (107-114)	Culturally in the human services field people have difficulty in being definite about what's trying to be achieved (43-52) We had a consultant who did a fair job of specifying the reports that we would need to imbue an output culture (119-122) We've had the normal bureaucratic inertia, which is partly reflected in the ability of people like me to move outputs along (151-157) We still need a degree of professionalism and understanding that the social good can have some intellectual performance based system around it without it being undermined (592-595)	When we give output information to CS and DTF we are aware of the link between revenue and performance so we explain things carefully (759-765)	Outputs should be more strategic (4-11) Output reports are useful to me. We've now got what we produced with what we spent. It's been invaluable to us in the funding process, in shifting the thinking from funding inputs to providing a level of service (565-592) Outputs can help us demonstrate what we're providing which can help us compete for funds (603-610)	We're still a long way from the fundamentals of costing (96-99) We are for the first time allocating overhead to actual outputs to try to get the costing right (107-111) DHS has never had good costing systems (114-116) Only just seen the first report which drags together the expenditure figures with measures of output (116-119) When we get additional dollars they get related to programs or fund sources and not to outputs, which doesn't help emphasis (161-164) Costing is arbitrary. We need to do a systematic costing exercise like ABC (164-176) Minimal development of outcome measures and effectiveness indicators (558-563) Finance still needs to move further in organising their reports and systems around outputs (775-779) Capital is not incorporated into output level costs - we're still no closer to this (787-798) Just replacing very strict control over inputs with strict, detailed control over outputs (4-11)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T42		Not all funding can be output based, even in Acute but DTF don't understand that (924-934)	Welfare areas have many small agencies with low unit cost activities so you can't spend much on information systems, compared with health where there are high unit costs and big agencies (1018-1033)	Acute is much more advanced with outputs than DTF is (922-925)		Imposes costs on the smaller agencies and they can't afford it so you get poor quality data that's not used anyway (1034-1042)	We manage by using the "soft" stuff as well as the measured stuff - both are important (936-941) Other divisions have tried to develop output systems but have made the mistake of trying to measure everything (975-997) Our new service agreement information system have accelerated the level of detail recorded (1043-1046) Other divisions in trying to measure everything have ended up with input measures like hours worked (988-997)
T41	It is not workable for us to tag every output we provide because we must have flexibility to be able to respond by moving money from one area to another if there's a break out of flu say (599-620)	For our directly delivered services it's easier to count the inputs than the outcomes (94-100) Some of our services are broad in range and it's hard to define a human service in ways that allow you to put a cost and quality boundary around it. Also the benefit from that refined information has costs because we really want the focus of programs to be the service delivery not recording and reporting overloads of information (108-134) output management is a		Everyone is working on understanding what it costs to provide services (166-182)	Dangerous to apportion overhead to outputs in DTF figures until DTF understand the full basis on how the costs are derived. They are likely to think that is what it costs to provide X service, without realising that the cost includes many other things (288-298; 326-331) DTF have used the MRP also to re-establish their role as close overseers. That role had diminished over time with the previous management	Output management has deviated from the MRP strategic path of buying outputs and devolving responsibility for operations to delivery agencies - too detailed and inflexible (196-208; 232-262; 264-278) This micro level specification is not good management reform (304-307) The MRP message has been positive and reinforced our internal direction but no tangible benefits. In fact it's been a negative in moving back towards micro management when we had	DHS have for years been developing their own output management systems before the MRP with casemix (14-15; 19-21) In other areas funding is based on inputs and they are moving toward outputs once they have the data to tell them the costs before you can develop an output purchasing system (33-39) It takes time to develop effectiveness measures of what you are doing rather than just units of services that you are buying. We are still developing that (97-106) There have been changes to

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
		very discrete form of buying services. We don't want to buy a whole lot of discrete, separate things because that has major implications for who delivers our services and how they are delivered (183-192) The DTF model is flawed, especially for us by having an audit process attached when we don't report the 500 activities that we really do. We report on what we can meaningfully measure (530-570)			reforms (436-460; 507-528)	moved beyond there to global budgets. It should focus on more strategic management information (333-370; 404-412; 648-672) The output model is capable of being strategic but that is not the way they've gone unfortunately (530-535) Gives more information on the value that we're getting for the public dollar but seems to have become a tool for central agencies to know what we do rather than a management tool (622-646) None of the information we pass up to DTF is part of our "internal management reporting review" because it's gone down a path of public spending accountability rather than providing strategic management information. The MRP has lost it's way (412-434)	financial systems to cope with accrual output management but we have a long way to go to adapt our internal financial systems to reflect the management of output as a purchasing task in welfare areas (135-164) Our costs are just the budget for an area which is a long way from being an output cost (298-305) Welfare areas still have much work to do in specifying outputs. Funding systems are only output based in Acute so far (674-681) Much harder in Welfare - less countable and measurable than in Acute. So very variable in our management and budgeting systems output sophistication (681-717)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T40		Philosophically everyone should be suited to output management, but... (66-71) Because we don't make cars or hamburgers we can't apply output management perfectly, but just because we can't doesn't mean we shouldn't do it at all (79-108) Quality is of great concern to us and hard to measure. We have clients for life and are not throughput based so you need to be careful not to just focus on the numbers (148-166)		There's been resistance in the field and in head office about how we were implementing outputs and whether in fact all this information was worthwhile or nonsense (227-231) When we first spoke I thought output management was a waste of time, but now I support it (368-372) We're not very far advanced with the output reforms. We've got the reporting part done and we're in the second stage of redefining outputs, questioning the validity of our output measures (27-48) The reality now is that output management is a way we should do business (66-77)	CS have helped us to balance getting our measures meaningful, avoid overload, and not empowering DTF to run our businesses (754-771) Played into DTFs hands a little. Gave them too much detail to start with and they got egotistical about their ability to make operational decisions about our programs (783-795) CS have been very consultative with program areas and have been coordinating the process to get output information broadly consistent across DHS. They've quality controlled and value added (754-774)	Having the output measures is an impetus to get them right because you are reporting on them. It's been a worthwhile process (133-146) We've collected information to report to DTF but we've used it extensively internally. We were always data rich, information poor but this has made us record at least baseline information for all our services (340-366)	Our sector has a surprisingly low IT base. Other than Acute, we have a very low capacity for reporting robust indicators (50-64) In some areas we had measures that easily converted to output indicators. In other areas we didn't have measures before and they've just been developed this last year (303-308) Currently allocating overhead to output group level only. We are working on a lower allocation as part of ongoing improvement. No guidance so far on how we should do it though (1217-1244)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T32	I've seen people put together logical business cases to have them thrown out because they don't suit the political flavour (1251-1254)	Developing outputs in ACMH is difficult because we've got complex service systems which vary across the state from small budgets to large networks (9-13) WEIS is based on body parts and we are talking about mental health which is harder to define - dental is easy (125-149; 830-840) Because ACMH is hard to measure we'd need long term, heavy investment to develop good measures and there's always a push for a quick fix in a political environment (374-383) There aren't really outcomes in Aged Care (396-398) Biggest problem we have is measuring actual performance on the ground of our provider agencies (721-726) Working towards unit costing in harder areas. Debate occurring about whether measures are input or output on those which are hard to measure like counselling (167-182)		WEIS took 20-30 years to properly develop (123-125) There's general agreement that outputs are a good idea but it's seen as a driven ideology, it's hard to get commitment because it doesn't really change anything on the ground and in ACMH measurement is fraught with problems (358-389) There are business world things we find useful and I wouldn't want to lose them, but I think there's been a real belief in if we just put business principles in place, which is blind (1247-1251) The pressure to develop outputs and PMs has certainly influenced what we do here (13-16) We've made real progress in unit costing Home and Community Care Services and Dental (133-139)	We have a good relationship with the finance people in ACMH (647-654)	PP gets us much clearer about what we want to purchase but the dilemmas around outputs are capping services (or not and letting them grow), delivery all year around and quality assurances (66-87) We've costed meals on wheels but it doesn't take into account that the important service is the visit itself, so decisions can be flawed. Need to be careful in defining indicators and not using something simple that creates distortion (135-163; 835-836) The quality and timeliness/access indicators are the ones you can use to see if it does look right (158-163)	We've tended to measure things like bed day separations, contacts which don't help with quality or outcomes in some areas. In others we've measured better, by episodes of care (88-120) Were trying to create some sort of casemix but it's simple minded to think it can be done like in acute (120-126) Mostly we fund on a traditional basis and so they are very hard to cost and our measures aren't very good either (721-733) We actually know a lot about which services are good based on the relationships that regions have with the agencies - not from output measures (835-840)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T31			Changed from two output groups to one for the division with five major outputs (197-208)		Budgeting and accounting staff are across the unit costing stuff but we do all the non-financial performance development in the program. We get on very well with them (423-427)		Outputs haven't changed our performance measurement because we do far more extensive measurement and reporting for our Federal agreement (210-219)
T30	DTF think if you have commercial financial statements plus output information that is what you need to manage. I agree that's important but politicians need to put labels on buckets of money for specific initiatives (389-434)		Output structure still reflects the organisational structure but there's been organisational and output restructure (121-125)		Much higher awareness of output cost issues for budget and accounting staff (280-282)	New information is definitely shedding new light, focusing decisions more especially with capital demands (294-311) Need other information besides though - need to specify on the basis of initiatives separately (389-434) Outputs are very useful. We need to understand what we get for our money - can't just blindly trust. We are accountable to the taxpayer. Problem is you can mislead as much as you inform because outputs are a poor surrogate for outcomes, and some outputs are very difficult to define and measure (764-802) Useful at lower levels also to make contractual decisions on the basis of delivery performance (803-817)	We still have problems in accurately counting outputs - difficult when we deliver services through 4,500 external agencies as well as our direct delivery and their systems are not necessarily capable (377-379) Over 80% of our activity is delivered externally where we don't cost - done by contract negotiation. The internally delivered services we still haven't done much on costing and allocation because it's a small part of the pie and we don't want to spend too much time on that (510-530)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T29			Outputs map to our divisional structure largely. We don't have people defined as output managers but I could point my finger to people. We still have cost centre managers (281-307) Currently questioning the consistency of size and complexity of output groups and may review this (404-426)	A lot of our purchasing is a historical arrangement with a block granting process (441-446) We call ourselves old hands at output management now. This is our third budget for output group management, much refined (384-395) We don't go below total output cost in this program. There are a couple of unit costs around within the programs but they are largely contrived (434-437)			Overhead costs have now been identified and assigned legitimate cost drivers prior to allocating funds to outputs - a major step forward for finance (392-403) The few unit costs we have are not built up from a sensible understanding of the costs - just inputs added and divided (436-446)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T29			<p>People view outputs as artificial because they don't understand how it we've got 135 services how can there only be seven outputs. It's about getting them to see holistically across the service similarities (313-324)</p> <p>Output groups are just a convenient amalgamation of some outputs and largely reflect the divisional structure (573-593)</p>	<p>People are beginning to think in output and understand what it actually means (211-216)</p> <p>People don't find outputs exciting. They think it's modern speak of accountants (365-369)</p> <p>We need someone here who can think in terms of output budgeting but also has the accounting and communication skills to be able to give people a vision of outputs that's policy relevant (386-392)</p> <p>Traditionally people budgeted along fund lines and now they are putting it all together and beginning to develop some reasonable output budgets (217-222)</p> <p>People are accepting that they are going to get given output reports and that the figures will be full cost but it's still foreign for them (342-353)</p> <p>People are taking more responsibility for their budget monitoring - not just relying on a finance person to tell them (640-650)</p>	<p>We still make the decision internally as to how the global budget is divided between output groups (256-263)</p> <p>We deal with central finance people, not normally with DTF directly (656-663)</p>	<p>All the figures in the system are rubbish first off - inconsistent charging to outputs (226-231)</p> <p>output management has made our priorities clearer about the way we were going to manage the business (645-650)</p>	<p>We have developed a purchasing framework about our set of services which is organised on an output basis (203-211)</p> <p>We give our nine regions output group budgets not output budgets and they allocate within that (226-236)</p> <p>DTF and our finance people might think that if we manage on an output group basis that we're doing output management (but we're not) and unless output management is used to integrate the way services are delivered output management can't help solve service delivery problems (573-599)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T27		Every bit of money cannot be output based - even in Acute (287-300)		DTF learned output management from us. We've had casemix and their reform has had no effect on us (258-273)			The systems that need improving are in areas where the outputs aren't well measured - ours are in Acute. People are trying to build a DHS system for the smaller programs when we've got a system that overcame the problems they'll have a long time ago - dumb idea (161-174)
T26		We're always going to provide less information than the DTF output model requires because the complexity of the service system doesn't allow for the full coverage of all outputs that you produce. Further there's management information that is more relevant to our role as service purchasers that would be mad to report up the line to DTF (656-680)	<p>Remained thinking it's better to have the output structure reflect management responsibilities for outputs to work. Especially with output management where management responsibilities are linked to output performance with DTF you wouldn't risk your funding (456-506)</p> <p>Internal restructurings to reflect a different output structure driven by the need to review structures with the new output reporting system (508-520)</p>	<p>Used consultancy to aid people in programs to redefine their output structures and PIs for this budget process (557-568)</p> <p>More refinement in output definitions and people are thinking more about the nature of the business (508-520)</p> <p>Need to still refine further definitions and break down into components. Some areas done better than others being innovative in reorganising the business. Others reflect historical ways of thinking about the business (520-527)</p> <p>The program have been funding agencies more on an output basis (599-607)</p>	<p>Programs have always had planning people and their function isn't much changed but there's more emphasis on performance measurement (592-598)</p> <p>Confusion about the level of involvement by central agencies - too much detailed information could invite them to meddle in DHS management decisions (663-672)</p>	<p>Can use the output structures to standardise some of the processes across programs so that regions can purchase more consistently. Short term gain though because then these structures become inflexible (531-545)</p> <p>We collect more output information than we report to DTF because we use some of the information internally at corporate level (646-653)</p> <p>The implications if we fully implemented the DTF model are too many resources used and an unnecessary level of information (656-680)</p>	<p>Ability to meet DTF timelines in monitoring and reporting is problematic due to the current gas crisis - operational managers too busy to be involved (47-60)</p> <p>Have introduced new output reporting system (519-520)</p> <p>Tight time frame for reevaluating budgets and measures each time (569-577)</p> <p>We don't have the resources to fully meet DTF information requirements (656-680)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T25		The variability of an intervention say from two hours to six months means you can't output cost it (503-508)	We had 29 activities to our two outputs within our output group last year. Refined this year to 21 activities and eight outputs - more meaningful (532-558)	Limited involvement of finance people in development of non-financial measures - now have people with experience in these areas who take lead role (349-360) Were much more conscious of output management now (494-498) There are no output costs in the budget papers (560-568) Output management has already permeated in DHS - we all work that way now, that's the way it is (570-578)		It's an external reporting requirement but we refined them to make them more meaningful so we could work out exactly what it is we are delivering (548-558)	We have developed costs for everything we do and purchase five years ago and use that for outputs. Being refined now (449-460) We are still at the input end of costing - hours of behaviour intervention not what the intervention costs. Headache to constantly rework the unit cost because it's changed (494-513) No change to management information yet - just moving to accruals this year (515-524)
T16				Housing already using full accruals before output management (382-386) True output costing like casemix is a long way off (924-930) Divisions will probably need business managers (944-948) Output management is not new to Housing which is a commercial operation (164-174) There's no output funding at the moment - only outputs (908-909)	Output management will not change balance of control unless departments have control of their assets (322-328)	Doubt the government will actually fund on an output basis - costings too poor (924-930)	Housing has a hundred output performance measures. Other divisions don't and will be effected - need some business management (888-902) Oracle can handle outputs (902) Costing of outputs is very poor. (924-930)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T15	Politicians are concerned about the openness of the reforms because of the sensational way information is used in what is an adversarial system (508-521)	Accrual accounting is next to irrelevant to welfare areas - many people, few assets. Problems of measurement and defining outputs because social workers solve different problems (991-1008)	Output groups basically reflect organisational lines. Debated with DTF about structure and if there is a better output structure but inconsistent with our delivery structure it's not worth changing (1169-1214) CEO has suggested he might prefer a "non-delivery" type structure (marketing, operational delivery etc.) to that of outputs (1480-1489)	Lot of attitude about the MRP. People are sceptical that it will help the real DHS problems. Sense of seen it all before with PB (973-986) Need to help people see how output management effects their job and explain reports (1009-1031) We are supportive of government reforms such as output management and accrual accounting (168-175)	At policy level no change to level of control (536-538) Should be no change in authority to make decisions - same people (1111-1120) Role of accounting staff will have to change to cope with the revenue side - not just expenditure. Must be more linking financial to non-financial (1076-1104) CEO recruited hard headed finance people (1004-1008)	Because people have vested interests in their divisions output management can assist by at least getting enough data in a reasonable format to debate (301-311) output management can have some effect but ultimately politicians will decide how many outputs and at what price (523-533) For managing at the coal face you don't so much need a process like output management to manage your business - the problems hit you in the face. Those processes become important at DTF level when you don't have anything else to tell you what's happening (612-639) output management may highlight issues more clearly providing a lever for strategic funds redirection - useful at corporate level (1317-1333) Two tools are inputs and outputs - you'd have to go for managing by outputs. But an output is only another way of wrapping together inputs where you are not in a competitive market (108-130)	Having said output management is hard/inappropriate we need more hard measurement in the welfare areas (996-1004) Lot of areas still providing expenditure reports without what was delivered - not that meaningful (1094-1097) Not refined output numbers and PIs sufficiently to use then for performance (1516-1518) Casemix is output management which we did for our own purposes (1291-1296)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T14			Similarities across programs may be packageable as outputs, like counselling (1066-1082) Programs turned into output groups; given the speed of adoption we couldn't do anything more (1083-1092; 1113-1116) Output managers are very senior managers (1495-1497) Output structure doesn't have to reflect organisational structure (1504-1512)	Progressing well to be looking at our structure in only the second year (1093-1100) Initially done the outputs to appease DTF but people are starting to understand the new theory (1124-1136) Unfortunately that outputs have been associated with cost reduction (523-533) Reviewed all the output groups and performance measures to refine (1116-1122)	Outputs may be a code word for budget cuts - impressed if they are real about output budgeting (540-544)	Rhetoric is that we should be purchasing outputs but you get government decisions made around inputs, which causes frustration (228-274)	Strategic plan has cross divisional overarching strategies - relevant to change in output structure? (1256-1262)
T13		Deriving unambiguous outputs is hard - it's based on an artificial construct (485-490) For non-institutional delivery it is easier to do output management (506-509)		People understand that we account on an output basis but not concept of full output accrual cost (475-483)	No authority change for managers but will have to make resource management decisions more - relied on input accountants for that in the past (571-579)	We're reporting on outputs but doubt about whether resource allocation decisions are being taken on an output basis (689-691)	output management requires sophistication and specification of information that we are a long way off (209-213; 227-231) BERC submission was not even close to output based last year; at least there's numbers there this year but no output or unit costs (631-644)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T12		Output funding is fine except where there are pressure points which can't be widgetised (248-257; 964-968) Not sure that objective of getting 100% output based funding appropriate (1137-1159; 1490-1499)	Structure reflected programs and we've worked to ensure new output groups match programs for administrative convenience (1103-1107)	In Acute output management is not new (956-968) We've done output based funding before DTF with casemix (139-141)	Inappropriately detailed data to DTF so there's more meddling (464-473) No change to power for managers under outputs (1109-1116)	Efficiency benefit will be limited in changing to output budgeting without less money in the system (148-152) People need training in output management for it to be useful internally but output management is not the only objective - plans, PP (931-945)	Even in well developed Acute, we can't measure all outputs (1116-1132)
T11			Still have program structure which are now called output groups and correspond to ministerial accountabilities (1035-1038)	Some managers don't understand the relevance of the reforms to their work (717-719) We haven't got understanding that accountability needs translating into information systems linking to accountable people (724-734) The culture of general output accountability is accepted (719-724) Output based funding has been committed to for a long time in DHS (866-867)		Will be useful internally because we'll have clarity of the link between inputs and outputs achieved (649-661) Simple output measures don't tell you the more interesting qualitative things which don't exist yet (937-942) We may count how many people got counselling but how do you measure effectiveness without onerous demands on agencies to record (950-957)	Partly need to get the information systems running; tension is that time spent reporting is less time spent managing the service system (738-746) We've got so many activities to report on (749-753) We need to sort out a reporting framework that gives central parts of DHS what they need without burdening regions in information collection (754-759)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T10			Output groups mirror program structures (973-975)	Staff don't know about output management (601-602) but it is a new concept (606-608) CSG understand the output budgeting/output management process, their area of expertise so we don't need to know (642-648)	Output budgeting could allow DTF to dictate operations (276-279) CSG have CEO backing to recommend changes to outputs (627-635) Managers are heavily involved in the budgeting process anyway (667-670)	We've defined 27 activities and we might report on five or six (957 and 972)	Concern whether output management will restrict managers in operating (407-408)
T9	Ministers wary of reform process - concern over portfolio (634-636)		Funding lines don't match outputs (162-175)	Need to guess what requirements reforms will place on them (613-615) Those in finance who are committed won't have the skills (624-626) Casemix background may be helpful to receptiveness (634) Needs commitment at all levels but isn't because in finance area most have old school approach (621-624, 626-629)			

OM-MCS and MCS usefulness in relation to context across the period of study: summarised analysis
Department of Education

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T39		Output management is less well suited to education because there is great variability amongst schools about the specialist services that they provide. It suits well at a general level, like cost per student, but that masks the real picture - so problems with cost allocation (104-126; 161-162)	There's a lot of people that can't be held accountable because management information systems are not currently structured that way (66-72) There is definitely no thought to aligning DOE's organisational structure to its output structure. It would be far too costly (369-377) We are regionally structured not product based. It would be a huge cost to restructure along the output structure and managers wouldn't understand that anyway (151-160)	External consultant has been integral in developing the reforms within DOE because he has strategic, IT and accounting skills (245-249) Much staff change in finance. Some good but others left with valuable expertise. They felt threatened by the changes (842-855) It really takes five to ten years to get embedded cultural change (58-67) We have understanding of what's required to implement output management at the top level but other issues are always more pressing and urgent (186-197)	DOE preference for resourcing at the service delivery end means it is difficult to get resourcing to improve central operations (163-173) There is a general lack of interest about the reforms but there's also active but anonymous resistors within DOE. Comes through insecurity that they lack accrual accounting skills so they might lose their jobs (231-280)	The reforms don't effect people yet. When the new systems come on stream there will be heightened transparency and quality of information (63-74) Dubious as to whether the capital financing charge is effective in changing managerial decision making - arbitrary charge from DTF (785-798)	There's been a lot of front end work in building systems and processes for outputs (63-66) We've got systems coming on stream in July 2000 (66-69) There aren't yet the mechanisms to provide really good quality, user friendly management reporting (70-74) The systems for output budgeting have been developed although I'm not that happy with the way they're working (320-330) We're struggling to meet DTF timelines and will do until the new systems are in place to support quarterly reporting (337-346) Monthly management reporting to corporate board is basically the same as the DTF report but with some commentary overlaid (348-357)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T38	Managing by outputs makes a lot of sense philosophically. It's different in practice because we operate in a political environment (11-28)	Output management is not too well suited to education. It wrongly assumes that we can measure learning outcomes - we're not building cans of corned beef (54-73; 84-91)		From a management perspective we're not well equipped for output management (73-82) Comprehension of output management for non-accountants in DOE is not occurring because they haven't even seen an output management report. It's still just nice words (127-147) Managers are comfortable with the few lines of accrual. They'll be uncomfortable if we make the quantum leap to output reporting (282-293) CFO has not been successful in championing output reform (885-892) Big staff change over in finance (945-949; 954) Emphasis is not occurring rapidly enough for people to understand the significance of output management (121-125) Output reporting is very much externally driven - for DTF. In house it's pretty slow off the mark (152-159) Huge contrast between the clearly directed, enthusiastic education reforms and the output reform emphasis (1042-1068) There's been accrual training for middle and upper		Our outputs are very global (709-712) There has been no impact of output management on staff. Most people wouldn't know what you were talking about if you said outputs. They're still in program mode (1069-1083)	We're purchasing systems and software for output management (120-121) We don't see output management reports yet (132-147) Internal systems have changed very little. It's still all yet to happen (160-179) There's some move toward accrual - just a few more lines in their budget. Still a quantum leap away from outputs (271-293) There's a buzz of activity going on developing data warehousing, new chart of accounts and an upgrade of the accounting systems but it's all back room stuff - maybe in 12 months we'll see these changes reflected in our management reporting (1103-1111)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
				management using a big six firm. It's been ineffectual - just really awareness training and not linked to day to day work (1085-1102) "People saw it as an add on thing and not really related to their work... We haven't integrated into people's minds". We're addressing that problem now (102-115) We'll be reviewing our output structure again this year (147) Overhead is only allocated to output group level "because that's all Treasury requires of us" (287-290) Used consultants to develop a plan for linking outputs to outcomes, but CB didn't want to go ahead with it yet. GM Strategy is impressed with it and we may go forward with it again (808-816) CEO is keen to get output management information used for internal planning and management (1168-1181)			

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T36	We don't have strategic clarity in DOE so you can't link everything back to where you want to be which is essential for any output management system (45-60) Output costs weren't published last year because ministers got cold feet about misuse of information by the media and doubt about the accuracy of the costings (1299-1321)	Many things we deliver don't fit within the notion of outputs. Our outputs are harder to define than other departments. Many outputs are difficult to quantify and have such long lead times before you see any outcome results that it's not suitable for output management (26-38)	We're looking at assigning clear accountabilities and responsibilities for outputs which will be hard because our outputs and organisational structure don't match. It will be more changing outputs than organisational structure, but both (148-228) There will be some structural changes in DOE but minorly driven by output structure (212-228) We'll need to get responsibility to activity level (237-277)	We've had people within DOE experienced or learned about outputs who have taken on the reforms and have been willing to work it across DOE which helps. But it's been seen as high level department connecting to central agencies and not connecting to people's day to day work (116-124)	Some tensions between the CFO and GM Strategy. Personality and who's got the lead role which has probably hindered emphasis (309-324) Secretary is very open and prepared to give DTF all the facts (477-482)	It doesn't make a lot of sense to have full cost allocation to outputs because the information is not that meaningful (298-307) output management has probably helped administrative performance. It makes things more open between the DOE and central agencies (475-477) output management information is only used by Strategy and Finance for central planning and budgeting to DTF and annual reporting (1168-1176) Output information that goes to DTF is not meaningful. It is the best we've got but it's not meaningful enough for them to make decisions on how we are performing. Also, the invoicing is a false process because they haven't set a price. Setting a price is incompatible with their forward estimates approach (1187-1203) Unlike the outputs we've been able to give them meaningful information on specific initiatives like literacy (1234-1267)	We're going to institute output service delivery plans for each output so people have to link them to their operations. Before we just had PMs and targets (155-164) We have very little control over the main measures that we have in place for some areas. Retention rates and VCE pass rates are really descriptors, because they are mainly driven by the economy (229-235) CFO has a project to map cost centres to outputs. We'll have to have much better resource and costing information for our outputs once we get the money on the basis of delivery (245-261) Overhead is allocated to output group level and CFO is keen to go below that (287-298) Changes to information demands - divisions are asked for in terms of outputs and relationship to priorities. Budgets have only been given at Office level, divisional budgets are not in place yet so there's problems (1151-1161). At our management level there's been no real change to management reporting (1166) Old Secretary said our performance plans would be driven by output performance but nothing came of it (756-760)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T35		Our outputs are harder to specify than some other departments once below output group level. Even though we can cost outputs separately, they are not divisible upon provision to customers (560-584)	Output and organisational structure is not yet aligned. We are in the process of trying to get those output accountabilities established so that we can move from output budgeting to output management (645-658) In some departments the output structure almost matches the organisational structure (695-703)	We're not rolling out formal training for managers until we're putting in a new system. You don't just have training where nothing's actually changing (736-746) Managers understanding of accruals is patchy (747-750) "I'd say output budgeting has been implemented because that's the way we prepare our budget for discussion with government. In terms of the actual management of resources within the department, we are not yet on an output management basis" (633-644) Performance measurement development involves only senior management at this stage. It will only get lower involvement when you get below output level (725-734)		DOE would not have adopted outputs to improve internally without being pushed into it *because ultimately the value has got to come from managers seeing value (541-551) Managers will find output information more useful than what they've had once the culture changes. It won't change the way they manage overnight (765-784)	Costing systems still need work to manage outputs (642-645; 695-703) Added complexity for us to develop output systems because our cost centre budgets can't become our output budgets given the structural misalignment (695-703)
T34	OTFE can reject clients, Schools cannot. So OTFE can use student contact hours as a funding mechanism which won't work in schools (94-108)	Reporting requirements are easy for OTFE to meet because we are actually buying what we record (132-159) Although the quarterly reporting is inappropriate for measuring progress against targets when 95% of enrolments occur in one quarter (166-173)		We had output based funding in OTFE before DTF thought of it but not in the other areas of DOE (17-34; 110-124) We have raised accrual output issues with DTF that no other department has. We are far advanced with outputs and accruals (914-929)	Cash is all powerful and DTF have to control the cash so they're paying lip service to funding outputs (911-913)		The outputs we have set are easily measurable. It's a waste of time setting output targets if you can't measure them (88-92) In OTFE we've taken the output model to extremes. We take money back from institutes for under delivery and we're moving toward outcomes (66-73)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T33		Implementing outputs should be easier here than other departments because we've really only got two major businesses and one other. It is a concept of PEE (49-58)	Problem to manage by outputs with management responsibilities not matching up with output lines (40-47; 79-81)	Haven't fully implemented output budgeting but have begun to realise that it might work, provided problem resolution occurs (17-30) With output budgeting we're moving toward a goal of a proper budget process along output lines. output management is more problematic (32-37) Some managers think it's all nonsense. They want to go back to the old days of "give me a budget and I'll live with it" (147-149) Better skills in DOE regarding outputs and accruals than in DTF now (808-809) Outputs are now part of the language at corporate board, which is a recent development (17-30; 73-74) I'm more optimistic that the output principles and their use is beginning to filter down a bit. More in OTFE than Schools but it's changing with things like Self Governing Schools (143-159)		Outputs still need refined specification so there's still uncertainty about how we should manage (37-39) Limited usefulness so far. Hasn't made a fundamental change but has helped us to think about what we do, why we do it, and who we do it for (761-813)	No change to internal management reports (32-37) output management is a big problem for the information systems that management reports on output group lines don't complement management responsibility (40-47) Systems to support outputs are being developed in finance area (131-137)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T24				Taking a long time to sell reforms to the CB because they don't automatically understand that they are best practice. If they had a wider background they would just automatically accept it (136-164) Finance group has been back room and process oriented and suddenly they've had to manage a change process around providing management information. Also been viewed as back room by department, so credibility in driving the reform is an issue (170-180; 192-194) Some staff couldn't cope with the change and left which aided, allowing hiring of appropriately skilled people (216-219) We are next on the CEOs agenda for a staff briefing session. We've left any training or general communication to closer to the time that people are going to use it. I don't want to waste resourcing on that when they'll forget by the time they're using the new information. We changed the budget process and had seminars for that. There's no appropriate departmental medium for communication (228-259) SP held accrual training previously, but there will need to be more to help managers with their year end position (312-327)	Resourcing has been a problem. Need hump resourcing to change from processing to higher value added people (170-171; 196-216) DTF has provided us with some resourcing which assisted us greatly, but internally it's been difficult to get resources (220-225)	My guess is that some managers find the reform burdensome and they didn't like the change in the budgetary process where they have to build up their own budgets. It's less time for them on the job they really want to do (328-341) Better informed managers think the reforms are fantastic (354-363)	It might be another twelve months before people have to deal with all the information changes. We've seen some of it like devolving the budget process to managers. We see managers delegating their budget responsibility to staff without checking the information though (253-269)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T23				<p>The MRP is distant from managers – they've heard of it but it hasn't impacted upon them (283–288)</p> <p>It will embed once our new cash budgets are reframed then we'll have to work out how to use them, provided we can see benefit and it's not just for DTF requirements (289–295)</p> <p>When the structure and the funds we receive are on an accrual basis then it will have meaning. Sure it's important that we know about full costs, but the decision making processes haven't been changed to an accrual basis (158–168)</p> <p>So far the CFO and working group have done well in pulling the reform together. They understand and are comfortable with the reforms. But the critical stage is about to come, which is selling that message to the wider department. Hardest stage because you're committing and if you don't deliver people get disenchanted (297–320)</p>		<p>I'm waiting to be convinced that accruals will be more useful because we've got accrual accounts in the budget but we haven't got accrual budgeting (152–159)</p> <p>There's been little impact from reporting output group targets to DTF. We've been reporting targets – some useful, some not – federally for years which is a requirement of our funding (391–412)</p>	<p>We've had accrual accounting for a couple of years in DOE but it's up there in our discussions with DTF and not easily accessible. It's not used by line management (145–150)</p> <p>We work to cash budgets (289–291)</p> <p>We tend to meet our targets – we set targets that we know we're going to get (393–399)</p>
T22			<p>Dilemma that outputs aren't aligned with the organisational chart, so who's going to drive the outputs – or do we hope that outputs are also key</p>	<p>Consultants have been brought in to help develop systems (71–75)</p> <p>Cost centre managers need a lot of education in financial management to adapt to the</p>	<p>People who headed up programs head up output groups. No change in authority (784–798)</p> <p>Finance people think the centre of the universe is</p>	<p>Whether we call them output targets or PBs or PIs or balanced scorecards it's all the same thing – it's nothing significantly new (109–125)</p>	<p>Systems for outputs are being developed but still at early stages (75–78)</p> <p>Haven't seen any change in reports yet (487–494)</p> <p>Output development and</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
			<p>cost centres? There's only responsibility at output group level – very high (758–798)</p>	<p>government requirements. Huge challenge for finance managers to get them there (78–83)</p> <p>Huge changes in finance area – means new blood but also a lack of organisational experience (193–215)</p> <p>CFO may have had the right background to implement outputs but CFO is limited in ability to drive the reforms. The environment here is different to CFOs experience and CFO doesn't communicate clearly or have the networks (464–485)</p> <p>If financial reform is a key strategy, the alignment is not there between the reform strategy and what we are doing (170–176)</p> <p>Outputs are not a reform in their own right but just a mechanism to help us, whereas the Schools reforms have enormous impacts (234–247)</p> <p>There is a plan for report development, committees and processes being put into place and target dates to get accrual and output reports happening (75–78)</p> <p>Operational managers don't know what the reforms are – it's all just words. The action isn't there yet – we're</p>	<p>financial reform and it's not (387–391)</p> <p>Operational managers resist the reforms because they are very busy dealing with educational issues and don't want their time wasted unless they can see value (428–462)</p>		<p>cost allocation has not been done very scientifically – didn't have time (746–756)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
				<p>dragging our feet (99-111)</p> <p>People are expecting this big revolution but it's an anti-climax. It will fail if people don't see positive outcomes when it's implemented (124-154)</p> <p>Low level of commitment and enthusiasm compared to Schools reforms. Minister was totally committed to Schools reform (346-363)</p> <p>It's not a failure but it's not going well - still early days (484-485)</p> <p>I'm not briefed on the changes and I'm meant to be a champion. Those driving the reforms internally don't know how to influence and inform people (495-517; 836-840)</p>			
T21							<p>DOE are working very hard on improving MIS and their output costing systems and so on (4-14)</p> <p>Very little change to PL: (49-56)</p> <p>Under PB DOE really only had input measures like number of students participating. Now we have lap testing or VCE results which is outcome focused (309-324)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T20			<p>Organisational structure and output structure are closely aligned, but not exactly (104-123)</p> <p>We've been constructing a draft list of managers to output responsibilities but that hasn't been ticked off (125-132)</p> <p>The draft output responsibility structure is just cosmetic over the top of the organisational structure (170-193; 213-224)</p>	<p>CFOs framework didn't quite work when you came to do the actual budget but it raised people's awareness of the relationship between their budget and outputs and to the departments outputs. It was new to a lot of people (296-307)</p> <p>In a PB sense the people in the draft document at the lower level would have had the responsibility for an activity but would not have been held accountable for it (152-159)</p> <p>We've tried to come up with intermediate inputs for our division and put them into our business plan (241-246)</p> <p>We've got a long way to go to get people to make use of output information (330-334)</p> <p>Minor cultural shift has taken place in Schools (684-699)</p>	<p>The same people who had responsibility for activities or sub-programs are the responsible managers for the outputs and activities now (142-159)</p> <p>Tensions between finance and SP areas but they are working together on the DTF quarterly reports (740-748)</p>	<p>People would still say outputs are an overlay - something extra to do. output budgeting will be a useful thing internally when we get people to make use of it (328-335)</p> <p>Some managers have been happy to be involved, using outputs to structure their own planning. Others have said it's an overlay on what they already have to do (700-721)</p> <p>output management is not useful to management yet because it's so macro. The PMs in output reports we use all the time are national measures we had before anyway, like teacher/student ratio. It's useful to DTF (920-938)</p> <p>Managers are documenting outputs rather than using the information for planning or managing (935-938)</p>	<p>People have to convert figures they're already using into an output format which doesn't really work (334-337)</p> <p>Our PMs are the same as we've had for a long time. Minor changes only (336-393)</p> <p>Performance measurement for managers is not related to production of outputs (566-574)</p> <p>But PMS people are keen to link individual performance through departmental level outputs (617-622)</p> <p>Each output has PMs but some of those measures don't change much during the year, are measured annually and we have to report quarterly (133-140; 337-360)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T19			<p>We've devolved the budgeting process to the operational level because those responsible for producing the outputs need to be held accountable. We still need to refine the output structures though - early stages (141-165)</p> <p>The existing organisational structure was consistent with cash input based accounting and management concepts and appropriations. It doesn't really fit the output structure. Other departments have realigned their structures so you get a direct line relationship (305-312)</p> <p>Once below the Deputy Secretary level it's hard to tell who's responsible for outputs (314-350)</p>	<p>Many of the accounting and budgeting staff are struggling with reform. They were skilled in cash basis accounting, transactional processing and compliance reporting (74-83)</p> <p>We need to train the operational managers in business concepts that we've now imposed on them - we don't have the resources to do that at the moment (176-189)</p> <p>Some of the managers don't have the background necessary for the new management concepts and they're learning it as they go (727-730)</p> <p>New budget devolution seems to be positively received (186-189)</p> <p>Questioning whether it's valid to include overheads in unit costs - if not may have to convince government of this (268-274)</p> <p>Until recently there was a feeling that the reforms were just another government initiative that people could let wash over us but that's changing - the new budget papers have been a message that this won't go away (364-386)</p> <p>The corporate board they are fully across the reform now and the general manager level is getting there. In Schools it's still business as usual but it's starting to change. There's a much more focused approach to the management of the fiscal responsibility (377-386)</p>	<p>Feedback meeting on the budgeting process suggested that the managers welcomed the opportunity to take control of their own budget destiny (167-175)</p> <p>DTF have devolved the responsibility to us partially, trying to retain control of the cash - we need to work this out because it is flawed (491-521)</p>	<p>We've just been debating whether we should try to allocate overhead to outputs or just have an extra output group for overhead - question of whether allocating is providing meaningful information to managers (260-288)</p> <p>DOE is more focused on being innovative in providing the best services than on cost efficiency, which may not sit well with the output process (577-584)</p>	<p>We currently build the cost of overheads into the output price using a fairly rough rule of thumb for allocation (280-286)</p> <p>They didn't cost outputs, only output group because the information wasn't robust enough (326-327)</p> <p>To measure units of contact hours is very easy in OTFE but in schools it's very difficult (346-348)</p> <p>We've developed an output costing structure which is not strictly true output costing because we don't start with a blank sheet to cost what we do (584-586)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T18			<p>Until we've linked high level outputs through a value chain to low levels and link in all the managers contributing along the way output management won't be of value to managers (380-388)</p>	<p>All we've done is put our existing PIs into a common framework (245-248)</p> <p>It's more accrual budgeting and reporting at this stage. output management is very much in the embryonic stage (388-389)</p>		<p>Output management is currently only of benefit to DTF. It's an external reporting tool at this stage because the outputs are very highly aggregated and there isn't an accountability chain to managers yet (371-389)</p>	<p>Our non-financial indicators have not improved or changed much. We've been working with PIs in education for a long time - little impact of output management (236-248)</p> <p>Managers in the field are not getting different information to before (368-370)</p>

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T17			DOE is not structured by output group. You can still have an organisational matrix with an output overlay on top (279-284) Output identification is always difficult (359-362) Reconciling the organisational structure to the definition of the output groups is difficult and therefore the issue of which line manager(s) accountable and responsible. You've got to assign responsibilities for output groups across the corporate board structure (359-367) Output groups don't entirely match the organisational structure - they're more highly aggregated than the Divisions, but no shared ones between divisions (635-650)	There is a healthy degree of scepticism that output management is the latest fad that began with PB in the 1980s (378-388) There will have to be some brainwashing and cajoling but it will gradually infiltrate (390-394) We are appropriated dollars through the budget by output group and we report to DTF that way, but that's about where we stop in implementing output management (274-279) We are currently working on linking what happens at school level to the budget paper outputs but it's not happening as quickly as people would like (286-290)	DTFs role has always been important because they hold the purse strings - not necessarily more important now (729-741)	It's difficult to relate the outputs in the budget to practice on the ground in terms of decision making and accountability (284-286) When accrual becomes part of the culture we'll use it (322-328) Accrual information will become useful if the appropriation of accrual (330-342) Output management has enhanced the trend we had already toward performance measurement. Now because they're published you pay more attention to how appropriate they are because somebody somewhere will measure you by them. That's been helpful (773-781) We're not used to using accrual stuff and that's partly why it's not useful (322-328)	This division is fortunate that we use student contact hours as our measure anyway which are readily measurable and it's one of the outputs we publish (279-284) There's some accrual stuff available now (322-328) Plans to change the internal reporting format for corporate board to match that required by DTF (344-357) Need to get good accounting and financial systems that allow you to extract the information and read it (367-377)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T8				There will be no cultural change until the reforms are embedded in DOE. You get the reforms first and then the cultural change (698-708) Reforms have no effect yet. Too recent and very high level - so most managers would be unaffected (113-117) "I think the CEO here has most probably done it (driven the reform) through the formal structures in the organisation" (761-802) Intend to choose people within divisions to champion reform who will not just be finance. Nothing done yet (786-800) The project scoping is a formal change strategy for the management reforms (1107-1116)	Managers have more accountability on them than they ever had before and it will appear to them as an adverse move (123-132)	Some managers will find the reforms a bonus in helping with resource allocation decisions. Others will think it's a burden to have to report (123-132) From a DOE and senior management perspective it will provide greater ability to manage resources (123-132) Managers will find it superfluous at first, but with training, time and communication from the top that the information is important will find it extremely useful (820-830)	We're trying at the moment to get the systems and structures into place to implement output management (118-122) output management will create a need for strategic change to cost efficiency (908-920) We've only just done our budget allocation for the first budget round next year (1068-1071)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T7	Output information is just free ammunition for the opposition, same as with PB – not helpful in this environment (318–336) Strong desire but you can't be completely rational in applying outputs because of the democracy (399–408)			Past developments make moving to accrual budgeting an easier task (435–438) OTFE is seen by DTF as a leader in developing output type management approaches (565–572) In terms of output management OTFE staff are all aware of the concepts of college autonomy where we buy a service and expect a certain quantity and quality (607–622)	Output funding won't influence relations between the centre and DOE because the outputs aren't very useful and most aren't really outputs – policy not funding position (311–320) Within finance the move to accrual budgeting has been painful due to a lack of skills. The functions have been deliberately kept separate and the development of output arrangements have been done by non-finance people (701–711)	Reported outputs are not very useful (311–320) Moving to accrual budgeting makes a huge amount of sense (435–438)	We measure things in house, but for public documents it's very difficult to do (338–341)
T6	You won't get the reforms to work because they are commercial and we are not. We are different to the private sector in our operations, our thinking and our accounting structures because we've made it different to fulfil our objectives (765–776) Danger that output information may tell the government things they don't want to know (1085–1088)	Outputs are not going to be helpful unless we closely link them to the outcomes managers want – sometimes the outcomes are very difficult to score (471–488) Output model will not fit all schools (1651–1656)	In real accrual output budgeting we should have all control over monies devolved to us – that won't happen (707–726; 730–764) Business units are unique and that's okay, but the problem is that the outputs and the organisational structure don't mirror image. So we've got the same problem as with PB that people need to be in charge of the outputs, but if we do that we have an additional matrix making the structure even more complex (1285–1357)	Lovely business for all those consultants – you just wonder – gravy train (513–517; 1804–1818) Need to make the information understandable to the executives. That will have to be our skill (578–597) I'm unclear about the reforms so my business units must be more unclear so I don't know how they are going to plan (984–989) Reforms are just a mechanism to get the AAA credit rating (1058–1065) Reforms are not called changes because that frightens people (1819–1827) Reforms are hardly different	New information is threatening to managers because they don't understand the fundamentals of accrual. Managers will totally rely on finance even more than before (598–617) Managers will be very involved in the output processes – they were with PB (1606–1616)	We work around having to bore schools with accruals by using the schools cash accounts and adding accruals on to them centrally (152–158) Our goals are not going to be achieved through output management. It is possible output management could help achieve high quality education but only if it's an in house initiative and it's not (508–524)	Schools are not on any accrual accounting so that has difficulties (128–131) To properly cost the literacy and numeracy output we'd either have to do some sophisticated time card system in all schools or do it roughly on estimated teacher time spent. But because we haven't been able to develop these cost indicators the danger is that the figures are not accurate in the outputs. Developing good drivers is very complex in services (1358–1372) Questionable whether it's

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
				from PB – just jargon is different, but perhaps this is an attempt to treat it more seriously. Time will tell if it succeeds or not (82–94; 919–940) Lower commitment to output reforms than the internal ones. People think reforms are fine but are not convinced of the benefits of reforms to gaining better outcomes such as literacy (443–470) Greater commitment and speed of emphasis with internal reforms even though they were much more complex than outputs because we wanted to do it because it was to give schools more flexibility for better outcomes (534–577) Outputs are externally driven so it's hard to gain commitment from say people in curriculum who are very distanced users somewhere down the track. There's an enormous lag between emphasis and effects to them (1548–1562)			desirable to introduce accrual accounting at the school level. If it's just so DTF can consolidate it's of no benefit to the teacher or children. We have over 500 one or two teacher schools in the bush and it's silly to expect them to use accrual accounting. Perhaps there is a case for the large secondary colleges (132–151)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T5			No structural change yet but under consideration perhaps an additional output matrix (699-710)	There's a lot of work getting the necessary systems into place and a lot of change in the organisational culture to get the full benefit of the reform (155-158) A lot of people here don't have the necessary commercial experiences to help them adapt to the changes (298-302) Our minister hasn't seen the benefits of the information yet. There will need to be education for him and people at every level of DOE including finance to use it (623-636) People are positive about the reforms. We're not just complying with it because DTF are pushing it (637-642) Many people are cynical that reforms will be like PB where nothing really came out of it. They can see some of the potential benefits and are committed to that, but they don't believe the whole story they are being told (783-796)	The quality and accuracy of the figures must improve over time but people know even if you put the qualifiers on that there will be comparisons on cost which will be inaccurate, with the risk that DTF will say, "we can get this cheaper from an outsider" there is concern about that (491-512)	Reforms will help us to understand how much it's costing us to produce services and allow us to benchmark. It will give the Minister and our executive far better information to make resourcing decisions (145-153; 797-799)	What we've done is looked at our inputs and apportioned them across one or more outputs accordingly. If more than one we work it out on staff time or floor space. This was a first attempt just to meet DTF timelines. In the next six months we have to build the system that's going to produce this information automatically from the general ledger system (471-490) Many problems to overcome to implement. Different definitions, systems to get into place, allocation rules agreed with, and we haven't even looked at issues of fixed and variable cost (530-553)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T4				People have felt it's externally driven by us - corporate strategy (91-106) View that it's just an external requirement - some change now because the review process kept some measures in DOE (120-138) Lack of skills in the Schools area for planning (142-155) Output management gets associated with budget cuts but it's coincidental (792-804)	Accounting staff won't have more to do with evaluation of departmental operations but operational managers have been more involved (1304-1315) Getting output management into place and getting it to work properly will be difficult if there is not more openness about budget allocation - tactic of senior managers to give their managers a budget without knowing what anyone else's is (1794-1810)	People are starting to see the output processes as valuable (91-106) It's been helpful to develop a departmental wide perspective (428-436) Some of the measures may be very useful internally at a less aggregated level (1319-1327) Planning and budgeting relationship is very murky - output management could help with that (1794-1810) Was doubtful that commitment would be gained for reforms until feedback from review process where managers realised it was useful for their own planning processes as well (1223-1236; 1278-1288)	People haven't come to terms with documenting their outputs as a department properly (554-558) We still need to refine the outputs - not satisfactory (1316-1318) Feeling in Schools of "what does this have to do with what we want to achieve" whereas in OTFE there is a central planning focus already (139-145) Outputs are very aggregated - you lose things in the aggregation (578-585)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T3				We've been asked to make major changes in the way we do busi. s - output management etc. are being introduced quickly and we've got a long way to go to respond - steep learning curve (99-107) Senior executive level have their heads around output concepts (286-296) Lack of professional accounting skills - more needed (504-511; 1207) More awareness of the need for change than in other areas (523-525)	Service delivery people think accountants get in their way but accept that you need a budget although don't fear the budget will be the driving force (556-566)		Output concepts not down to operative levels yet (286-296) Accruals only being reported externally (489-502) Much refining needed of performance measures - managers involved - before not because it was just cash budgets (720-755)
T2				Financial people don't have skills to develop Pls, just the cost side. Need to train up operational managers (351-375)			Need to develop systems to track performance for outputs. Oracle can provide output financials (373-388)

Source	PEE	Technology	Structure	Culture	Power	MCS Usefulness	OM-MCS
T1			We were a program and now an output group - hasn't effected our structure although output groups are beginning to change over time, but it could (742-752)	Risk that output management will end up like PB - just publish something to keep DTF happy, not to manage with - may be a fad but line item budgeting is silly (424-447) Staff in the financial area of TAFE understand reform (688-691) Output budgeting is no more than words at present - just definitions, no quantity and price debate (320-332) Acceptance of outputs by TAFE because we were already doing it (703-719)	Development on outputs and Pls is mainly being done in the strategy area, little in budgeting - accounting people being left behind but need to integrate the three so that outputs align with operations and are able to be costed (770-789)	If output budgeting is not used in the BERC allocation process or in discussions with DTF it is no use (449-452)	OTFE has been used as an example by DTF as what to do (403-406)

Appendix 3n Education MCS

Mechanistic

(The performance plans that you were talking about, are they linked to the business plan?) Yes. (And to the budget?) Yes, both, yes they are.

There's a very comprehensive reporting package in place that covers finance, budgets, personnel, staffing... (Is this the Oracle system?) Well that's the storage data for it, but it's an information package prepared by the resource managers over in the finance group. It's a corporate management information package that goes out every month. It draws information from the finance system and the personnel system as well as management information in relation to policies and projects and initiatives that are currently running, how they're going and what they're achieving. It's a fairly widespread thing.

...in terms of a reporting structure and a budgeting process here that was very, very elementary in what I would regard as commercial or professional standards. So I've introduced a whole lot of concepts there...

(So each division has a separate business plan?) Well the department's got a business plan and each division has a section of it. I don't think it's all that well developed at this stage yet. I think that a lot of it's produced at the higher level, and not really at the lower level yet.

(Okay, so there's not much ownership of it by people if they've not had much input to it?) Yeah, I think that's coming. I think that's starting but I think at the moment that there's room for development in that area.

It... (is) particularly the case with TAFE, I mean we haven't got that far with schools yet. The sort of contracts they have with TAFE institutes is quite strong. They have to deliver the hours in the business areas and the industry areas. If they don't then there are some consequences. I mean it's not automatic - they obviously go out and talk to them about it, to find out why, what happened, why didn't you do it? If there are some reasons for it obviously it's not a problem, but I think it's happened once or twice where they actually write to the TAFE council and say you didn't deliver. We'd like our money back or something like that anyway.

...found difficulty. Because we've devolved responsibility means that we've increased the accountability. So there's a lot more work involved in that in terms of we have an annual review or training review process and we've got annual processes that schools have to do and then from a simple administrative and finance side because schools were dealing with a whole new model and a dollar budget, and the budget is quite a detailed budget and there's a lot of rules and restrictions on it, or there were at the start...

...technological change from this end, is when you're coming from a traditional line item to a global budget, it means that you want to put the whole picture together. That in other words, you now have to produce for them regularly - and we do it fortnightly - a financial report at school level, cash as it may be, budget allocation and expenditure on all their credits, which

Organic

(And is that fairly obviously linked or are the objectives very motherhood so you can fit anything into them?) Yes, I think that's probably more the case, they are in theory linked to the business plan. What we've got to try and do this year in the performance plans is make them a little tighter. We've got an operational plan for the division that we've just completed, we've now got to make sure that the specific projects in that are, draw down to individual performance agreements. But in truth I think it's more the motherhood issue at the moment.

Well the issue is that performance measures and - you know we're continuously refining our performance measures, both measures of financial performance and also measures of effectiveness and quality of service delivery. So the accounting and budgeting people aren't going to have any enhanced role in monitoring performance.

(So this is the new system that you're talking about? So Oracle is not helpful then? Does Oracle have a facility for collecting that sort of data?) The financial data yes. (Ok, so the other system is to collect all the other sorts of things?) Yeah.

...use it - when I say that, there's still no real understanding that they've got to work within their budgets, because they've always had a blanket budget and nobody ever worried about it. Now I think they're starting to realise that each unit and each centre has its own budget and it's own responsibility, so they're starting to come back to us seeking more...

...putting together a monthly management reporting structure based on staff budgets as well as dollars on staffing establishments. So who are the people they've had in their budgets at the start of the year, who are the people they are actually paying, and why is the difference there and what's been done about it and that sort of thing. We hope to bring that on stream in March this year. But we've had to develop that up ourselves. And they're the sorts of things that I feel ought to be the prerogative of the corporate system but they're not.

(To what extent are budgets and targets used in the performance evaluation of managers, and how are the staff evaluated?) Well, budgets and targets - I've just started to introduce a whole new reporting mechanism now which is based on that traditional methodology. For the first time I've broken up the whole department, well certainly the Office of Schools component of the total budget, into its various cost centres, and linked those cost centres back to individuals. So each individual manager has got to report back against his own budget. That's a concept that's foreign to most of them, so they're grappling with that at the moment.

...managing the budget even at my level I don't have a... budget for my branch, there is a budget for our division of 26 which our general manager of the management group has responsibility for obviously. But there's not really a performance thing as such. He likes to consider it as a divisional budget which he can use back and forth across things so yeah. A bit of flexibility there I suppose because it's only quite a small division. So staff that I work with, it plays very little part. And even, well I'm speculating here, say in the Office of Schools where you've got people in Schools area who have responsibility for certain programmes, some of them would have - for some of them managing the budget would be part of their performance, but others very little part again. There's a lot of information (that's used internally) there'd be population information from ABS that would be used.

...thinking in terms of our budget planning, it tends to be on a short term focus. Okay, what do we need next year rather than what's our plan going to be over the next five or ten years. But I think, you know, we'll get there...

Well, take the facilities people, they would use what they call from the demographics they use a lot of the specific indicators that are used for planning permits. So they would have a fairly good feel of the number of new developments that are occurring, the number of pockets of developments, the number of households that are occurring, not over the next two years, but over the next ten, fifteen or twenty years and so... (So they go right, we're going to need a school there in 2005?) Absolutely, and in fact there's a fairly strong liaison with the local councils that when a piece of land is being developed, is that we the department sit on that inter departmental committee, which basically puts the hand up and says right, that particular patch there is reserved for educational purposes. So there's fairly good inter government...

(Any specific things that are being benchmarked at the moment?) Cost per capita of child education in primary schools, secondary schools. Learning outcomes you know literacy, numeracy, corporate costs, corporate costs of the percentage of people employed, compared to industry and international... to meet their local needs. So while we do have central planning, and try to get some sense as to the way the markets might be going, we recognise that really it's very important that the institutes themselves can respond flexibly to the local run.

Well it not so much changed - we are certainly increasingly strongly moving into quality systems. All TAFE institutes - within the Office of Training and Further Education - we've adopted the Australian Quality Council procedures. Institutes - virtually all of them are ISO 9000 accredited and they're also

are their salaries and their payroll and cash elements...

...organisation, this is huge. And it meant payroll systems talking to asset systems, asset systems talking to accounting systems, accounting systems talking to other physical asset systems and so forth, all bandaged and put together in a particular cohesive set of systems which we call CASES. You may have heard the term you may not have, CASES is computer assisted environment in schools. It is a suite of software products which is atypical to Victorian education. And that allows the integration of lots of pieces of software at school level. So they now have the administrative systems to be able to 1. Extract their global budgets fortnightly, 2. Process the payroll, 3. Administrative systems in student records; physical assets, what rooms are in the schools, what needs to be fixed, what handles are falling off, what spouting needs to be fixed and the affects of that - so the physical assets, 4. The statistical returns, there's probably one or two other little suiles there. So they have a number of integrated, incorporated pieces...

The new HRMS system controls certainly obviously all the trails and all the sort of things a good system needs to have. It's bigger, it's better, it's faster, basically it provides a lot more flexible information to schools. We'd probably have one of the biggest outsourced, biggest multi-user payroll system certainly in Australia and probably somewhere in the world as well. You've got 1 700 schools tapping into it at the same time, simultaneously all feeding into one data base, it's quite a complex system.

...they still do quite a lot in the principal performance. So they do a lot of the assessment, principal assessment. Shouldn't say this but they're almost like, a lot of them like inspectors... Well, they'll review the principal's performance annually, yes you have, no you haven't - achieved. That's your six out of ten, eight out of ten.

...send across the money, we have a performance agreement with the institute in which we're asking them for various performance indicators to report, to be accountable on the basis of various performance indicators. And they report on those, and if they don't deliver then it affects their funding next year.

We have an operational plan, each branch has an operational plan and that's the basis for the development of the individual plans.

...think it is interpreted in some way down the management structure in the sense that there's certainly a strong, an absolutely strong command in a sense, not to overspend in any sort of way. So you know this is the budget, and you keep within your budget. So, at the top it's seen as achievement.

moving to HUC procedures as well...

...a coherent view as to what they want to do. And we also develop or support the institutes in the development of their systems. Like we're working on a student management system which will, or can replace, the other management systems.

So they have tremendous autonomy. But apart from the requirement to abide by general public sector accounting standards and financial regulations and legislative requirements, there's very little detailed control that we have.

...compare between institutes. So that we get statistical returns and information returns from the institutes that enables us to say, to compare some ratios, financial ratios, asset utilisation and a number of things like that and we put out to institutes, or we put out to councils, the performance against these, of the councils, on each of these areas, compared with the average of similar colleges. So we break our colleges up into three groups and basically they rate size and then compare - then in the information we provide - say for a middle sized college we'd say this is you, this is the average, you might want to think about why you are so much less. The aim of that is not so much to control from our point of view, but to give the councils of the colleges some information, which they can use to question the performance of their college. We've had Oracle Financials go in, in terms of the financial reporting side, but there'll be more information systems, more in the line of sort of EIES... information systems that will provide, which will basically tap into the information bases that we have available and bring that information together in terms of an easy, assimilated format on some key performance indicators. Some of those will be financial, some will be non-financial...

...ways of doing things better basically. But one of the things that has been introduced recently, is signalled to be introduced and starting to come off is the whole quality management program through the AQC. So, you know the whole focus of that is quality, and I don't know if you've run into anything about total quality management but total quality management assumes quality without increased cost in any way or quality with reduced cost. It doesn't assume quality with increased cost... the AQC have apparently said that one way of increasing school efficiency by 30 per cent was not to teach children things they already knew.

...a more formal accountability in respect to, a lot more transparent reporting hasn't been there and it's that side that's now going in. So, and the benchmarks and the performance measures. So I think the structure is there for it, it's just that it hasn't been a requirement and so the accountability's really been at the top level and not managers formally reporting back in terms of a formal process against budget. They may well have done against other indicators, in terms of their work programs and things like that but not being held accountable in a financial sense. So I think that it's there, it's just getting more formal in a sense in terms of putting in those performance measures. In a financial sense they haven't really been held accountable for those decisions, because there's been no way of managing their accountability because we didn't have the information.

Yeah, we do it in two ways. I'm a bit of a fairness... so I tend to get them to report on a bullet point basis in two parts. One which is the sort of urgent stuff that has to be done and the other part which is important but not urgent. So the quadrant that's about sharpening the saw and strength of the organisation, so what are they doing in that area. So that's a focus as well. I mean what are they doing in that area? So you know, what are the urgents or the exception report stuff, or how they are going on particular projects or what is the stuff that they are doing to improve the organisation qualities and procedures or what's happening.

We can say that there is, that the model is implicitly in place already with school global budgets, and school charters and things like that. So you know, they're funded to a formula and they manage within that formula to provide the services. And it's just there at the moment and we give grants to private sector schools. So at the moment you know private sector schools aren't receiving the funding that the public sector schools are. But, so in a sense, and this is sort of a contractual relationship and we compare the costs, we can compare the costs from school to school. So, you know we're sort of on that track. It's just not as explicit as it is on the TAFE side.

...strategic planning area that one because... they benchmark all the educational performance and things like that. So there are a lot of (non-financial) benchmarks.

Human Services MCS

Mechanistic

The main change has been a greater emphasis on key performance indicators and outputs essentially, to be much more responsible for the outputs and that we are actually going up for a budget bid for whatever percentage growth we need to demonstrate that the outputs will grow in accordance with that. So there's been a greater focus on the measurement more than anything else. That's been the main change, and that's been quite good in a way but then again it's probably going to be our responsibility to take that and to disaggregate that down to all our funded areas and the agencies in the end so we have this consistent set of service targets between what we need to report back to Treasury on and deliver on, and what individual agencies need to do as well so there needs to be a direct link between the two. As long as you can specify the contract that things such as research have to be delivered and have a way of measuring it – so research has to be delivered. You use KPIs to monitor it. So I think the problems in the past with CTC has been an overspecification in the way the services have been delivered rather than focusing on the services to be delivered. If you've got a miserable budget performance you're going to get flogged. If you've got a good budget performance you'll get a pat on the back. (And how do you control that?) You do everything and anything you possibly can to ensure that initiatives get up and running and the money gets spent. (So it's good to have the money spending attitude within budget?) At this point in time yes. (Is there a fear that if you don't spend it all that you don't get as much next year?) No. (Why is it then that if you don't spend...?) About – maybe four years ago we were allowed to roll forward unspent funds. And that actually ended the mad end of year – you know it's like five truckloads of toilet paper and ten...that finished that off. What that then led to was a view that – you know, shit – here's Disability who's \$500M dollars – there under spent by seven. Yet here they are crying poor about how hard up they are and how hard up the clients are, you'd reckon if they were that hard

Organic

(To what extent are budgets and targets used in your performance evaluation and that of your staff?) Probably not very much on the staff. It's very much a task focused performance management plan for staff. I'm meant to manage within my budget, the actual performance score has nothing at all to do with the performance plan, it's just a perception of how well I've done. So what you do is you write a performance plan, that gets signed off at the end of the year and in the assessment of your performance you don't even go through the plan. It's just general perception of how well you've done during the year. (Are rewards linked at all to budgets and targets, or is it entirely intangible factors considered?) Intangible, totally. Which is all about the political perception of how well...it's actually part of our client information system. Which is the mega database...to work...to next of kin, to the services that you're receiving, a whole range of demographic information...valuable...is added on to. Focuses primarily just on accommodation, services and...because your chances of...goals and waiting lists...services. (...does the minister use financial information provided by the department in order to go into bat? Or is it an emotional thing like, this is what the community needs...?) Probably a mixture of the two. I wouldn't say that it's been overly strong on the financial side. I mean all departments maintain some capacity to respond to the unforeseen. They don't generally commit all of their budget on July 1 for the whole of the year. There's always some flexibility within some degree of uncommitted funds which are previously just used for, say, one-off projects which again, could be harnessed to respond. ...organisation to report to them on everything they do, because the centre doesn't need to know everything they do given it's functions. But it needs to know some things about some particular activities for various other reporting needs all the way up to reporting to Treasury. Because if we have to report a large range of information then we have to pursue a large range of information essentially. I'm trying to discourage that to some extent and try to get the programs and Head Office to think about what sort of information they need to know from the regions, that doesn't mean that they are second guessing the regions' contract management role...And the information you want back from them, ought to be more about some sort of aggregation of performance or outcome related, so you're getting a sense of what's being achieved in areas, rather than trying second guess their analysis of what the agencies are doing. ...rules of the department, and the four key result areas of the department. And...we as a division need to be demonstrating that we are in line with the departmental business plan. ...of the technology we had Oracle come out of that, we had the service agreement management system come out of that (SAMS)...Now SAMS interfaces with Oracle and that actually is the mechanism that's recorded all of our service agreements. Who the agreement is with, the amount of dollars, the actual output that we're purchasing, at what unit price and also...goods has the capacity for managerial performance. There is the Strategic Development Fund where I was saying the department frees up an amount of money to move from lower priorities to newer priorities. It's really if I actively work within my program to lock in money, then I would make my job harder at finding that money. And I don't have the option of not finding that money. ...budget process. This year the department has had a go at a strategic plan. They're genuinely more than just the sum of the parts. It really hasn't had time to bring together what the department does under some key headings which we can now identify with and share with, and then sort of say "well if they're new here these are our key result areas, what are the implications and therefore what is the budget implication". So I would think this year, because we've had...early on, having a strategic plan over more than one year...what it tries to do is rather than just...up to the program contributions, it actually tries to set a strategic direction. ...there are certain types of statistics that ministers like to report...rather than (just) percentage of the population that goes to kindergarten, they like to have trend data on those things. Very keen (on) child protection cases and things like that, ambulance bypasses, and there's a whole lot of those critical data that they like to have...if you didn't have a ministerial system...we would need all that information for effective program management. ...because we don't have a strategic plan published for the department yet, we do have a business plan. Now that's never going to be a good tool if you like, you really do need that longer outlook. You can't ever have, I don't think, in a large organisation, your executive of that organisation focusing on the one year only. That just seems to be not very productive. Also it doesn't, it isn't consistent with the idea of management being about innovation...So in terms of is our performance linked to strategic planning at the moment I'd say no it isn't because there isn't a Public Health strategic plan, a current one....Some other areas do have current strategic plans. I think we measure it (quality) less like you'll find it probably less in our performance systems, we don't have a good understanding of how you translate quality into performance indicators, which we've had a go at this year with the review...process. And this year they've had a go at putting together the forward three year plan. So I think that is starting to give us a framework. (Is that performance agreement that you have, personally linked to the business plan of the organisation, or this division?) Yeah. To the extent – to the business plan yes, and we're in the process of developing a new strategic plan...(for the division?) Yes, yeah. And then that will form what happens...in both the executive contracts and the non-executive contracts, so and I mean, this is sort of the process that folds over and over on itself. For instance, I started here in September, and had to negotiate a contract for when I was here. So you can't wait until the department puts out it's next business plan...

up that they should spend all the money – wouldn't they? Doesn't it make sense? So, obviously they got too much money. So what that sort of in turn does is actually redirected that pressure to ensure that we spend. ...strategic planning process better. And also, I guess I'd say because the money has been so important, we tend to do things in the context of the budget, and that's probably a distortion to bring to output management. (SAMS) links to Oracle. Oracle will actually make the payments and SAMS will manage the whole range of agreements. Because I think around about 85 per cent of our budget is covered by service agreements...It first of all identified that we needed a system like that – in the three year strategic plan that finished in 1996-97...so that's the way we've started to position ourselves to get better information. (It's a lot of assets to control then, isn't it?) Yes, and we have big systems to assist us doing that. ...manual behind you, down there – that's one of the Bible's. We have standards that are developed for how we deal with clients, how we build, buy, dispose, maintain, we have large contractors and there's a lot of specification. Housing is very organised in that sense. It's hard for housing because we probably have a hundred key performance measures that are output based. We use that for our own management, for interstate comparison, for national reports... 90 per cent of our expenditure is externally provided. 83 per cent of our operations are externally provided – one's the dollars the other's the extent – it's a very large amount though. (Is that hard to keep control of?) No, not if we have good contracts. (So it all comes down to the way the contract's written and monitored?) Yes, indeed. So we use architectural engineering consultants and accounting to check probity and so forth. This is one of the costs of downsizing a lot in staff and doing purchasing through contracts – you need that external check and balance.

...are links, but given that the plan that we're working off now for public health is about two years old and the thinking in the departmental one is more recent – we're definitely ready to revisit that and update it, which we're going to do. Within Child Protection I would think they would know very accurately what every other state in Australia was doing in child protection and how they measured up. So that knowledge is probably more at the program level rather than at the executive management level. Yes, large organisations are always difficult to control. I think, it adds some particular complexities and a way that those complexities have been tackled internally is through service agreements. So that what happens is that the regions operate under a service agreement with the central programs, so programs are primarily involved in major policy direction, broad program management, the regions are fairly much involved in delivery, so the central programs develop contracts for service delivery by the regions, those contracts have – there's some flexibility in them, so that the regions can deal... working more closely with them. And so this is why fools like a good output and performance information system can assist you at least in getting enough data there, and data in a reasonable format to have a look at the landscape and to ask difficult questions. And if your division...is not performing to that level then you will be told in no uncertain terms. I would get a few phone calls a week at least from people telling me where they thought we could improve...again just from my jurisdictions, I have service agreements with – internal service agreements with all the directors, we've performance benchmarks as well from all the services I'm providing to them. The others would have external feedback, and similarly, the way the process works and the way that government works, the hospitals, CEO's and others who are very influential people talk to people and they would be providing feedback through all and sundry on the performance of the department whether they believe that they've done a good job or a bad job in managing certain things in the jurisdiction – so there are formal feedback and informal processes that are in operation. ...problems in that the organisation hasn't had a particular history of cost attribution, so when we start putting in cost attribution systems, and just things like accommodation, payroll tax, insurance charges – a lot of things were held in central budgets and weren't attributed out to relevant cost centres. That's one of the very big issues of this organisation, because our accounting of those outputs is not good, and it's not very corporately collected. It's through all layers of the organisation and we really don't have the infrastructure at the present stage to capture them properly and we're trying to deal with that – and it's a real problem for us. (Do you use the Oracle system too?) We certainly do. That's just for the financials – but we have a housing system which is known as ISIP. It's designed for housing operations. Each state housing authority has housing-type software. (Does that keep information about the rental income and all that sort of thing?) It's a suite of relational databases on clients – things like eligibility and rent review times and things like that on the maintenance program, on all the assets, and we also run a banking operation as well. They need special systems, so Oracle really is just our general ledger and payment system which interfaces with our housing systems. We have a policy and research area that relies a lot on ABS statistics, on household types and properties, growths and so forth. A lot of other areas do housing type studies as well – local councils and so forth. But yes, we rely a lot on large suites of statistics to predict demand because make – we purchase around about \$300 million of houses per year and you could argue that they're a 40 or 50 year investment, so we want to get it reasonably correct, we don't want to acquire, that is build or buy, in areas where demand is falling – so we need to try and match that. Our approach is – we use – we've got a lot of data in our own systems as well, particularly as to where the immediate demand if you could call it that, being those on the priority waiting lists. The longer term demand being those that are paying more than 30 per cent of their income after any commonwealth rent assistance privately. Their demography, if you like, and we match those two together. That's aggregate-type information which we have available here. That then needs to be overlaid with local evidence and we do fund, in each of our nine regions, a part time research analyst, on one of our external advisory organisations to undertake similar local research – we try and marry the two. That's data and fact driven and then overlaid by local knowledge and anecdotal evidence. You'll have to read our corporate plan – which is still being written. There's an area, Home and Community Care that looks at homelessness. Homelessness is very hard to get measures of, but that's our, under our new segmentation – that's our highest priority list – or to be list. We compare not only on indicator levels, which is my job – and we meet quite regularly on those – I guess it's more informal elsewhere. The Director of Housing may visit other states and likewise, and we'll just pick up ideas on what official benchmarks may exist. Yes, I think it's fairly informal. (So what kind of information is produced?) Efficiency, productivity, qualitative – it's all a whole performance network regime. It's agreed to by the states and the Industry Commission. It goes all the way down to very extensive data dictionaries that are run by the Australian Institute of Health and Welfare – it's very well organised.

Appendix 3o
MCS usefulness pre-OM emphasis (time one)

Education	Human Services
<p>...importantly to ask the managers what they want. Because at the moment even in this place, you get reports and you're not quite sure what they are and they're not much good to you, and they're certainly not related to your outputs.</p> <p>...we're still in a sense looking at the old incremental approach combined with the strategic focus of where our greatest needs are in terms of geography or location. But it's not linked back to a balance sheet in terms of the maintenance issues that arise from continually building things, or the opportunities that arise from rationalising your balance sheet. So no, Strategic Planning but in future a far stronger role strategically from the financial people is required I think.</p> <p>The only issue as far as we're concerned here is that there doesn't seem to be any use of that major corporate data warehouse for strategic purposes. It's being introduced for practical purposes, that is to run the payroll and get the leave records and do all those day to day things. So I find from my area in the planning and the resource area here, that you then have to resort back to maintaining your own database structure for the various sorts of information needs. So everybody's got data islands around the place. So the concept of data warehousing hasn't really been grappled with here.</p> <p>We haven't really had a set of - clear set of priorities on which you can make decisions on funding as well, I mean that areas is - not saying it's - it would be nice to have those priorities because then...you can evaluate those sort of things. We do have priorities and I know they've been used and things like that, sometimes what happens is you have the submission which gets approved and then it becomes the priority and...things come through. (Chicken and egg?) Yeah, that's right.</p> <p>So all the processes have to fit in with competitive tendering and things like that...So it's not anywhere near 100% yet, but they've actually - what processes they do have to have in place have to comply with those competitive tendering arrangements. And they're preparing their own institutes for increasing that percentage as well. I mean their own institutes are allowed to tender for those ones. So their processes have to be spot on as well.</p> <p>(Are those plans consistent with the budget as well?) They should be. But really, so far even our divisional plans like this, it's more a top like a priority area and the projects that you're going to do under those and how they're going to be achieved and then the budget sort of, if there is a budget associated with that, fine you can incorporate that but sometimes there's no extant budget it's just staff time and working things through like that. So it'd be consistent with the overall budget but there's no, the planning relationship is very murky between the divisional level plans and the budget, at least in our area anyway.</p> <p>We've got a lot of work to do. So you're dealing all the time with the immediate issues, the urgent issues that have to be resolved, and you don't have a lot of time to think of those issues that are important that might not be as urgent...in terms of our budget planning, it tends to be on a short term focus. Okay, what do we need next year rather than what's our plan going to be over the next five or ten years. But I think, you know, we'll get there eventually and we'll start to have this longer term focus.</p> <p>In terms of the financial reporting I think he's (the minister, is) reasonably happy with that, and we've</p>	<p>Yes but also harder in a way to deliver what were doing because the structure makes it very difficult to have control over what we are doing. Regions will act in a reasonably illogical way quite often and it's very hard for us to actually pull them into line and then to approach the purchaser in the way we would like to do so...there's a degree of inconsistency across the state.</p> <p>There's no great catastrophe which will lead to a change in demand - its very slow change and reasonably easy to predict - if we've got data. The effectiveness of (plans for new MCS) has been patchy because they've been badly implemented. In a lot of cases the actual system doesn't perform what it should.</p> <p>(So would that be along the lines of qualitative performance measures?) It is yes. Again from a reasonably simplistic point of view because they don't have a good understanding of the business. So it's hard to actually have KPIs which are meaningful.</p> <p>We've just put in place a service needs register...so that we have a database that lets us know what sorts of services people are after, and I guess even more importantly captures the client base... (write the contract very carefully...) Yes. It's a question of - you know you need to make sure that your service specifications are right, and that your contract price is right.</p> <p>(Restructure) was to try to solve that (local fragmented service delivery problem) organisationally...The notion that you can have business units who then communicate with each other by some formal arrangements, and they buy and sell each others services etc, didn't have a hell of a lot of application to a lot of the services that we provide. It might for some things like corporate services and we've certainly gone down (that) track...But as a method of relating between different parts of the service system, it didn't have a lot going for it. I'd like to think that we aren't really going down that path. Though as recently as a couple of months ago someone in one of the programs said to me that they did regard themselves as separate businesses that needed separate rules for allocating funds for example to the regions.</p> <p>If you really want to make strategic decisions about whether you should put more into slip, slop, slap or more into AIDS or more into cancer, you actually need a really good evaluation of programs, a really good evaluation of trends and a really good evaluation of what the opportunities to make gains are...And budget papers are pretty awful, they're just not the sort of information for making those sorts of decisions.</p> <p>What SAMs will do is link back to the activity, in other words the chart of accounts and so each activity has a program service plan that then goes into a service agreement - and then you purchase specific products under that activity. So I think it works really well...I'd count that as a significant tool.</p> <p>...we tend to do things in the context of the budget...I would rather see the strategic plan as the vehicle and the budget as just a reflection of the financial decisions that fall out of the strategic plan. So we'll see what happens.</p> <p>...suite of management information that program managers need in the department to manage their programs and try and understand how their programs are working. Now, having said that, I don't think we've got a good set of management information within the department yet, but I would think people will realise the improvement. As we know more about it, as we have more certainty about the budget, now that we've moved on to the new financial management system, shortly well we're rolling out release one of SAMs at the moment, and so that will actually give us a fair bit of commitment to the budget and thinks like that. So we'll actually really, really know our whole - cash flow for the budget will actually will actually be held, and you'll be able to see it at activity, at agency, by program, by region, there'll be a whole range of ways you can cut into that information and have a look at it. So that will be a great improvement in the type of management information that's available.</p> <p>...but there probably aren't right now in terms of really key performance indicators that are important to the executive. But if this - if we take this new strategic plan which if you like, it looks for a level of commonality across the department, and you can take that strategic plan and make out what are the key performance indicators and implement...(improvements) across the programs...That if you don't</p>

gone through changes to it but they were more inspired by us than directed by him.

So I upload all the information that I need to consolidate on behalf of the schools. So to bring accrual accounting in at school level you really have to ask the question - because I can get around it in a different way, in a consolidated format. You want to ask the question therefore, what benefit is it to the school? Now if you can see a benefit to the school then that's fine, but I think on balance, that small school doesn't have a lot of benefits. Because if it reports, if that school has a balance sheet and it has in front of it so the one person teacher or the one person school has a balance sheet, what's it going to do with it. What can it do with it, what can it influence? Is it going to sell the school? No.

No, I wouldn't have thought (they needed balance sheets internally), unless they want a report to the Community for management purposes to say, look the school's budget is more than just the cash but it's all this other stuff as well. So one has to question the fundamental need of it and whether it really is something that they really need to have. But from a consolidation point of view, we as a department can do it a different way, without affecting that school one bit. We can improve and refine the chart of accounts so that it makes it easier for us (at head office) to extract information, fine - and we're doing that all the time - a school level chart of accounts.

(In the strategic plan) that's very flowery words and that's their objective, (for example) to expand the scope of consumer choice, to further encourage education and training institutions, to compete for clients...to expand competitive tendering for the provision of occasional adult community and further education...to enhance the physical and learning environment of students in schools...You can see the very, very high - motherhood...it's high.

But we're not like that and if service indicators are our real drivers, then we should be putting a lot of work in that in my view. Having said that I still see a big advantage in accrual accounting.

Public Service environment, because there is such a focus on correctness, process. See we have, our charge codes, our charge codes are 28 digits... And even with 28 digits I cannot, if I've got a project say which is development of online training in the electronics industry, I cannot within a 28 digit charge code, have a charge code that relates specifically to that project. So it's not even project based.

...not exist five years ago. There was no basis for comparison, statistics were generally shonky, or inadequate because they weren't used. That's the thing about information, if its not used for decisions, after a while people just fill in the forms because it's a job they have to do rather than having the interest in accuracy.

have a strategic plan then what you end up with is you developing some sort of plan to say what my branch is going to do, then you're assessing with my own performance and the performance of my branch against it, and you get yourself into a situation where your plan, your targets and your time lines are all assessed by yourself and I think that's a situation we've fallen in. I don't think that's very helpful at all...If you never take a long term outlook, you just never going to start to tackle those real environmental obstacles.

...a very active department. Now whether there is some sort of coherent strategic framework for the department, I am less sure of that and I think just in recent times we have seen examples where say, work done in one program and work done in another is clearly contradictory. That's either saying the strategy is not there, or people aren't aware of it, or there is insufficient communication. The department just sort of gets so big that you just can't talk to everyone that you really should, to do your job. But we certainly are thinking and improving...

In some things it is improving the data quality of what we've got now. Other aspects are improving accessibility of information, we've got a huge amount of information trying to design better performance indicators and better tools to actually pull data together. We've got some of those now, like - executive information system sits on my terminal there - so we have some of this stuff now, but it's really looking at the next generation of refinement of that material and trying to look across programs and trying to build corporate systems where each of our major programs can leverage off a central - one data base information facility.

...people's problems and dealing with it and how to measure that - and look the people who are running that area would agree wholeheartedly that we need more measurement in it, and it's been left too soft. And it is difficult, and it is hard to decide what to measure. But having said that, we haven't done enough of that hard measurement. We've done some good things in that area - we've made mistakes too - but you know, we need some more measurements.

...satisfaction survey we rank about third top, in client satisfaction with services provided. Now, it's again, it's difficult to know whether you've got an exact comparison about the sort of measures that you can really, that you can really use. The difficulty also is once you start looking at international comparisons you get issues between the layers of government...

We're in the process of creating what will be known as a segmented waiting list, which will basically treat each of those groups I just mentioned as different groups, and there will be different strategies for handling each. And the priority, if you like, will be we'll cater for the homeless first...And we involve the community sector in managing some of those groups as well. It's not only just the housing operation, but if you take people with various types of disabilities, they can utilise a number of other services, whether it be local council or you'll often find they're also clients of this department whether it's disability, psychiatric, or whatever. So one of the concepts of housing coming to...Human Services as opposed to where it was in Infrastructure, was the overlapping clientele, or the potential overlapping clientele. But the department itself caters for those people. We don't have very good data systems yet between each other to identify that and aspects of privacy come up so we can only deal in aggregates.

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