Management Accounting Innovation and Organizational Learning

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Declaration statement

I declare that this thesis entitled *Management Accounting Innovation and Organizational Learning* is my own work and has not been submitted previously, in whole or in part, in respect of any other academic award.

Albie Brooks

Abstract

Innovation in management accounting has been significant over the last 15 years. Since the publication of Johnson and Kaplan's (1987) *Relevance Lost: The Rise and Fall of Management Accounting*, innovations such as activity-based costing/management, the balanced scorecard, value-chain analysis and economic value-added systems have been introduced by organizations to improve the quality of information and management within those organizations. At the same time there has been a growing interest in the concept of organizational learning. While the literature in this area is dispersed across a range of disciplines, there has been a growing interest in the concept in the business and management literature, and, to a lesser extent, the accounting-related literature.

The purpose of this study is to explore the potential links between these two broad concepts, namely, management accounting innovation and organizational learning. It is believed that the thesis will contribute to the further development of theory in the areas of management accounting innovation and organizational learning

The investigation was conducted using the case-study method of research. A single-organizational site with embedded units of analysis was used to facilitate the investigation. Multiple forms of data were collected, though the predominant form of data collection was through semi-structured interviews with senior managers.

Some support for the broad research questions posed was found. That is, there appears to be some support for links between organizational learning and management accounting innovation. Both the form of organizational learning, measured by the learning orientations, and the extent of organizational learning, measured by the facilitating factors, increase the level of management accounting innovation. In turn, the level of management accounting innovation seems to influence the organizational learning environment. The issues of organizational memory and absorptive capacity emerge as two important variables worthy of further consideration in future investigations of management accounting innovation.

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Thanks to those managers at Telstra who so willingly agreed to be participants in the research. Your co-operation made the research possible. Special thanks to Barry who was extremely co-operative from the outset, and helped set up the investigation.

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To my mum and dad, I say thanks for the great start, for teaching me the sense of perspective and always being proud.

Finally, and most importantly, to my four best friends, Deb, Hali, Ben and Jess, thanks for your love and support. It is hard to express the effect you have had on my life.

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Chapter 1: Introduction

1.1 Introduction

Innovation in management accounting has been significant over the last 15 years. Since the publication of Johnson and Kaplan's (1987) *Relevance Lost: The Rise and Fall of Management Accounting*, innovations such as activity-based costing/management (ABC/ABM), the balanced scorecard, value-chain analysis and economic value-added (EVA)systems have been introduced by organizations to improve the quality of information and management within those organizations. The concept of organizational learning has emerged as an area of interest across a range of disciplines. While the literature in this area is dispersed there has been a growing interest in the concept in the business and management literature, and, to a lesser extent, the accounting-related literature.

The purpose of this study is to explore the potential links between these two broad concepts, namely, management accounting innovation and organizational learning. The investigation is conducted using the case-study method of research. A single-organizational site with embedded units of analysis is used to facilitate the investigation.

Section 1.2 provides the key definitions to which the research relates. Section 1.3 specifies the justification for the research. Sections 1.4 and 1.5 outline the research method underpinning the study and the key results emanating from the study. The structure of the remainder of the thesis is outlined in Section 1.6.

1.2 Definitions

As discussed in detail in Setions 2.2.1 and 2.2.2, organizational learning transcends a number of discipline boundaries. A number of different definitions is used, both in practice and in the academic literature. To ensure some commonality of understanding of the term, the following definition of organizational learning was adopted for the interviews conducted:

Organizational learning relates to the capacity, practices and/or processes embedded within an organization to improve its performance. While all organizations learn to some extent, the deeper levels of learning occur when previously held views/images/practices are challenged, refined and/or developed. Individual and organizational processes are central to the strength and style of organizational learning.

As a number of the interviewees would not be accounting trained, where applicable, a definition of management accounting was also provided:

Management accounting relates to the generation and use of information for the internal monitoring, control and decision-making within an organization. The information may be financial and non-financial, and the decision-making may occur at the operational and/or senior (staff) levels.

Management accounting innovation relates to *the adoption of relatively new practices within the management accounting field including innovations such as; activity-based costing/management, business process reengineering, value-chain analysis, target costing, balanced scorecard, strategic cost management, cost driver analysis, advances in operational control systems and economic value-added management systems.*

1.3 Justification

One of management accounting's key objectives is to provide information for internal decision-making at both a strategic and operational level to assist the organization to meet its objectives (Emmanuel et al 1990, Ingram et al 2001, Kaplan and Atkinson 1998).

Organizations are constantly seeking new ways to improve performance. As part of the internal decision-making processes at both the strategic and operational levels, ways of improving the quality of management accounting information are sought through innovations. Evidence of this lies in the number of significant innovations in the management accounting-related field over the last fifteen years. Ensuring maximum

utility and, in many cases, sustained benefits from these innovations is a challenge for all organizations.

The ideas for this research stemmed from an initial interest in management accounting innovations. The idea of embedded processes and practices to facilitate the identification, implementation and sustained utility from these innovations lead to a consideration of the area of organizational learning. Some, if limited, support for a consideration of organizational learning in a management accounting context existed (Argyris and Kaplan 1994; Shields and Young 1992) yet few (Kloot 1997; Kloot et al 1999) had gathered empirical evidence.

Initial queries related to:

- the factors influencing the decision to adopt a management accounting innovation;
- the impact of the existing implementation framework in embedding new knowledge and learning;
- what comes first, the new knowledge or the processes to embed the new knowledge;
- does the extent of management accounting innovation effect the existence of these processes;
- the extent of management accounting innovation;
- whether organizational learning has management accounting relevance; and
- how robust are the existing organizational learning frameworks in a management accounting context?

These early queries provided the foundation for the development of this research project and the research questions posed below.

As organizational learning relates to capacity, practices and processes to improve performance, then intuitively, management accounting and organizational learning appear to have some links, or at least, the potential for links. Any links between the two concepts are important for a number of reasons. First, organizations have limited resources. Consequently, maximum utility should be sought from any innovation. Those

organizations with embedded processes which capture and develop the concepts of the innovation are more likely to achieve maximum utility. Second, those organizations with higher levels of organizational learning are likely to identify suitable innovations for adoption. Third, as new insights and practices are developed in the area of management accounting, organizations need to have the processes not only to identify suitable innovations, but have the internal processes to facilitate their implementation. There has been some, if limited, evidence of recognition of the link between organizational learning and management accounting to date (Kloot 1997; Kloot et al 1999).

The concepts of organizational learning have been raised in a management accounting context in relation to:

- specific management accounting practices or innovations (Argyris and Kaplan 1994; Kaplan and Norton 1996; Shields and Young 1992);
- empirical research investigating aspects of management accounting and elements of organizational learning and/or innovation (Kloot 1997; Kloot et al 1999; Libby and Waterhouse 1996; Gosselin 1997); and
- calls for further research into management accounting and organizational learning concepts (Atkinson et al 1997; Shields 1997).

From this background, this research explores the potential links between management accounting innovation and organizational learning. It does not seek statistical-based cause and effect relationships but rather, through the identification of possible links between the constructs, to provide a platform for further investigations and development of theory in this relatively new area of interest. The concept of organizational learning is operationalized using DiBella and Nevis' (1998) organizational learning framework comprising learning orientations (the form of organizational learning) and facilitating factors (the extent of organizational learning). Two broad questions guide the research:

RQ 1: whether the form and extent of organizational learning influences the level of management accounting innovation; and

RQ 2: whether the level of management accounting innovation influences the organizational learning environment.

In order to answer these research questions, it is necessary to investigate:

- the form of organizational learning in the case-site as depicted by the learning orientation choices;
- the extent of organizational learning in the case-site as depicted by the existence and extent of the facilitating factors;
- the extent and type of the management accounting innovation adoption;
- whether management accounting innovation is viewed as an administrative or technical innovation;
- the main determinants underlying the adoption of management accounting innovation. These relate to the:
  - organizational characteristics as depicted in the innovations literature;
  - influence of the learning orientations; and
  - influence of the facilitating factors on management accounting innovation adoption.

1.4 Research method

Given the exploratory nature of the research, a case-study was used to explore the links between management accounting innovation and organizational learning. The organization used was a large Australian telecommunications company, Telstra, operating in a dynamic environment. The investigation was made in part of the support functional areas. Ten interviews were conducted with senior managers within the finance and administration segment, and the employee relations segment of the organization. Organizational chart data are provided in Exhibits 5.3, 5.6 and 5.7.

Data collection was predominantly through semi-structured interviews with the managers, supplemented by archival/documentary evidence in the form of training manuals, internal reports and publicly available reports and information. Data reduction and analysis of the interview transcripts were conducted with the assistance of NUDIST software.

1.5 Key results

This research finds some support for the broad research questions posed in Section 1.3. That is, on the evidence collected, there appears to be some support for links between organizational learning and management accounting innovation. Moreover, in line with the research questions, the links appear to be two-way. Both the form of organizational learning, measured by the learning orientations, and the extent of organizational learning, measured by the facilitating factors appear to influence the level of management accounting innovation. In turn, the level of management accounting innovation seems to influence the organizational learning environment. The issues of organizational memory and absorptive capacity surface as two important variables worthy of further consideration in exploring maximum utility from management accounting innovation.

1.6 Thesis structure

The literature review is contained in Chapter 2. The literature is discussed in three main areas, namely, organizational learning, innovation and management accounting innovation. Developed from the literature review, is the research framework, which is detailed in Chapter 3. The research framework includes the development of the research model underpinning the study as well as the two broad research questions and five specific areas of investigation.

In Chapter 4 the research methodology is detailed. As a case-study was used as the method of investigation significant attention is devoted to aspects of this research method, as well as the specific practices used in this study. The justification for, and characteristics of, the research site are provided in Chapter 5. The results are detailed in Chapter 6, while a discussion of the issues emanating from the results and conclusions from the research are provided in Chapter 7.

Chapter 2: Literature Review

2.1 Introduction

Chapter 1 provided a background to the research. In this chapter the key literature relevant to organizational learning and management accounting innovation will be discussed and reviewed. That literature is classified into three main segments:

- organizational learning;
- innovation; and
- management accounting innovation.

2.2 Organizational learning

2.2.1 Introduction

Organizational learning has been researched across a range of disciplines for many years, particularly in the areas of organizational theory and psychology (Cyert and March 1963). More recently, researchers in other disciplines including business and management have begun to integrate the concepts of learning and, more specifically, organizational learning, into studies of the organization and related phenomena (Edmondson and Moingeon 1998). Some of this increase in attention on other disciplines can be attributed in part to highly exposed works in the area, such as Senge's (1990) *The Fifth Discipline*, and Argyris' (1992a) work over many years. In addition, there have been calls for studies in organizational learning to transcend discipline boundaries and to be more cumulative and integrated (Foster and Young 1997; Huber 1991; Shields 1997; Shrivastava 1983). Stata (1989) suggested: "the rate at which individuals and organizations learn may become the only sustainable competitive advantage, especially in knowledge-intensive industries" (p.64).

In this section the focus is on: definitions of organizational learning; aspects and forms of learning; a contrast of the systems and structures view and the *interpretative spirit* view of organizational learning; and, what organizations might do to facilitate organizational learning.

2.2.2 Definitions of organizational learning

One thing that is quite clear from the literature is the diversity of opinion regarding what organizational learning actually is and how it should be assessed (Garvin 1993; Huber 1991). Indeed, as Popper and Lipshitz (2000) observed: "the downside of the ensuing outpouring of publications is a confusing proliferation of definitions and conceptualizations that fail to converge into a coherent whole." (p. 181)

Levitt and March (1988) suggested organizational learning be: "viewed as routine-based, history-dependent, and target-oriented. Organizations are seen as learning by encoding inferences from history into routines that guide behavior" (p. 319).

Huber (1991) was critical of narrow concepts/definitions of organizational learning and adopted a behavioral approach when he defined learning (including organizational learning) as:"an entity learns if, through its processing of information, the range of its potential behaviors is changed" (p. 89).

Dodgson (1993) suggested that some authors focused on *outcomes* of learning as opposed to the *processes* of learning. He defined organizational learning in the following way:

> *Learning.... relates to firms, and encompasses both processes and outcomes. It can be described as the way firms build, supplement and organize knowledge and routines around their activities and within their cultures, and adapt and develop organizational efficiency by improving the use of the broad skills of their workforce (p. 377).*

Dodgson identified a number of assumptions within this definition. First, the definition assumes learning generally has positive consequences even though the outcomes of learning may be negative, such as an organization learning by making mistakes. Second, while the concept of learning is based on individuals, fundamental to organizational learning is the premise that organizations themselves have the capacity to engage in learning. How this might occur is discussed in Section 2.2.3.1. Third, learning occurs

throughout all the activities of an organization. Moreover, individuals are the primary learning entity in organizations and it is individuals that create organizational forms that enable learning in ways that facilitate organizational transformation (Dodgson 1993).

Following a comprehensive discussion of the concepts and [possible] nature of organizational learning Kim (1993) settled for a relatively simple definition: "organizational learning is defined as increasing an organization's capacity to take effective action." (p. 43)

In arriving at this definition Kim made a number of observations that warrant attention:

- the term *learning* means essentially the same thing whether taking an individual or organizational view;
- organizational learning is more complex and dynamic than a mere magnification of individual learning. The learning process is fundamentally different at the organizational level;
- organizational learning is dependent on individuals improving their mental models[1], making those mental models explicit is a necessary prerequisite to developing new, shared, mental models.

Dodgson (1993) argued this process allows organizational learning to be independent of any specific individual. Given individuals do not necessarily stay within the one organization [or for that matter the same business unit within an organization], this aspect seems critical to embedding organizational learning within the processes and culture of an organization.

Edmondson and Moingeon (1998) viewed organizational learning as a process that requires individual cognition and supports organizational adaptiveness (sic) through their definition:"...a process in which an organization's members actively use data to guide behavior in such a way as to promote the ongoing adaptation of the organization." (p. 12)

[1] Senge (1992) suggested "*mental models are deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting*" (p. 174). The issue of mental models will be explored in detail in Sections 2.2.3.1 and 2.2.3.2.

Nevis et al (1995) also opted for a relatively simple definition: "we define organizational learning as the capacity or processes within an organization to maintain or improve performance based on experience." (p. 2)

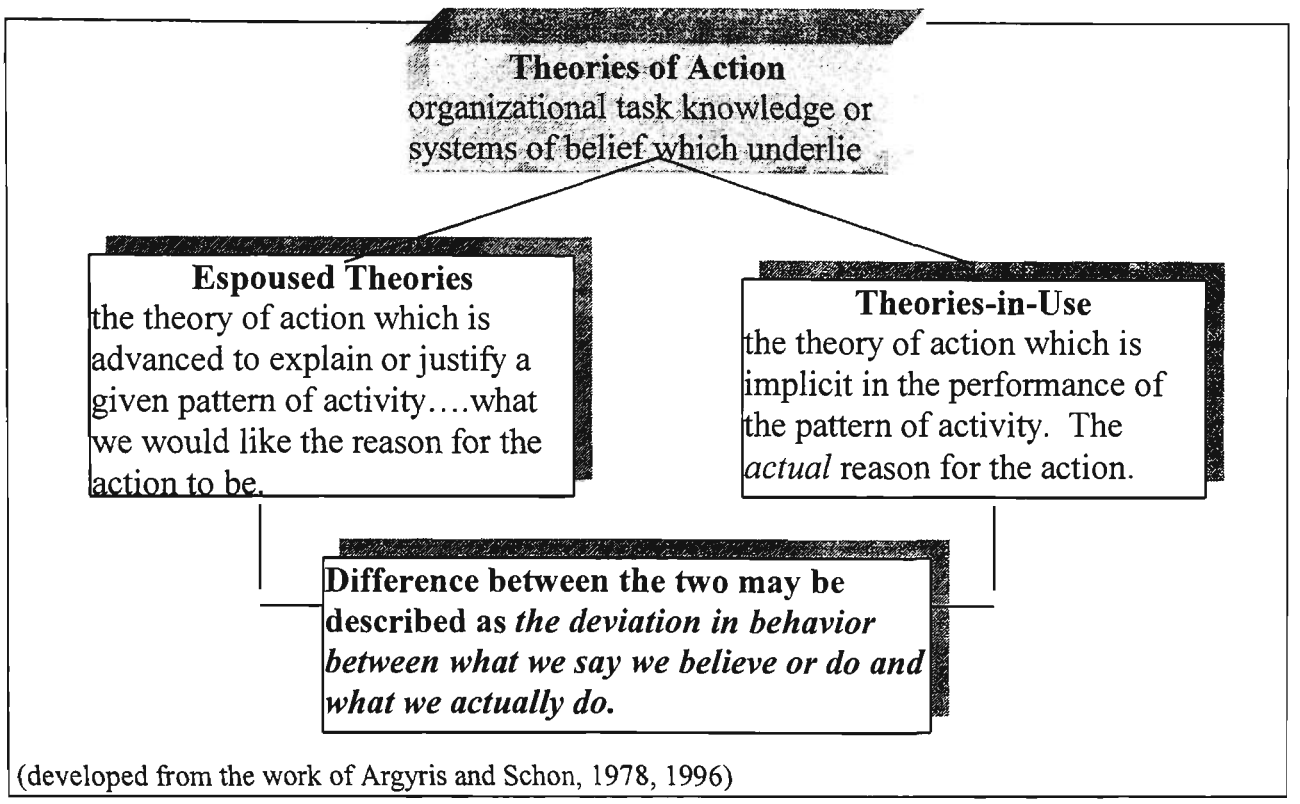
Argyris and Schon[2] (1996) devoted significant space to a discussion of what organizational learning actually is. They concluded:

> *"Organizational learning occurs when individuals within an organization experience a problematic situation and inquire into it on the organization's behalf. They experience a surprising mismatch between expected and actual results of action and respond to that mismatch through a process of thought and further action that leads them to modify their images of organization or their understandings of organizational phenomena and to restructure their activities so as to bring outcomes and expectations into line, thereby changing organizational theory-in-use. In order to become organizational, the learning that results from organizational inquiry must become embedded in the images of the organization held in its members' minds and/or in the epistemological artifacts (the maps, memories, and programs) embedded in the organizational environment." (p. 16)*

It is apparent from Argyris and Schon's work that organizational learning requires a change in organizational theory-in-use. Theory-in-use is a concept developed by Argyris and Schon as one form of theory of action. Theories of action might be described as organizational task knowledge that may be represented as systems of beliefs that *underlie* action, as prototypes from which actions are derived. Theories of action might include strategies of action, the values that govern the choice of strategies and the assumptions on which they are based. Exhibit 2.1 demonstrates the concepts of theories of action.

[2] This is the second seminal work from Argyris and Schon. Their first seminal book in 1978 laid much of the groundwork for the increasing attention [in both research and practice] given to organizational learning.

Exhibit 2.1: The concept of theories of action



(developed from the work of Argyris and Schon, 1978, 1996)

The concepts of theories of action can be explored in an individual context. From this perspective, espoused theories may be viewed as the values, beliefs and attitudes which individuals express when questioned, even though their actions may appear inconsistent with the espoused theories. Theories-in-use at the individual level contain the rules that individuals actually follow when they design and implement their actions (Argyris & Kaplan 1994).

At the organizational level, the espoused theories are likely to be embodied in the strategies, rules, job descriptions and the like which should guide organizational activity [which, in the main, is performed by individuals]. From an organizational viewpoint, theories-in-use must be constructed from observations of the patterns of interactive behavior of individuals as their behavior [presumably] should be governed by the strategies, rules and job descriptions found in the espoused theories (Argyris & Schon 1996).

According to the definition of Argyris and Schon, organizational learning can be said to occur when there is a change in organizational theories-in-use. Not all learning is necessarily positive. Changes in behaviour in an organizational context may result in negative consequences such as unworkable outcomes. The term *productive organizational learning* may be used to describe organizational learning that produces positive outcomes. Three types of productive organizational learning have been identified:

- *organizational inquiry, or instrumental learning which leads to improvement of organizational tasks;*
- *inquiry through which an organization explores and restructures the values and criteria through which it defines what it means by improved performance; and*
- *inquiry through which an organization enhances its capacity for learning of the form outlined in the first two points* (Argyris and Schon 1996, p. 20).

Argyris and Schon's (1996) detailed explanation of organizational learning possesses some of the elements of the other definitions provided. These include:

- a link between the learning of the individual and the organization, as noted by Kim (1993) and Dodgson (1993);
- the idea of restructuring activities is consistent with the concept of guiding and [presumably] altering behaviour (Levitt and March 1988);
- the idea of the results from organizational inquiry influencing members' minds is related to the concept of mental models as described by Dodgson (1993) and Senge (1992). Similarly, Argyris and Schon's concept of theory-in-use and its impact on organizational learning is similar to the concept of mental models outlined by Dodgson (1993) and Senge (1992). Edmondson and Moingeon (1998) supported this link when they viewed Argyris and Schon's *theories-in-use* and Senge's *mental models* similarly in relating to how "individuals in organizations take action to develop and refine their cognitive maps." (P. 10)

2.2.3 Learning

Scattered through the organizational literature are attempts to seek a resolution to the perceived dilemma of the wider issue of learning itself and, specifically, the links between learning at the individual level and at the organizational level. Kim (1993) recognised that the meaning of the word *learning* varied widely by context, while Dodgson (1993) suggested learning is a dynamic concept and that its use in theory emphasizes the continually changing nature of organizations. Interestingly, of the definitions of organizational learning provided above, both Huber's and Kim's are generic definitions as they may apply equally to individuals, groups of individuals or organizations. In this section the focus is on two areas, namely, the links between individual learning and organizational learning, as well as forms of learning.

2.2.3.1 Links between individual learning and organizational learning

Learning at the individual level can take place in a variety of ways. As for organizational learning, Kim (1993) provided a simple definition of individual learning: "increasing one's capacity to take effective action" (p. 38).

With due recognition to the extensive research over time by psychologists, linguists and educators, Kim suggested that organizations can learn independently of any specific individual but not independently of all individuals. Like others (Senge 1992) Kim explored the role of mental models in a discussion of individual learning. Further, he explored the difference between learning and memory, suggesting learning has more to do with acquisition, while memory has more to do with retention of whatever is acquired. In so far as learning is concerned Kim suggested a need to understand the role of memory in the learning process itself. Kim identified two forms of memory: stored memory and active structures, where active structures are those that affect our thinking process and the actions we take. Mental models are seen as a vehicle for a better understanding of active structures.

Dodgson (1993) explored individual learning in the process of conceptualising organizational learning. He argued that individuals are the primary learning entity in

organizations and that it is: "individuals which create organizational norms that enable learning in ways which facilitate organizational transformation" (p.377).

Argyris (1992b) was concerned that, at the individual level, people did not know how to learn. Moreover, he suggested that often those assumed to be best at learning are, in fact, the poorest, while the organization itself was not aware that the problem (inability to learn) existed due to a misunderstanding of what learning is and how it may be facilitated.

Clearly, individual learning is a pre-requisite for organizational learning (Kim 1993), or is mediated by the learning of individual organizational members (Popper and Lipshitz 2000). However, that does not mean that the sum of learning of a group of individuals is equal to organizational learning (Dodgson 1993; Hedberg 1981). Argyris and Schon (1978) identified a paradox and suggested that organizational learning was not merely individual learning, yet organizations only learn through the experience and actions of individuals. Clearly, individuals are a necessary but not sufficient component in achieving and sustaining organizational learning.

Argyris (1992c) suggested that it was individuals acting as agents of organizations who produce the *behaviour* that leads to organizational learning. Organizations are able to create conditions that may significantly influence what individuals frame as the problem, design as the solution, and produce as action to solve the problem. This is consistent with Dodgson's (1993) view of organizational learning discussed earlier.

Stata (1989) suggested organizational learning entails new insights and modified behaviour, and differs from individual learning in at least two respects:

- Organizational learning occurs through shared insights, knowledge and mental models and can only occur as fast as the slowest link learns. Major decision-makers must learn together, come to share beliefs and goals and be committed to change.
- Organizational learning builds on past knowledge and experience. Stata refers to this as organizational memory and suggests that its development depends on institutional

mechanisms such as policies, strategies and explicit models used to retain knowledge. Relying solely on the memory of individuals is a high-risk action as individuals migrate from job to job.

At the individual level, Corsini (1987) viewed learning as involving five forms of learned capabilities. These were:

- verbal or declarative knowledge, which may be viewed as isolated facts or bodies of organized information;
- intellectual skills or procedural knowledge which enable the individual to demonstrate the application of concepts and rules to specific instances;
- cognitive structures, which involve processes such as perceiving, encoding, retrieving and thinking which may be applied to problem solving tasks,;
- attitudes, which may be viewed as learned states that influence the choices of personal action which the individual makes towards persons or events; and
- motor skills, which are smoothly timed muscular movements enabling procedures to be undertaken precisely.

From the above list, the categories of cognitive structures and attitudes would seem to be capable of facilitating double-loop learning, a concept to be explored in the next section. How well these translate from the individual to the organization would be dependent on the organization culture (Dodgson 1993).

Shrivastava (1983) identified some of the key themes characterizing the organizational learning literature:

- organizational learning is an organizational process rather than an individual process;
- organizational learning is closely linked with experience that the organization possesses;
- the outcome of organizational learning is organizationally shared;
- learning involves fundamental changes in the theories-in-use or frames of reference within which decision-making proceeds;
- learning occurs at several levels in the organization; and

- organizational learning is institutionalized in the form of learning systems which include formal and informal mechanisms of management information sharing, planning and control.

Popper and Lipshitz (2000) refer to two different conceptions of organizational learning:

- learning in organizations, as depicted, for example, by the learning of individual organizational members; and
- learning by organizations, as occurs when the organization recruits new members who have knowledge which the organization previously did not have.

They suggest that what they classify as organizational learning mechanisms (OLMs) are one vehicle for overcoming the disparity between learning in and learning by organizations. OLMs are interpreted as institutionalized structures, procedures and arrangements that allow organizations to learn. Popper and Lipshitz (2000) conclude that while individual learning and organizational learning are similar in that they both involve the same information processing phases (collection, analysis, abstraction and retention), they differ in two respects:

- information processing is carried out at different systemic levels by different structures; and
- organizational learning requires an extra phase – dissemination – that is, the transmission of information and knowledge among different persons and organizational units.

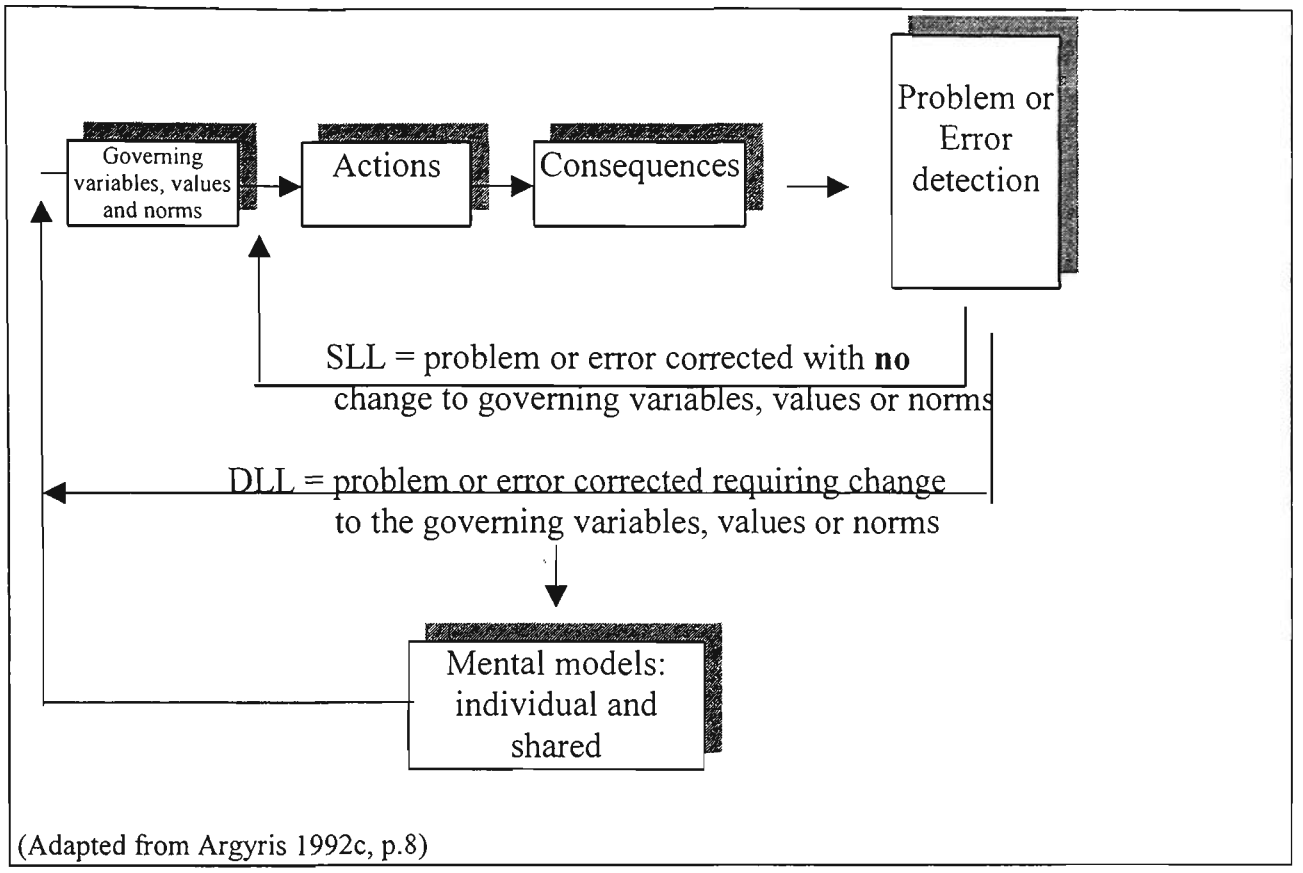
2.2.3.2 Forms of learning

In relation to organizational learning (and often individual learning) particular forms of learning can be identified. Some of the common discussions in this area of the literature focus on the concepts of: single-loop learning and double-loop learning (Argyris 1992c, Argyris and Schon 1978; Argyris and Schon 1996), adaptive (sic) learning and generative learning (Senge 1990; McGill et al 1993) and the constructs of organizational learning (Huber 1991).

Single-loop learning may be viewed as the learning achieved from dealing with a problem by applying the existing and accepted governing variables, values and norms. As a consequence, the values of a theory of action remain unchanged. On the other hand, double-loop learning may be viewed as the learning achieved following the identification and challenging of the existing and previously accepted governing variables, values and norms, resulting in changes to the values of theories-in-use (Argyris 1992; Argyris and Schon 1996; Kim 1993).

Furthermore, the role of mental models is an important variable in demonstrating double-loop learning. At the individual level, double-loop learning will result in a change to an individual's mental models that will consequently affect future learning. At the organizational level, double-loop learning will result from individual mental models being incorporated into the organization via shared mental models which affect organizational action (Kim 1993). Exhibit 2.2 illustrates the concepts of single-loop and double-loop learning. The role of mental models in achieving learning is consistent with Senge's (1992) concept of *metanoia*, which relates to a fundamental shift or movement of mind.

Exhibit 2.2: Single-loop, double-loop learning and mental models



(Adapted from Argyris 1992c, p.8)

While single-loop learning is a valid, and often appropriate, form of learning, double-loop learning is more powerful and more likely to contribute to an environment of inquiry, development of innovation and enhanced long-term performance.

Senge (1990) categorized the two forms of learning as adaptive learning and generative learning, and in doing so, reinforced the concepts of single-loop and double-loop learning. Adaptive learning is about coping and viewed similarly to single-loop learning, while generative learning [viewed similarly to double-loop learning] is about creating and identifying new ways of looking at the world. McGill et al (1993) transferred this view of learning to organizations and suggested that an adaptive organization tends to focus on incremental improvements to existing products, markets, services or technology, often within the context of the firm's pre-existing track record of success. On the other hand, they suggest organizations engaging in generative learning have demonstrated their

ability to learn how to learn and have used generative learning to transform their organizations and markedly improve their effectiveness.

Huber (1991) identified four constructs integrally linked to organizational learning. These were:

- knowledge acquisition, which is the process by which knowledge is obtained;
- information distribution, which is the process by which information from varied sources is shared, resulting in new information or understanding;
- information interpretation, which is the process by which distributed information is interpreted by users. An interesting issue in this process [raised by Huber] is whether organizational learning is enhanced by common interpretations of the same information or, rather, by varied interpretations of the same information. Quite possibly, varied interpretations of the same information facilitate organizational learning to a greater extent than common interpretations of the same information. This would be consistent with definitions of organizational learning in terms of changing behaviours, mental models or theories-in-use. This is consistent with Dodgson's (1993) view regarding the role of conflict and its link to learning.
- organizational memory, which is the means by which knowledge is stored for future use. Two forms of organizational memory have been identified - stored memory and active memory. Stored memory relates to the static storage of procedures and the like, while active memory may be viewed as more dynamic in that it affects our thinking processes and the actions we take (Kim 1993). Meanwhile, Cross and Baird (2000) identified five forms of knowledge retention capable of improving the collective organizational memory:
    - individual memory;
    - personal relationships;
    - databases;
    - work processes and support systems; and
    - products and services.

2.2.4 Challenging the systems and structures view of organizational learning

Some controversy surrounds whether organizational learning is best viewed via a formal process of structures and systems or whether 'softer', more subjective, elements should be dominant.

Addleson (1996) identified these two segments of the organizational learning literature. First, he identified the *systems and structures* component of the literature. This component included references to learning loops and archetypes which Addleson believed suggested that there was one way to solve organizational problems. Addleson chose to label this section of the literature as *modernist*, where modernism is viewed as routine and mechanistic, independent of people's ideas or beliefs. Addleson believed there was a lack of the subjective elements of human nature and behaviour in this strand of the organizational literature. He classified Argyris and Schon's (1978) and Argyris' (1992) work on single-loop and double-loop learning, and Senge's (1992) systems thinking work, as forming part of this systems and structures component in the literature. Addleson preferred to support the second component he identified in the literature. This he labelled as the *interpretative spirit* of organizational learning, drawing first on hermeneutics or interpretative understanding, which, in its contemporary form, offers a different view of what constitutes an organizational problem. Second, whether or not there are clear-cut answers to organizational problems, he challenged the tenets of modernism.

He suggested:

> *"the interpretive (sic) spirit of organizational learning focuses on how people understand, recognising that understanding cannot and should not be taken for granted. This leads to an appreciation of the singular importance of discourse as the basis of learning. A learning organization is one that uses discourse to build communities of understanding. Organizational learning, then, is about understanding how people understand and about facilitating understanding." (p. 38)*

This view of organizational learning suggests that organizational learning takes place when people's views are shaped by those of others and they come to understand differently as a result of engaging in discourse.

There are some similarities between what Addleson labels the *modernist* literature and the *interpretative spirit* literature. While Argyris and Schon (1978), Argyris (1992) and Senge (1990,1992) do address the systems and structures view of organizational learning, it would also seem that the deeper concept of focusing on how people understand is not completely ignored. For example, the achievement of double-loop learning is more likely when adequate attention is given to how individuals understand and have the beliefs that they hold. Similarly, addressing the problem of *defensive routines* as described by Argyris (1992b, 1992d) requires an appreciation of the way in which people come to understand and view organizational problems. Defensive routines relate to actions or procedures which avoid embarrassment or threat, and are viewed as impediments to both individual and organizational learning (Argyris 1992d). Senge (1990) recognised that identifying the gaps between espoused theories and theories in use is often pivotal to deeper learning. It is problematic whether this can be achieved successfully without dealing with the way in which people come to understand. Moreover, the importance that Senge (1992) placed on the role of mental models relates as much to the interpretative spirit element of organizational learning as the systems and structures view. Addleson himself recognized this: "If the object is to understand and to solve organizational problems, the way to do so is to understand how people concerned see things" (p. 37)

How people see things is an important element of mental models. Overlaying the systems and structures view of organizational learning with the interpretative spirit of organizational learning provides a broader and more insightful view of organizational learning.

2.2.5 Operationalizing and facilitating organizational learning

The literature abounds with ways in which organizations might facilitate learning. Those organizations which are able to sustain organizational learning successfully are

commonly referred to as learning organizations (McGill et al 1993; Phillips & Watkins 1996; Senge 1992), although the literature relating to *organizational learning* and *learning organizations* may be perceived as being in two distinct categories (Argyris and Schon 1996). According to some, these two distinct categories of the literature are identified on the basis of consultants and practitioners promulgating the *learning organization* category of the literature. The second category labeled as *organizational learning* literature, according to Argyris and Schon (1996) appears to be the domain of the sceptical scholar.

Nevertheless, there appears to be a number of common elements in both strands of the literature that focus on ways to facilitate organizational learning or remove the impediments to organizational learning. One of the problems in this area is the use of different terms and labels often with similar meanings. It is generally agreed that the literature relating to organizational learning is diverse and fragmented (Dodgson 1993; Huber 1991; Popper and Lipshitz 2000). This has also contributed to the variety of tools used to facilitate as well as to investigate and to operationalize organizational learning. Terms such as constructs (Huber 1991), dimensions (Foley and Armstrong 1997[3]; McGill et al 1993), organizational learning mechanisms and learning culture values, (Lipshitz and Popper 1996; Popper and Lipshitz 1998, 2000), learning organization features (Kloot 1997) and disciplines (Senge 1992) are scattered throughout the literature.

One of the more comprehensive and integrated frameworks for evaluating and facilitating organizational learning in the literature to date is that of DiBella & Nevis (1998).[4] They have developed a two-part framework that describes organizations as learning systems. The model has then been integrated with Huber's (1991) constructs to provide the elements of an organizational learning system.

[3] Foley and Armstrong (1997) in a consulting assignment relied on the work of the American Society for Training and Development's organization assessment framework.

[4] This most recent work by DiBella and Nevis emanated from their earlier work in Nevis et al (1995).

The main components of the two-part framework are *learning orientations* and *facilitating factors*. These learning orientations and facilitating factors provide both breadth and depth in relation to the key variables likely to influence the form, level and extent of organizational learning within an organization. Each is discussed below, while Exhibit 2.3 illustrates the components of each.

Exhibit 2.3: Learning orientations and facilitating factors

Learning Orientations	Facilitating Factors
Knowledge Source Internal — External	***Scanning Imperative***
Content-Process Focus Content — Process	***Performance Gap***
Knowledge Reserve Personal — Public	***Concern for Measurement***
Dissemination Mode Formal — Informal	***Organizational Curiosity***
Learning Scope Incremental (single-loop) — Transformative (double-loop)	***Climate of Openness***
Value-Chain Focus Design — Market-deliver	***Continuous Education***
Learning Focus Individual — Group	***Operational Variety***
	Multiple Advocates
	Involved Leadership
	Systems Perspective

(Developed from DiBella and Nevis 1998)

2.2.5.1. Learning orientations

Learning orientations are the constructs that reflect where learning takes place and the nature of what is learned. Each construct representing values or practices is presented as

a polar choice on a continuum, where taking a particular position is not right or wrong but simply a reflection of the learning approach of the organization. Seven learning orientation constructs were identified by DiBella and Nevis (1998). The seven were:

- knowledge source;
- content-process focus;
- knowledge reserve;
- dissemination mode;
- learning scope;
- value-chain focus; and
- learning focus.

Each of these is discussed below.

Knowledge source

This orientation relates to whether knowledge acquisition and development come from internal and/or external sources. In some ways, this orientation draws on the distinction between *innovation by doing* and *innovation by imitating*. Communities of practice – both internal and external – may be an important source of knowledge. Communities of practice may be viewed as formal or informal groups or relationships of people who meet, share tacit knowledge, exchange ideas about work practices and experiment with new methods and ideas, and engage in discussions which affirm or modify Argyris and Schon's (1996) theory-in-use concepts (Hendry 1996). Outside sources of knowledge are often critical to the innovation process (Cohen and Levinthal 1990). Cohen and Levinthal argued that the ability of the organization to evaluate and use outside knowledge was largely a function of prior-related knowledge.

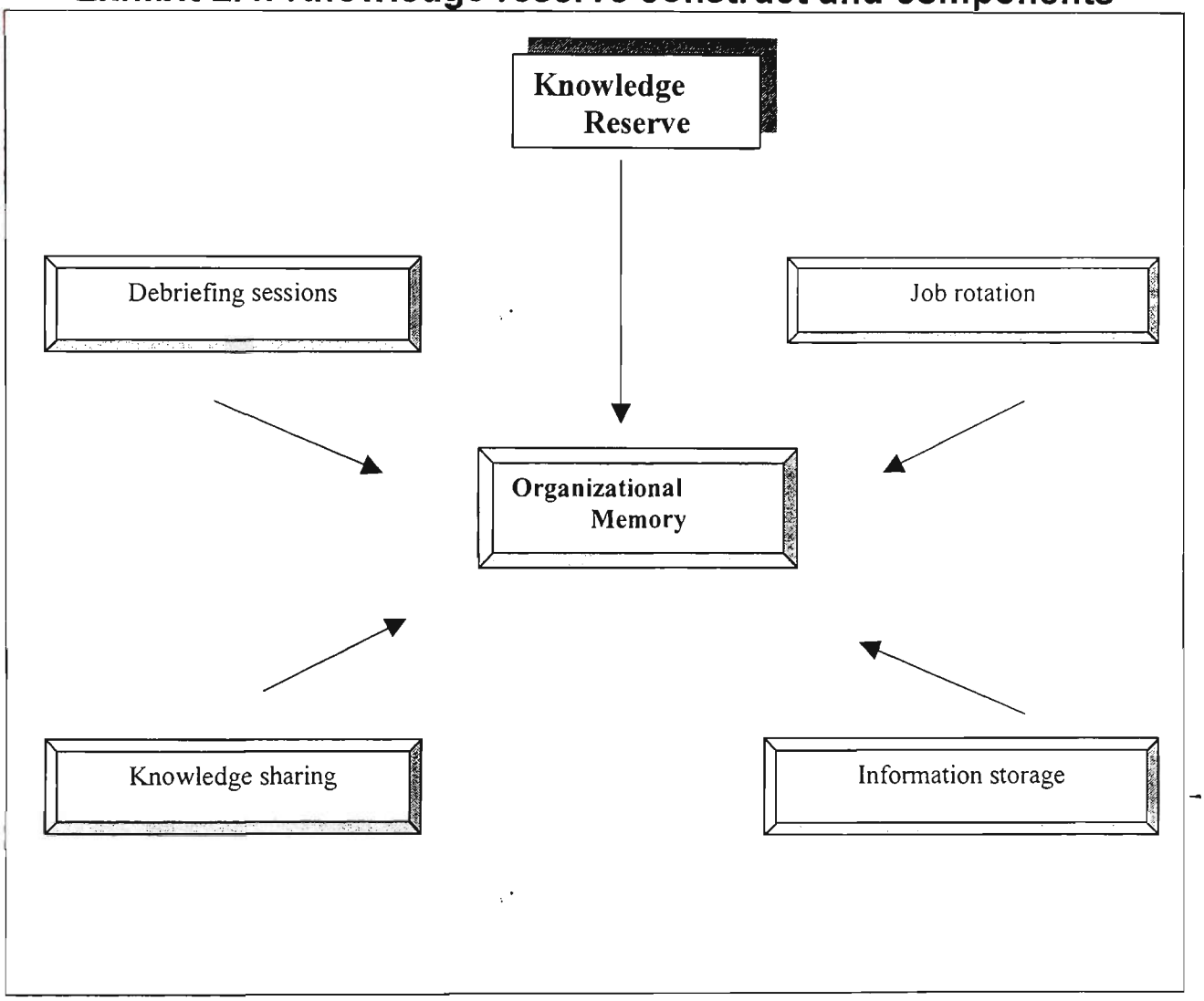
Content-process focus

This orientation relates to the organization's preference for knowledge via a focus on product and service attributes or the processes that underlie or support them. The nature of the organization and, indeed, organizational units may have some influence on the focus in this orientation.

Knowledge reserve

This orientation relates in part to a sometimes-contentious issue of whether knowledge is able to be stored in the organization's memory. Four variables that relate to the mechanisms used within an organization to retain knowledge within the organization and to add to the organization's knowledge reserve are: debriefing sessions; job rotation; knowledge sharing; and, information storage (Huber 1991; Kim 1993; Levitt and March 1988; Nonaka 1991; Popper and Lipshitz 1998). The link between the construct and the four variables is demonstrated in Exhibit 2.4.

Exhibit 2.4: Knowledge reserve construct and components



(Developed from the work of Huber 1991; Kim 1993; Levitt and March 1988; Nonaka 1991; Popper and Lipshitz 1998)

Dissemination Mode

The dissemination mode construct relates to the way in which learning and knowledge are disseminated throughout the organization. The organization-wide choice is formal as opposed to informal methods. Formal processes would rely on institutionalized modes of dissemination and support Senge's (1990) mental models. The informal relies on organizational members getting together and sharing knowledge, learning and insights. While this might occur in an ad hoc way, maybe the organization relies on this informal process of dissemination as an integral knowledge/learning tool. The dissemination mode may be influenced by the extent of the organization's *absorptive capacity*. Absorptive capacity may be viewed as the existence of prior knowledge (including knowledge of the most recent developments in a given field), which facilitates the recognition of new information, assimilates it and applies it to commercial needs (Cohen and Levinthal 1990). The issue of absorptive capacity will be further explored in Section 2.3.3, as a characteristic influencing the adoption of innovations.

Learning scope

The learning scope construct relates to whether knowledge/learning is focused on methods and tools to improve existing knowledge and practices (incremental or single-loop learning); or on knowledge/learning that challenges underlying assumptions about existing knowledge and practices (transformative or double-loop learning) (Argyris 1992c; Argyris and Schon 1978; DiBella and Nevis 1998),

Value-chain focus

An organization's internal value-chain is its set of interrelated value creating activities (Porter 1985). The internal value-chain can be viewed as part of a wider industry-based value system (Porter 1985; Shank and Govindarajan 1993). This construct as a learning orientation focuses on where in the value-chain the organization believes it can best commit its resources to develop its competitive advantage (DiBella and Nevis 1998).

Learning focus

This construct relates to the difference between targeting learning at the individual level or at the team or group level. DiBella and Nevis (1998) support the combination of both individual and team development. This is in line with some of the work by Senge (1990) who supported both personal mastery and team learning.

Combined, the seven learning orientation constructs make it possible to develop a picture of the learning processes within an organization. For any individual organization, once absorbed into the everyday life and operations of the business, the learning orientations provide an indication of the attitudes and preferences of the organization in terms of the what and how of learning (DiBella and Nevis 1998)

2.2.5.2 Facilitating factors

Facilitating factors are ten constructs that collectively represent an organization's learning potential. The more each is present the more the opportunity exists for learning (DiBella and Nevis 1998). The ten facilitating factor constructs are:

- scanning imperative;
- performance gap;
- concern for measurement;
- organizational curiosity;
- climate of openness;
- continuous education;
- operational variety;
- multiple advocates;
- involved leadership; and
- systems perspective.

Each of these is discussed below.

Scanning imperative

This construct relates to the practice of scanning the external environment to provide stimulation and direction of knowledge generation (DiBella and Nevis 1998). The nature

of the scanning may take a variety of forms from high vigilance, active scanning to routine scanning or maintenance of a state of alertness for information (Huber 1991)

Performance gap

This construct focuses on the shared awareness of organizational members of any variances between desired performance and actual performance. With a direct link to management accounting with its emphasis on performance, this construct requires a little extra attention. DiBella and Nevis (1998) identified two aspects to this construct:

- the form of analysis used to reveal a performance gap; and
- the identification of a new vision or levels of performance not previously considered.

Both of these are viewed as means of identifying learning opportunities by the use of new knowledge and/or changing the way things have been previously performed. This second aspect may involve a certain amount of unlearning. Rogers (1995) suggested that the identification of a performance gap may lead to the search for an innovation.

DiBella and Nevis (1998) also identified three kinds of problem that may often act as barriers either to recognizing or to responding to a performance gap:

- use of the wrong kind of measures to monitor performance. The management accounting literature contains abundant material relating to the issue of performance measures (see for example, Johnson and Kaplan 1987; Kaplan and Norton 1996);
- failure to adopt a *systems perspective* when tackling performance gap problems; and
- the potential for complacency from a lengthy period of positive results, masking the continuing need for critical self-examination.

Concern for measurement

This construct, while linked to the previous one, extends the notion of performance measurement by focusing on an environment where managers are willing to seek new measures of performance. These measures might relate to non-traditional or unconventional performance metrics, and incorporate some of the developments in innovations such as the balanced scorecard (Kaplan and Norton 1996)

Organizational curiosity

This construct relates to the willingness of the organization and its members to try new things, curiosity about how things work, and the preparedness of the organization to experiment with aspects of policies, methods and procedures (DiBella and Nevis 1998). The greater the tolerance to 'curiosity' by organizational members, then the greater the likelihood that learning is being facilitated. The path to developing organizational curiosity may best be achieved via a plan for small evolutionary experiments and developments rather than major revolutionary ones (DiBella and Nevis 1998).

Climate of openness

This construct focuses on the willingness of an organization to foster communication via open boundaries providing enhanced learning opportunities (DiBella and Nevis 1998). One impediment to a climate of openness is the extent of defensive behaviour or defensive routines (Argyris 1992b; 1992d) as discussed earlier in this chapter. DiBella and Nevis noted the difficulty in improving the climate of openness with deeply entrenched assumptions about trust and control major impediments.

Continuous education

This construct relates to the commitment of an organization to lifelong education at all levels of the organization (DiBella and Nevis 1998) and is in line with Senge's (1992) *personal mastery* concept. Embedding continuous education within an organization (or business-unit therein) requires a little more than simply sending staff on a training program (DiBella and Nevis 1998). Nevertheless, a suitable starting point would be to have some resources committed to the concept of training and education. In the first instance, a line item in the budget of business units and the organization would provide some indication.

Operational variety

This construct is linked to the organizational curiosity construct and focuses on the concept that there is often more than one way of doing things and performing tasks. The

tolerance of multiple ways of doing things is opposite to the historical control concepts emanating from the scientific management movement (DiBella and Nevis 1998).

Multiple advocates

This construct revolves around the concept that usually a number of advocates or *champions* are required in order for innovations to succeed and knowledge to be effectively utilised and disseminated. The more of the organization members involved in the promotion of a new learning mode or innovation, the greater the likelihood of success (DiBella and Nevis 1998). DiBella and Nevis (1998) elaborated:

> *...the greater the number of advocates who promote a new idea and the greater the number of 'gatekeepers' who bring knowledge into the system, the more rapidly and extensively will true organizational learning take place. (p. 75)*

Involved leadership

This construct focuses on the role of leadership in facilitating learning acquisition and creating an organization-wide learning environment. Moreover, merely creating an environment conducive to learning and knowledge acquisition is insufficient. A greater effect is more likely where senior managers and leaders are actively involved in the knowledge acquisition and learning and play an integral role in its diffusion (DiBella and Nevis 1998). The role of leadership is critical to the development of organizational learning (Beer and Eisenstat 2000; Senge 1990; Shields and Young 1989; Shields and McEwen 1996), and the leadership role may be viewed as shaping and building understanding rather than merely giving information (Addleson 1990).

Systems perspective

This construct was the 'fifth discipline' in Senge's (1992) *The Fifth Discipline*. Its underlying basis is that managers need to be able to see the interdependencies within an organization. Organizational learning is limited when staff cannot recognise the relationships among processes, structures and dispersed actions (DiBella and Nevis 1998). There is some link between this perspective and the value-chain perspective, as an understanding of the organization's value-chain will assist with the development of a

systems perspective.

These learning orientations and facilitating factors developed by DiBella & Nevis (1998) provide an integrated framework from which to investigate organizational learning issues within organizations. At the same time, other authors have promulgated lists of constructs and variables as means of evaluating learning capability or investigating organizational learning issues (Huber 1991; Popper and Lipshitz 1998; Senge 1990). To enhance the confidence in the framework adopted for this study with learning orientations and facilitating factors as central components, these constructs have been cross-referenced to the constructs and variables used by some of these other authors. In Exhibit 2.5 the constructs and variables identified by other authors cross-referenced to the learning orientations and facilitating factors used in this study are provided.

Exhibit 2.5: Cross referencing of learning orientations and facilitating factors with other literature

Organizational Learning Variables	Link to Learning Orientations (LO) and Facilitating Factors (FF) of DiBella and Nevis.
Beer and Eisenstat (2000) **Six inhibitors to learning and strategy implementation**	
Senior management style	FF: involved leadership
Unclear strategy and conflicting priorities	FF: involved leadership
Ineffective senior management	FF: involved leadership
Poor vertical communication	LO: dissemination mode; FF: climate of openness
Poor coordination across functions	FF: systems perspective
Inadequate down-the-line leadership skills and development	FFs: involved leadership, continuous education; LO: learning focus
Foley and Armstrong (1997) **Common dimensions of a learning organization**	
Leadership and management	FF: involved leadership
Culture	Envelops entire framework
Communication and knowledge systems	LOs: knowledge source; dissemination mode
The structure	
Support systems	LOs: learning focus, learning scope; FF: concern for measurement
Technology	LOs: dissemination mode, knowledge reserve
Huber (1991) **Four constructs**	
Knowledge acquisition	DiBella and Nevis' framework is integrated with Huber's constructs to produce a learning system framework.
Information distribution	
Information Interpretation	
Organizational memory	
Foley and Armstrong (1997) **Learning Environment Structures and Processes**	
Learning and development drivers (the learning environment)	FFs: continuous education, climate of openness.
Knowledge and resources (Identifying learning and development needs)	LO: learning focus
Learning and development support mechanisms (Meeting learning and development needs)	LO: Learning scope
Knowledge utilization assimilation and integration (Applying	LO: dissemination mode

learning in the workplace)	
Senge (1992) **Five disciplines relating to the learning organization**	
Systems thinking	FF: systems perspective
Personal mastery	LO: learning focus; FF: continuous education
Mental models	LO: dissemination mode FF: organizational curiosity
Building shared vision	FF: operational variety, multiple advocates, systems perspective.
Team learning	LO: learning focus, dissemination mode.
Kloot (1997) **Learning organization features**	
Appropriate structures	
Corporate learning culture	Envelops entire framework
Empowerment	FF: multiple advocates, climate of openness; organizational curiosity
Environmental scanning	FF: scanning imperative
Knowledge creation and transfer	LO: knowledge source, dissemination mode.
Learning technology	
Quality and continuous improvement	FF: organizational curiosity, continuous education
Strategy	
Supportive atmosphere	FF: climate of openness, organizational curiosity
Teamwork and networking	LO: learning focus
Vision	
Popper & Lipshitz (1998) **Learning culture values**	
Continuous learning	FF: continuous education, organizational curiosity
Valid information	LO: learning scope, dissemination mode
Transparency	LO: knowledge reserve
Issue Orientation	LO: dissemination mode. knowledge reserve
Accountability	LO: learning scope, learning focus; FF: performance gap
Kaplan and Norton (1996) **Learning and growth enablers***	
Employee capabilities	FF: continuous education
Information system's capabilities	LO: dissemination mode
Motivation, empowerment and alignment	FF: multiple advocates, systems perspective; LO: learning focus
Strategic learning enablers**	
Shared strategic framework	LOs: learning scope, dissemination mode FFs: systems perspective, involved leadership
Feedback process	LO: dissemination mode; FFs: performance gap, concern for measurement
Team-problem solving process	LO: learning focus; FF: performance gap, multiple advocates

* Kaplan and Norton's (1996) learning and growth enablers were a significant component of the *learning and growth perspective*, which was the fourth perspective of their *balanced scorecard,* now a popular management accounting innovation discussed later in the chapter.

** Kaplan and Norton (1996) differentiate between organizational learning at the operational level and at the senior management and strategic business unit level. When it occurs [particularly in the double-loop form] at the management and business loop level they label it strategic learning.

The results of the cross-referencing process in Exhibit 2.5, provide sufficient grounds for confidence in the framework used in this study. While different terms have often been used, the learning orientations and facilitating factors adopted for this study provide a reliable platform from which to operationalize the concept of organizational learning.

2.3 Innovation

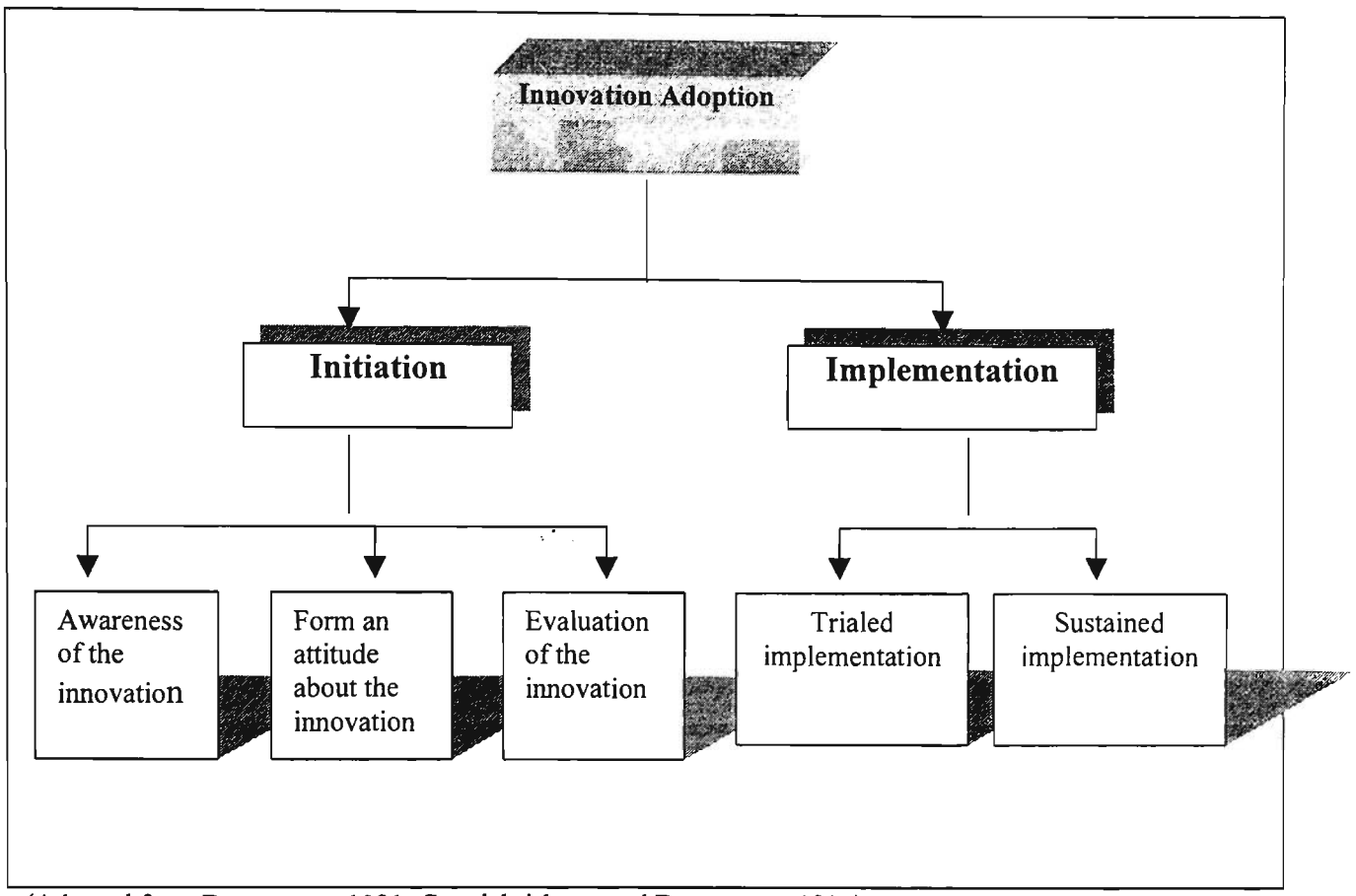
2.3.1 Introduction

Innovation may be viewed as the implementation of an idea which may relate to a device, system, process, policy, program or service and is new to the organization at the time of adoption (Damanpour 1987; 1991), though it may not be new to a population of organizations (Damanpour 1987). Innovation is often discussed in typologies: radical versus incremental innovations, high-risk versus low-risk innovations, and technical[5] and administrative innovations. The distinction between technical and administrative innovations appears to be the most appropriate for the study of organizational-based innovation as the typology highlights the differences in the nature of innovation. Moreover, the technical and administrative innovations together represent changes in a wide variety of tasks within the organization (Damanpour 1987).

The adoption of innovation may be viewed as occurring in two distinct but related stages. As reflected in Exhibit 2.6 these two stages are the *initiation stage* and the *implementation stage*.

[5] In the literature, the terms technical innovation and technological innovation are treated as synonyms.

Exhibit 2.6: Adoption of innovation stages



(Adapted from Damanpour 1991; Gopalakrishnan and Damanpour 1997)

The broad classification of adoption of innovation into these two broad stages is referred to as a unitary sequence model (Gopalakrishnan and Damanpour 1997). These stages may be further disaggregated whereby the initiation stage is viewed as having three sub-stages:

- awareness of an innovation;
- formation of an attitude towards it; and
- evaluation from an organizational viewpoint.

This initiation stage encompasses all activities relating to problem perception, information gathering, attitude formation and evaluation, and gaining the resources relating to the decision to adopt.

The implementation stage may be viewed as having two sub-stages:

- trialed implementation; and
- sustained implementation.

This implementation stage consists of all events and actions relating to modifications in an innovation and an organization, initial utilization and, importantly, continued use of the innovation as it becomes a routine feature of the organization (Damanpour 1991; Gopalakrishnan and Damanpour 1997). A similar distinction is made by Bjθrnenak (1997) in his study of diffusion of activity-based costing (ABC) in Norway. Bjθrnenak recognized the existence of a potential time lag between the adoption [defined as initiation] of an idea and the implementation of it, concluding that the number of adopters/initiators of an idea will usually be greater than the number implementing the idea. Rogers (1995) suggested five stages within the same broader stages of initiation and implementation. The initiation stage consisted of agenda setting and matching, while the implementation stage consisted of redefining/restructuring, clarifying and routinizing. Cooper and Zmud (1990) identified a six stage model of innovation adoption: initiation; adoption; adaptation; acceptance; routinization; and infusion, which were the stages of implementation used by Anderson (1995) in her activity-based costing field-study. Gosselin (1997) opted for a broader four-stage model incorporating adoption, preparation, implementation and routinization stages.

2.3.2 Technical and administrative innovations

The distinction between types of innovation may be critical as the determinants influencing the adoption and implementation of an innovation may differ depending on the type of innovation. Similarly, not all organizations are the same, so what is a high-risk innovation for one organization may not be for another (Damanpour 1987; Downs and Mohr 1976; Moch and Morse 1977).

A common distinction for innovations relates to their classification as technical or administrative. The distinction appears to be important due to the fact that they serve different functions and that they imply potentially different decision-making processes (Kimberly and Evanisko 1981). Technical innovations may be viewed as those which

bring change to operations and basic work activities through changes in technology, where technology may be defined as a tool, technique, physical equipment or system whereby individuals, sub-units or the organization itself extend their capabilities (Damanpour 1987; 1991). Meanwhile, administrative innovations may be viewed as those indirectly related to the basic work activity of the organization and more immediately related to its management. Such innovations can be said to occur in the social system of an organization, where the social system refers to human interactions and relationships (Damanpour & Evan 1984). An administrative innovation might be expected to change an organization's structure or its administrative processes (Damanpour 1987, 1991; Kimberly and Evanisko 1981).

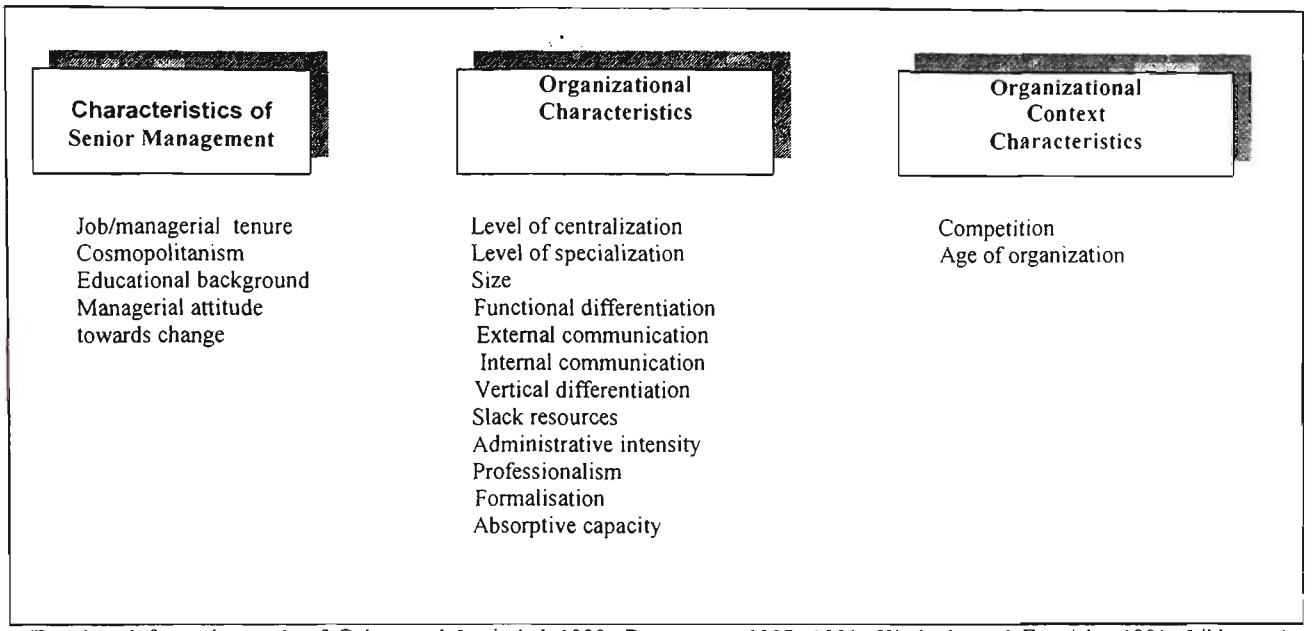
Shields & Young (1989) and Shields (1995) viewed management accounting innovations such as activity-based costing (ABC) as administrative innovations rather than as technical innovations. This view is based on the important role of behavioural influences on the success of management accounting innovations. While Argyris and Kaplan (1994) support the importance of behavioural influences they use the term *technical initiative* to describe ABC. Gosselin (1997) takes the view that some management accounting innovations, such as ABC, may possess both technical and administrative innovation characteristics (Gosselin 1997).

2.3.3 Characteristics influencing adoption of innovations

In studies relating to the adoption of innovation authors have sought to identify the key variables likely to influence the adoption of innovation. Researchers have been interested in identifying the key determinants of innovations, particularly technical (technological) and administrative innovations (Damanpour 1987, 1991; Gosselin 1997; Kimberly and Evanisko 1981; Moch and Morse, 1977). These studies, which in most cases have drawn on previous research, have tested empirically the relationship [if any] between particular characteristics and the adoption of innovation in a variety of settings.

Eighteen determinants or characteristics (independent variables) expected to have an influence on the adoption of innovations are provided in Exhibit 2.7, classified according to one of three clusters.

Exhibit 2.7: Adoption of innovation – key determinants



(Developed from the work of Cohen and Levinthal 1990; Damanpour 1987, 1991; Kimberly and Evanisko 1981; Libby and Waterhouse 1996, Rogers 1995)

The way in which each of these determinants might influence the adoption of technical or administrative innovation varies. That is, the same determinant might have a greater or lesser influence on technical than on administrative innovation and vice versa. For example, Damanpour (1987) found that administrative intensity was positively related to both technical and administrative innovation, though the strength of the relationship was greater for administrative innovation than technical innovation. Similarly, Kimberly and Evanisko (1981) found that the organizational characteristics[6] seemed to explain more of the innovation adoption than the other two clusters.

Much of the research evaluating many of these variables and their link to innovation has been based on research undertaken in libraries (Damanpour 1987; Damanpour (1991) and hospitals (Kimberly and Evanisko 1981) A brief description of each of the characteristics follows.

[6] Kimberly and Evanisko's study (1981) did not include all of the organizational characteristics identified in Exhibit 2.7.

2.3.3.1 Characteristics of senior management

Job/managerial tenure

This represents the length of service and experience that managers have with an organization (Damanpour 1991). A positive relationship has generally been found between innovation adoption and length of leader service, though there is scope for a rival hypothesis when considered in the context of new leaders bringing new ideas to an organization (Kimberly and Evanisko 1987). Damanpour (1991) found no statistically significant relationship between managerial tenure and organizational innovativeness, perhaps lending some support to the rival hypothesis of Kimberly and Evanisko (1987).

Cosmopolitanism and educational background

Kimberly and Evanisko (1987) found a positive link between the educational background and cosmopolitanism of [hospital] administrators and administrative innovation adoption.

Managerial attitude towards change

This relates to the willingness of senior management to embrace change, considered particularly important in the implementation stage, and is commonly measured by a list of items assessing values favouring change (Damanpour 1991). Damanpour's (1991) meta-analysis found a positive association between managerial attitude towards change and innovation.

The author did not explore specifically any of the senior management characteristic variables and any link to organizational innovativeness. The study was focused on interviews with some but not all senior managers.

2.3.3.2 Organizational characteristics

Level of centralization

Damanpour (1991) argued that the concentration of decision-making authority prevented innovative solutions. The resultant tests confirmed this assertion, which was supported by Kimberly and Evanisko (1981) who expected but did not get a positive relationship between centralization and the adoption of administrative innovations. Meanwhile,

Gosselin (1997) found that centralization was linked to the implementation of ABC rather than the decision to adopt ABC.

Level of specialization

The level of specialization is related to the range of specialists found in the organization (Damanpour 1987), and is often measured by the number of different occupational types or job titles in an organization. A positive association has been found to exist between levels of specialization and innovation (Damanpour 1991).

Size

Size has been found to be linked to the adoption of innovation (Damanpour 1987; Kimberly and Evanisko 1981; Libby and Waterhouse 1996; Moch and Morse 1977). Some discussion has occurred relating to the different measures used for size. Commonly, direct measures such as employee numbers, total assets, or capacity measures (such as number of beds for hospitals) are used.

Functional differentiation

Functional differentiation represents the extent to which an organization is divided into different units and is commonly measured by the total number of units under the top management level. Damanpour (1991) found a positive association between innovation and functional differentiation.

External communication

This variable relates to an organization's ability to be in contact with and scan its environment, and is commonly measured by the degree of participation in extra organizational professional activities (Damanpour 1991). To this extent, external communication is linked to similar variables such as environmental scanning.

Internal communication

This variable relates to the dispersion of new ideas within an organization as well as the environment which exists to facilitate new ideas (Damanpour 1991). Damanpour (1991) found a positive relationship between innovation and internal communication.

Vertical differentiation

Vertical differentiation relates to the extent of hierarchical levels within the organization. Though he found no significant association, Damanpour (1991) hypothesized a negative relationship between innovativeness and vertical differentiation, suggesting that communication between a number of hierarchical levels would inhibit innovativeness. Gosselin (1997) found no direct effect of vertical differentiation on the implementation process of ABC.

Slack resources

Slack resources or organizational slack relates to the difference between the resources an organization has and what it requires minimally to maintain operations (Damanpour 1987). A positive relationship with innovativeness was expected and a significant relationship was found with regard to technical innovations (Damanpour 1987).

Administrative intensity

Administrative intensity relates to the proportion of senior managers to the employee group (Damanpour 1991). Damanpour (1987) found a positive relationship between administrative intensity and innovativeness.

Professionalism

Professionalism reflects professional knowledge of organizational members, which requires both education and experience (Damanpour 1987; Damanpour 1991). A positive association has been found between professionalism and innovativeness (Damanpour 1991). This concept of professionalism is similar to the concept of absorptive capacity, (see below).

Formalization

This variable reflects the emphasis on following rules and procedures in conducting organizational activities (Damanpour 1991). While Damanpour (1991) expected a negative relationship between formalization and innovativeness, he found no significant association. Gosselin (1997) found a positive link between formalization and the implementation of ABC once the decision to adopt had been taken.

Absorptive capacity

Absorptive capacity relates to the existence of prior related knowledge including knowledge of the most recent developments in a given field, which facilitates the recognition, assimilation and application of new information to commercial needs (Cohen and Levinthal 1990). Using the term *organizational capacity to learn*, Libby and Waterhouse (1996) applied a similar concept in their study of changes in management accounting systems. They found a positive relationship between organizational capacity and changes in management accounting and control systems. The concept of absorptive capacity underpins the *social and technical skills* to which Chenhall and Langfield-Smith (1998) refer in relation to organizational change programs.

2.3.3.3 Organizational context characteristics

Competition

Some studies have found the extent of competition to have a positive association with innovation adoption (Kimberly and Evanisko 1981), while others have not (Libby and Waterhouse 1996). The differing results might be due to different contexts for the research and/or different measurement scales.

Age of organization

Kimberly and Evanisko (1981) found some association between the age of the organization and the adoption of technical innovations.

Only some of the innovation adoption characteristics discussed above (and listed in Exhibit 2.7) were explored in this investigation. This occurred for a number of reasons:

- the investigation of each of the determinants would have been a study in itself. With some eighteen variables explored in a range of previous studies, it was considered impractical to investigate all eighteen in this study
- the thrust of the research was not to focus specifically on innovation adoption characteristics;
- some of the characteristics and measurements were found to be unsuitable at the time of interviewing. For example, in relation to competition, the Libby and Waterhouse(1996) five-point measurement scale was found to be unsuitable at the business-unit level. This was identified at the time of interviewing, which at that stage rendered an exploration of the competition variable not possible. Similarly, it was believed that to gather data relating to the characteristics of the senior management cluster was not possible. While some background on each interviewee was sought, the characteristics of senior management of the organization were not sought.
- The five organizational characteristics investigated: level of centralization; size; levels of formalization; administrative intensity; and absorptive capacity were selected as variable for which data might most likely be able to be collected.

Little of this innovation-related research (Cohen and Levinthal 1990; Damanpour 1987; Gopalakrishnan and Damanpour 1997; Kimberly and Evanisko 1981) has been reported in the management accounting literature, though there have been a few exceptions (recent empirical examples include Anderson (1995), Gosselin (1997), Libby and Waterhouse (1996). Other work has raised innovation-related issues; often in an ancillary way to the research (for example, Shields 1995; Shields and Young 1989; and Argyris and Kaplan 1994; Chenhall and Langfield-Smith 1998). There have been studies in the management accounting field which have investigated adoption or implementation issues associated with a particular management accounting innovation. Some of these will be explored in the next section.

2.4 Management accounting innovation

Since the mid-1980s there have been significant developments in management accounting resulting in the initiation/adoption and implementation of innovative management accounting tools, practices and concepts (Kaplan 1994). Some of the major management accounting innovations in this time include: activity-based cost (ABC) management (Kaplan 1994); the balanced scorecard (Kaplan 1994; Kaplan and Norton 1996); business process reengineering (BPR) (Hammer and Champy 1994); strategic cost management and its components including value-chain analysis and organizational-based cost driver analysis (Shank and Govindarajan 1993); target costing (Cooper 1996; Tani et al 1994; Kato 1993); advances in operational control systems (Kaplan 1994); and economic-value-added (EVA) performance systems (Stewart & Stern 1991) Some of these innovations can be directly classified as management accounting innovations, for example, ABC, while others might be viewed as general management innovations which have an impact on, or are linked to, management accounting practice, for example, BPR, EVA.

The literature in relation to management accounting innovation is, in the main, composed of work focusing on:

- the attributes of the innovation, such as the early work by Cooper (1988);
- refinements to the innovation such as Cooper's (1990) cost hierarchy, Cooper and Kaplan's (1992) resource usage model, Kaplan and Norton's (1996) balanced scorecard developments;
- adoption and use statistics, and issues - Booth and Giacobbe (1997), and Nguyen and Brooks (1997);
- issues associated with the implementation process – such as Anderson (1995), Gosselin (1997), Shields (1995), Swenson (1995); and,
- links between the adoption of a management accounting innovation with other areas of the literature such as innovation (Anderson 1995; Chenhall and Langfield-Smith; Gosselin 1997; Libby and Waterhouse 1997) and organizational learning (Kloot 1997).

The nature of the research in these areas varies from work which is theoretical (Argyris and Kaplan 1994) and normative (such as much of the work in the professional literature) to survey work by mail questionnaire and telephone survey (Shields 1995, Swenson 1995), to intensive field work (Anderson 1997; Chenhall and Langfield-Smith; Kloot 1997) to, more recently, the use of experimental designs (Lipe and Salterio 2000).

As previously mentioned, a few recent studies have focused on management accounting innovation in the context of the innovation literature and/or the organizational learning literature. A brief comment on each of these is appropriate at this point.

Libby and Waterhouse (1996) combined elements of the organizational change and elements of the innovation literature with the organizational learning literature to test empirically the influence of four key variables as predictors of change in management accounting systems. Of the four variables, decentralization, size, competition and organizational capacity for change/learning, capacity for change/learning was the best predictor of change in management accounting systems. The variable, capacity for change/learning, was based on the premise that prior knowledge in an area facilitates an organization's ability to assimilate and exploit new knowledge and is similar to the concept of absorptive capacity (Cohen and Levinthal 1990).

Drawing on the organizational learning literature, Argyris & Kaplan (1994) developed a theoretical framework regarding the behavioural aspects of ABC implementation. Using the concepts of espoused theories, theories-in-use and defensive routines (Argyris 1992b; 1992d; Argyris and Schon 1978; 1998), Argyris and Kaplan (1994) provided a theoretical treatise on the requirements for the successful implementation of ABC. The requirements related to:

- aligning the interests and incentives of the participants;
- education and sponsorship; and
- creating internal commitment (Argyris and Kaplan 1994).

Using survey data, Gosselin (1997) examined the effect of strategic posture and organizational structure on the adoption of activity-management approaches. Activity management and its components were used as surrogates for management accounting innovation, while organizational structure was operationalized using the variables of centralization, vertical differentiation and formalization. The author concluded that strategy and organizational structure do influence decisions to adopt and implement activity management approaches.

Via a study on integrated performance measures, Chenhall and Langfield-Smith (1998) identified five factors affecting the role of the management accounting function in change programs:

- a shared view by those performing the management accounting function and managers using management accounting information of the potential role of management accounting in change programs;
- senior management support for accounting innovations;
- championing of the accounting function;
- the level of social and technical skills of the management accountants; and
- the positioning of accounting within the formal hierarchy.

Following a field-study investigation of ABC implementation, Anderson (1995) identified socio-technical factors influencing the implementation process classified as: individual, organizational structure, technology and external environment variables. Also using field-work, Kloot (1997) and Kloot et al (1999) studied organizational learning and its links to management control systems in a change environment. The studies are examples in an area where little research has been conducted.

2.5 Summary

In this chapter, the main literature relating to organizational learning, innovation and management accounting innovation has been reviewed. While some recent literature in management accounting has explored links with the literatures of innovation and to a lesser extent, organizational learning, there is generally little work that has explored these

links. This research contributes by helping to fill this gap. In Chapter 3, the research framework is developed.

Chapter 3 Research Framework

3.1 Introduction

In the previous chapter the literature relating to organizational learning, innovation and management accounting innovation was reviewed. The objective of this research is to investigate the lightly researched area of management accounting and organizational learning. In broad terms, the potential links between organizational learning and management accounting innovation are explored. In this chapter the research framework used to guide the research is outlined. It is organized in the following way: first, the research model is developed; followed by the broad and then specific research questions; the operationalizing of the key concepts in the research; a discussion of the research instruments used in the field-work; and final comments.

3.2 Research model

The purpose of this study is to explore both organizational learning and management accounting innovation, investigating potential links using a field-study. Issues associated with the choice of a field-study are detailed in Chapter 4, but here, the focus is on the research questions guiding the research.

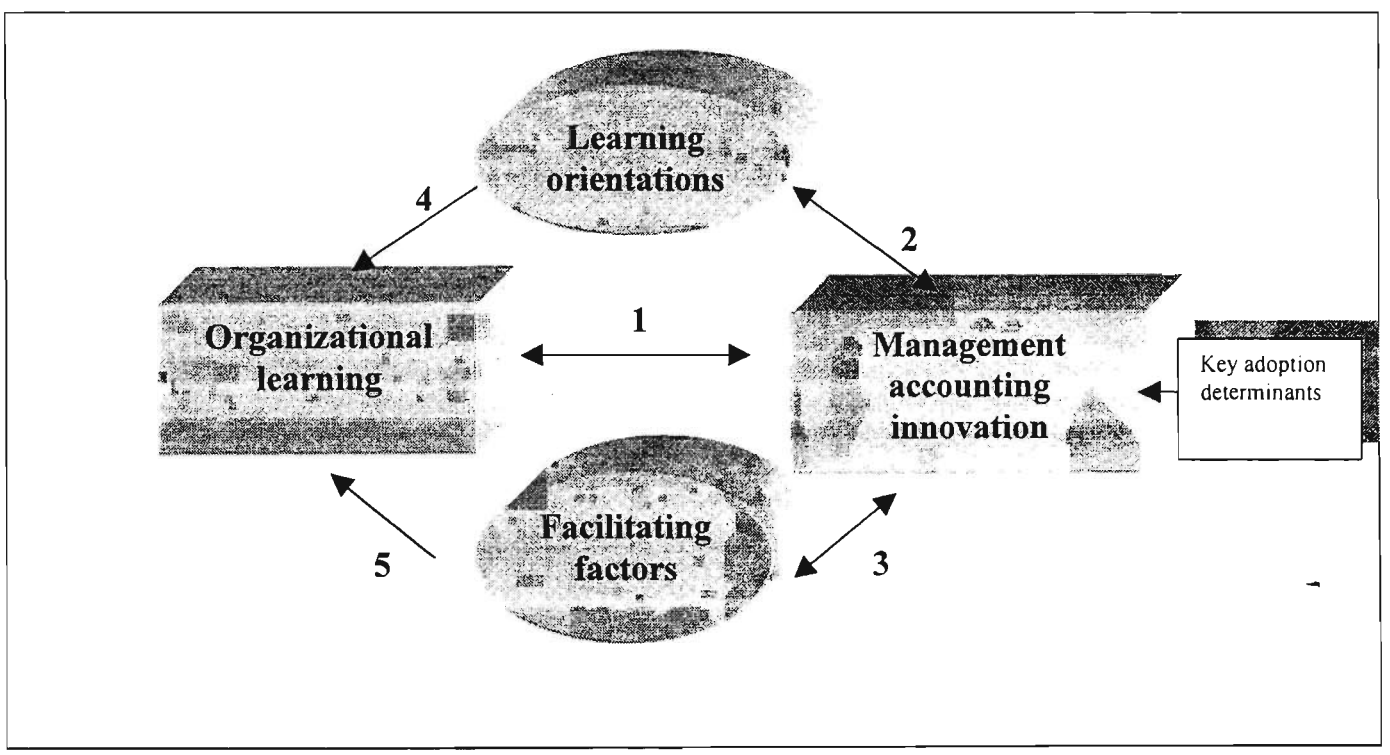
In Chapter 2, the organizational learning framework of DiBella and Nevis (1998) was examined in detail. This framework had two main components, the learning orientation constructs which explain the form of organizational learning, and the facilitating factor constructs which evaluate the extent of organizational learning. As organizational learning relates to capacity, practices and processes to improve performance, then intuitively, management accounting and organizational learning appear to have some links, or at least, the potential for links. There has been some, if limited, evidence of this recognition to date (Kloot 1997; Kloot et al 1999).

The concepts of organizational learning have been raised in a management accounting context in relation to:

- specific management accounting practices or innovations (Kaplan and Argyris 1994; Kaplan and Norton 1996; Shields and Young 1992);
- empirical research investigating aspects of management accounting and elements of organizational learning and/or innovation (Kloot 1997; Kloot et al 1999; Libby and Waterhouse 1996; Gosselin 1997); and
- calls for further research into management accounting and organizational learning concepts (Atkinson et al 1997; Shields 1997).

The research model developed here involves an investigation of the role of learning orientations and facilitating factors as they measure organizational learning and interact with management accounting innovation. This research model is depicted in Exhibit 3.1.

Exhibit 3.1: Organizational learning and management accounting innovation: research model



Two broad questions are to be investigated:

- whether the form and extent of organizational learning influences the level of management accounting innovation; and

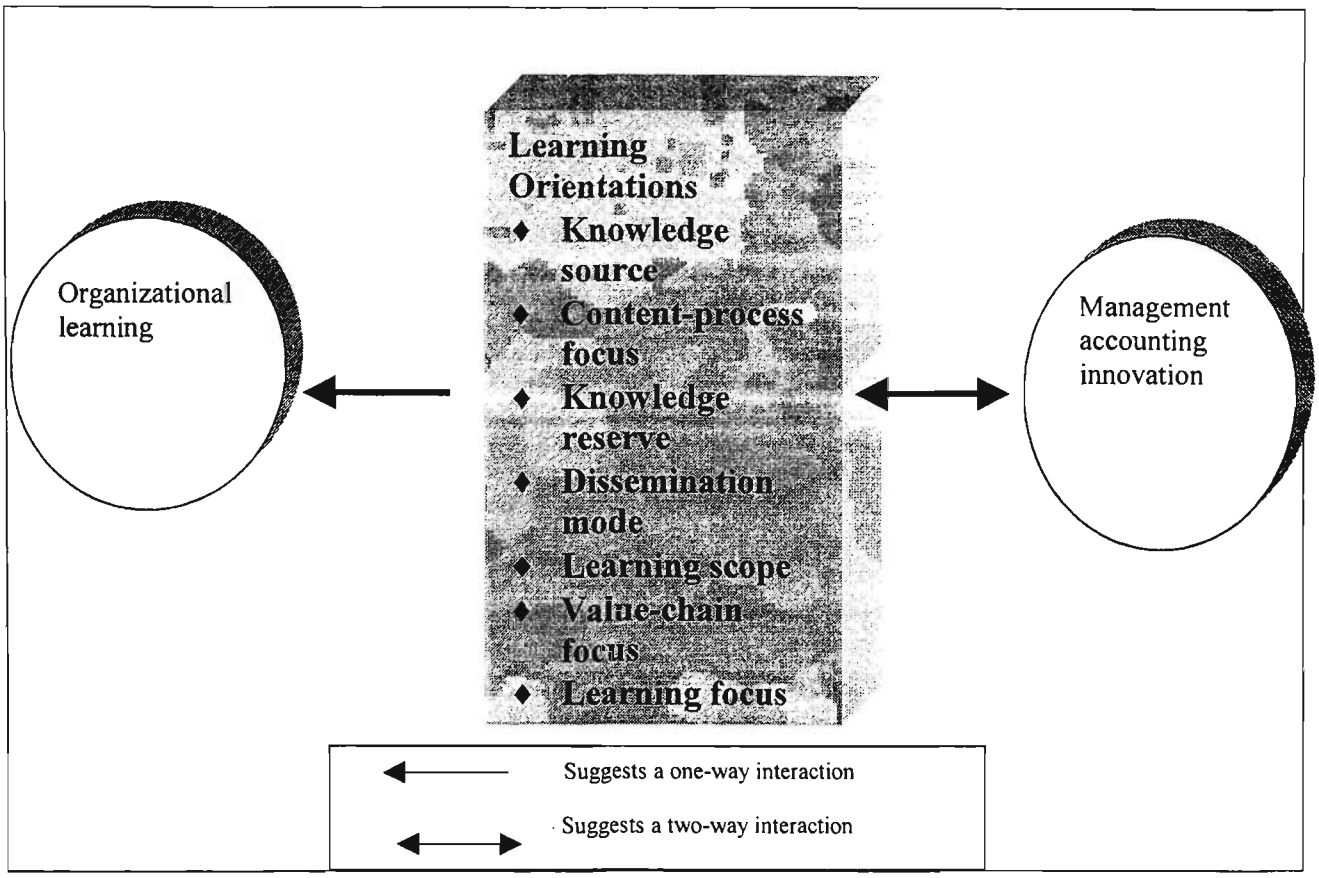
- whether the level of management accounting innovation influences the organizational learning environment.

Exhibit 3.1 depicts the broad potential links between organizational learning and management accounting innovation as depicted by arrow 1. As outlined in Chapter 2, organizational learning is operationalized using a two-component model comprising learning orientations and facilitating factors. This two-component model was developed by DiBella and Nevis (1998), following their extended field-based work on organizational learning. Learning orientations are seven constructs that reflect where learning takes place and the nature of what is learned (see Exhibit 2.4). Facilitating factors are ten constructs that collectively represent an organization's learning potential (see Exhibit 2.4). Arrows 2 and 3 in Exhibit 3.1 suggest that management accounting innovation may influence and/or be influenced by the learning orientations and facilitating factors as measures of organizational learning. Arrows 4 and 5 depict learning orientations and facilitating factors as facilitators of organizational learning.

In more detail than Exhibit 3.1, Exhibit 3.2 illustrates specifically the links to be investigated between the learning orientations, organizational learning and management accounting innovation.

The model characterizes learning orientations as influencing organizational learning by determining how organizations learn. The principal characteristics of the learning orientations demonstrate the influences of the learning orientations over organizational learning (Exhibit 3.2). However, the learning orientations may also influence and be influenced by management accounting innovation

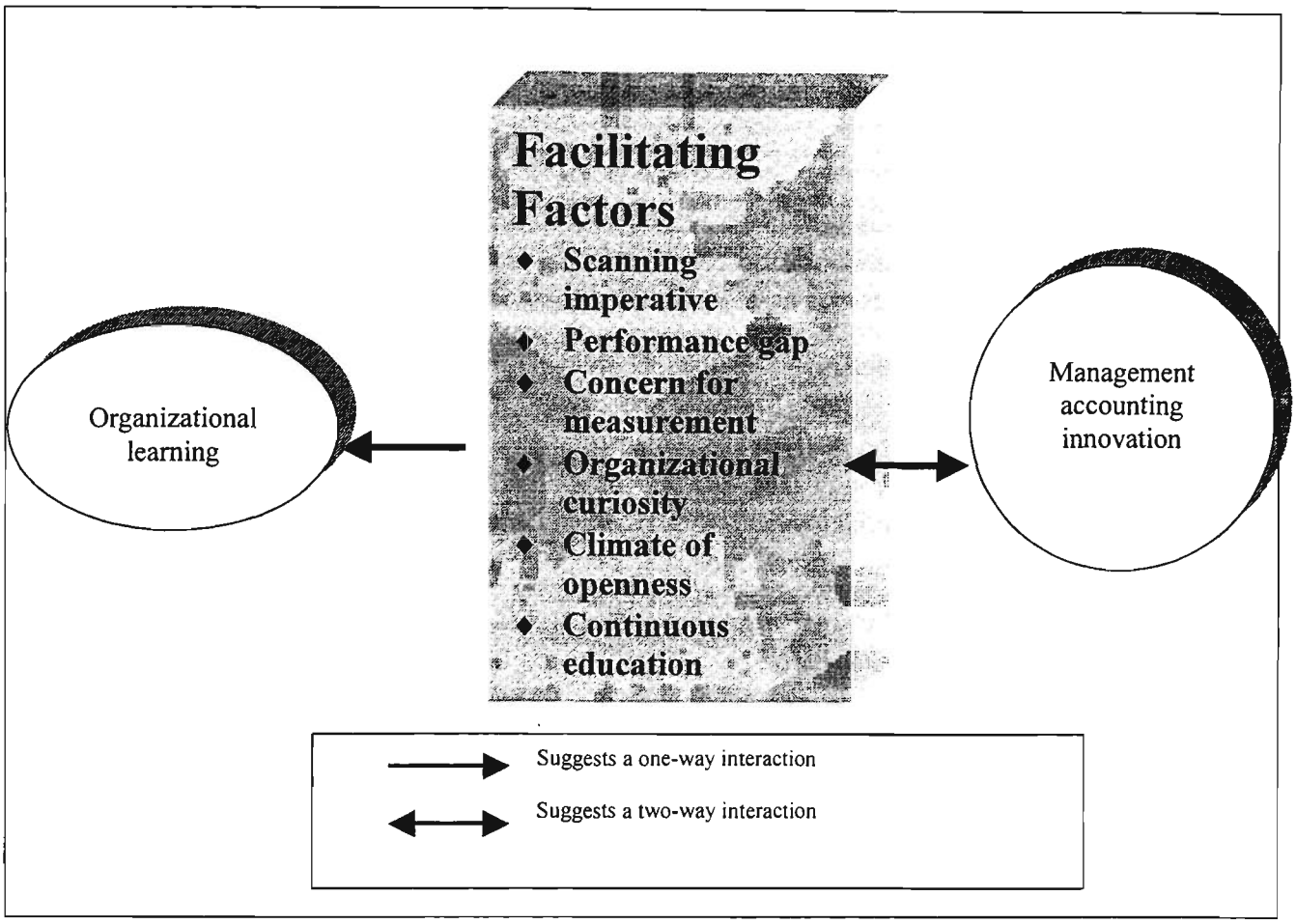
Exhibit 3.2: Learning orientations and interactions with organizational learning and management accounting innovation



For example, *knowledge source* may influence the ability of an organization to identify innovative management accounting practices due to the organization's preparedness to seek and to experiment with new and innovative practices. An example of management accounting innovation influencing the learning orientations would be an innovation such as activity-based costing influencing the *dissemination mode* learning orientation.

The model (Exhibit 3.1) also characterizes the facilitating factors as influencing both organizational learning and management accounting innovation. Exhibit 3.3 illustrates in more detail the proposed links between the facilitating factors, organizational learning and management accounting innovation.

Exhibit 3.3: Facilitating factors and interactions with organizational learning and management accounting innovation



The existence of the facilitating factors does not guarantee useful learning but does influence the learning potential of an organization (DiBella and Nevis1998). The model proposes a two-way interaction between the facilitating factors and management accounting innovation, that is, the facilitating factors may influence management accounting innovation, while management accounting innovation may also influence the facilitating factors. For example, the facilitating factor *scanning imperative* would assist with the adoption of innovative management accounting practices via benchmarking

comparisons and by perusing the external environment and identifying the innovative practices of others. On the other hand, innovative management accounting practices may assist with the *performance gap* facilitating factor. The use of innovative tools such as the balanced scorecard and activity-based management would provide useful information and practices in overcoming the barriers to recognizing a performance gap. Moreover, each might assist with the pursuit of higher performance levels.

3.3 Research questions

As outlined in Section 3.2 this research in the first instance focuses on exploring two broad questions, depicted here as research question 1 (RQ1) and research question 2 (RQ2):

RQ 1 whether the form and extent of organizational learning influences the level of management accounting innovation; and

RQ2 whether the level of management accounting innovation influences the organizational learning environment.

In order to answer these research questions, it is necessary to investigate:

- the form of organizational learning in the case-site as depicted by the learning orientation choices;
- the extent of organizational learning in the case-site as depicted by the existence and extent of the facilitating factors;
- the extent and type of the management accounting innovation adoption;
- whether management accounting innovation is viewed as an administrative or technical innovation;
- the main determinants underlying the adoption of management accounting innovation. These relate to the :
  - organizational characteristics as depicted in the innovations literature;
  - influence of the learning orientations (Exhibit 3.2); and

- influence of the facilitating factors on management accounting innovation adoption (Exhibit 3.3).

3.4 Operationalizing key concepts and the research instruments

The research methodology issues are explored in detail in Chapter 4, including justification of the case/field-study method used to facilitate the investigation. Nevertheless, it seems appropriate, in this Chapter, to comment on the operationalizing of the key concepts and the research instruments used as they are closely tied to the research model outlined in the preceding sections.

As semi-structured interviews were the main data collection tool in the research, three main research instruments and two minor research instruments were used to guide the interviews. As demonstrated later in Exhibit 4.9 not all instruments were used in each interview. The three main instruments related to the key areas under investigation, namely, learning orientations and facilitating factors as measures of organizational learning and management accounting innovation. The two minor instruments related predominantly, but not exclusively, to EVA.

The learning orientations instrument was structured with one page for each of the seven constructs. Each construct was operationalized by a series of prompts and questions. In some interviews one or more of the prompts may have been used. The interviews were conducted in a *conversational style*. As a consequence, not all prompts were used or issues explored to the same degree. An example of one of the pages from the learning orientations instrument is shown in Exhibit 3.4. The full instrument is contained in Appendix 1. Each of the construct pages was adapted from DiBella and Nevis (1998).

Exhibit 3.4: Learning orientation construct research instrument sample

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
1. **Knowledge source:** whether knowledge development comes from internal or external sources as extremes.	Internal ←						External →	♦ Use of consultants ♦ Use of internal groups or involvement in external groups for developing and sharing new ideas. ♦ Innovation in non-accounting and accounting areas from internal developments, OR from imitating ♦ Levels of R & D investment

(Source: Learning orientations interview schedule [developed from DiBella and Nevis 1998] – Appendix 1)

Similarly, the facilitating factors instrument was structured with one page for each of the ten constructs. Again, each construct was operationalized by a series of prompts and questions, which were used to varying degrees in the interviews. An example of one of the facilitating factor constructs is contained in Exhibit 3.5, while the full instrument is contained in Appendix 2. As for the learning orientations, the construct pages were adapted from the work of DiBella and Nevis (1998).

Exhibit 3.5: Facilitating factor construct research instrument sample

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
4. Organizational curiosity Support for trying new things; curiosity about how things work; ability to "play" with things; "failures" are accepted, not punished; changes in work processes, policies and structures are a continuous series of learning opportunities.								♦ Acceptance of experimentation ♦ Existence of 'one best way' ♦ Encouragement of new ideas ♦ How new ideas are dealt with m-individual cf group-based. Any processes for dealing with new ideas? ♦ Role of MAI in encouraging organizational curiosity, eg has the existence of ABC encouraged questioning about the results and related organizational issues.

(Source: Facilitating factors interview schedule [developed from DiBella and Nevis 1998] – Appendix 2)

Management accounting innovation was operationalized by focusing on a number of the key (popular) innovations developed and used by organizations over the last ten to fifteen years. Those selected were: activity-based costing/management; business process reengineering; value-chain analysis; target costing; balanced scorecard; strategic cost management; advances in operational control systems; and, economic value added. The research instrument developed in this area sought to identify the extent of adoption of any of the management accounting innovations. It also sought to explore a range of issues drawn from the innovation and management accounting area. These included: management accounting innovation as a technical or administrative innovation; determinants of the management accounting innovation adopted ranging from organizational characteristics to organizational context characteristics; the main uses of management accounting information; and the extent of any individual and organizational defensive routines. For a number of the areas on the instrument likert-scale responses

were sought.. The likert-scales were not developed with the objective of facilitating quantitative analysis. Rather, the purpose was to gauge the level of the strength of the respondent's view of the variable under investigation. The results reported reflect this approach rather than any quantitative analysis approach. An example is contained in Exhibit 3.6 which contains an excerpt from the full instrument and relates to some of the organizational characteristics explored in the interviews in relation to management accounting innovation. The full instrument is contained in Appendix 3.

Exhibit 3.6: Management accounting innovation adoption instrument sample.

1. Level of centralization	♦ Participation in decision-making ♦ Degree of freedom to make own decisions ♦ Readiness to accept failure	**Level of participation in decision-making is:** High Moderate Low 1 2 3 4 5 6 7 **The degree of freedom for organizational members to make their own decisions is:** High Moderate Low 1 2 3 4 5 6 7 **The degree of readiness to accept failure is:** High Moderate Low 1 2 3 4 5 6 7
2. Size	Number of employees	
3. Formalization	♦ Level of rules, manuals and job descriptions controlling employee activities ♦ Freedom to 'break the rules' as a form of inquiry and curiosity	**The level of rules, policy manuals and tight job descriptions is:** High Moderate Low 1 2 3 4 5 6 7 **The degree of freedom to 'break the rules', to be inquisitive and curious is:** High Moderate Low 1 2 3 4 5 6 7
4. Administrative intensity	Ratio of managers to total employees	

5. Absorptive capacity – accounting office	♦ Qualifications ♦ Level of professional development and training	- Percentage of degree, post degree holders in accounting office - % of budget devoted to professional development and training - who has the majority access to professional development and training **Rate the proactive level (as a leader of management accounting usefulness) of the management accounting office:** High Moderate Low 1 2 3 4 5 6 7

(Source: Management accounting innovation interview schedule – Appendix 3)

3.5 Summary

In this chapter the research framework used to guide the research has been outlined. The model suggests a link between organizational learning and management accounting innovation. The learning orientations and facilitating factors are used to measure organizational learning and the interaction with management accounting innovation. Two broad research questions guide the research, relating to the influence of the form and extent of organizational learning on management accounting innovation and, the influence of the level of management accounting innovation on the organizational learning environment. In the final part of the chapter, the focus was on how the key concepts would be operationalized.

Chapter 4: Research Methodology

4.1 Introduction

In Chapter 3 the research framework guiding this research was detailed. In this chapter the research methodology underpinning the study and the principal research method used in the investigation is described and justified. The chapter is set out as follows:

- a discussion of the available research methods and their use in the published literature;
- the suitability of available research methods to this study;
- a comprehensive review of the case/field study method, including the steps taken in this study to overcome the limitations;
- how the case/field study was conducted; and
- an outline of the data analysis method.

4.2 Available research methods

In this section the research methods available to the broader accounting field and more specifically to the management accounting discipline are outlined. The methods of research available for deployment in accounting are usually drawn from the key methods of experimental research, survey research, historical inquiry, field research and emerging methods in capital markets research such as events studies (Richardson 1996). Management accounting research methods will often be drawn from this list though some writers have chosen to dissect these key methods further (Kaplan 1986; Klemstine and Maher 1983; Shields 1997).

Klemstine and Maher (1983) classified management accounting articles that had been published in: *The Accounting Review; Journal of Accounting Research; Abacus; Accounting, Organizations and Society* and research studies of the American Accounting Association. Their classification of papers by method of analysis was modified by Kaplan (1986). A summary of the research method, its definition and number of published papers based on Kaplan's investigation is provided in Exhibit 4.1.

Exhibit 4.1: Research methods in management accounting-published research

	Definition	Number	Percentage	Cumulative Percentage
A priori	Conceptual reasoning without an explicit model manipulation, experiment, or empirical analysis.	325	51.5%	52%
Modeling/ simulation		176	27.8	79
Laboratory/Field Experiment	An experiment with students or practitioners on artificial data or in an artificial setting.	51	7.6	87
Survey	Collection of data from actual organizations not from direct observation; analysis performed in some studies.	17	2.6	90
Personal observation	Description of current practices in actual organizations	32	5.1	95
Empirical	Statistical analysis of data obtained from actual organizations	10	0.8	96
Field study	Analysis of impact of accounting information on decisions, actions, or attitudes of managers in actual organizations	31	4.5	100

(adapted from Kaplan 1986)

Shields (1997) reported on the methods deployed in the management accounting literature during the first seven years of the 1990s. Shields (1997) focused on management accounting research published by North American's in six leading journals: *The Accounting Review; Contemporary Accounting Research; Journal of Accounting and Economics; Journal of Accounting Research* and *Journal of Management Accounting Research.*

Exhibit 4.2 provides a summary of the results in relation to research method adopted.

Exhibit 4.2: Distribution of research methods 1990 - 1996

Research Method	Frequency	Percentage	Cumulative Percentage
Analytic	49	32.2%	32%
Survey	28	18.4	50
Archival	22	14.5	65
Laboratory Experimentation	21	13.8	79
Literature review	13	8.5	88
Case/Field Study	10	6.6	95
Behavioral Simulation	2	1.3	96
Multiple Research Methods	7	4.6	100
Totals	152	100%	100%

(adapted from Shields 1997)

The differences in the results shown in the two exhibits can perhaps be explained by the selection and definitions of the research methods used, the differences in journal selection and the time difference.

It is the identification of the research method that is of importance across the two studies. Clearly, experimental, survey, case/field study and simulation can be identified as common research methods across the two studies. Shields' *analytic* method may take on similar properties to some of Kaplan's *modeling* method, while the *archival* method in Shields' study may possess similar characteristics to Kaplan's *a priori*.

Other publications of management accounting research seem to support the experimental, survey and case/field-based research. This is usually performed on the basis that these three methods can be classified as empirical research methods and are found to be the most commonly used empirical research methods in management accounting (Birnberg, Shields and Young 1990; Brownell 1995). Birnberg, Shields and Young (1990) suggested empirical research in management accounting is mainly concerned with developing and testing theories, and applying research findings to policy formation. It can be either basic or applied. Basic research would involve describing, explaining and predicting management accounting phenomena, while applied research would emphasize the design

and/or implementation of particular management accounting systems and may result in a policy recommendation. Such recommendations may or may not be scientifically based.

What is evident from Exhibits 4.1 and 4.2 is the apparent lack of growth (at least in the selected journals) in published management accounting research based on the case- or field-study research method. It should be noted that journals other than those cited in the two studies have, in recent years, published more work using the case- or field-based research method. An example is the United Kingdom publication *Management Accounting Research*. Nevertheless, Shields (1997, p.10) offered possible reasons for the lack of growth in the publication of field-based research:

- lack of knowledge about how to do good studies;
- lack of colleagues with whom to team;
- lack of incentives (annual performance reviews, short times for tenure and promotions);
- lack of access to good sites; and
- editorial styles of journals.

This has resulted in calls for the increased use of case/field-based research in the investigation of management accounting phenomena since the early 1980s (Birnberg, Turopolec and Young 1983; Kaplan 1983, 1986; Hopwood 1983; Otley and Berry 1994; Scapens 1994). It has also resulted in the development of journals or journal editorial policies that have greater empathy with research using the case/field-study method.

Ferreira and Merchant (1992) conducted a study of published research in management accounting/management control for the period 1984–1992. Their study was focused exclusively on field-studies and spanned a wider array of journals and other publishing formats that numbered sixteen in all.

By casting the net much wider than the other two studies, Ferreira and Merchant were able to identify eighty-two studies that met their criteria of field-research in management accounting and control. The sources of these studies are summarized in Exhibit 4.3.

Exhibit 4.3: Field research publications 1984 - 1992[7]

Publication Source	Number	Percentage	Cumulative Percentage
Harvard Business School field research collections	34	41.5%	41.5%
Accounting, Organizations and Society	20	24.4	66
Other books and monographs	12	14.5	80
Management Accounting Research	6	7.3	88
Accounting., Auditing & Accountability Journal	4	4.8	93
The Accounting Review	2	2.4	95
Critical Perspectives on Accounting	1	1.2	96
Journal of Accounting and Economics	1	1.2	97
Journal of Accounting and Public Policy	1	1.2	98
Journal of Financial Economics	1	1.2	100
Totals	**82**	**100%**	**100%**

(adapted from Ferreira and Merchant 1992)

Some fifty-six percent of these field studies appeared in publications other than accounting research journals. This, in part, explains the lack of growth in the publication of case/field studies identified by Shields (1997) who focused on five North American accounting journals.[8]

Experiments are more applicable in an environment where causal relationships are sought (Brownell 1995) and require a well-developed theoretical argument where the independent variables to be manipulated and the hypotheses for testing are clearly specified (Abernethy et al 1999; Shultz 1999). This study is exploratory and does not have variables or questions defined to facilitate hypothesis testing seeking causal relationships, thus an experimental design is inappropriate.

Surveys may take many forms and may be incorporated into a case study via an interview technique. Common survey techniques include: the written questionnaire administered predominantly by mail (Roberts 1999); the telephone survey; and, more recently, the

[7] Ferreira and Merchant (1992) suggested caution in the interpretation of the data due to the degree of variability between the publications in regards to years in operation, number of pages published, and editorial policy.

[8] Kaplan's data were published in 1983, one year prior to the commencing date to which the Ferreira and Merchant (1992) study relates.

internet; and, interview techniques (Brownell 1995). Surveys are particularly useful where scope is more important than depth, and the research questions relate to fact-finding and the researcher wishes to draw inferences about the population (Roberts 1999). Abernethy et al (1999) suggested that survey research is best used to capture 'simple' constructs whose meanings are standardized and widely shared. When the objective is to seek the views of as many respondents as possible, the survey method – particularly the mail questionnaire - is most suitable. The greater the number of cases under investigation, the greater the likelihood of survey suitability (Roberts 1999).
As capturing the views of as many respondents as possible is not an objective of this study, the use of a mail questionnaire is inappropriate.

4.3 The Case/field study method

4.3.1 Definition of the field study method and identification of characteristics

Field-based research is a term usually applied to research conducted in natural settings. It may be viewed as including field studies, case studies, field experiments, clinical studies, ethnographical studies, idiographic studies and what is referred to as qualitative research (Chua 1996; Ferreira and Merchant 1992). No doubt, both case studies and field studies form part of the wider method of *field-based research* (Birnberg, Shields and Young 1990; Shields 1997).

Yin (1994) described a case study as:

> *".....an empirical enquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between the phenomena are not clearly evident and in which multiple sources of evidence are used"* (Yin 1994, p. 23)

Similarly, Kaplan (1986) described case studies in the following way:

> *" Case studies are characterized by the intense examination of a single entity....[the] case study provides a rich description of an actual situation such as a management or organizational setting .....case study data are frequently collected by multiple means."* (Kaplan 1986, p. 442)

The term field study is often used interchangeably with case study. Whether there is any difference between the two seems to be of concern to some but not others. Many (Chua 1996; Ferreira and Merchant 1992; Spicer 1992) concede that in accounting the terms appear to be used synonymously, while some (Spicer 1992) choose to differentiate between the two.

Case/field studies may be viewed as possessing the following characteristics[9].

1. The researcher has direct, in-depth and extended contact with the researched. That is, he/she is the research instrument (Chua 1996).

2. Multiple types of [qualitative and quantitative] data are collected with the researcher's [structured or unstructured] interviews often the main source of data collection. Eisenhardt (1989) made it clear that the evidence collected may be qualitative (words), quantitative (numbers) or both. This is an important clarification as at times case/field-studies are referred to as qualitative research, but as Ferreira and Merchant (1992) commented, qualitative research is a type of evidence not a type of research design. Further, Eisenhardt (1989) suggested that the combination of qualitative and quantitative data types can be highly synergistic, while Covaleski and Dirsmith (1990) found value in the use of both qualitative and quantitative methods. The use of interviews as the main source of data collection in case/field-studies is supported by Eisenhardt's (1989) list of seven recent examples of inductive case study research where all had used interviews. Other data sources may include: [participant and non-participant] observation; archival search; questionnaires; and public record (Chua 1996; Eisenhardt 1989; Ferreira and Merchant 1992).

3. The researched is studied in its own natural setting, not in settings created for the primary purpose of conducting research (Birnberg, Shields and Young 1990; Chua

[9] As if to highlight the different terms often used to describe what is characterized here as case/field research, Miles and Huberman (1994) provide a similar list of characteristics to demonstrate the features of what they label *naturalist research.*

1996; Ferreira and Merchant 1992; Kaplan 1986). Relative to some other methods the field researcher is likely to exert much less control over the process and outcome in the field. The research design may not be totally structured but will evolve along with the observations in the field (Chua 1996).

4. Highly structured hypotheses are not a necessary precondition. Indeed, hypotheses or their equivalent may change during the research process. In this sense, case research, due to time, complexity and change in the researched organization, takes on an emergent form (Otley and Berry 1994). Shields (1997) referred to this aspect of case research as *dynamic theory*, where the theory is revised as evidence is obtained in the course of the study.

5. The presentation of the data includes relatively rich descriptions of company contexts and practices (Ferreira and Merchant 1992).

A case-study is the method selected in this research to investigate the links between organizational learning and management accounting innovation. Given the exploratory nature of the research, the desire for depth rather than breadth, and the fact that the investigation focuses on contemporary phenomena, an exploratory case-study is the most suitable. The conclusions developed in this study may well serve as a foundation for further research using other research strategies and methods.

4.3.2 Forms of case research

Case/field-studies may be of a variety of forms or types depending on the objectives of the research and, in some ways, the role of theory. The literature suggests six *types* or *applications of* case-study: illustrative; experimental; meta-evaluative; descriptive; exploratory; and, explanatory (Birnberg et al 1990; Otley and Berry 1994; Ryan et al 1992; Spicer 1992; Yin 1994). Otley and Berry (1994) suggested that the central role of case-studies appeared to be exploratory. An exploratory case-study is more than mere description and heads towards explanation (Otley and Berry 1994). Spicer (1992)

identified the two key roles to be descriptive or exploratory, and explanatory noting that the differences between some of the types/applications are not exclusive.

The exploratory case-study would play a key role in the investigation of new practices and where the objective was to generate new theory. This research is exploratory as it is exploring the potential links between organizational learning and management accounting innovation. An exploratory case-study is suitable in this environment. While the research is informed by existing theory, little work to date has been conducted in the specific area under investigation.

4.3.3 Sampling and site selection

In relation to sample size the proponents of case/field-study research make it quite clear that size is relatively unimportant. The following points can be made:

- the case/field researcher is not seeking similarities but rather differences between organizations (Starbuck 1981, 1993);
- greater information content may flow from the study of an *outlier(s) organization* rather than an organization representing an average (Chua 1996; Eisenhardt 1989; Ferreira and Merchant 1992; Starbuck 1993. The *outlier* or *critical* case may be used to :
  - ◊ address issues arising from well formulated theory to determine whether there are alternative explanations;
  - ◊ to extend theory to cover a wider range of circumstance; or
  - ◊ to explore and begin the process of theory development (Ryan et al 1992; Yin 1994);
- other factors influencing sample size and site selection include a demand for sites with particular characteristics such as industry or environment effects, and site accessibility or convenience (Birnberg et al 1990; Ferreira and Merchant 1992).

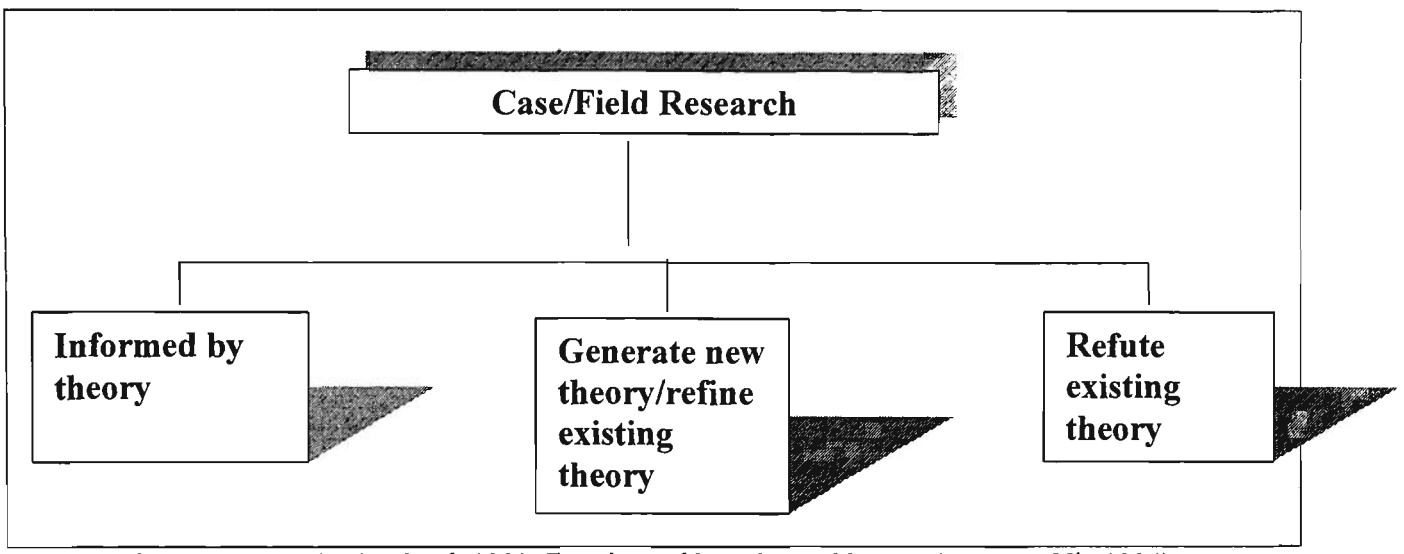
In this investigation a sample size of one is used. This provides the potential for exploration and investigation of contemporary issues developed from existing theory in a site where the phenomena under investigation are likely to be evident. The site had to be

large enough to be likely to contain the organizational structures and programs, have the characteristics likely to lead to adoption of management accounting innovation and use practices to facilitate organizational learning.

4.3.4 The role of theory

Theory has three roles in case/field-study research which are illustrated in Exhibit 4.4.

Exhibit 4.4: The role of theory in case/field research



(adapted from Chua 1996; Eisenhardt 1989; Ferreira and Merchant 1992; Kaplan 1986; Yin 1994)

Like most research, case/field-studies are informed or guided by the existing theory (Chua 1996; Kaplan 1986; Yin 1994). Ferreira and Merchant (1992) suggested that the building of new theory usually emanates from a dearth of theory in the topic area to which the study relates. Moreover, in the process of building theory, Ferreira and Merchant noted that some researchers identify new concepts and classification structures.

The ability of a case/field-study to generate new theory is linked to its flexibility as it enables the research to be conducted without formal hypotheses (Chua 1996). To facilitate the theory building potential of case/field-study research it may be necessary to avoid thinking about specific relationships between variables and theories particularly in the early stages of the research (Eisenhardt 1989). Case/field-studies that commence with a relatively strong set of expectations or hypotheses are likely to seek reasons where these expectations are not met. This provides the opportunity for the existing theory to be enriched, developed or refined (Ferriera and Merchant 1992).

Finally, field research might enable the examination of one 'critical case', which may call into question an accepted theory or proposition (Chua 1996; Hammersley and Atkinson 1983; Spicer 1992).

4.3.5 Limitations of case/field research

Some of the identifiable limitations of case/field research are outlined in this section, as well as the ways in which in this project those limitations have been minimized.

While there may be less control over the variables under investigation in case/field-based research (Birnberg et al 1990; Chua 1996), the exploratory nature of this research does not require high levels of control. Nevertheless, the constructs and variables of interest are both clearly defined and relate to prior research, and three key research instruments were designed and used to guide the investigation.

Case/field-based research is not suitable where the measurement of cause-and-effect relationships and developing statistical conclusions is important (Birnberg at al 1990). As this study is focused on qualitative data collected through semi-structured interviews, cause-and-effect relationships, statistical conclusions and generalizability are not objectives of the study.

The level of objectivity is highly influenced by what the researcher observes in the conduct of the case study. While there are data collection tools that may reduce this problem, case-study research is intended to provide an interpretation of the social system being studied, not necessarily an objective representation (Ryan et al 1992). The use of the research instruments enabled a focus on the issues under investigation, the taping of all interviews and direct transcription of each helped to decrease the level of subjective representation

Interviews are an integral component of case/field research. The responses and descriptions provided by interviewees are based on the individuals' interpretations of

their own social reality (Scapens & Roberts 1993). This reliance on respondent's interpretation is no different to survey research. In this research, senior managers were interviewed, each of whom were qualified to respond with authority in the areas of interest. Moreover, multiple data sources were used. These included:

- interview transcripts;
- handwritten interview notes;
- internal accounting reports such as monthly balanced-scorecard reports;
- observation such as the results of an EVA-driver identification meeting observed on a white board and briefly referred to in an interview;
- annual reports and prospectus documents; and
- EVA training manual.

Balancing the characteristics and limitations of case/field research is the role of the researcher. In this study a flexible design was sought to investigate the areas of interest. In Section 4.6, a description of the practices used in the research to satisfy what Yin (1994) refers to as quality tests are outlined.

4.4 Case/field studies in management accounting – some illustrations

In Exhibit 4.5 some recent examples of case/field research in management accounting are analyzed with respect to: the number of case-sites; unit of analysis; data collection methods; and the number of interviews conducted.

Exhibit 4.5: A sample of case/field study research in management accounting

Author/Year	Title	Journal	Type/ application	Sites	Unit of analysis	Data collection	Interview numbers (where applicable)
Kloot, 1997	Organizational Learning and Management Control System: responding to Environmental Change.	Management Accounting Research	explanatory	2	single	semi-structured interviews; informal contacts; accounting output; local media data.	- 4 managers from each site
Anderson, 1995	A Framework for Assessing Cost Management System Changes: The Case of Activity Based Costing at General Motors, 1986-1993.	Journal of Management Accounting Research	exploratory	1	single	semi-structured interviews; archival data; direct observations.	- 10 corporate and division-level salaried employees at an average of 4 hours each.
Bhimani & Pigott, 1992	Implementing ABC: A Case Study of Organizational and Behavioural Consequences.	Management Accounting Research	exploratory	1	single	semi-structured interviews; archival data; accounting output.	- 7 45 min interviews of non-accounting staff; 3 meetings of 6 hours in total with Chief Accountant and factory Accountant
Innes and Mitchell, 1990	The Process of Change in Management Accounting: Some Field Study Evidence	Management Accounting Research	descriptive/ explanatory	7	single	semi-structured interviews; accounting output.	interviews with the senior accountant (7) at each firm for up to 3 hours each, a series*of interviews with other accounting staff for up to 2 hours each, and a number* of interviews of users up to 1.5 hours each.
Lillis, 1992	Sources of Influence on Capital Expenditure Decisions: A Contextual Study of Accounting Performance Measurement	Management Accounting Research	exploratory	3	embedded	interviews; company project reports	21 interviews with both corporate and divisional mangers.
Cobb, Helliar, Innes, 1995	Management Accounting Change in a Bank	Management Accounting Research	exploratory/ explanatory	1	single	semi-structured interviews; archival data; follow up telephone interviews; publicly available data.	interviews with accountants and managers*
Colbert & Spicer, 1995	A Multi-Case Investigation of A Theory of The Transfer Pricing Process	Accounting, Organizations and Society	explanatory	4	embedded	interviews	a total of 46 interviews conducted across corporate and 21 divisional sites.
Malmi, 1997	Towards Explaining Activity-Based Costing Failure: Accounting and Control in a Decentralized Organization	Management Accounting Research	exploratory/ explanatory	1	single	participant-observation; Informal and formal interviews; company memos, reports and history.	formal interviews included 3 interviews of 1 to 1.5 hours each with group level managers.
Merchant, Chow & Wu, 1995	Measurement, Evaluation and reward of Profit Centre Managers: A Cross-Cultural Field Study	Accounting, Organizations and Society	exploratory	4	single	open ended interviews.	23 managers across two of the firms for a total of 40 hours.
Chenhall & Langfield-Smith, 1998	Factors Influencing the Role of Management Accounting in the Development of performance Measures within Organizational Change Programs.	Management Accounting Research	exploratory	1 main 4 sub-sites	single	Semi-structured interviews with multiple interviewers Company documentation	Not provided

From Exhibit 4.5, the following issues appear relevant:

- use of single-case designs and multiple-case designs;
- use of both holistic (single-unit of analysis) and embedded (multiple units of analysis);
- use of interviews as the predominant data collection tool supported by a variety of other data sources including accounting output and reports, archival data and publicly available data. As to the number of interviews conducted within the case study, the number and length of each interview may vary substantially.

4.5 The research design

Conducting good case/field research requires attention to research design issues (Yin 1994). In this section key research design issues relevant to this study are discussed.

As previously alluded to, case studies involve investigation at a single-case site or multiple-case sites. Irrespective of the number of sites, the case study may be holistic with a single unit of analysis or, embedded with multiple units of analysis (Yin 1994). In this study a single-case site with embedded or multiple units of analysis is used. The case site used, Telstra, is one of the largest corporations in Australia. It operates in the telecommunications industry, which is both highly dynamic and competitive. It is large enough with structures and practices likely to produce a fertile research site for the investigation of organizational learning. Moreover, it is likely to have adopted, to varying degrees, a number of recent management accounting innovations. For an investigation into the links between organizational learning and management accounting innovation Telstra presents a rich and fertile site. The characteristics of the case site are detailed in Chapter 5.

4.5.1 Research design types

Yin (1994) suggested that in case/field-study research four types of design are available. These are illustrated in Exhibit 4.6.

Exhibit 4.6: Basic types of designs for case studies

	Holistic (single unit of analysis)	**Embedded (multiple units of analysis)**
Single case design	Type 1	Type 3
Multiple case design	Type 2	Type 4

(Yin 1994, p. 39)

Yin (1994) suggests key rationale for conducting a single case:

- when it represents the *critical case* in testing a well formulated theory;
- when it represents an *extreme or unique case* where any single case is worth documenting;
- when it is a *revelatory case* providing the opportunity to investigate a phenomenon not previously available for investigation; and
- when the single case is used as a prelude to further study or as a pilot in a multi-case design.

The major shortcoming of the single-case design is that the site selected may not turn out to be the case it was first thought to be. Consequently, action needs to be taken to reduce the risk of misrepresentation and to maximize the access needed to collect the case study evidence (Yin 1994).

This study uses a single-case design in line with Yin's (1994) revelatory case. It also has some elements of an extreme case, and could be a prelude to further investigations. Initial investigations were conducted via a preliminary interview to ensure the site would be suitable for the research questions posed in the study.

4.5.2 Holistic and embedded designs – units of analysis

A holistic case study may be viewed as one in which the focus is the organization itself and not any specific sub-units within the organization. This is referred to as a single-unit of analysis. On the other hand, an embedded case study does include a focus on the sub-units of the organization and is referred to as multiple-units of analysis. These sub-units might be divisions, segments, individuals or 'process' units such as meetings, roles or locations (Yin 1994). The advantages and disadvantages of each are provided in Exhibit 4.7.

Exhibit 4.7: Holistic and embedded case designs: advantages and disadvantages

Holistic case design (single unit of analysis)	**Advantages**	**Disadvantages**
	Suitable when no logical sub-units are identifiable.	May restrict the examination of any specific phenomenon in operational detail.
	Suitable when the applicable theory itself is of a holistic nature.	May be conducted at an abstract level with no clear measures or data.
		A shift in the nature of the study during the course of the study may occur without the researcher realizing. The end result is that the data no longer address the research questions.
Embedded case design (multiple units of analysis)	**Advantages**	**Disadvantages**
	Enables specific analysis of segments or parts of the whole of organization.	Focusing only at the sub-unit level and not the larger unit of analysis may result in the study not being an organizational one at all.

(Developed from Yin 1994)

The current study uses an embedded design. The investigation focuses on the organization, units or segments within the organization and employees of the organization. However, sub-units of the organization are analysed in their own context as well as the organizational context. The organization context is addressed where questions are posed on two levels: first, relating to the immediate area of responsibility and, second, relating to the organization overall. The dominant segment of the organization under investigation incorporates the finance and administration area, employee relations and corporate services. In short, a number of the functional areas that provide support to the operational and other functional areas of the organization. The organizational structure of the case site is detailed in Chapter 5.

4.5.3 Research design quality

Yin (1994) suggested that the four quality tests commonly applied to other empirical research methods are also important and require consideration in case/field-study research. The four tests are: construct validity; internal validity; external validity; and reliability. In broad terms, some of the limitations of case/field-studies were outlined in Section 4.3.6. Each of the quality tests stated by Yin (1994) and the practices used in this research to satisfy each are now outlined.

4.5.3.1 Construct validity

Construct validity relates to establishing correct measures for the concepts under investigation (Yin 1994). While the test of construct validity may be problematic in case study research (Yin 1994), ways to increase construct validity include:

- using multiple sources of evidence (Yin 1994);
- establishing a chain of evidence (Yin 1994);
- having drafts reviewed by key informants (Yin 1994);
- developing interview research instruments from the prior literature(Abernethy et al 1999); and
- using semi-structured interview guides or instruments to steer the interview towards the constructs of interest (Abernethy et al 1999).

In this study, while there is a strong focus on interviews, multiple sources of evidence are used. As listed on page 70, these sources included: interview transcripts; archival data such as internal reports and training manuals; hand-written interview notes; and observation. The focus on interview-related data is common in field-based research. The interview-related data and the other data collected from the other sources have been analysed and used in the case analysis and development of results. Clearly, in this kind of research there is an element of subjectivity. Wherever possible, this subjectivity has been reduced by the use of direct quotations of interviewees and data from the other sources relevant to the issue of interest.

A chain of evidence has been developed and maintained. The purpose of a chain of evidence is to enable an external observer to follow the derivation of any evidence and trace the steps of the researcher. This is similar to the audit trail in the systematic analytical protocol of Miles and Huberman (1994), highlighted by Lillis (1999). Exhibit 4.8 outlines the chain of evidence in this study.

Exhibit 4.8: Chain of evidence

Item	Description
1	All documentation has been kept and held on file as part of the case study database.
2	A hand-written diary in a bound booklet has been maintained since contact was first initiated with prospective organizations as case sites. Diary notes include: ♦ activities engaged in to secure site for case-study; ♦ phone calls to interviewees to set up interviews and for follow-up interaction; ♦ dates of interviews; ♦ post-interview comments; ♦ process used for data analysis; and ♦ seminars attended relating to thesis; ♦ notes relating to informal contacts with organization members.
3	Correspondence between organizational contact and researcher. Initial contact made 3 December 1998, and an initial meeting/interview with a senior manager of the company conducted at case-site on 16 December 1998. For example, the letter from contact providing details of prospective interviews and internal memo sent to those prospective interviewees outlining the purpose of the study. This letter is dated 27 January 1999.
4	The plans and details of each interview conducted kept in a separate folder with cover sheet detailing: interview and location, time of interview, length of interview. Each folder also contained: ♦ relevant research instruments used in the interview, along with hand-written notes compiled during the interviews; ♦ a hard copy of the interview transcript(s); and ♦ a copy of any data/records provided in the course of the interview, serving as other sources of evidence. Each interview was conducted 'on-site', usually in the office of the interviewee. The details relating to each interview are provided in Exhibit 4.9.
5	All audio-tapes of interviews
6	A copy of the initial coding of the transcripts by hand
6-7	Copy of coding system developed in NUDIST (Appendix 5)
8	Saved NUDIST files of coding on interview transcripts.
9	Saved NUDIST files of Index Search reports generated via the 'collect' function in NUDIST. This 'collect' function allowed similarly coded data across the transcripts to be collected in the one report.
10	Printed hard copies of the output from the 'collect' function performed in NUDIST. This output was then used in the first stage of data reduction. Written notes on the NUDIST output are all available. Some samples provided in Appendix 6. This

	demonstrates the evidence used to facilitate the write-up as per Chapter 6.
11	Drafts of the write-up from the first stage data reduction process are on file. A sample provided in Appendix 6 Part A.
12	Evidence collected other than the evidence relating directly to the interviews including: • internal accounting reports such as monthly balanced-scorecard reports; • observation such as the results of an EVA-driver identification meeting observed on a white board and briefly referred to in an interview; • annual reports and prospectus documents; and • EVA training manual.
11	The chapter drafts
12	The chapters as they appear in the thesis.

The three main research instruments used in the interviews were developed from the literature. The learning orientations schedule (Appendix 1) and the facilitating factors schedule (Appendix 2) were adapted from the organizational learning framework of DiBella and Nevis (1998). The management accounting innovation schedule was adapted from a variety of sources in both the innovations literature (Cohen and Levinthal 1990, Damanpour 1987, 1991, Kimberly and Evanisko 1981), and management accounting literature (Argyris 1992b; 1992d; Argyris and Kaplan 1994; Gosselin 1997; Libby and Waterhouse 1996). Specific EVA instruments were used on two occasions and they are in Appendix 4.

Finally, while the interviews were conducted in a relatively informal manner, semi-structured interview guides were used to maintain focus on the areas under investigation. This was particularly useful where time constraints were an issue. Details relating to each of the interviews are contained in Exhibit 4.9. A series of ten interviews with seven senior managers was conducted in the period December 1998 through to June 1999[10]. Following an initial contact visit with one of the senior managers, the other managers were initially sought for interview by the initial senior manager. Interviews were then arranged. All interviews were audio-taped, as well as interview notes compiled on the research instrument in each interview. The audio-tapes, the transcribed documents and interview notes all form part of the case-study database. As highlighted in Exhibit 4.9 not all schedules were used in all interviews. While most used the learning orientations schedule, the facilitating factors schedule, only some used the management accounting

[10] A further follow-up interview was conducted in April 2002.

innovation schedule and EVA schedule. All interview data generated is available on request. Further discussion on the organization, its structure and position of managers interviewed within that structure are provided in Chapter 5.

Exhibit 4.9: Interview details

Name (disguised)	Position	Date	Times	Length	Transcript word count	Instruments used
M1	Group Controller for F&A, ER, REA	Dec 1998		2 hours	No taping	none
		14 April 1999	9.00-10.30	1.5 hours	11250 words	- Management accounting innovation schedule - Facilitating factors schedule - Learning orientations schedule
		24 May 1999	9.00-10.30	1.5 hours	3658 words	-Economic value-added instrument, specific to interview
M2	General Manager – Fleet Services	25 Feb 1999	10.00 – 12.00	2 hours	19116 words	-Data collection sheet -Facilitating factors schedule -Learning orientations schedule
M3	(then) Finance Manager – Corporate Services	26 Feb 1999	2.30 – 2.00	1.5 hours	8079 words	-Data collection sheet -Management accounting innovation schedule -Facilitating factors schedules -Learning orientations schedule
M4	General Manager – Property Services	5 March 1999	8.10 – 9.30	1 hr 20 mins	10863 words	-Data collection sheet -Facilitating factors schedule -Learning orientations schedule
M5	Manager – Leadership Development	15 March 1999	9.15-10.10	55 mins	5004 words	-Sheet specific to Centre for leadership -Data collection sheet -Learning orientations schedule -Facilitating factors schedule
M6	General Manager – Employee Relations	24 March 1999	10.40-11.30	50 mins		-Data collection sheet -Sheet specific to ER -Facilitating factors schedule -Learning orientations schedule
		7 April	2.10-2.55	45 mins	Both int = 13637 words	As above
M7	Project Director – EVA[11]	17 June 1999	9.30-10.30	1 hour	8584 words	Economic value-added specific instrument

[11] A subsequent follow-up interview was conducted with this manager in 2002 to seek clarification on some of the issues raised in the main set of interviews.

4.5.3.2 Internal validity

A study with high internal validity may assert a causal relationship so that the variation in the dependent variable is due to a variation in the independent variable. Alternative explanations may be dismissed (Abernethy et al 1999; Ticehurst and Veal 2000). Where it is possible to provide an alternative explanation for the results, the study has low internal validity (Ticehurst and Veal 2000). In so far as case-studies are concerned, Yin (1994) suggested that internal validity is a concern for the causal or explanatory case but not so much for the descriptive or exploratory case.

Where cause and effect relationships are not sought, traditional tests of internal validity are less applicable (Abernethy et al 1999). In such instances the concept of plausibility seems more applicable (Abernethy et al 1999; Golden-Biddle and Lock 1993). In this situation multiple sources of evidence may be used to guide plausible explanations and strengthen the internal validity of a study.

In this study, formal cause and effect relationships are not sought, but rather, like Lillis (1999), possible relationships between key constructs in a field setting. Wherever possible, multiple sources of evidence have been used.

4.5.3.3 External validity

External validity relates to whether the findings/conclusions of a study are generalizable beyond the immediate case-study or transferable to other contexts (Abernethy et al 1999; Miles and Huberman 1994; Yin 1994). Miles and Huberman (1994) drawing on the work of Firestone (1993) suggested three levels of generalization:

- from sample to population, which Yin (1994) labels statistical generalization and has suggested is an inappropriate form of generalization for case-studies;
- analytic or theory-connected, which Yin (1994) suggested as an appropriate form of generalization;
- case-to-case transfer, which would approximate Yin's (1994) replication logic.

From an external validity perspective, this case study satisfies the analytic or theory-connected form of generalization in which a previously developed theory is used as a template with which to compare the empirical results of the case-study (Yin 1994).

4.5.3.4 Reliability

The goal of reliability is to minimize errors and biases in a study so that if a later investigator were to conduct the same case study using exactly the same procedures as the earlier investigator, the findings would be the same (Yin 1994). Enhancing case-study reliability might be achieved by:

- Using a case-study protocol to ensure documentation of the research procedures utilized;
- Clearly specifying basic paradigms and analytic constructs;
- Use of coding checks and data quality checks;
- Ensure data are collected across the full range of appropriate settings, times and respondents suggested by the research questions;
- The development of a case-study data-base. This would allow other investigators to review the evidence directly and not be limited to the written reports.

(Miles and Huberman 1994; Yin 1994).

The chain of evidence shown in Exhibit 4.8 provides an overview of the evidence collected and the protocol relevant to the research. Moreover, a formal case-study database has been maintained. The contents of the case study database are outlined in Exhibit 4.10.

Exhibit 4.10: Case-study database

Diary notes maintained throughout planning, data collection and analysis phases
Research instruments used in each interview
Hard and soft copies of all interview transcripts
Audio tapes of all interviews
Reports, archival data and training manuals collected from case study site
Output data from NUDIST
Hand-written notes on NUDIST output used in data-reduction and analysis phases
Draft write-ups relating to interview schedules reflecting the results of the data analysis and data reduction
Thesis chapter drafts

The case-study database reflects the resultant archival material emanating from the research, whereas the chain of evidence (Exhibit 4.8) reflects the procedures adopted in the execution of the research.

To further strengthen reliability, the transcription of the audiotapes was conducted by an independent commercial service. The resultant word document files were loaded into NUDIST without any tampering. A hard copy and a disc copy of the interview files were stored. A separate file was maintained for each interview. Each file contained: interview details with regard to time, date, location; a copy of each interview schedule with interviewer notes made during the interview; a hard copy of the independently transcribed interview. In addition, at the completion of each interview brief, first impression, notes were entered in the research diary.

4.6 Data analysis

Much case/field-study work involves dealing with qualitative data rather than quantitative data. The nature of qualitative data has implications for both its collection and analysis (Saunders et al 1997). The forms of data collection make the analysis process problematic, there being no standardised approach to the analysis of qualitative data

(Saunders et al 1997). There are, however, a number of key guiding works influencing the form of data analysis.

Yin (1994) suggested four guiding principles of good social science which underlie the highest quality analysis:

- analysis should show that it relied on all the relevant evidence;
- analysis should include all major rival interpretations;
- analysis should address the most significant aspect of the case study; and,
- the investigator should bring his/her own prior expert knowledge to the case-study.

Saunders et al (1997) suggested that the nature of the analysis may differ depending on whether a deductive or inductive approach was adopted for the study. While the distinction is not always clear cut, they suggest that the deductive approach, whereby an existing theory has been used to guide the qualitative data analysis, will require different analysis tools to an inductive study which explores phenomena without any pre-determined theoretical position commonly referred to as a grounded theory approach.

Miles and Huberman (1994) suggested a three-tiered approach to data analysis. Their approach includes the three phases of: data reduction; data displays; and conclusion drawing/verification. Qualitative data analysis can be viewed as a continuous, iterative, process where the three phases may continually interact (Miles and Huberman 1994). The data-analysis process used in this research is in line with Miles and Huberman (1994) and Yin (1994), and is shown in Exhibit 4.11

Exhibit 4.11: Data analysis phases

Step	Action	Research Phase
1	All taped interviews transcribed by the same person as the interviews were completed. In most cases, two interviews were handed to the transcriber at a time. All interviews were transcribed verbatim into Microsoft Word. The tapes and a disk copy of the transcription were received back.	Data reduction

2	Initial manual coding of hard copy of interview transcripts. The coding was developed from the key components of the research instruments. Initially, a *coding hierarchy* was established prior to any specific coding. As the coding was applied, some refinement was performed to improve the overall coverage of codes and, where necessary, to provide additional sub-sets.	Data reduction
3	NUDIST software was acquired and used to enable greater flexibility with the coded data. It would enable the efficient classification of similarly coded data. This would facilitate the development of ideas by different interviewees in relation to the same issue. The coding tree developed in NUDIST is provided in Appendix 5. This coding tree was developed form the initial manual coding outlined in number (2) above.	Data reduction
4	The *collect* function on NUDIST enabled the collection in the one report of data relating to the same code (issue) across respondents. The interviews were conducted wherever possible in a conversational style, but exactly the same questions were not necessarily asked across all respondents. This limited the capacity to use some of the formal data reduction and display techniques within NUDIST.	Data reduction Data displays
5	The output from the collect function for each code was then used to identify key themes and issues across respondents in each of the coded sets. This important data-reduction activity was conducted manually on the NUDIST output making notes in the margins. This was performed in three main stages based on the three key research instruments: ♦ learning orientations ♦ facilitating factors ♦ management accounting innovation Samples of this part of the analysis process are provided in Appendix 6. This became an iterative process with the coded output, manually entered margin notes highlighting point of interest, extraction of direct quotes as evidence and richness and the development of the initial drafts.	Data reduction Data displays
6	Initial drafts of preliminary results sections were then prepared from the prior data reduction activity. Three documents were prepared, one in each of the key research	Data displays Conclusion drawing and

	instrument areas. Wherever possible, interviewee quotations were included to provide evidence, corroborate the interpretations made and provide richness in the write-up. The initial drafts were reviewed by the supervisor(s). This review included the supervisor receiving the initial draft, the NUDIST output and associated hand-written comments from which the draft was developed	verification
7	Write- up of the results chapter and interpretation of results from the initial drafts This was a process of writing, comment and review, and re-writing.	Conclusion drawing and verification

Chapter 5 Case Site

5.1 Introduction

In Chapter 4, research methodology issues were explored, including the decision to use a single-case site as the focus of the investigation. In this chapter, issues associated with the selection of the case site are discussed. The chapter is set out as follows: a discussion of site selection and sampling issues; background to case site; an outline of the organizational structure; and some concluding comments.

5.2 Site selection/sampling

As outlined in Chapter 4, this research focuses on an investigation of organizational learning and management accounting innovation using a case-study of one organization. The research design is an embedded case-study with multiple units of analysis within the organization. Sufficient prior evidence exists to support the single-case study.

Ferrreira and Merchant (1992) noted that samples studied in field research were diverse, but mostly used a sample of one organization. Eisenhadt (1989) noted the inapplicability of statistical sampling in field research, suggesting that theoretical sampling (cases chosen for theoretical not statistical reasons) was more appropriate. Further, randomness may not be necessary and in many cases not preferred (Eisenhadt 1989). The sample of field-based studies in management accounting contained in Exhibit 4.5 shows that up to 40% of those listed used a sample of one organization.

The organization selected for the research needed to possess the characteristics required enabling an exploration of the phenomena under investigation. For example, Cooper et al (1987) in their field-study of activity-based cost systems required organizations with innovative product cost systems. For the purposes of this study, the organization selected needed to have:

- adopted at least one, but preferably more than one, management accounting innovation;

- been likely to demonstrate at least some of the attributes of the organizational learning framework; and
- managers available to be interviewed who were sufficiently senior to be able to comment on the issues explored in the interviews from the point of view of their organizational segment or research unit of analysis.

A larger organization would seem to be more likely to have adopted more than one management accounting innovation. In terms of organizational learning, an organization subjected to significant external events would be likely to have needed to engage in change programs and have in place learning practices similar to the learning framework. To this end, Telstra surfaced as a suitable research site given the objectives of the study. There was a reasonable expectation that Telstra would be a suitable site on which the case-study could be based. Telstra had been subjected to significant external events in recent years:

- The part privatization in November 1997 meant that the organization was now subjected to market expectations and operations; and
- The deregulation of the telecommunications industry resulted in direct competition with Telstra in all aspects of its business, including the retail segment.

These two factors alone were likely to have had a significant impact on the operations of Telstra, including issues associated with the organizational learning framework used in this study. Further, following an initial meeting with a senior manager, it was clear that a number of management accounting innovations had been adopted in recent years and that the study could be conducted through interviews with senior managers within the support services areas.

5.3 Background of Telstra

Telstra is Australia's principal telecommunications company and one of the largest companies in Australia. It offers a broad range of telecommunications and information services. Telstra's principal activities include providing telephone exchange lines to homes and businesses, servicing local and long-distance telephone calls in Australia and

international calls made to and from Australia, supplying mobile telecommunications services and providing a comprehensive range of data, Internet and on-line services. In this section the following will briefly discussed:

- brief history;
- industry de-regulation;
- ownership structure and privatization program; and,
- some key financial and non-financial data.

5.3.1 Brief history

In 1901 the PMG (Post-Master General) was created by the newly formed Federal Government. The PMG provided both postage and telecommunications services throughout Australia. It remained a Federal Government owned monopoly in most of its activities, until restructuring and de-regulation occurred. On 1 July 1975 the PMG was split in two along the lines of principal activities. Mail and associated services were to reside with the newly formed Australia Post, while telecommunications services would reside with the newly formed Telecom. Both Australia Post and Telecom remained under the ownership of the Australian Federal Government. Telecom would be the precursor organization to Telstra. The change from Telecom to Telstra occurred on 13 April 1993. Telstra continued to offer the same principal activities as the former Telecom.

5.3.2 Industry deregulation[12]

A number of key initiatives occurred since the mid 1980s to move the telecommunications industry in Australia, from one, government-owned, monopoly to a deregulated competitive market with a number of key participants. These initiatives can be categorized on a time scale using; pre 1991, 1991 reforms, and the 1997 reforms.

Pre-1991

In 1987 the focus of telecommunications regulations shifted to greater liberalization. This resulted in an increase in the commercial focus of the government-owned carrier through

[12] This section relies heavily on the report: *A Report to the Minister for Communications, the Information Economy and the Arts on the State of Competition in Australian Telecommunications Services One Year after Deregulation"*, prepared by Sidak, J. Gregory, on behalf of Telstra Corporation Limited, 30 June 1998.

new accountability measures and the removal of unnecessary constraints. The corporatization of (the then) Telecom in 1989 marked the first wave of recent telecommunication reform initiatives in Australia. Prior to this, Telecom was a fully government owned statutory monopoly on the supply of telecommunication services. Regulatory authority was passed to the newly formed AUSTEL, which was to become the independent industry regulator.

1991 Reforms

The *Telecommunications Act 1991* represented the second step in the de-regulatory process to open Australia's telecommunications market to competitive forces. The first stage of competition would be achieved via a duopoly of licensed general fixed service carriers – Telstra and Optus. In addition, mobile telecommunications licences would be issued to Telstra, Optus and Vodafone. According to Sidak (1998), the major highlights of the legislation included:

- access rights for each carrier to each other's networks;
- preselection of long-distance carrier; and
- Ministerial access pricing principles that allowed for the recovery of direct costs of assets employed in providing access service plus a commercial return.

Moreover, AUSTEL used its regulatory powers to disallow any practices (such as pricing) deemed to be anti-competitive.

1997 Reforms

The previous legislation was replaced by the *Telecommunications Act 1997* which came into effect from 1 July 1997. Sidak (1998) states that the main features of the new regime were as follows:

- moving competition regulation of telecommunications closer to general trade practices law while still having access and conduct rules that are specific to telecommunications;
- an increased focus on self-regulation in the consumer and technical areas;
- eliminating the limit on the number of carriers; and,

- abolishing the rule against discrimination.

The outcome of these reforms for Telstra is most probably reflected in the nature and operations of the organization in the late 1990s compared to, say, the mid-1980s. No doubt organizational change would have occurred, but the nature and pace of that change has been highly influenced by the *opening up* of the telecommunications market. The combined external influences of market deregulation and part-privatization of Telstra certainly render the organization a suitable research site on matters related to organizational learning and innovation.

5.3.3 Ownership structure and privatization program.

From 1901 till late 1997 the Federal Government was the sole owner of Telstra and its precursor organizations. A part-privatization program began in late 1997. The outcome of which was to offer one-third (equivalent to 4,288,866,733 shares) of the ownership of Telstra to individuals, institutions, employees and overseas investors[13]. Share offers opened in October 1997 and closed in November 1997. Payment for the shares was by way of two instalments. The first instalment was paid around the time of the share offer, while the second was paid one year later by November 1998. Trading in the shares or instalment receipts, as they were called, on the Australian Stock Exchange commenced on 17 November 1997. At the time of the flotation, Telstra had produced revenue of almost $16 billion for the year ending 30 June 1997, had assets of $25.9 billion, and shareholders equity of $9.9 billion.

Following the successful one-third float of Telstra, the Federal Government decided to float a further portion of the company's capital which would result in the government's ownership being reduced to 50.01%. This occurred on August 1999.

5.3.4 Key financial and non-financial data

Some of the key financial data for the five-year period 1996 – 2000 are contained in Exhibit 5.1, while Exhibit 5.2 contains some of the key non-financial data for the period 1998 – 2000.

[13] Overseas investment in Telstra was limited to 11.67 % of the company.

Exhibit 5.1: Selected key financial data at 30 June

	2000 $m	1999 $m	1998 $m	1997 $m	1996 $m
Operating revenue	19,840	18,218	17,302	15,983	15,239
Operating expense (excl. depreciation, amortisation, interest expense and abnormals)	10,643	9,818	9,878	9,301	9,113
Operating profit before abnormals and income tax	5,921	5,320	4,468	3,805	3,242
Operating profit attributable to shareholders	3,677	3,486	3,004	1,617	2,305
Earnings per share	.31	.27	.23	.20	.17
Dividend per share	.18	..33	.14	.32	.11
Total assets	30,339	27,682	26,470	25,858	24,362
Current borrowings	3,316	2,265	2,935	1,560	793
Non-current borrowings	6,505	4,946	4,787	6,421	4,350
Shareholders' equity	11,602	10,294	11,079	9,938	12,668

(Source: Telstra 2000 Annual Report)

Exhibit 5.2: Selected key non-financial data

	2000	1999	1998
Full-time employees	50,761	52,840	57,234
Number of local calls	11,343m	11,190m	11,138m
Basic access lines in service			
Residential	6.51m	6.93m	6.77m
Business	2.36m	2.44m	2.43m
Total mobile phone customers	4,126,000	3,435,000	3,068,000

(Source: Telstra 2000 Annual Report)

5.4 Organizational structure

The organizational structure of Telstra is dynamic. Numerous corporate restructurings have and will continue to take place. This seems to be an outcome of the ever-changing internal and external environments to which Telstra is exposed. Exhibits 5.3, 5.4, 5.5 and 5.6 represent the corporate structure around the time of the interviews. Exhibit 5.3 shows the eight major divisions or segments, five of which are labeled Strategic Business Units:

- Network and Technology Group;
- Commercial and Consumer;

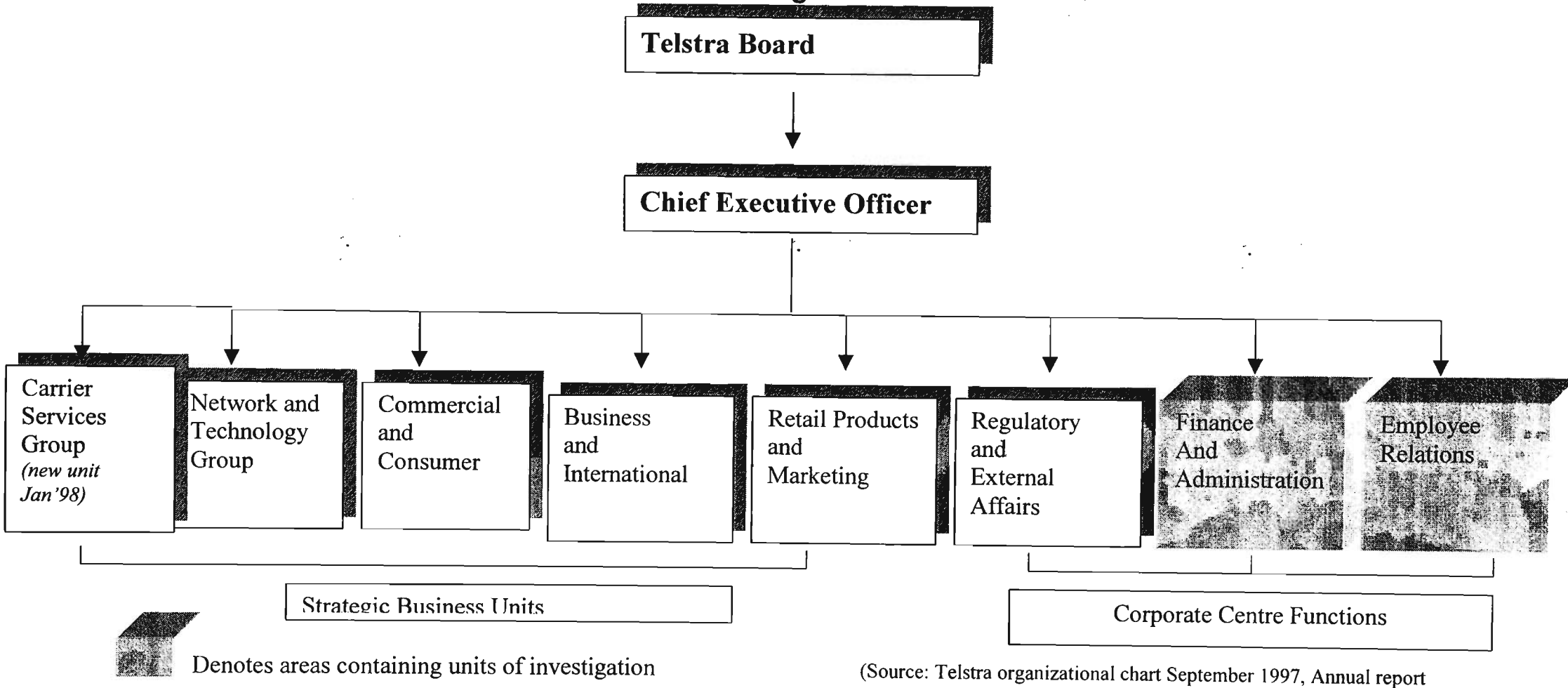
- Products and Marketing;
- Business and International; and
- Carrier Services Group.

The other three represent the support functions and are labeled Corporate Centre Functions:

- Finance and Administration;
- Employee Relations; and
- Regulatory and External Affairs.

A Group Managing Director heads each of the eight areas. Exhibit 5.4 briefly outlines the areas of responsibility of each of the eight segments.

Exhibit 5.3: Telstra organizational structure



(Source: Telstra organizational chart September 1997, Annual report 1998; and interview discussion)

Exhibit 5.4: Areas of responsibility of eight main segments

Segment	Responsibilities
Network and Technology	Planning, design construction and operation of the Company's domestic, international, fixed and mobile telecommunications networks and associated systems to deliver all of the Company's products and services. Also includes responsibilities for research and development as well as technology strategy.
Commercial and Consumer	Sales and service delivery to more than seven million residential and small business customers, as well as management of the Company's operator-assisted services and payphones.
Business and International	Sales and service to larger businesses, all levels of government and wholesale customers. Also includes responsibilities for the Company's satellite and radio services, global business services, and the international operations.
Retail Products and Marketing	Company-wide product management for access and local call services, national long distance and international telephone services, mobile telecommunications services, and internet access.
Carrier Services Group	Managing carrier and service provider customers and suppliers in Australia and overseas and aims to be the preferred wholesaler supplier of domestic and international telecommunications products and services to this customer segment. Includes responsibilities for negotiating arrangements for delivering call and data traffic into and out of Australia.
Regulatory and External Affairs	Manages regulatory strategy and operations, corporate and public affairs, government relations, consumer affairs and, stakeholder and issues management.
Finance and Administration	Provides corporate policy and support functions across Telstra's strategic business units, including finance, audit and risk management, treasury operations, legal counsel, corporate secretarial functions, corporate strategic planning, investor relations and other corporate services.
Employee Relations	Manages personnel, industrial relations, health and safety, training and leadership development programs.

(Source: Telstra Prospectus: Appendix to the Public Offer Document 1997 and 1998 Annual Report)

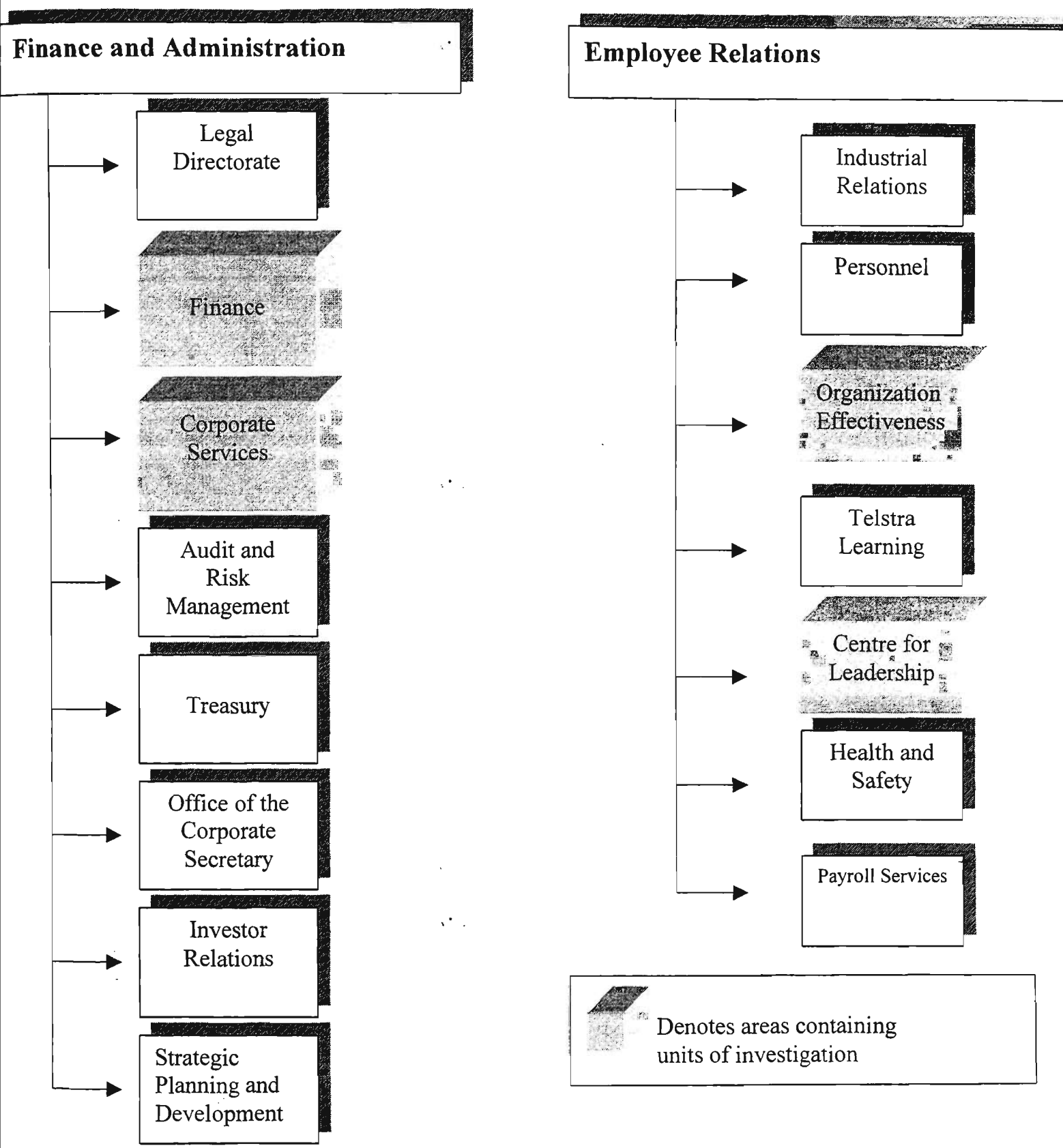
Exhibit 4.9 contained the interview details. Part of this detail is repeated in Exhibit 5.5 which contains the interviewees and their areas of responsibility at the time of

interviewing. Relating those interviewed to the organizational structure, the Group Controller for Finance and Administration, Employee Relations, and Regulatory and External Affairs was interviewed on three occasions and initiated contact with the managers of some of the areas to which he provided financial and management support. The Group Controller area is highlighted in Exhibit 5.7 and is a component of Finance as highlighted in Exhibit 5.6. In turn, Finance is a component of Finance and Administration as highlighted in Exhibit 5.3. The second accounting and finance interviewee was situated in the Group Controller's area and provided specific support to the Corporate Services area. Two interviews were conducted with General Managers of areas within Corporate Services: Property Services and Fleet Services as highlighted in Exhibits 5.6 and 5.7. One interviewee was a General Manager positioned in the Organization Effectiveness component of Employee Relations, while another was a Manager in the Centre for Leadership that was positioned in Employee Relations. Finally, the Project Director – EVA was positioned in the Finance and Administration Central Services area. As managers of their respective areas and the areas for which they were responsible, each of the managers was both sufficiently senior and in a position to comment on the phenomena under investigation.

Exhibit 5.5: Areas of responsibility of interviewees

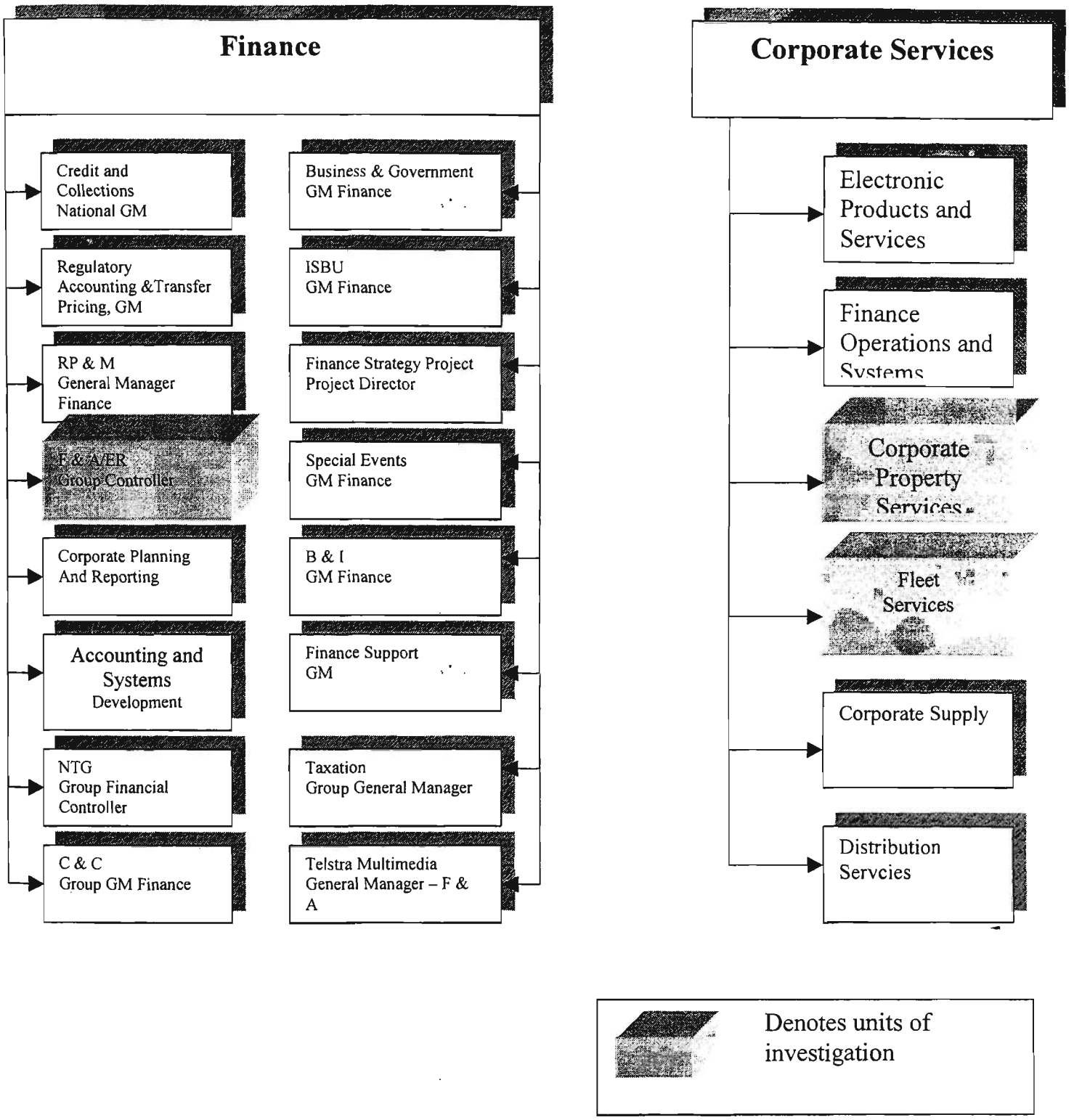
ID	Position	Structure Link
M1	Group Controller for Finance and Administration, Employee Relations, and Regulatory and External Affairs.	Part of Finance which is a component of the Finance and Administration segment.
M2	General Manager – Fleet Services	Part of Corporate Services which is a component of the Finance and Administration segment.
M3	Finance Manager – Corporate Services	Part of Finance (specifically supporting corporate services), which is a component of the Finance and Administration segment.
M4	Manager – Property Services	Part of Corporate Services which is a component of the Finance and Administration segment.
M5	Manager – Leadership Development	Part of Center for Leadership which is a component of the Employee Relations segment
M6	General Manager – Employee Relations	Part of the Employee Relations segment
M7	Project Director – Economic Value-added (EVA) Project	Part of the Finance and Administration segment

Exhibit 5.6: Internal structure: finance and administration, employee relations



(Source: Telstra organizational chart September 1997; Annual report 1998; and interview discussion)

Exhibit 5.7: Internal structure: finance, corporate services



(Source: Telstra organizational chart September 1997; Annual report 1998; and interview discussion)

Telstra's organizational structure is a dynamic one, with numerous restructurings in recent years. While another restructure was about to commence, based on available evidence, this section has outlined the structure at the time of interviewing. In the next chapter, the results are detailed.

Chapter 6 Case Analysis and Results

6.1 Introduction

In Chapter 5 the issues surrounding the selection of the site used in this study, along with the history and characteristics of the research site were outlined. This chapter provides a discussion of the results emanating from the data collection stage of the research. An interpretation and discussion of the implications of the results are addressed in Chapter 7. In Chapter 3 the data collection, data reduction and analysis processes used were detailed. In summary, these included:

- transcription of all interviews from voice to text in Microsoft Word format;
- the loading of the Microsoft Word documents into NUDIST 4.0 software;
- coding of all transcripts based on the key components of the interview schedules;
- collecting all similarly coded text-units together using the *collect* function in NUDIST 4.0;
- printing the similarly coded data;
- data reduction through the identification of the key issues arising from the interviews from the coded output, including the identification of suitable quotations by interviewees. This was predominantly performed through a manual, iterative process of working through the printed NUDIST output for each coded area and using side-margin notes to highlight points/issues of interest/agreement/conflict across the interviewees. From there, initial write-up occurred which was evaluated and altered by returning to the NUDIST output for clarification. Where possible direct quotations were added to provide richness, but more importantly to verify or confirm the point in question.

The discussion in this chapter is arranged according to the three main research instruments used to guide the interviews. Quotes from participants are used extensively throughout the chapter for verification and to add richness to the analysis. In Section 6.2 the organization learning enabler, learning orientations, is the focus. In Section 6.3 the focus is on the organization learning enabler, facilitating factors, while in Section 6.4 the focus is on management accounting innovation issues. A summary is provided in Section

6.5. To support the process of analysis conducted, sample NUDIST output and data reduction activities are demonstrated in each of sections 6.2, 6.3 and 6.4 through the inclusions in Appendix 6. This helps to demonstrate both where the evidence existed and how it was used to complete the write-up.

6.2 Learning orientations

6.2.1 Introduction

Learning orientations are the values and practices that reflect where learning takes place and the nature of what is learned within organizations (DiBella and Nevis 1998). The orientations help define an organization's learning style and represent the practices by which knowledge is acquired, disseminated or used. Di Bella and Nevis' (1998) framework contains seven orientations, each of which has a polar choice regarding approach. This was illustrated in Exhibit 2.3 and is shown in summary form in Exhibit 6.1.

Exhibit 6.1: Learning orientations framework

Orientation	Approach Continuum
1. Knowledge Source	internal.....external
2. Content-Process focus	content.....process
3. Knowledge reserve	personal.....public
4. Dissemination mode	formal.....informal
5. Learning scope	incremental.....transformative
6. Value-chain focus	design-make.....market-deliver
7. Learning focus	individual.....group

(DiBella and Nevis 1998, p. 42)

The interview schedule (Appendix 1) developed from the framework was used in six of the interviews conducted. The purpose was to gauge the approach within Telstra for each of the learning orientations. The interviewees were in the support areas within Telstra and not the operational areas. Consequently, some of the orientations had greater significance than others. The only orientation not explored was the value-chain focus orientation. This was due to the nature of the support areas under investigation leading to [at the time] a belief that little relevant information would result from pursuing this orientation, particularly in the light of interview time constraints. Moreover, the

approaches identified through the interviews relate to those support areas and may not be universal throughout the organization. At the outset there was no preconceived idea about some factors or constructs being more important than others or allowing greater depth of study. As the interviews unfolded, it was clear that some of the constructs were able to be explored in greater depth than others. Moreover, the similarities between some of the factors reduced the need for depth of exploration in some. The outcome of this is that the discussion of some of the constructs is longer than for others. A sample of NUDIST output and data reduction and analysis is contained in Appendix 6 Part A in relation to the *knowledge source* orientation, a component of the *knowledge reserve* orientation and a first write-up illustration to demonstrate the iterative nature of the process used. A discussion of each of the learning orientation constructs follows.

6.2.2 Knowledge source

The first of the learning orientations was labeled *knowledge source*. The focus of this orientation is at the extremes, whether knowledge development comes from internal or external sources. In some cases, this distinction may be viewed as the difference between *innovation by doing* compared with *innovation by imitating*. Levels of internal research and development are used as a guide as to the preference of particular organizations (DiBella and Nevis 1998).

As the sections of Telstra under investigation in this study are not those supported directly by research and development, this measure is less suitable. Given the size, structure, internal and external environment it is plausible to expect Telstra to make a relatively high use of consultants and the like in exposing the organization to new ideas. Moreover, the participation of staff members in both formal and informal professional development activities and communities-of-practice raises the awareness of recent developments in innovative practices and techniques. The organization seems to be a strong supporter of activities conducted by the professional accounting bodies, while a number of accounting and finance staff are involved in communities-of-practice such as

the seminars of the Australian Centre for Management Accounting Development (ACMAD)[14].

Those managers with a more corporate responsibility tended to support a higher level use of external consultants as evidenced by the following: "we tend to be a fairly high user of consultants" (m1), and "we had .... to help us to define the framework, so we really worked for six to eight months with them [consultants] to put the framework in place" (m7).

Two other interesting perspectives emerged. First, the suggestion that external consultants were not heavily used at the local level. In this instance the local levels tended to use staff at the corporate level as the knowledge source. In this way the corporate staff are acting as internal consultants. As one local manager put it: ".....so if we're desperate for knowledge you tend to have corporate people that would help you or if it's a big enough issue they will hire someone" (m3).

Second, a training and leadership manager pointed out: ".....we do use some consultants .....but we are very strong on building the expertise and building the knowledge internally" (m5).

This concept of building the knowledge and expertise internally is reinforced by the manner in which many of the training programs are conducted. The Centre for Leadership focuses on facilitating training and leadership programs in the first instance for the senior management group. The diffusion of the knowledge and expertise throughout the organization is, in the main, carried out by the managers: "the top two hundred would teach the next six hundred, the next six hundred would teach the next five thousand, etc." (m5).

This concept of using the more senior group of managers to impart the newly acquired knowledge and expertise to subordinate levels is in line with the concept of using internal

[14] ACMAD has since changed its name to *Insite Connect*.

groups to share new ideas in the role of internal consultants. The Centre for Leadership plays a facilitating role in this diffusion process.

Insofar as identifying the knowledge source as being internal or external the evidence suggests that there is a mixture of both external and internal sources. The use of consultants would seem to indicate a preparedness to explore and consider the adoption of innovative practices, particularly in the 'services' related area. The participation by the accounting and finance staff in professional development activities and communities-of-practice further support the external approach. Innovation in the services area is also occurring. One of the service operational units found a lack of integrated software reduced its ability to deliver its services to internal clients the way in which it wished. Eight internal staff were allocated to the project to work alongside consultants and facilitators to develop software that meets their needs. This type of practice combined with the method of internal diffusion of new knowledge and use of internal consultants supports the internal approach.

6.2.3 Content-process focus

The second of the learning orientations was labeled *content-process focus*. This orientation related to whether the organization focused its energies on process-related improvement or improvement in the product/service attributes. Within a communications and technology company there might be a degree of emphasis on the attributes of the products and services provided. The area in which this research was conducted exposes the emphasis in areas other than the technological side of the business.

Overwhelmingly, the managers supported a fairly heavy emphasis on process improvement. Evidence from the two service operational units supported a fairly strong emphasis in recent times on improving processes, with suggestions that this has not always been the case: "It's totally reverse to the way that it used to be" (m4) and,
"Yes, we've targeted some deliberate areas over the last few years in what we had..." (m2).

Interestingly, in relation to pursuing changes in process, the concept of assessing who owned the processes arose as an issue in discussion with one of the managers. This seemed important in the context of making alterations to a smaller process that may have been part of a larger, umbrella process. The conclusion drawn by the manager was that the changes needed to be completed all at once:

> *There are always little processes but it has an umbrella coverage and we need to do it all at once, so we've done that with our purchasing cycle and then back into the system making all system changes that's needed. We've done it in the last twelve months with our maintenance cycles and in our processes in the system, and we've started looking at our customer reporting in the broadest possible sense and then to try to break them into reasonable chunks and come up with an overall view of it, an overall change.* (m6)

One manger indicated that the recent emphasis had been heavily on the processes, while presently there appears to be more balance. Another manager felt that a key role of her service area was to identify process improvements, so as to deliver the outcomes sought by line managers: "I see my role as simplifying that process, so their outcomes are delivered in a more effective manner." *(m6)*

The overriding impression gained in this area is that there has been significant emphasis on process improvement across each of the functional areas.

6.2.4 Knowledge reserve

The third learning orientation was labeled *knowledge reserve*. The focus of this orientation relates to whether knowledge and learning are viewed on an individual basis or on a group or team basis. If viewed as individual and personal only, then knowledge and learning might be lost when certain individuals leave the organization. Alternatively, if viewed more objectively on a group basis then the emphasis is on organizational memory or the documentation/storage of knowledge. Related to this are the concepts of individual and organizational memory as well as four sub-variables which impact on the

approach, nature and extent of this construct: debriefing sessions, job rotation, knowledge sharing and information storage. These four variables as components of organizational memory and the links to knowledge reserve were illustrated in Exhibit 2.4

One issue regarding the knowledge reserve is whether an organization itself has a memory, or whether the organization's memory is in the minds of its members. If the latter were true, then the organizational memory would simply be the sum of the memory of the individual members. The question about whether organizations have memories and the links to individual memories was viewed as an interesting one by one respondent: "That is a very interesting question. I really would like to think about it." (m7)

It is apparent that people's views of what constitutes *organizational memory* are an important issue here. From the interviews conducted two broad forms emerge:

- 'historical memory or knowledge', whereby the focus is on memories of the past; and
- 'how-to memory or knowledge', whereby the focus is on how things should be done or must be done.

On the historical memory, there appeared to be different views about its worth. From:

> *...one of my pet theories is that one of the things we've never used as a resource and it's probably a very cheap resource, is that people like me are getting very close to leaving the corporation. However, I'd be quite happy sitting in my lounge room looking over the beach for someone to ring me up and say, 'remember when bla bla blaa, what did we do?' I would do it for nothing. We don't tap into it. People leave the company, we're given a present and they have a dinner for them or whatever, and we kiss them goodbye and that's it. (m1)*

to:

> *I used to think there were some people that thought if they left unexpectantly the place would collapse, but it doesn't, it just keeps going. Basically what happens, whoever is exposed to the issues finds a way*

through it badly or well. And you don't really compare after that, the guy's gone and it's out of mind. (m3)

On the question of whether an organization itself has a memory or whether it only exists in the minds of it members, there was a divergent view. Of those who responded directly one supported the organizational view, two supported the individual view, while one was unsure. If it was only to be in the mind of individuals then the variables – *job rotation* and *information or knowledge sharing* and *information storage* as sub-components of organizational memory, increase in importance to ensure that such knowledge and learning is dynamic within the organization.

6.2.4.1 Debriefing sessions

The purpose of debriefing sessions is to capture some of the individual knowledge held by the departing member. Importantly, in a large organization, the departing member may not necessarily be leaving the organization altogether but simply transferring to another section. A number of issues emerged from the interviews.

- Where the departure was occurring through redundancy initiated by management, then a significant amount of investigation that might feasibly be sought via a debriefing session would be carried out in the redundancy process.
- It is one of management's roles to ensure that some succession planning is in place, even though it may not be part of any formal process.
- If debriefing sessions were held, the problem still exists as to what information from the departing member would be sought and how that might be committed to the corporate memory: " .....it's difficult to sort of say what will I download? What is it that I want to know?" (m1) and,

  You can look back at something that has happened in a corporation's history and say, they did that, they did this, that process looks fine, why didn't it work? If you ask someone that was there at the time, they'll say may be, that's because Jack was an arsehole. The corporate memory tends

not to say Jack was an arsehole, it's not there. That's the bit we're going to find difficult to catch. (m1)

6.2.4.2 Job rotation

The idea of job rotation, such as accounting and finance staff moving from one client group to another, is offered as one means of spreading and extending knowledge acquisition. The environment that the research site has experienced over the last few years seems to have hindered the practice of job rotation: "The rotating jobs and so on, no, there's more than enough change out there without rotating." (m4) and,

Definitely, attempts to take people around, look it's a bit unfortunate that .....you're really just shrinking, when you're shrinking you don't attempt to do that. If it stabilizes, which it sort of has, we would attempt to start moving people around again, for the development of the person and to get fresh ideas..... (m3)

From one of the service operational areas, there was some evidence of 'forced rotations' as a strategy to meet skilled shortages:

If worse comes to worse what we've done is actually where you really have a shortage of skilled personnel you know someone has got to go on leave at times, we just move somebody down from interstate, who does the same thing or has that knowledge. (m2)

6.2.4.3 Knowledge sharing

In Section 6.2.2, reference was made to the use of senior managers to assist with the diffusion of new ideas through the subordinate management levels. At Telstra, the Centre for Leadership played a central facilitating role in this process; new knowledge is disseminated in this way.

On whether the knowledge and information sharing was formal or informal, one manager suggested that it was a fifty-fifty arrangement. Other managers supported the view that

there were in place both formal and informal processes, highlighting the important and, at times, effective role of the informal processes for sharing knowledge and information: "It all depends what the issue is in relation to that, but certainly informal is one of the most effective ways." (m6)

6.2.4.4 Information storage

In relation to information storage two aspects emerge. First, if much, if not all of the organization's memory resides with individuals, then one of the key information storage entities is the individual members themselves. In this way, individuals may be viewed as knowledge and information receptacles. Second, one manager highlighted the role of the organization's intranet as carrying much of the organization's basic information, knowledge and processes. The use of the intranet as a storage facility for policies, rules and regulations is a recent development within the organization. The use of the intranet was confirmed in a follow-up interview. For example, the intranet was now being used as a communication device with real-time data reported to senior managers via the internet.

6.2.5 Dissemination mode

This construct relates to the way in which learning is disseminated throughout the organization and has some links to the knowledge sharing variable discussed in Section 6.2.4.3. At one extreme there is the formal, prescribed, organization-wide, methods, while at the other, informal methods such as team or group discussions and casual interaction. It would be reasonable to expect that a combination of formal and informal modes of dissemination would be used, particularly in a large organization.

Certainly with major, organization-wide, innovations such as the economic value-added (EVA) project, relatively formal dissemination practices are used. As mentioned previously, the Centre for Leadership has played an important role in this dissemination process. It has put in place a structure to facilitate the sharing of the new knowledge and learning, using the senior managers of the organization. There is also evidence of the

role of the informal dissemination of learning and knowledge: "I think a lot of learning happens in [the] informal environment." (m5)

Some discussion occurred with participants about the way in which accounting information is disseminated, and whether there was reliance on one method [formal] or the other [informal]. From an accounting-information provider: "...it's not just the formal part, there is communication going on outside of the formal process.." (m1), and from a support-operational manager:

> *I'd say a mixture of both, we had our standard monthly reports that are produced – the management reports that are set, but some of the other issues then are really on the informal or project basis. Yes, a mixture of both really.* (m2)

Another of the managers has made an effort to push for an improvement in the accounting/financial base of the line managers.

6.2.6 Learning scope

This construct relates to whether learning is focused on methods to improve existing knowledge, processes and paradigms or on learning that challenges the assumptions about existing knowledge, processes and paradigms (DiBella & Nevis 1998). The latter is more transformational and in line with Argyris & Schon's (1978) double-loop learning. While double-loop learning is viewed as an increasingly necessary component of the learning system of organizations, (the existence of) both incremental (single-loop) and transformative (double-loop) learning operating in co-existence would seem to be appropriate (DiBella & Nevis 1998).

One insight which emerged in discussions with one manger, was the idea of constant incremental change resulting in an outcome radically different from the starting point, and perhaps closer to transformative:

> *I think it's [change] been fairly incremental but it's been every year [since 1975], its just constant and there has not been any let up since*

> *1975. Technology, structural change, industry structure, and competition.....so in the end what we finished up with is perhaps radical against what we were.* (m1)

Viewing the sum of a series of incremental changes over time in this way may eventually result in a similar outcome to the one-off transformational change. It may well be that to some staff regular transformational change starts to look like incremental change.

A leadership development manager identified the learning focus as being of the single-loop form on the basis that there is little questioning of the overall framework within the organization. On the other hand, there were managers who viewed their own functional areas or roles as being more in line with transformational or double-loop learning. This seemed to be so particularly in relation to processes and process improvement. One of the operational managers, who felt both the incremental and transformational forms of learning existed within the organization, provided an example of the transformational that also incorporated the use of management accounting information:

> *To go back to use the example of the' claims' process in the company, we turned that completely around. It wasn't just a matter of using a different insurance company. We changed the whole 'claims' process with the aim of being able to understand what the cost is to the company, because they were all over the place and you couldn't pull [them] together.....The outcome was we wanted to know how much .....is costing the company and couldn't capture it anywhere. So we worked back through all the processes.* (m2)

6.2.7 Learning focus

The learning focus construct relates to the extent of concentration on individual learning/knowledge acquisition relative to team or group learning/knowledge acquisition. It would seem more appropriate for them to co-exist (DiBella and Nevis 1998). The evidence collected within Telstra suggests a relatively strong use of teams within the organization. The following quotations were indicative of that:

Telstra always worked on teams, that's one of the things that's survived which is good. Teams are a very effective way of getting the same message to a larger group of people, a consistent message very quickly. (m4)

Well, the use of teams is significant, we've tried to move towards team learning and team process reviews.....So, certainly we've tried to go down that path where there's more team evaluation of things....if somebody takes on a project then they have a responsibility too, we don't expect them to do the whole thing, we expect them to engage other people from other parts of the business. (m2)

I think it tends to be team oriented than individual, although we still don't reward teams, we reward individuals. So I don't think we're there yet, but I mean there's a tendency for people to talk about my team does this or we do this as a team very well, or yes my team understands where it's heading or what it's got to do. (m1)

The nature of the teams and how they are specifically used is relevant. The evidence suggests that teams are used in a variety of ways. From multi-function teams in operational units[15] to temporary specific-purpose teams created to deal with a specific task, teams in one form or another appear to be well entrenched in the organization's mode of operation. This suggests a rather strong collaborative aspect within the organization and that the opportunities for transferring individual learning and knowledge to others is far more likely than if there was only a low-level team-based structure[16].

[15] An example would be where accounting staff positioned in operational areas work in teams with the staff from within the operational area.

[16] This strong use of teams was highlighted in a follow-up interview, particularly the use of temporary specific-purpose teams in the accounting/project area.

In terms of the impact of teams on the demand for information, one manager indicated the need for a change in the team-based environment:

> *I'd have to say at times we have to create new information in terms of data collection, we've had to set up a process to collect data for the team to understand part of the process review that they've got to do.* (m2)

In terms of teams and reward systems, one manager noted that while teams are prevalent, the reward system is still predominantly based on an individual system. While the top one thousand managers are exposed to a bonus system that has three components – the performance of the organization, the performance of the manager's operating unit, and the individual manager's performance, the vast majority of the employees are rewarded on the basis of individual performance.

6.2.8 Summary

In summary:

- a combination of external and internal sources of knowledge appeared to exist within the support areas investigated;
- a greater focus was on process than on content;
- in relation to knowledge reserve, there was a divergence of views about the role or presence of organizational memories, and some questioning about the usefulness of historical memory in dealing with present day problems. Limited use was made of debriefing sessions and job rotation as organizational memory enablers, while the diffusion process for major innovations facilitated knowledge sharing. Finally, the intranet has emerged as a useful device for storing information particularly for procedural-related information;
- a combination of formal and informal dissemination modes;
- the co-existence of transformative and incremental learning; and
- a moderate to high use of a variety of teams indicating the form of learning focus.

The learning orientations framework depicts each of the constructs as having a polar choice in terms of approach. The evidence from the research site suggests that for a number of the constructs what occurs is a combination of approaches rather than one or the other. This will be explored further in Section 7.2.1.

6.3 Facilitating factors

6.3.1 Introduction

The facilitating factors are ten constructs identified by DiBella and Nevis (1998) as representing practices [or conditions] that promote learning within organizations. The greater the extent or prevalence of each the better the environment or potential for learning. The ten factors are:

- Scanning imperative;
- Performance gap;
- Concern for measurement;
- Organizational curiosity;
- Climate of openness;
- Continuous education;
- Operational variety;
- Multiple advocates;
- Involved leadership; and
- Systems perspective.

The interview schedule (Appendix 2) used sought to identify the level of existence of each of the ten factors either within the specific unit to which the manager belonged or within the organization in general. At the outset there was no preconceived idea about some factors or constructs being more important than others or allowing greater depth of study. However, as for the learning orientations, as the interviews unfolded, it was clear that some of the constructs were able to be explored in greater depth than others. Moreover, the similarities between some of the factors reduced the level of exploration in some. The outcome of this is that the discussion of some of the constructs is longer for

some than for others. A sample of NUDIST output and data reduction and analysis is contained in Appendix 6 Part B in relation to the *scanning imperative* factor.

6.3.2 Scanning imperative

This construct relates to organizations scanning their environment to increase their awareness of the external environment, what other organizations are doing and to provide the opportunity for bench-marking performance.

A fairly high level of scanning within Telstra would seem evident Managers across a number of different functional areas suggested that a significant amount of scanning occurred.

From accounting-based staff, two important issues emerged. First, an accounting strategy group appeared to conduct much of the scanning, meaning that less was performed at the business-unit level. Second, there was a view expressed that bench-marking management accounting across companies was a difficult task due to the contingency nature of management accounting. Nevertheless, the use and applicability of innovative practices by other organizations were sought in the scanning process. As well as some direct contact with the organizations (for example, via overseas study tours) there appears to be some use of the large consulting firms in providing information on what other entities are doing. In some ways, the use of intermediaries provides a relatively lower-cost option in the scanning process.

In one of the operational areas the enthusiasm for scanning in the form of networking is extremely high but the result to date is negligible. This is supported by:

> *.....we've been trying to network for twelve to eighteen months with other Telco's, international Telco's and its not getting very far because every time we put our head up everyone says give us all your information.* (m4)

> *.....so we'll keep looking and we've got an offer that I will spend $100 000 and I will pick up the bill to benchmark with anyone. I'll pay the full thing*

> *and there'll be an independent audit to do it, I don't care. Every time that people start to come in you realise that there's not much we can learn here, and once we get this new computer system in we'll be light years ahead.* (m4)

The other operational area is also a keen scanning participant, being a part of two 'bench marking clubs' – one internal, the other external. The external appears to be a formal bench marking process with other Telco's and utilities predominantly from the United States.

The evidence in relation to the *scanning imperative* is:

- there is a relatively high level of scanning within Telstra, particularly in the operational areas;
- the scanning tends to be in the form of investigation of the environment, networking and bench marking;
- some management accounting scanning takes place but the contingency nature of management accounting seems to restrict its operation; and
- in a number of areas, Telstra considers itself to be, or, to be close to, world leader. Scanning activities have provided the opportunity for some segments to take some consolation in this aspect.

6.3.3 Performance gap

This construct focuses on the shared awareness of organizational members of any variances between desired performance and actual performance.

The discussion in the interviews for this construct focused on a couple of areas; the nature of the performance measures used to monitor performance; and the action undertaken following variance (or performance gap) identification.

6.3.3.1 The nature of the performance measures used

The performance measurement system used for operating managers has revolved around the use of key performance indicators (KPIs) via a *KPI pack*. This would invariably contain profit and loss report, cash flow report, a business issues commentary page, variance analysis and some non-financial measures. More recently, this has been upgraded to incorporate some of the key EVA measures relevant to the particular segment, as well as adopting a style of presentation more congruent with the balanced scorecard approach[17].

In relation to the performance measures adopted, a number of issues emerged in the interviews:

- the incorporation of both financial and non-financial measures in a 'balanced scorecard' type format to managers;
- different stories emerging from the use of different measures relating to the same issue;
- the difficulty of quantifying some measures; and
- the impact of the recent adoption of EVA.

A brief discussion of each of these follows.

Financial and non-financial measures

While there is an emphasis on financial measures, particularly at the organizational level, the reporting to operational managers has incorporated non-financial measures. This has been observed by the researcher in the sample KPI pack provided. One of the questions raised by DiBella and Nevis (1998) was whether the right measures are used by the organization. While originally asked in the context of financial versus non-financial measures, the question is still valid in relation to non-financial measures themselves. The simple use of non-financial measures in itself does not produce more effective outcomes where the measures are not suitable.

[17] The balanced scorecard and EVA concepts are explored further in this and Sections 6.4.2.3 and 6.4.2.4.

The EVA project has re-invigorated the search for performance measures in the form of EVA drivers. Some of these have been incorporated into the revamped KPI pack now provided to managers. Discovering whether the measures are the right ones would appear to be a trial and error issue:

> *.....we don't really know that they (the new ones) are the right measures. In other cases we do know that the measures are right because we've been using them for a long time and they are tried and true. I'm thinking of some like, for example, some of the activity management type measures that people are still using. We know they are OK, we know that they work and we know they are the driver because we have proved it.* (m1)

At the two operational areas – Fleet and Property, the managers are provided with their KPI packs on a monthly basis, although there might be some supplementation with measures of their own, developed and used in-house which are more likely to be of a non-financial type. Nevertheless, there appears to be a reliance on the financials as a trigger for the non-financials. This appears to be partly due to the links between the financial and the non-financials. In a climate of staff and cost reductions there appears to be little scope for an alternative way. For example, while a key non-financial measure in property relates to the "14 square metres a person" objective it is also linked to the occupancy costs, so that as staff numbers come down so should the occupancy costs. This issue is discussed further in the next section. In the Fleet area, non-financial operational measures such as *length of time to produce a fuel card* have been developed to improve the service provided to internal clients.

Different stories, different measures, same issue

A couple of examples in the Property Services area highlighted the need for careful examination of the results when using performance measures. The first was a discrepancy when a senior manager questioned why staff numbers were being reduced significantly, yet occupancy costs were not decreasing at anything like the same rate. The senior manager was focusing on full-time staff numbers, while the occupancy costs captured all occupancy costs associated with full-time staff, contractors and temporary

workers. So while full-time staff numbers were decreasing, the number of bodies requiring accommodation was not decreasing at anything like the same rate. While this may be interpreted as a lack of insight on the part of the managers, it might also indicate some confusion about measures used, the link between financial and non-financial measures and expectations.

The second example related to the role of property in maintaining the number of staff moves. Property used the requests for telephone numbers/connections as the key measure. Based on this measure, Property estimated that one-third of the 35, 000 office-based staff would change their seats every twelve months. As the Information Technology section tracked changes in extension numbers to main directories and computer log-ons, they were able to confirm that the movement rate was more like 50%. This more reliable movement rate is based on the idea that staff may move within an office area without contacting Property or requesting a new phone, which is, nonetheless, a staff movement. As for the first example, this may reflect use of wrong measures by managers, but it might also reflect confusion about measures by different sections. Ultimately, it might be argued that if organizational processes result in the eradication of conflicting measures then a climate of learning is evident.

Quantifying some measures

Calls for the increasing use of non-financial measures pre-supposes that measures can be quantified for all sections of an organization. In a number of the support areas this has proved to be a problem within Telstra during the EVA project and the identification of the EVA drivers, which, in many instances, are non-financial in nature. Areas such as Treasury and Investor Relations have proved to be more difficult when it comes to performance measure identification.

Impact of adoption of EVA

While the EVA project is discussed in detail in Section 6.4.2.4, it is relevant to mention briefly its impact specifically in relation to the performance gap issue. The introduction of EVA as the organization-wide performance measurement tool triggered a search for

EVA drivers as the measures most likely to drive the performance of units.[18] The formal calculation results in a financial measure that illustrates the profit contribution of a unit after deducting a capital charge on the assets of the unit or organization. Two issues emerged in the interviews:

- what happens with the support and service department areas in terms of EVA measurement? and
- the identification of the EVA drivers as key non-financial measures of performance.

The support departments produce negative EVAs because of the lack of revenue[19]. There was some concern about the motivational effect of continual negative EVAs. Consequently, in such areas managers are not held accountable for the hard numbers, but rather, for the EVA drivers. This is summed up in the following:

> *There's a perception that the [EVA] number itself is not a good motivational thing at all. I disagree with that in the sense that I'm fairly pure conceptually and I say it ought to be a good driver to minimise or to reduce the negative. People don't see it that way so.....what we do for those areas is drop down to holding them accountable for the drivers rather than the for the absolute number. (m1)*

The EVA drivers are the key items identified for each section of the organization as having the greatest influence over the level of the EVA measure. The identification of the EVA drivers was an important component of the entire EVA adoption. In the support areas, in particular, where the drivers formed the basis of the measurement system, the drivers are performing the dual role of measurement tool and reward-system base.

6.3.3.2 Action undertaken following performance gap identification

In dealing with identified performance gaps, the evidence suggests that the managers undertake action fairly quickly. This might be in conjunction with the accounting/finance

[18] For senior managers the EVA measure is a substantial factor in calculating the bonus component of the reward system.

[19] Some internal charging goes some way towards overcoming this in some of the service-related areas.

manager working with the operational manager and/or with the manager at the next level: "....the managers tend to act fairly quickly themselves if it's a performance gap." (m1)

> *If we go below budget*[20] *we go through the whole process from top to bottom.....first of all to find out where it happened, where is it happening and then to work from there to see if we can get it back on track.....the whole thing is a learning process.* (m4)

> *.....if my results get significantly out of alignment, my boss would have a detailed session with me to understand why and what strategies we've got in place to fix it, will it be fixed and can it be fixed.* (m2)

The objective of trying to analyse the reasons for variances (or performance gaps) is to open the door for learning opportunities.

6.3.4 Concern for measurement

This construct is linked to the performance gap construct in the sense that it revolves around the issue of performance measurement. While the former focuses on the identification of performance gaps as indicated by the measures used, this construct is related to the pursuit of new information and measures other than the ones traditionally used within the organization. In addition, it focuses on the development of indicators by the people involved, and on customised as well as standard indicators (DiBella and Nevis 1998).

Data for this construct were collected during the research more by way of indirect means than direct means. The issue of performance measurement permeated a number of the interviews conducted, and the idea of developing performance measures appears central to much of the innovations adopted such as EVA and the balanced scorecard.

[20] *Below budget* highlights a level of performance below expectations.

Nevertheless, there is a number of observations which can be made in relation to this construct:

- within the organization there appears to be a willingness to explore managerial innovations. The recent adoption of EVA is a good example. The linking of the EVA measurement system with the reward system for senior managers demonstrates the desire of the organization to have an integrated performance measurement and reward system. Further, it supports the *customising* to which DiBella and Nevis (1998) refer.
- The exploration of other innovations such as ABC, ABM and the balanced scorecard further highlight the organization's willingness to explore managerial innovations.
- At the local level there is some evidence to support the *development of indicators by the people involved.* In the areas of Fleet and Property there appears to be a significant amount of work being done in relation to internally generated performance indicators. On top of the organization-wide annual survey, the manager of Fleet conducts an internal survey (usually bi-annual), which results in a complete 360° review. In addition, as mentioned in the previous section, Fleet has developed operational measures to reflect its environment and operations.

6.3.5 Organizational curiosity

This construct relates to the willingness to try new things, curiosity about how things work, and the preparedness of the organization to experiment with aspects of policies, methods and procedures (DiBella and Nevis 1998). The greater the tolerance for 'curiosity' by organizational members, then the greater the likelihood that learning will be facilitated. The path to developing organizational curiosity may best be achieved via a plan for small evolutionary experiments and developments rather than major revolutionary ones (DiBella and Nevis 1998).

The issue of organizational curiosity arose in seven interviews. The attitude towards organizational curiosity varied among the interviewees. It might be expected that curiosity would be relatively high in the technical areas of the business via new product development and the embracing of new technologies. However, this part of the business

was not under investigation. Nevertheless, there appears to be at least moderate levels of curiosity in some of the support areas.

While the accounting and finance function suggested a low level of tolerance for "failings in relation to the basic stuff" caused by curiosity, there is evidence of higher tolerance levels when it comes to embracing innovation and other forms of curiosity, for example:

> *I would say that the tolerance level (for 'having a go' at something) is improving, and yes, they do get learning. There is much better learning out of that than say four or five years ago,* and

> *It's high (levels of inquiry and curiosity from staff). I describe it as pretty high and encouraged to be high more and more, and the EOS (employee opinion survey) is part of that.* (m1)

Other support for at least moderate levels of organizational curiosity within Telstra are shown by the following:

- The role of major innovations such as EVA in promoting curiosity. The acceptance of innovations such as EVA is, in itself, evidence of curiosity. Moreover, the implementation and then operation of EVA has the capacity to encourage further curiosity:

  > *They (the managers) are using it (EVA) as an opportunity to change their strategies, may be to help them see how they are going to go forward, to check alignments. So it is very exciting.* (m7)

- The linking of organizational curiosity to other occurrences such as restructuring and change within business units, rewarding people (via promotions) who take risks, encouraging staff to "think outside the square".

- The existence of a standard process for innovation within one of the operational support areas. This process encourages ideas for change and looks at 'experimenting'

with new ideas in a pilot phase. The use of pilot programs is a good indicator of 'curiosity'.

- Some evidence to support the links between management accounting innovations and organizational curiosity: "Oh no, I think they (management accounting innovations) really support the curiosity, because they give you a framework." (m2)

While DiBella and Nevis (1998) observed few instances of strong levels of organizational curiosity at their research sites, and while the levels of organizational curiosity vary widely within Telstra, it (Telstra) demonstrated at least a moderate level of tolerance towards organizational curiosity. Further, it seems that the tolerance and attitude of managers to organizational curiosity is critical to embedding a curiosity culture. The installation of processes to deal with innovations and new ideas serve as suitable examples.

6.3.6 Climate of openness

This construct focuses on the willingness of an organization to foster communication via open boundaries providing enhanced learning opportunities (DiBella and Nevis 1998). One impediment to a climate of openness is the extent of defensive behaviour or defensive routines[21] (Argyris 1992b; 1992d). DiBella and Nevis noted the difficulty with improving the climate of openness with deeply entrenched assumptions about trust and control as major impediments. The interviews revealed the following:

- A belief by the EVA manager that the EVA implementation encouraged managers to [re]open the communication channels. Perhaps EVA and other similar organization-wide implementations are powerful tools in this respect, particularly when the innovation is given 'teeth' by being linked to the reward system of managers.
- Recognition that tools such as electronic mail and the intranet serve as an organization-wide communication device through daily announcements. Ultimately the nature of such announcements determines the level of true openness.

[21] This issue is explored further in Section 6.4.6 with specific reference to the accounting/finance function.

- An observation in relation to defensive behaviour by one of the interviewees was the importance of being able to recognise when defensive behaviour was NOT being used.
- The use of practices such as job rotation to facilitate some form of open boundaries:

  I shifted all my managers for a year, not all of them, sorry. I put the Queensland guy here, the Victorian guy in Western Australia, and the Western Australian guy in Queensland for a year, yet again to try and break down those boundaries. (m2)

DiBella and Nevis (1998) highlighted the importance of the actions of senior managers in facilitating a *climate of openness* environment. There was sufficient evidence at Telstra to support this observation with organization-wide innovations providing the opportunity for enhanced communication. Technological devices serve as useful tools in at least facilitating the sharing of information, particularly to large numbers. On the second point there is no evidence as to the greater effectiveness of these tools compared to previous information distribution tools.

6.3.7 Continuous education

This construct relates to the commitment of an organization to lifelong education at all levels of the organization (DiBella and Nevis 1998), and is in line with Senge's (1992) *personal mastery* concept. A suitable starting point for embedding continuous education within an organization would be to have some resources committed to the concept of training and education. In the first instance, a line item in the budget of business units and the organization would provide some indication.

Telstra has two formal 'training and education' providers in-house. The first, the Centre for Leadership was originally established by the former CEO to develop and foster programs for the senior executives and management of the organization. For example, as previously indicated, the Centre for Leadership was responsible for the EVA training of senior managers. The second in-house training provider – Telstra Learning – focuses on the technical training for technicians and the like as well as acting as co-ordinator for

other middle to lower level training programs. In this context, the operating and support units generated the demand for such programs.

While the Centre for Leadership plays a key role in providing programs for senior management, it is the responsibility of the managers of the business unit to 'hand-down' the training to subsequent levels. At the time of interviewing, no formal mechanisms existed for gauging or evaluating this 'handing-down' or diffusion process. In some ways, the ultimate success of some of the programs operated will be influenced by the capacity of managers to embed the concepts at the business-unit level.

The two operating support units both indicated the existence of education and training in their budgets. One of the operating support units sourced most of its training from outside the organization, while the other unit did the same for some of its training. This other unit also promoted skills development for individuals by sending them to outside training programs but also by encouraging staff to 'take time-out' from their own office area to focus specifically on individual skill developments such as PC-related training, working in teams and negotiation skills.

6.3.8 Operational variety

This construct complements the *organizational curiosity* construct as it focuses on the idea that there is often more than one way of doing things and performing tasks (DiBella and Nevis 1998). Most of the discussion in this regard was covered in the organizational curiosity section. Nevertheless, direct questioning on this issue showed that two operational units had contrasting views.

On the one hand, Property made it clear that operational variety was an objective: "In here, no that's why we've changed, the traditional way was the one way of doing things. We're just getting rid of the last of that now." (m4)

Alternatively, Fleet tended to seek the optimum process and while people were encouraged to find new ways of doing things, once found, it would be 'locked-in' via quality assurance documentation.

6.3.9 Multiple advocates

This construct revolves around the concept that usually a number of advocates or *champions* are required in order for innovations to succeed and knowledge to be effectively utilised and disseminated. The more staff involved in the promotion of a new learning mode or innovation the greater is the likelihood of success (DiBella and Nevis 1998). While this might be so, an initial ingredient for major innovations is the support of the CEO and senior executives/managers.

For major innovations where the Centre for Leadership is involved, the diffusion process for new knowledge provides the capacity for a number of advocates to 'buy-in' to the innovation. Moreover, for some major innovations such as the EVA project, a process was pursued to identify specific champions to assist with the implementation. Senior managers were asked to identify potential 'champions' who could assist with the implementation and dissemination throughout the organization.

6.3.10 Involved leadership

This construct focuses on the role of leadership in driving learning acquisition and creating an organization-wide learning environment. Moreover, merely creating an environment conducive to learning and knowledge acquisition is insufficient. Senior managers and leaders should be actively involved in knowledge acquisition and learning and play an integral role in its diffusion (DiBella and Nevis 1998).

In the interviews, there was general agreement that managers of business and support units were active within their units and not simply observers of work. This was partly caused by the fact that the layers of management had been stripped away over recent years as well as apparent changes in work practices where the managers view their role as 'hands-on'.

There was some evidence that senior executives have triggered key initiatives. The organization's CEO initiated the recent EVA project but no evidence of his active involvement in the implementation and diffusion process was collected.

6.3.11 Systems perspective

This construct's underlying basis is that managers need to be able to see the interdependencies within an organization. Organizational learning is limited when staff cannot recognise the relationships among processes, structures and dispersed actions (DiBella and Nevis 1998).

In the accounting and finance function there was some evidence that some staff are busy meeting monthly deadlines and the like, and so have little time for reflecting on the wider implications. This appears to be, in part, a function of the reduced numbers and, perhaps, in part, the organization of work. On the other hand, those staff working for particular internal clients are encouraged to be orientated towards the needs of the client group and the corporation.

This was one construct where a variety of different opinions was expressed, which perhaps demonstrated the different situations and functions that the managers were engaged in. From:

> *Oh yes definitely, I think that's what's expected of my level and above, that you don't work in insular tubes or silos that you ensure you share any information that's worthwhile.* (m6)

to:

> *We go back to the skill of each individual, some people only seem to always look at the big picture, others working to do what they are doing today and now, and they have to fix it. I'm quite pleased actually that we have some people geared to have to fix what they have to do and are single-minded about it. But I do encourage them to think why.* (m3)

6.3.12 Summary

In summary:

- the level of scanning would seem to be relatively high;
- in relation to the performance gap construct, the monthly reporting to managers includes a combination of financial and non-financial measures, notwithstanding the measurement difficulty in some cases. Recent innovations such as the EVA project have influenced this construct;
- new measures have been sought via the EVA project demonstrating the capacity of the organization to seek new measures;
- there appears to be a growing level of organizational curiosity and tolerance towards curiosity;
- the climate of openness would be classified as moderate at this stage;
- the level of continuous education would appear to be moderate-to-high, particularly with two internal units supporting education and training;
- the current diffusion process for organization-wide innovations provides the opportunity for advocates to 'buy-in' to projects. In other cases, champions have been pre-selected to assist with initiatives;
- moderate-to-high levels of involved leadership appear to be in existence. This is based on the willingness of business-unit mangers in the support areas to be active managers, and the involvement of key senior managers in recent innovations;
- in relation to the systems perspective, divergent views were expressed. At the management level there appeared to be a moderate level of a systems approach, while for others caught up in meeting scheduled deadlines, this was more difficult.

6.4 Management accounting innovation

6.4.1 Introduction

In the literature review a number of management accounting innovations was identified including: activity-based costing/management; business process reengineering; value-chain analysis; target costing; balanced scorecard; strategic cost management; cost driver analysis; advances in operational control systems; and, economic value-added. A management accounting innovation schedule (Appendix 3) was developed for use in the

interviews. The schedule itself was used specifically in discussions with [management] accounting related staff, while a number of the issues was also explored with the other interviewees.

Some of the items in the schedule were explored to a greater or lesser extent than originally planned. As the interviews progressed the expected relevance of some of the items in the schedule was reduced. For example, items relating to the competitiveness of the organization in general seemed less applicable given that the interviews were in the accounting/finance area supporting corporate services. Similarly, the section on rating the amount of management accounting information prepared for internal customers became irrelevant given that each group controller had a specific group of internal customers. A sample of NUDIST output and data reduction and analysis is contained in Appendix 6 Part C in relation to ABC/M and EVA implementation.

In the discussion that follows the focus is on the key elements of the management accounting innovation schedule, namely:

- the extent of management accounting innovation adopted;
- management accounting innovations as technical or administrative innovations;
- the key influences on the adoption of management accounting innovations;
- the main uses of management accounting information;
- the extent of any existence of individual and organizational defensive routines.

6.4.2 Management accounting innovation adoption

The first issue related to the extent of adoption of the key innovative management accounting concepts and practices. An overview of which practices had been identified as explicitly adopted is provided in Exhibit 6.2. The research site needed to be one that had engaged in some degree of adoption of management accounting innovations. The list of possible innovations was identified in the literature review chapter, while the five degrees of adoption from awareness to sustained implementation were developed from the prior work of Damanpour (1991) and Gopalakrishnan and Damanpour (1997).

On the evidence collected, Telstra had worked through the degrees of adoption to sustained implementation in part or all of the organization for four of the innovations: activity-based costing/management (ABC/ABM); business process reengineering (BPR); balanced scorecard; and economic value-added (EVA). A brief commentary with relevant supporting quotations follows for each of the four innovations adopted.

Exhibit 6.2: Management accounting innovation adoption at site

Innovation	Yes/No	Degree of adoption				
		Initiation			Implementation	
		Awareness	Form a view	Evaluate	Trialed	Sustained
Activity-based costing/ management	Yes	√	√	√	√	√
Business process Reengineering	Yes	√	√	√	√	√
Value-chain analysis	No					
Target costing	No					
Balanced scorecard	Yes	√	√	√	√	√
Strategic cost management	No					
Cost driver analysis	No					
Advances in operational control systems	No					
Economic value-added	Yes	√	√	√	√	√

(Source: developed from management accounting innovation interview schedule and interview data)

6.4.2.1 Activity-based cost management

There is evidence that Telstra has adopted activity-based cost management, at two key levels. First, the organization's general ledger has an activity chart linked to it. The level of aggregation is high, but nonetheless, there is an activity focus at this level. For example, areas such as Property and Fleet appear as one activity line-item each, which suggests a relatively aggregated system at the organizational level. Nonetheless, for segments of the corporate services area it might be unreasonable to expect any greater level of disaggregation at the corporate level in an organization of this size. The focus of the interviews was not at the corporate level of use.

Second, some of the individual business units and sections have conducted specific studies to provide more detail on an activity basis. This might be in the form of a one-off

study as in the Fleet segment to develop a pricing and charging mechanism: "we'd already done an activity-based analysis some years ago as part of a basis for establishing our pricing and charging mechanism." (m2)

Alternatively, the activity-based data may have been used to manage the organization on an activity basis:

> *I think we've embraced activity-based costing and then we moved and did activity-based costing studies in different areas of the group that I looked after and in T. We realised that was fine, hey! We've done our activity-based costing study, what now? There had to be more to it, so we moved on and what I call activity-based management became our next phase if you like where we tried to use what we had learned in our activity-based studies to manage the corporation.* (m1)

Two issues emerged in the discussions: the impact of activity analysis; and the identification of its limitations. There is some evidence that it has been of particular usefulness. The use of special studies to assist with costing and pricing has already been mentioned. There is some evidence of a positive impact on the users of the activity-related information: "It did switch the lights on for some managers, who said, this is good, how long has this been happening and we haven't been told." (m1)

On the identification of limitations, a number of interviewees commented on the lack of suitability of activity analysis where the employee numbers were low, the number of transactions was low, or areas where activity-driver identification was problematic.

> *What we've come to realise with activity-based management and activity-based costing is that it's not all that helpful in a lot of areas. It's helpful in areas where you've got high volume, repetitive transaction type activity or repetitive process activity like fixing faults or connecting telephones if you like. Or paying accounts payable where there's repetition that's*

ongoing and you can use it very successfully for seeking productivity improvements. (m1)

.....activity based management is only actually useful where we tend to have quite a few people ....and they're doing a lot of transactions, accounts payable, accounts receivable, so there they tend to have a local system given the information they need in terms of transaction per person and all the things you usually drive on an activity base. (m3)

Activity-based cost management has been a major innovation in management accounting in recent times. An organization the size of Telstra might reasonably be expected to have adopted innovations like activity-based cost management. Its inclusion in the chart of accounts supports this at the organizational level, while the special studies support its use, if somewhat limited, at the local level.

6.4.2.2 Business process reengineering

The reengineering of business processes has been a part of the organization's activity for a number of years. In the first instance, this was triggered by the corporate plan which identified the need to shed twenty-seven-and-a-half thousand staff over the life of the plan, which, at the time of interviewing, had one more year to run. At the time of interviewing employee numbers totalled fifty-seven thousand, so the staff reductions were significant. With such a dramatic reduction in staff numbers, the reengineering of processes and the way in which things were done became paramount.

While the staff reductions have provided an impetus for the reengineering, other factors seem, at times, to have influenced the decision. At the time of interviewing, the Property segment, which was seeking a new software system as a core component in providing its property services, was quite prepared to reengineer its processes to support the new system. The development of the core accounting and finance function as a shared services segment was the product of a reengineering exercise. In Fleet there seems to

have been a focus on evaluating the business processes. Two issues emerged in the discussions with m3 on business process reengineering:

- the identification of who owned the processes:

  We've targeted some deliberate areas over the last few years .....and there hadn't been much change so we went through this aspect of assessing who owned the processes.....It became clear that what we needed to look at was a bigger chunk. (m3)

- the realisation that making changes to processes in a specific area may result in changes elsewhere:

  There are always little processes but it was an umbrella coverage and we need to do it all at once, so we've done that with our purchasing cycle and then back into the system making all the system changes that's needed. We've done it in the last twelve months with our maintenance cycles and in our processes in the system, and we've started looking at our customer reporting in the broadest possible sense and then try to break them into reasonable chunks and come up with an overall view of it, an overall change. (m3)

6.4.2.3 Balanced scorecard

Telstra had a balanced scorecard in operation for some time though there is some question about its usefulness. One observation from the interviews was that while a balanced scorecard existed at the corporate level, it was perhaps not as dynamic or influential as it might have been. Nevertheless, managers of line units receive monthly performance reports, which provide information relating to four broad areas; financial, people, process and service, and would typically include a profit report, a cash flow report, a business issues commentary page, a variance analysis, and a page on non-financial measures. When reporting to the next level of managers up the line, the term *balanced scorecard* is used to describe the performance report used.

The link between one management accounting innovation and another surfaced during the discussions on the balanced scorecard. The very recent introduction of the EVA management system seems to have rejuvenated the role of the balanced scorecard:

> *.....with EVA and the fact that we now will come up with a set of drivers and measures to go with them that really does belong on the balanced scorecard. So we'll have a linkage now with the way that we're trying to drive in running the business, and how we are reporting and helping people monitor their accountabilities.* (m1)

6.4.2.4 Economic value added (EVA®[22])

At the time of interviewing Telstra was in the process of implementing an EVA management system. While implementation had not been completed, the interviews provided the opportunity to explore issues associated with the implementation process. This exploration of an innovation 'in-action' enabled a more thorough investigation relative to the other innovations. While the EVA concept arose in discussions with a number of interviewees, two interviews were conducted which specifically focused on the EVA project (Appendix 4). One was with the EVA project director and the other with m1 who was directly involved in the implementation of EVA at the business unit level in the corporate services area. In addition, the training manual used by the Centre for Leadership in the training of the Finance professionals was made available to me.

The discussion of EVA is divided into a number of sections.

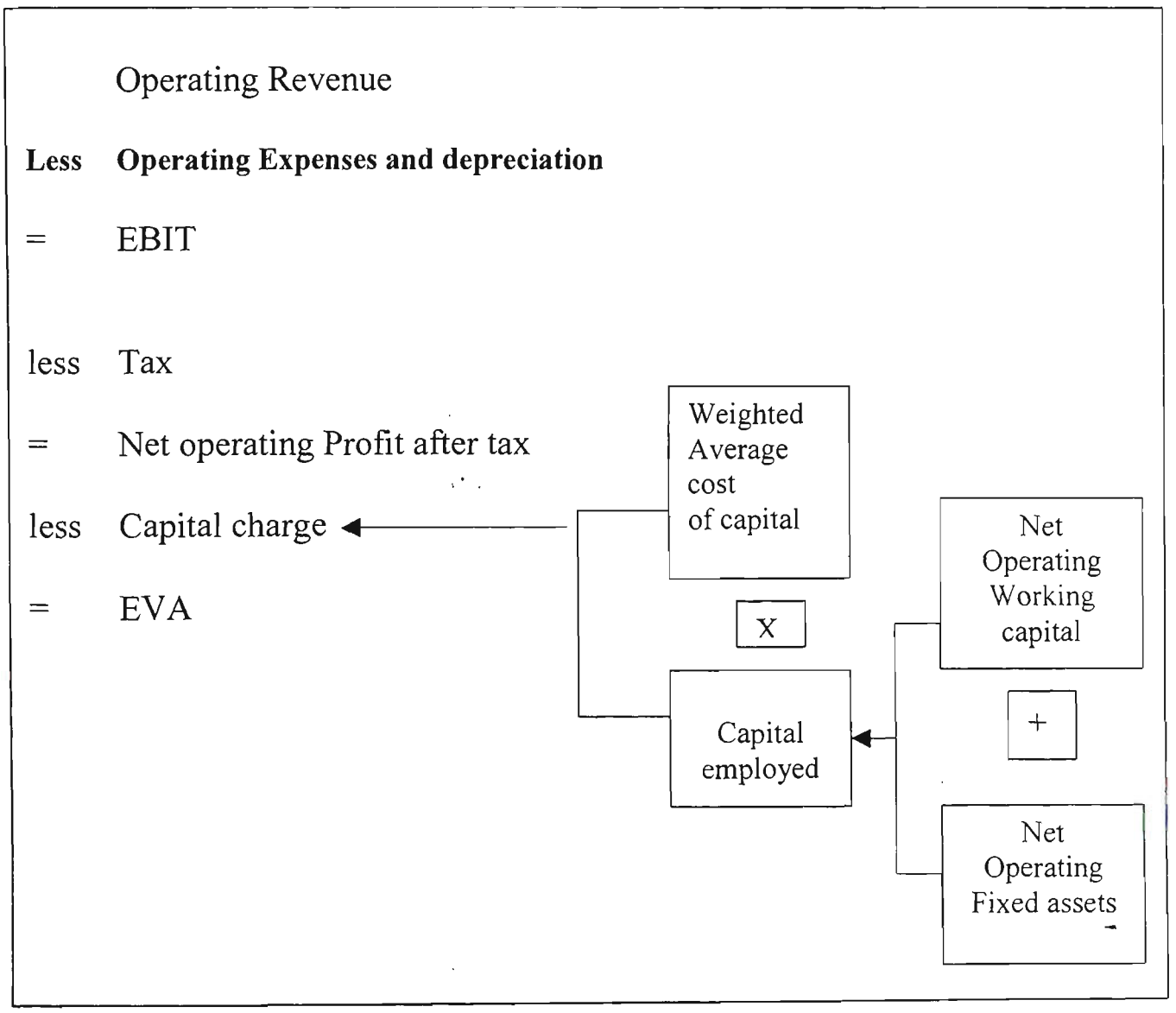
- What is EVA?
- EVA implementation process;
- EVA drivers or enablers;
- EVA calculation and capital charge;
- EVA and links to reward systems and behaviour;
- EVA and the balanced scorecard;
- The commitment of senior management to the EVA project.

<u>What is EVA?</u>

[22] EVA is a registered trademark of the Stern Stewart Corporation

EVA is the acronym for economic value added, which measures the wealth created for the owners of an enterprise in the accounting period being considered after taking into account a capital charge for the assets employed. A simple form of the calculation (as provided in Telstra's training manual) is provided in Exhibit 6.3.

Exhibit 6.3: EVA calculation



(Constructed from details in Telstra's EVA Financial Management Training Manual)

The calculation is a form of residual income after charging the organization or business unit for the assets used to generate the profit. Telstra's training notes outline why EVA was pursued as a management system:

- *There are shifting priorities and market changes facing Telstra management;*
- *Measuring performance against budget, EBIT or Business Cases is insufficiently robust; we will add EVA which captures capital employed and non-Business Case (sic) investment;*
- *The aim is to increase focus throughout the organization to continuously increase shareholder value – as measured by the market;*
- *EVA measures the wealth created after recognising the cost of capital, i.e. debt plus equity;*
- *EVA separates finance from operations but encompasses both P&L and B/S;*
- *EVA is a market accepted management tool, not just a measurement methodology.* (Training manual, P.3)

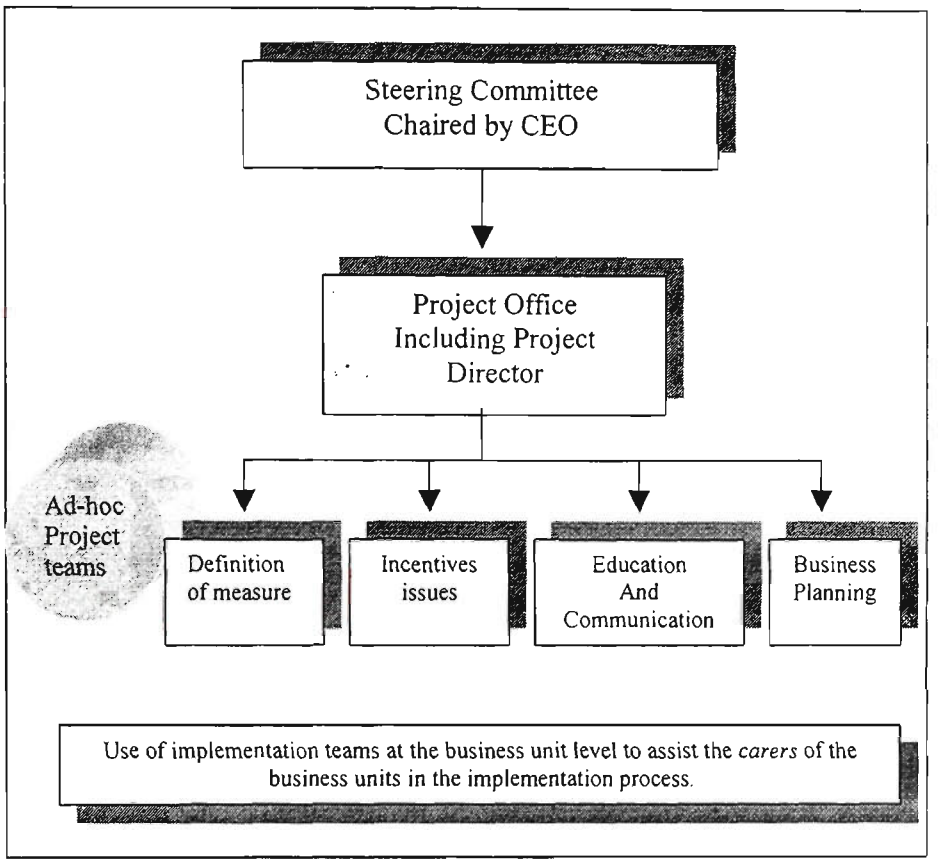
EVA implementation

The EVA project commenced in mid-1998 and was guided by a steering committee chaired by the CEO. Sitting below the steering committee was a project office headed by the project director. This project office managed the implementation process, although there was no permanent project team. Temporary project teams were created with the objective of addressing broad implementation issues such as: definition of the measure and calculation issues; linking incentives to the EVA measure; the function of education and communication; and issues related to business planning. The project teams were made up of staff from a number of functional areas. For example, the *incentives issues team* was made up of staff from finance and accounting and employee relations. The specifics of the implementation at the business unit level were in some ways left to the business units in conjunction with the group controllers for each area. For example, some made use of external consultants and some did not. Some comments confirmed this:

> *....you look at the nature of the business and you look at the nature of the buy-in in the area. How they embrace EVA, they all do it at their own pace and with their own issues so although the concept is the same, the way of embracing it is quite different.* (m7)

Exhibit 6.4 shows diagrammatically the broad implementation structure used.

Exhibit 6.4: EVA implementation structure



(Constructed from interview data)

The objective was to have a corporate-wide EVA measure, an EVA measure at the business unit-level and, in some cases, to go to a third level. The specific business unit implementation discussed here related to the corporate services area. There seems to have been a fairly concerted effort to have both *buy-in* and some ownership from the business unit areas. This is supported by the use of operational managers in the EVA driver identification process:

> *.....if I start putting in champions and if we put the finance people in as champions, everybody will see it as a finance thing, and it is not. The people that will make or break the company is not finance, it really is the operational managers.* (m7)

The Centre for Leadership – the executive training arm of Telstra - played a pivotal role in the education of senior managers about EVA. Workshops were used to brief managers about the EVA concept and then to commence, at least in their minds, the idea of an EVA implementation. The EVA training was conducted along similar lines to other executive programs, where the top two hundred are put through a series of workshops and then the concept is taken to the next level of managers. In the case of EVA, external consultants were brought in, in the first instance, to assist with the initial education and knowledge dissemination. The consultants worked with Telstra for up to eight months through this initial phase.

EVA drivers

The EVA drivers or enablers are those factors or variables most critical to the performance of the business unit or organization and most likely to influence the level of the EVA. From the interviews it seemed that a lot of emphasis was placed on the identification of the EVA drivers.

> *We're going to have no problem measuring EVA at the corporate level and understanding what drives it is not an issue. Trying to drill it down, bring it down, which is why we have gone to the drivers and to put a lot of focus on the drivers. The financial calculation, sure we can do it as an arithmetic exercise, but what means more and what will cause behaviour to change is if we can unearth what are the things that drive the EVA.* (m1)

This is further supported by Telstra's own training materials whereby, below the second tier or business unit level, the emphasis was on the EVA drivers as the measurement tool. The relevant group controller and project director sat down with each manager to identify the key value-drivers in their support areas. In most cases, the objective was to keep the number of drivers to approximately six.

An interesting issue is how the EVA drivers at one level are aggregated up to the next level. The group controller has taken the responsibility for picking out the key drivers

from each of the six business areas in the corporate services segment. Aggregating the drivers from a relatively diverse group of support areas may produce a subjective set of drivers at higher levels. This subjectivity may be reduced over time as management learns more about those variables having the greatest impact on performance.

EVA calculation and capital charge

The EVA calculation was outlined in Exhibit 6.5. In its simplest form, it is the residual following the subtraction of a capital charge on the assets employed from the net operating profit after tax. At the corporate organization-wide level this is relatively straightforward. However, at the business unit level (second tier level), and below, it becomes necessary to make adjustments and amendments, particularly in relation to the determination of the capital employed component of the calculation.

A number of issues emerges in relation to the calculation. First, so as not to complicate the calculation the number of adjustments is kept to a minimum. The adjustments are partly caused when moving from accounting numbers to the EVA framework. The Telstra training notes contain a list of reasons for the adjustments:

- *capture the true investment in the business;*
- *separate operating from financing decisions;*
- *'normalise' earnings for non-recurring gains/losses;*
- *eliminate bookkeeping entries that do not reflect underlying performance;*
- *to establish a framework for operating accountability; and,*
- *to remove subjectivity and encourage value-creating behaviour. (p. 11)*

Second, any corporate restructuring requires some adjustment to the asset allocation for purposes of the calculation. As Telstra appears to undergo corporate restructuring on a relatively regular basis, amendments and adjustments to the numbers will be necessary following each restructuring. The information system will need to be sufficiently dynamic to perform this efficiently. Third, income taxes are viewed as a real cost of

business and so for the EVA calculation, cash taxes on operations will be used, while at the business unit, a prima facie tax rate will be applied to estimated EBIT. Fourth, the capital charge is applied to the adjusted operating capital employed for the organization or group business unit. The capital charge is currently applied at the rate of 9.5% and at present is common across all units and segments. Fifth, transfer pricing provides the mechanism for support units and segments to report an 'internal revenue' enabling an EVA to be calculated. Even though this may be so, the focus in the support areas is on the EVA drivers relating to costs and operating assets they control, and not the calculation. This is partly caused by the difficulty of revenue identification and the possible negative behavioural influences in some of the areas caused by focusing on the calculation.

EVA, reward systems and behaviour

The decision to link the EVA performance with the management incentive program has brought a sharper edge to the impact of the EVA implementation[23]. At the senior levels of management the incentive program will be based on three key components:

- Telstra's corporate EVA result – probably accounting for 50% or more of the bonus;
- EVA drivers at the business unit/segment level; and,
- the personal performance of the manager as measured, for instance, by the employee opinion survey.

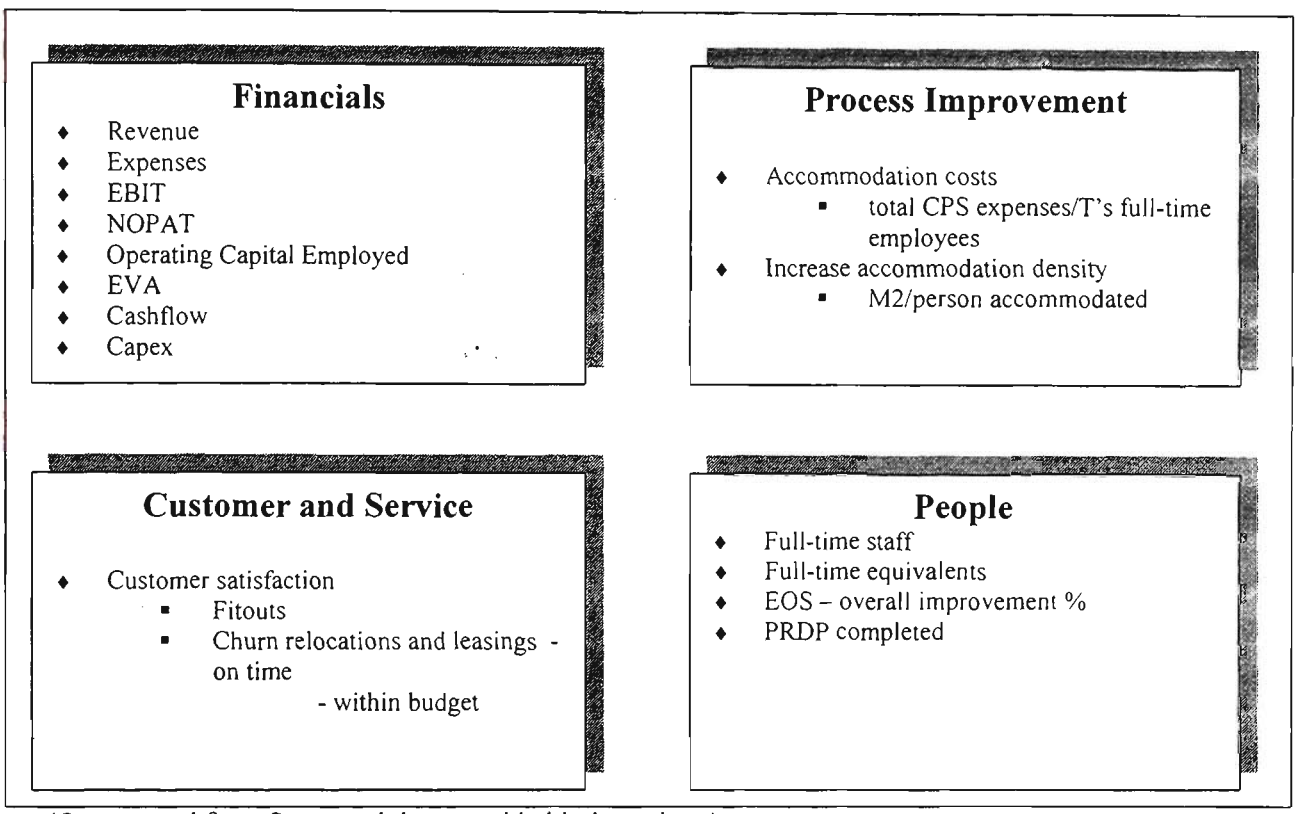
The proportions may alter depending on the level of management. The more senior the manager, the greater the proportion devoted to the corporate EVA result. This emphasis is clearly deliberate: "So what we have done with incentives.....is to have more emphasis on what is good for T, right, not just what is good for the business unit." (m7)

[23] A subsequent follow-up interview three years after the initial interviews, found that while EVA and the reward system were linked for the first two years of the EVA operation, this had now ceased.

EVA and the balanced scorecard

This section considers the interaction between two innovations; EVA and the balanced scorecard. In short, the EVA result for business units and segments will be included in the scorecard for that unit or segment along with other key measures and drivers. Exhibit 6.5 provides an overview of the key components of a scorecard for an operational unit in the corporate services area.

Exhibit 6.5: Balanced scorecard – property services unit in corporate services area



(Constructed from Scorecard data provided in interviews)

This scorecard demonstrates that EVA is a component of the financials perspective of the scorecard[24]. Further, the 'balanced' nature of the scorecard is highlighted, on paper at least, with the reporting of both financial and non-financial measures.

Commitment to EVA

Commitment by senior management to innovations has been identified as critical to the success of innovations. There is sufficient evidence to suggest that there is a relatively

[24] A follow-up interview confirmed that EVA continues to be reported on the scorecard.

strong commitment by the senior management of Telstra to the EVA project. In the first instance, it was the previous CEO who initiated the project and set up the steering committee of which he was chairperson. With a change of CEO during the implementation process, the new CEO quickly demonstrated his commitment to the project:

> *...in the first address to the management group since he's been CEO ...to the management team - probably about three thousand managers around the country – and in the first two or three minutes of his address he was confirming his commitment to EVA and its implication as a management system in the corporation.* (m7)

The commitment is also demonstrated by the extent of training provided in relation to the innovation. In this regard, the Centre for Leadership has played a central role. This initial training has focused on the educational function of managers mostly about the technical aspects of EVA. In the corporate services area that would include the director, the group controller, and those directly reporting to the director as well as other selected 'keen' managers. This formal training was then followed up by discussions between the group controller, project director and business unit manager to identify key EVA drivers. The director of corporate services would also reinforce EVA concepts as he visited sites around the country.

6.4.2.5 Summary

In this section the focus has been on the management accounting innovations adopted in recent times. Telstra has adopted in part of, or across the organization, activity-based costing/management, business process reengineering, the balanced scorecard, and EVA. The discussion on EVA is in more detail than the others as the interviews were conducted at the time of its implementation. This allowed more probing in the interviews as it was happening and reliance was not placed on the memory of the interviewee.

Activity-based costing/management is incorporated into the organization's ledger system, though its greatest benefit seems to have occurred in the one-off studies at the operational

level, particularly those with repetitive transactions. Business process reengineering has been necessary due to the dramatic staff reductions in recent years. Nevertheless, the operational areas such as Property have embraced process redesign as a means of delivering its services. A balanced scorecard has existed at the corporate level for some time. The scorecard has combined financial and non-financial indicators, and more recently, has incorporated the EVA measure at the management level. EVA was in the process of being implemented at the time of the interviews. Driven from the very senior management level, the EVA measure would be included in the performance evaluation adding greater impact to the EVA implementation. At the middle to lower levels the EVA drivers were the main factor likely to influence performance.

6.4.3 Management accounting innovation as technical or administrative innovation

The discussions in this area were fairly limited. For classification as a technical innovation, there needs to be changes to basic work practices (Damanpour 1987). There was only a little support for the role of management accounting innovations to result in changes to basic work practices. But this was more in the use of the information generated by the ABC-related data. ABC in itself does not necessarily cause changes to work practices, but the ABC-related data may be used to engineer changes.

The issue of whether an innovation would be classified as an administrative or a technical innovation may affect the process of adoption and may not relate equally to the same organizational factors (Damanpour 1987). As outlined in the literature review, the little accounting-based research in the area is inconsistent, in that some authors classify management accounting innovations as technical (see Argyris and Kaplan 1994), while others view it as administrative (Shields and Young 1989; Shields 1995). The investigations in this study have failed to provide a conclusive answer in this area, with some interviewees viewing management accounting innovation as technical (supporting the idea that the innovations trigger changes in basic work practices), while others viewed it as administrative. This supports the differing views expressed in the literature.

6.4.4 Determinants of management accounting innovation adopted

In the literature, a number of variables has been identified as influencing the adoption of innovations. These were classified into three broad areas: characteristics of senior management; organizational characteristics; and organizational context characteristics. The focus of the interviews in this section related more to the organizational characteristics than to the other two. This was because the characteristics of senior management and the organization context characteristics relating to competitiveness are difficult areas on which to acquire specific information. Five organizational characteristics are discussed here, namely:

- the level of centralization;
- size;
- levels of formalization;
- administrative intensity; and
- absorptive capacity.

The first organizational characteristic considered related to the *level of centralization*, which was measured in three ways:

- The level of participation in decision-making;
- The degree of freedom to make decisions; and
- The readiness of management to accept failure.

Both accounting managers interviewed rated the level of participation as relatively high (around two on a scale of one to seven, where one is *high* and seven is *low*). On the degree of freedom for organizational members to make their own decisions there was some difference between the two managers. One rated it a *four*, while the other a qualified *two*. The qualification related to Telstra's managers rather than to all employees. In relation to the readiness of management to accept failure two observations emerged. First, one manager related the readiness to accept failure to the accounting and finance function in particular and concluded that there was a responsibility to get the numbers right. On the other hand, he believed that where an employee genuinely tried

something new and it did not work, there was more acceptance of this form of failure. The other manager believed the level of tolerance in relation to failure was improving:

"I would say that the level of tolerance is improving, and yes they do get learning. There is much better learning out of that than say four or five years ago." (m1)

The second organizational characteristic related to *size*. Size may be a function of anyone of a number of variables, of which two are reported in Exhibit 6.6, employee numbers and sales revenue.

Exhibit 6.6: Employee numbers and sales revenue

	1995/96	1996/97	1997/98	1998/99	1999/2000
Full-time employees	76,522	66,109	57,234	52,840	50,761
Sales revenue	$14.716b	$15.430b	$16.703b	$17.571b	$18.609b

(Source: Annual Report, 2000)

While size itself was not discussed at length in the interviews, the data in Exhibit 6.7 suggests that the measure selected to operationalize size is important given the different results to emerge. At Telstra, while full-time employee numbers have been falling, sales revenue has been increasing for the period 1995/96-1999/2000.

The third characteristic related to the *levels of formalization*. This was operationalized in two ways:

- the level of rules, manuals and job descriptions controlling employee activities;
- the freedom to 'break the rules' as a form of inquiry and curiosity.

In relation to the level of rules, manuals and job descriptions two important issues arise. First, historically, every job had a position number, a job description and a person to occupy that position number. A different job description and position number for every job has now been replaced with generic job descriptions, while thousands of 'positions' and specific job descriptions have been eliminated. Second, the intranet has served as an important storage and resource tool. Standard rules and policy manuals are now communicated and stored through the organization's intranet system. The advantages of

this are numerous but include: 24 hour access; easily accessed irrespective of geographic or office location; and, relatively efficient and effective up-dating and distribution. A good indicator of the reduction in policy and procedures is the employee relations policy and procedures manual which has been cut from 13000 pages to 500 pages.

In relation to the level of freedom to 'break the rules', the issues of inquiry and curiosity were explored under *organizational curiosity* in the facilitating factors section. In short, the conclusion suggested that there were moderate levels of organizational curiosity in the support areas.

The fourth organizational characteristic related to *administrative intensity*. While operationalized as the ratio of managers to employees this characteristic was not pursued to any significant extent in the interviews, due to the perceived difficulty in obtaining the ratio of managers to employees across a number of segments of the organization. The accounting group controller interviewed had twenty-eight staff under his immediate supervision.

The fifth organizational characteristic related to *absorptive capacity*, which relates to the capacity [in this case] of the accounting/finance office to identify, seek out and explore innovation. This characteristic was operationalized in two ways:

- The level of and requirement for qualifications;
- The level of professional development and training.

Of the twenty-eight staff under the management of m1, at least 90% possessed an accounting/commerce degree. A degree would be the requirement for most positions requiring moderate to upper level accounting tasks. In the shared services area of the finance function, the percentage is lower, with staff performing lower-level accounting tasks not necessarily requiring a degree.

In relation to professional development and training, individual line units and sections do not appear to have a line item. Rather, the senior management training is handled through the Centre for Leadership, while Telstra Learning handles much of the other

training, particularly that of a technical nature. As previously discussed, the Centre for Leadership is responsible for executive programs, while Telstra Learning responds to the demands particularly from the technical segments of the organization.

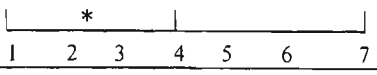
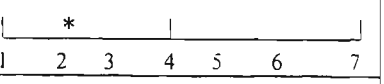
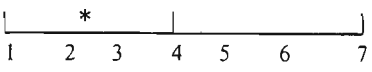
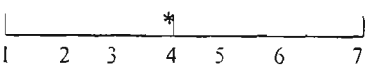
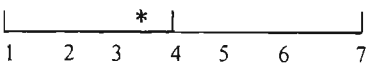
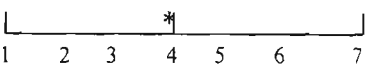
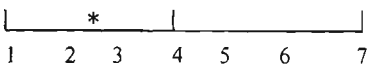
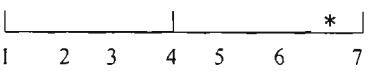
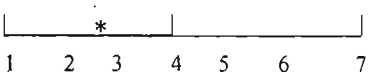
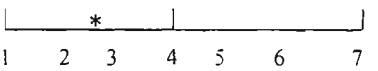
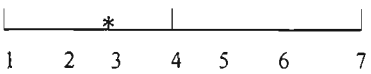
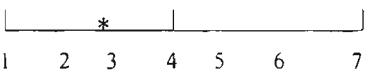
6.4.5 Use of management accounting information

The purpose of this section was to explore the general uses of the management accounting information prepared. Seven broad uses were selected for investigation:

- monitor and control;
- identify discrepancies and errors;
- raise questions;
- identify solutions;
- question the way in which things are done;
- assist with new ways of doing things; and
- contribute to strategy formulation.

Respondents were asked to rate the level of use from *significant* to *little*, where 1 = significant use and 7 = little use. The results are shown in Exhibit 6.7.

Exhibit 6.7: Use of management accounting information

	M1	M2
Monitor and control		
Identify discrepancies and errors		
Raise questions		
Identify solutions		
Question the way in which things are done		
Assist with identifying new ways of doing things		
Contribute to strategy formulation	No response	No response

(Developed from management accounting innovation schedule and interview data)

For most of the uses, both managers have rated the use much the same with the only divergent view in relation to the *identify solutions* use. While monitoring and control appears to be the most significant use of the management accounting output, the output is also supporting the more enquiring and problem solving issues and tasks.

6.4.6 Defensive routines

This area of questioning was very much linked to the work of Argyris (1992b; 1992d) and Argyris and Kaplan (1994). The underlying concept of defensive routines is that managers, including accountants, will engage in defensive routines, which ultimately

will engage in defensive routines, which ultimately serve as barriers to learning and organizational development. Defensive routines were operationalized in three ways:

- where managers continue to hold on to a project/process even though it has "gone off the rails";
- where there is concern over the adoption of new techniques/practices in case they fail; and
- where there are attempts to cover up poor results/performance for as long as possible.

In relation to holding on to projects/processes, both respondents indicated that this was not a common practice within the accounting/finance segment or at the organizational level. The concern over new practices/techniques was considered only a minor resistance tool to innovation and the adoption of new initiatives, with the use of pilot testing assisting in this regard. This is particularly so for management-accounting type innovations where a pilot project in one segment can serve as a suitable testing ground. In so far as covering up poor results is concerned both respondents indicated that this was much less likely to occur now as the organization was much more open than in the past. There was little value in pursuing covering-up practices. A recent initiative at board level in this regard was to have 12-month progress reports to the Board on major investments.

6.5 Summary

In this chapter there has been a focus on the results emanating from the study, with a particular emphasis on the interviews. This discussion was in three main parts. In Section 6.2 the focus was on the organization learning enabler – learning orientations. In line with the work of DiBella and Nevis (1998), seven constructs had been identified in the literature review and explored in the interviews via a prepared interview schedule. In Section 6.3 the focus was on the organization enabler – facilitating factors. Using Di Bella and Nevis' (1998) framework, ten constructs were explored in the interviews using a prepared interview schedule. In Section 6.4 results associated with management accounting innovation were detailed. Again a prepared interview schedule was used to explore these issues.

In very broad terms the results demonstrate: a combination of approaches for many of the seven learning orientation constructs; at least a moderate level of organizational learning potential as depicted by each of the facilitating factor constructs; and, a moderate level of management accounting innovation with the opportunity of studying one in its implementation phase. A discussion of the key issues emanating from this chapter follow in Chapter 7.

Chapter 7 Discussion of Issues

7.1 Introduction

The discussion in Chapter 6 focused on the results emanating from the investigation. The emphasis was on reporting the evidence collected from each of the three research instruments used in the interviews. The objective in this chapter is to identify the key issues arising from the detailed material in Chapter 6 and, in so doing, to respond specifically to the research questions posed in Chapter 3. The discussion is organized into the following sections:

- the form and extent of organizational learning;
- management accounting innovation adoption;
- management accounting innovation and organizational learning; and
- conclusions and recommendations.

7.2 The form and extent of organizational learning

The form and extent of organizational learning were investigated via two of the research instruments used to guide the interviews. The *form* of organizational learning was investigated by the seven learning orientation constructs and Section 6.2 detailed the results. The *extent* of organizational learning was investigated by the ten facilitating factor constructs and the results were detailed in Section 6.3. Issues arising from each will be discussed in turn.

7.2.1 The form of organizational learning

As depicted by arrow 4 in Exhibit 3.1, the learning orientations were used to evaluate the form of organizational learning. The six learning orientation constructs investigated were initially offered as polar choices along a continuum, indicating that organizations made decisions about the form of learning. For example, choosing internal or external sources as the dominant knowledge source for the organization is presented as a polar choice. This is the case for each of the learning orientation constructs. The evidence generated from the interviews suggests that Telstra is more likely to use a combination of

approaches for each of the constructs. That is, in relation to knowledge source, for example, Telstra prefers a combination of internal and external sources. DiBella and Nevis (1998) suggested that ideally organizations would make learning investments in all aspects of their business and be good at the fourteen approaches represented by the seven learning orientation constructs. The evidence from Telstra suggests that it is possible to draw on many of the approaches presented by the seven constructs and that, while presented as polar choices, a combination of approaches for each construct is more likely. This supports the final position of DiBella and Nevis (1998).

The six constructs[25] investigated appeared to be equally important. In contrast to the facilitating factors, each of the learning orientation constructs is generally independent of the others, and relates to separate decisions that the organization takes. Issues worthy of further comment emerged in relation to three of the constructs:

- knowledge reserve construct;
- dissemination mode construct; and,
- learning scope construct.

Knowledge reserve construct

The knowledge reserve construct focuses on an individual compared to a team or group approach. The evidence at Telstra was a combination of both individual and team or group approaches. As organizations tend to increase the use of teams and groups in their management and operations, the processes to facilitate knowledge transfer and sharing are important. One of the issues raised in Section 6.2.4 in this regard related to the nature of organizational memory. It is worth highlighting the importance for organizations to have processes that capture the knowledge and learning that should be committed to memory, either in the minds of other individuals or in some archival database. Of the four knowledge-reserve sub-components – debriefing sessions, job rotation, knowledge sharing and information storage Telstra appeared to make less use of debriefing sessions and job rotation in a formal sense, relied on formal and informal processes for knowledge

[25] As discussed in Section 6.2.1 the value-chain focus construct was not pursued in the interviews.

sharing, and had begun to use the intranet extensively for information storage and retrieval.

Given the information-providing function of management accounting, organizational memory, particularly knowledge sharing and information storage emerge as important concepts for those responsible for the management accounting function to consider. To maximize the utility of management accounting information, the processes used to share and store information, both by the providers and the users, require careful consideration and provide opportunities for further research.

Dissemination mode construct

In relation to the dissemination mode used, organizations are likely to use a combination of formal and informal approaches. The evidence at Telstra confirmed this. The important aspect for the management accounting function within organizations is to recognize the learning and knowledge transfer approaches in use and maximize the utility of the management accounting information generated. For new, organization-wide initiatives such as the EVA project at Telstra, the use of formal approaches as sponsored by the Centre for Leadership appear to be a suitable, particularly in the early stages of implementation.

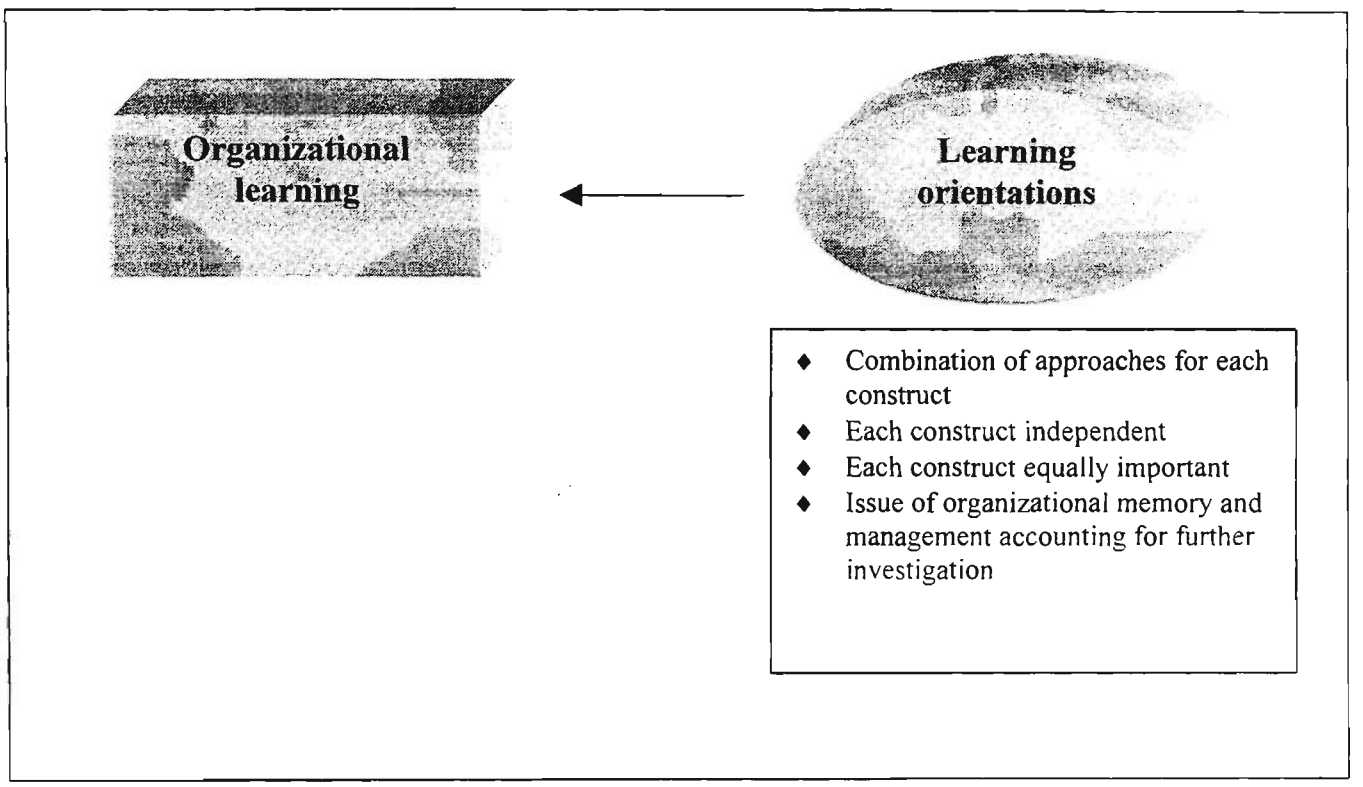
Learning scope construct

The learning scope construct relates to the type of learning occurring. Terms such as single-loop versus double-loop learning (Argyris and Schon 1978), and incremental versus transformational learning (DiBella and Nevis 1998), are used to indicate the type of learning occurring within organizations. The evidence from Telstra suggests some combination of learning types, which supports the literature (Argyris and Schon 1996; DiBella and Nevis 1998; Senge 1990). While double-loop or transformational learning was not in abundance in the organization's sections investigated, its very existence at all (particularly in the operational support areas) is a positive outcome. These areas seem to have undergone some transformational change, particularly in the evaluation of processes, fostering process reengineering efforts. This raises the prospect for the

exploration of potential links between business process reengineering and the type of learning occurring within organizations.

A summary of some of the key issued emerging from the form of organizational learning is shown in Exhibit 7.1, which is an expanded version of the link posited by arrow 4 in Exhibit 3.1.

Exhibit 7.1: The form of organizational learning



(Developed from research model and interview data)

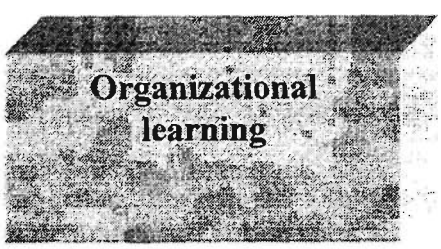
7.2.2 The extent of organizational learning

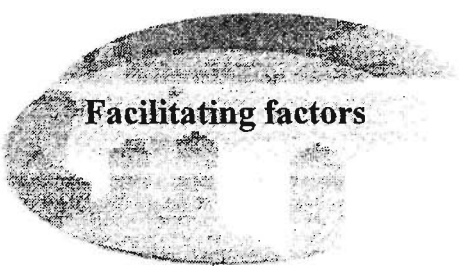
As depicted by arrow 5 in Exhibit 3.1, the facilitating factors constructs were used to evaluate the extent of organizational learning. In contrast to the learning orientations, not all of the factors were independent of each other, while some appeared to be more important than others in measuring the extent of learning. For example, when operationalized, the constructs *organizational curiosity, climate of openness,* and *operational variety* appeared to take on similar characteristics, as was the case for *multiple advocates* and *involved leadership.* This similarity between some of the constructs is based on the observation in interviews that questions were being repeated or exploring the same area. This is perhaps important in the context of construct validity

and suggests that future studies take the similarities into consideration. The idea that some constructs were more important than others emerged when significantly more interview time had to be devoted to some constructs than others. This is also reflected in the space devoted to the discussion of results for each construct in Chapter 6. Those constructs which appeared more important included: scanning imperative; performance gap; organizational curiosity and continuous education.

In rating the extent of organizational learning within the research site, a subjective rating for each of the constructs based on the discussion in Chapter 6 is provided in Exhibit 7.2, which also contains a summary of the key issues to emerge, as posited by arrow 5 in Exhibit 3.1.

Exhibit 7.2: Extent of organizational learning





Facilitating Factor Construct	Rating
Scanning Imperative	moderate-high
Performance Gap Concern for Measurement	}moderate -high }
Organizational Curiosity Climate of Openness Operational Variety	} low-moderate
Continuous education	moderate
Multiple advocates Involved leadership	Moderate Moderate-high
Systems perspective	low-moderate

- Not all constructs independent
- Some constructs more important than others
- Overall rating of at least a moderate level.

(Developed from research model and interview data)

The literature contains little material relating to the measurement of the extent of organizational learning. Kloot (1997) seemed to be content with the identification of the existence of the variables of organizational learning used in her study. Meanwhile, DiBella and Nevis (1998) see measurement at one point in time as less important, and argue for an interactive process to profile the current and desired learning capabilities using the learning orientations and facilitating factors as the basis for this profiling. The ratings in Exhibit 7.2 would suggest an overall organizational learning rating of at least a moderate level.

7.3 Management accounting innovation adoption

Management accounting innovation was the third key area of investigation, following the learning orientations and facilitating factors. As the research in general terms was exploring links between organizational learning and management accounting innovation, this area of investigation was integral to the research. In this Section the following issues are explored:

- the extent of management accounting innovation adoption;
- management accounting innovation as technical or administrative innovation; and,
- the main determinants of management accounting innovation adoption.

7.3.1 Extent of management accounting innovation adoption

It is reasonable to expect that an organization such as Telstra, given its size, competitive industry and deregulated environment, is likely to have welcomed innovation, including management accounting innovation. As outlined in Chapter 6, a number of innovations in the management accounting field have emerged in the last ten to fifteen years. Telstra has adopted a number of these: activity-based cost management; balanced scorecard; business process reengineering and economic-value added (EVA). In Chapter 6 significant attention was given to EVA adoption as this was occurring at the time of the interviews.

Much of the literature in this area has been on specific management accounting innovations combined with issues associated with successful implementation (Argyris

and Kaplan 1994; Anderson 1997; Shields 1995), the decision to adopt innovative practices (Gosselin 1997) and normative works on the characteristics of the innovation (Kaplan and Norton 1996). The degree of adoption of management accounting innovations has focused on the specific innovations and innovation in general.

There is little prior research available to facilitate a judgment about the extent of management accounting innovation adoption at the research site. Libby and Waterhouse (1996) focused on whether four variables; competitiveness, decentralization, size and capacity to learn, influenced changes in management accounting systems at the organizational level. They found capacity to learn as the best predictor of changes in management accounting systems. Chenhall and Langfield-Smith (1998) identified five factors influencing the link between management accounting and change programs.
Still, these studies did not attempt to quantify what makes an organization a highly innovative one in a management accounting context. Measurement can be a problem; from the number of innovative practices (the scope of innovativeness) and change programs, to the success of the new practices and programs (Damanpour 1991).

As detailed in Chapter 6, the innovations adopted to a sustained implementation stage at Telstra were: activity-based cost management (ABCM); business process reengineering (BPR); balanced scorecard; and, economic value-added (EVA). Whether this correlates with a high, moderate or low level of management accounting innovation adoption or management accounting innovativeness is debatable with the prior literature shedding little light. The prior literature in this area has often focused on the number of innovations adopted in a given time period (Damanpour 1991), though this says nothing of the extent of the innovations. In his study of activity-based costing, Gosselin (1997) used a number of these aspects from the innovations literature insofar as management accounting is concerned. More research which focuses on the integration of the innovation literature and the field of management accounting seems warranted.

Nevertheless, as the four management accounting innovations adopted by Telstra are four of the major developments in management accounting in recent times, it is reasonable to

conclude that a moderate-to-high level of management accounting innovativeness exists within the research site.

7.3.2 Management accounting innovation as technical or administrative innovation

Technical innovations are those which bring change to operations and basic work activities (Damanpour 1987, 1991). Administrative innovations usually occur in the social system of human interaction and relationships of an organization and are more immediately related to the organization's management (Damanpour & Evan 1984). In this way, such innovations may change an organization's structure or administrative processes (Damanpour 1987, 1991; Kimberly and Evanisko 1981). Whether an innovation is technical or administrative implies different functions and different decision-making processes (Kimberly and Evanisko 1981). The management accounting literature seems to be divided on whether management accounting innovation is technical or administrative. While the innovation literature suggests that the distinction is important, due to the fact that they serve different functions and they imply potentially different decision-making processes (Kimberly and Evanisko 1981), the management accounting literature remains inconclusive, though most support is for classification as an administrative innovation. The evidence form this study is also inconclusive.

7.3.3 Main determinants of management accounting innovation adoption

In the literature review in Chapter 2, eighteen key determinants of innovation adoption were classified in Exhibit 2.8 as either: characteristics of senior management; organizational characteristics; or, organizational context characteristics. In Chapter 6 the results for the four variables most closely explored in the interviews were outlined. The four variables were; the level of centralization, size, the level of formalization and absorptive capacity. Each of these variables was explored in the interviews more by way of general discussion than specific measurement, though some attempts were made to quantify some of the measures. For example, for the level of centralization a rating of high, moderate of low was sought from interviewees. However, in general terms this does not lend itself to any form of statistical testing. Each of the four variables will be discussed briefly.

Level of centralization.

The higher the level of centralization the less conducive the organization will be to innovation adoption. This was confirmed in Damanpour's (1991) meta-analysis study, though Kimberly and Evanisko (1987) found it so for technological innovation, but not for administrative innovation. Results from the Telstra investigation suggest that the level of centralization was being reduced, increasing the scope for participation in decision-making and freedom to make decisions. Nevertheless, in some aspects of the accounting function there is little freedom, given the need to conform to internal reporting requirements and the like.

Not pursued here, but highlighted by Libby and Waterhouse (1996), bureaucracy could be expected to be greater in larger organizations, as size necessitates some level of centralization. Moreover, as bureaucracy might be expected to be characteristic of mechanistic structures, the bureaucratic structure may, in fact, assist the innovation adoption though offer little with regard to the innovation identification (Gosselin 1997).

Size

Various measures of size have been used in the past. Measures include employee numbers, sales revenue, total assets or, where appropriate, a measure specific to the industry under investigation.[26] As reported in Chapter 6, full-time employee numbers have decreased 33%, while sales revenue has increased 26% over the five-year period to 1999/2000. These numbers do not reflect the number of contractors and consultants employed by Telstra on a part-time or casual basis, or those performing outsourced functions previously performed inside Telstra. The use of contractors and consultants was an issue confronted by Property Services in providing office accommodation, as many of the contractors required office accommodation. To this extent, employee numbers may not be a good indicator of organizational size, and may to some extent, explain why

[26] For example, in their study of hospitals, Kimberly and Evanisko (1981) used the number of beds as a proxy for size.

Libby and Waterhouse (1996) found no correlation between size (measured by employee numbers) and the number of changes to management accounting systems.

Level of formalization

Generally, the literature suggests a negative relationship between formalization and innovation adoption, although some links have been found between formalization in manufacturing firms and innovation (Damanpour 1991), while, more recently, Gosselin (1997) found a correlation between formalization and adoption of ABC.

In relation to formalization at Telstra, there is some evidence to suggest that there has been a reduction in the levels of formalization such as the elimination of specific job descriptions for every position. On the evidence collected it is not feasible to say whether the existing levels of formalization and the rate of innovation adoption are linked.

Absorptive capacity

Absorptive capacity relates to the existence of prior knowledge that facilitates the recognition of new information, assimilates it and applies it to commercial need (Cohen and Levinthal (1990). As reported in Chapter 6, the level and requirement for qualifications and the level of professional development and training were used to operationalize this variable. Using these measures, the level of absorptive capacity within the management accounting function under the supervision of m1, is relatively high. Ninety percent of the twenty-eight staff possess accounting/commerce degrees, while targeted professional development seems to occur. Moreover, the sections involvement in communities of practices, such as the activities of the Australian Centre for Management Accounting Development, is a sign of improving the absorptive capacity of the section. Absorptive capacity emerged as a construct worthy of further investigation in relation to its links to management accounting and management accounting innovation in particular.

7.4 Management accounting innovation and organizational learning links

In this section, the issues arising from the two broad research questions stated in Chapter 3 are discussed. The broad research questions were:

- whether the form and extent of organizational learning influences the level of management accounting innovation; and,

- whether the level of management accounting innovation influences the organizational learning environment.

Each of these will be discussed in turn.

7.4.1 Form and extent of organizational learning and management accounting innovation

The form and extent of organizational learning were measured by the learning orientations and facilitating factors respectively. Each of these are discussed in turn.

7.4.1.1 The form of organizational learning and management accounting innovation

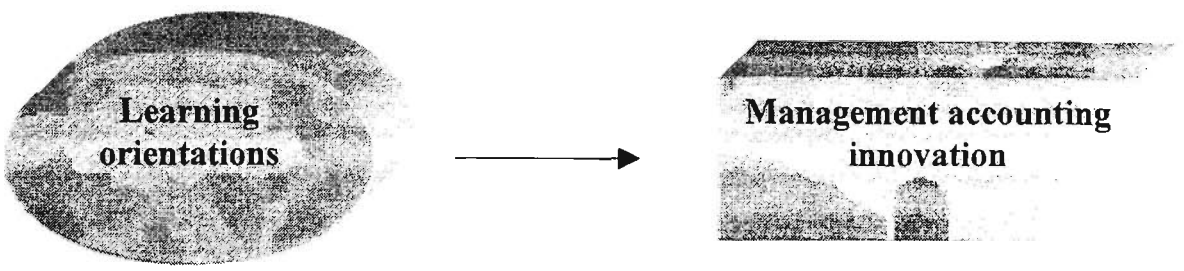
The form of organizational learning was explored via the seven learning orientation constructs. The research question relates to a potential link between the form of learning and the adoption of management accounting practices, represented by part of arrow 2 in Exhibit 3.1 and restated here in Exhibit 7.3. No specific test has been conducted in this research and, in some cases, the specific links were not formally pursued. Nevertheless, the following issues surfaced in relation to some of the constructs. Exhibit 7.3 provides a summary of some of the key issues to emerge regarding the learning orientation constructs and management accounting innovation.

Knowledge source

Incorporating external sources of knowledge as well as internal sources of knowledge is more likely to lead to the discovery of new and innovative practices. Telstra's combination of external and internal sources of knowledge support this, particularly for the identification of innovative practices. External sources of knowledge may also be

important in the implementation phase of the new innovation. Through the internal Centre for Leadership, Telstra makes a formal effort to commit the new knowledge and learning to other organizational members. In this way, they are internalizing the new knowledge and learning.

Exhibit 7.3: Form of organizational learning and management accounting innovation



Construct
Knowledge Source Use of both internal and external sources for management accounting innovation External sources important for implementation of innovations Use of formal processes to internalize new knowledge and learning such as EVA implementation
Content-process focus A focus on process improvement in line with some of the management accounting innovations
Knowledge Reserve Little influence on adoption decision More important during implementation and diffusion of innovation Issue of organizational memory and management accounting innovation
Dissemination mode Both formal and informal methods in management accounting dissemination
Learning scope Combination of both single-loop learning and double-loop learning Inconclusive with regard to impact on management accounting innovation
Learning Focus Some use of teams within management accounting function

(Developed from research model and interview data)

Content-process focus

The focus on process improvement at Telstra leads to the use of practices such as business process reengineering and perhaps cost-related practices such as activity-based cost management. It might be argued that much of the process improvement has been

triggered by the massive reduction in employee numbers. This may be so, but the interviews revealed a genuine need to improve the way in which things were done.

Knowledge reserve

Whether knowledge and learning are on an individual basis or a team basis (or some combination thereof) does not appear to influence the adoption of innovative practices. In this investigation, this construct appears to become more important following the decision to adopt the innovation. From this perspective, how the diffusion of new knowledge and learning occurs is important. The concept of organizational memory generated specific interest by the interviewees. This is reinforcing the literature where the differences between individual memory and organizational memory continue to be discussed (DiBella and Nevis 1998; Huber 1991; Kim 1993). Organizations operating in a dynamic environment may need to devote some time and perhaps resources to exploring the concept of organizational memory. Future research may focus on exploring the issue of organizational memory and management accounting.

Dissemination mode

In relation to the dissemination mode, the evidence at Telstra suggested a combination of formal and informal methods of dissemination. Certainly in relation to accounting and management accounting specifically, there is a formal, prescribed process for providing and disseminating routine information such as monthly performance reports to line managers. Management accounting innovation has influenced the form and content of the reports, such as the inclusion of EVA data, and the use of a balanced scorecard format for monthly reports to line managers. This strictly does not influence the formal/informal dissemination issue, but certainly influences what is disseminated.

Learning scope

Whether the learning scope has influenced the management accounting innovation is problematic. No doubt an organization continually challenging existing assumptions and frameworks is likely to be seeking new ways of doing things, including the use of management accounting. The evidence collected at Telstra is not persuasive one way or

the other. Pockets of double-loop learning would seem to complement single-loop learning within Telstra. This would appear to be the case within the management accounting function as well as in the units which it supports.

Learning focus

In Section 6.2.7 a relatively strong use of teams was reported. There was some evidence that the use of teams altered the demand for information. While not necessarily evident here, this could result in changes to management accounting information and the demand for management accounting innovation. Moreover, accounting staff placed in the units that they support provide the opportunity for membership of cross-functional groups and teams.

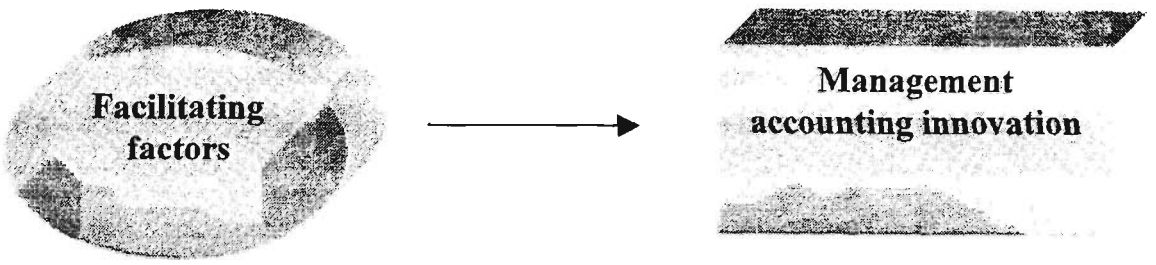
7.4.1.2 The extent of organizational learning and management accounting innovation

The extent of organizational learning was explored via the ten facilitating factor constructs. The higher the prevalence of each construct, then the greater the organization's potential for organizational learning. The research question is suggesting a link between the extent of organizational learning and management accounting innovation represented by part of arrow 3 in Exhibit 3.1 and restated here in Exhibit 7.4. As with the form of organizational learning, no specific tests were conducted, but the following issues seem relevant in relation to some of the constructs.

Scanning imperative

As reported in Section 6.3.2, much of the scanning at Telstra was in the form of investigation of the environment, networking and benchmarking. In relation to management accounting innovation, scanning of the environment would intuitively be an important vehicle for identifying innovative practices. The accounting strategy group within Telstra appear to have been allocated this task in the accounting field. Moreover, involvement in external communities of practice, and high contact level with external consultants, enhances the chances of identifying innovation in general, and management accounting innovation, in particular.

Exhibit 7.4: Extent of organizational learning and management accounting innovation



Some construct issues
Scanning imperative Environmental scanning an important source of management accounting innovation identification Role of accounting strategy group Involvement in external communities-of-practice and use of external consultants assisting the identification of management accounting innovation opportunities
Performance gap How organizations deal with performance gap issues may result in management accounting innovation
Continuous education and multiple advocates Use of formal training and executive development for innovation diffusion Diffusion process may promote multiple advocates

(Developed from research model and interview data)

Performance gap

The performance gap construct contains a number of issues relevant to the management accounting area. Fundamentally, the construct relates to the shared awareness of organizational members of variances between desired and actual performance. In Section 6.3.3 there is a detailed discussion of the case analysis relating to this issue. With a focus on performance measures, how organizations deal with performance gap issues may result in management accounting innovation. The recognition of the need to search for better performance measures is likely to result in identification of innovations such as: the balanced scorecard; a combination of financial and non-financial measures; and, the use of EVA drivers for performance measurement, as evident at Telstra.

Continuous education and multiple advocates

Much of Telstra's continuous education program revolves around its two internal training bodies – the Centre for Leadership and Telstra Learning. The Centre for Leadership is responsible for executive development, while Telstra Learning focuses on the technical

training needs. As the Centre for Leadership is responsible for organization-wide implementations, the EVA implementation program came under its direction. As detailed in Sections 6.3.7 and 6.3.9, the diffusion of innovations such as the EVA program is conducted through the Centre for Leadership in a routine, formal way. This is in line with the findings of Gosselin (1997) who found support for the mechanistic structure in relation to innovation implementation. Moreover, he reported that once top management in mechanistic (more formal in structure) organizations has decided to commit to a new system, they supply all the resources to ensure a successful implementation (Gosselin 1997). This supports the Telstra experience with the EVA diffusion, where a formal implementation process via the Centre for Leadership was pursued. This process opens up the opportunity for multiple advocates to participate in the innovation. The continuous education construct and multiple advocates construct are more applicable in relation to innovation implementation than to innovation identification.

7.4.2 Management accounting innovation and the organizational learning environment

This research question is nested in the concept that the prevalence and, perhaps type, of management accounting innovation may influence the organizational learning environment. This influence may come in a variety of ways such as: providing new learning opportunities by virtue of the new information created; or the process of implementation. Exhibit 7.5 is developed from the links demonstrated by part of arrows 2 and 3 in Exhibit 3.1. Drawing on the discussion in Section 6.4 the following issues warrant comment:

- activity analysis and organizational learning;
- business process reengineering and organizational learning;
- EVA and organizational learning;
- organization-wide innovations and organizational learning; and
- influence on routine and non-routine reporting.

Activity analysis and organizational learning

As outlined in Section 6.4.2.1, activity analysis in the form of activity-based costing was used organization-wide via an activity-chart linked to the general ledger, as well as in specific one-off studies in the operational areas. It is the latter that is most likely to produce new insights and learning opportunities. These one-off studies have focused, for example, on costing and pricing issues in the Fleet Services segment. These one-off studies tend to be driven by the operational or accounting/finance areas supporting the operational areas. There was some evidence of the use of activity-based management to help in the management function. This suggests some contribution of activity-analysis to the potential for double-loop learning within the learning scope construct. Ultimately, this results in the management accounting innovation fostering the learning environment.

Business process reengineering and organizational learning

Though the need for process reengineering was often triggered by dramatic staff reductions, the identification of new process improvements offers the opportunities for new ways of doing things and, hence, new insights. One fact to emerge from the interviews related to the need for a systems perspective in process changes, with a consideration of the impact of a process change in one area or segment on another, even within the same functional area. The Fleet Services segment is one where this umbrella view of processes was needed. Where this systems perspective is facilitated by the reengineering exercise, the management accounting innovation is contributing to the learning environment.

EVA and organizational learning

The EVA management system innovation provided the opportunity for new insights by the identification of the EVA drivers. Being key business drivers in the particular segments, the EVA drivers provided a performance focus for managers and staff, which previously had not existed. In this way, the EVA implementation process through its initial formal processes provided learning opportunities for managers. The linking of the EVA result to the reward system for senior managers furthered the impact of the EVA management system.

Exhibit 7.5: Management accounting innovation and the learning environment

Activity analysis and organizational learning One-off studies in particular offering new insights and learning opportunities Potential for some double-loop learning within the learning scope construct
Business process reengineering and organizational learning The need for a systems perspective in process changes
EVA and organizational learning Identification of key business drivers provided learning opportunities Linking innovation to reward system increases impact
Organization-wide innovations and organizational learning Mode of implementation may impact on extent of organizational learning A diffusion process which encourages multiple advocates promotes the extent of learning
Influence on routine and non-routine reporting Balanced scorecard influencing structure of routine reports and EVA included in content of monthly reports increases opportunities for new insights and information to assist management process

(Developed from research model and interview data)

Organization-wide innovations and organizational learning

The mode of implementation of organization-wide innovations such as the EVA management system may affect the extent of any organizational learning. The current mode of using the Centre for Leadership to facilitate the implementation and diffusion of organization-wide innovations as for EVA seems suitable to the development of learning opportunities. A diffusion process revolving around initial briefing and training to senior management, who then become responsible for the briefing to the next level, seems to work and provides additional learning opportunities as the consumer then becomes the deliverer.

Influence on routine and non-routine reporting

Management accounting innovation has had an influence on the content and/or structure of routine and non-routine reporting. The balanced scorecard has influenced the structure of routine monthly reports to unit managers, while the monthly EVA calculation is now a component of the monthly reports. In terms of non-routine reporting ABC studies have been undertaken in units such as Fleet Services.

The incorporation of innovative management accounting information in both routine and non-routine reports opens up the opportunities for new insights and information to assist in the management process.

7.5 Concluding comments

This research was exploratory in nature. Based on a case study in a large telecommunications company, the research, in broad terms, explored links between organizational learning and management accounting innovation. From the interviews and supplementary evidence outlined in Section 4.3.5 and Exhibit 4.8 and discussed in Chapter 6 there is sufficient grounds to suggest some form of link between organizational learning and management accounting innovation, and as suggested by the two broad research questions, the link may be two-way. This outcome contributes to theory development in both the management accounting innovation literature and organizational learning literature. Linking management accounting innovation and organizational learning provides a theoretical platform for moving forward in this area through further investigations in other organizations, or using different methods of investigation. These investigations may be more specific by focusing on particular variables and constructs as components of this broader study.

The evidence suggests a combination of approaches for each of the learning orientations used to measure the form of organizational learning. Organizations may be more likely to use a combination of approaches and each of the constructs appeared to be independent of each other as well as being equally important.

In relation to the extent of organizational learning, an overall rating of at least a moderate level was identified. Contrary to the learning orientations some of the facilitating factor constructs were not independent of each other and some appeared more important than others. This has some minor implications for future research using the same or similar constructs.

Notwithstanding the shortcomings in the existing literature relating to classification of levels of innovativeness, the extent of management accounting innovation at the research site appeared to be moderate-to-high. In line with this research and that of Gosselin (1997) and Libby and Waterhouse (1996), more research relating to management accounting innovation and the innovations literature in general may be applicable.

In organizations such as Telstra where the extent of management accounting innovation could be classified as moderate-to-high, there is sufficient evidence to suggest the prevalence and type of management accounting innovation may influence the organizational learning environment.

The concepts of organizational memory and absorptive capacity emerge as two concepts worthy of additional research. Both relate to the ability of organizations to identify and then diffuse, store and use knowledge and learning emanating from the introduction of an innovation. Further research in different settings and/or using alternate research methods will shed further light on the nature, strengths and consequences of the proposed links. In this research the organizational learning framework of DiBella and Nevis (1998) was used. Any future researcher adopting the same framework might take note of the minor construct validity issues which emerged in this research. While the learning orientation constructs remained relatively independent, as outlined in Section 7.2.2, a number of the facilitating factor constructs did not. Within this constraint, the organizational learning framework proved sufficiently robust to facilitate the research.

Overall, some grounds for a consideration of the links between management accounting innovation and organizational learning have been found in this research. The implications of this for organizations include:

- organizations are able to improve the level of organizational learning by promoting the existence of the facilitating factor constructs used in this study to reflect the extent of organizational learning;
- organizations which have promoted an organizational learning environment are perhaps more likely to identify, then modify and adapt management accounting innovations to achieve maximum utility;
- organizations with a strong learning environment are likely to use combinations of the choices for each of the learning orientations;
- management accounting innovations are likely to act as vehicles to promote learning within the organization.

For organizations wishing to embed processes and practices to ensure maximum utility from management accounting innovations, a consideration of these links would be valuable.

References

Abernethy, M., Chua, WF., Luckett, P. & Selto, F. 1999, 'Research in Managerial Accounting: Learning from Others' Experiences', *Accounting and Finance*, vol. 39, no. 1, pp. 1 – 28.

Addleson, M. 1996, 'Resolving the Spirit and Substance of Organizational Learning', *Journal of Organizational Change Management*, pp. 32 – 41.

Anderson, S. 1995, 'A Framework for Assessing Cost Management System Changes: The Case of Activity Based Costing at General Motors, 1986-1993, *Journal of Management Accounting Research*, Fall, pp. 1 – 51.

Argyris, C. 1992, 'Organizational Learning and Management Information Systems', in *On Organizational Learning*, ed C. Argyris, Blackwell Publishing, UK, pp. 115-130.

Argyris, C. 1992a, *On Organizational Learning*, Blackwell Publishing, UK

Argyris, C. 1992b, 'Teaching Smart People How to Learn', in *On Organizational Learning*, ed C. Argyris, Blackwell Publishing, UK, pp.84 - 99.

Argyris, C. 1992c, 'Why Individuals and Organizations Have Difficulty with Double-Loop Learning', in *On Organizational Learning*, ed C. Argyris, Blackwell Publishing. UK, pp. 7 - 37.

Argyris, C. 1992d, 'The Dilemma of Implementing Controls: The Case of Managerial Accounting,' in *On Organizational Learning*, ed C. Argyris, Blackwell Publishing, UK, pp. 161 - 172.

Argyris, C. & Kaplan, R. 1994, *Implementing New Knowledge - The Case of Activity-Based Costing*, Accounting Horizons, vol. 8, no 3, September, pp. 83 - 105.

Argyris, C. & Schon, D. 1978, *Organizational Learning: A Theory of Action Perspective*, Addison-Wesley, Publishing Company, USA.

Argyris, C. & Schon, D. 1996, *Organizational Learning 11: Theory, Method and Practice*, Addison-Wesley Publishing Company, USA.

Atkinson, A., Balakrishnan, R., Booth, P., Cote, J., Groot, T., Malmi, T., Roberts, H., Uliana, E. & Wu, A. 1997, 'New Directions in Management Accounting Research', *Journal of Management Accounting Research*, vol. 9, pp. 79 - 108.

Beer, M. & Eisenstat, R. 2000, 'The Silent Killers of Strategy Implementation and Learning', *Sloan Management Review*, vol. 41, no. 4, pp. 29 – 40.

Bhimani, A. & Piggott, D. 1992, 'Implementing ABC: A Case-study of Organizational and Behavioural Consequences', *Management Accounting Research*, pp. 119 – 132.

Birnberg, J., Shields, M. & Young, S. 1990, 'The Case for Multiple Methods in Empirical Management Accounting Research (With an Illustration from Budget Setting), *Journal of Management Accounting Research*, vol. 2, pp. 33 - 66.

Birnberg, J., Turopolec, L. & Young, S. 1983, 'The Organizational Context of Accounting', *Accounting, Organizations and Society*, vol. 8, no. 2/3, pp. 111 – 129.

Bjornenak, T. 1997, 'Diffusion and Accounting: The Case of ABC in Norway', *Management Accounting Research*, vol. 8, pp. 3 - 17.

Booth, P. Giacobbe, F. 1997, 'Activity-Based Costing in Australian Manufacturing Firms: Key Survey Findings', *Management Accounting Issues Report No. 5*, Management Accounting Centre of Excellence, CPAs.

Brownell, P. 1995, *Research Methods in Management Accounting*, Coopers and Lybrand Accounting Research Methodology Monograph No. 2.

Chenhall, R. & Langfield-Smith, K. 1998, 'Factors Influencing the Role of Management Accounting in the Development of Performance Measures Within Organizational Change Programs', *Management Accounting Research*, vol. 9 pp. 361 – 386.

Chua, W. 1996, 'Issues in Substantive Areas of Research: Field Research in Accounting', in Research Methods in Accounting: Issues and Debates, ed Alan J. Richardson, CGA_Canada Research Foundation, pp. 209 – 228.

Cobb, I., Helliar, C. & Innes, J. 1995, 'Management Accounting Change in a Bank', *Management Accounting Research*, 6, pp. 155 – 175.

Cohen, W. & Levinthal, D. 1990, 'Absorptive Capacity: A New Perspective on Learning and Innovation', *Administrative Science Quarterly*, vol. 35, pp. 128 - 152.

Colbert, G. & Spicer, B. 1995, 'A Multi-Case Investigation of a Theory of the Transfer Pricing Process', *Accounting, Organizations and Society*, vol. 20, no. 6, pp. 423 – 456.

Cooper R. 1988, 'The Rise of Activity-Based Costing – Part One: What is an Activity-Based Cost System', *Journal of Cost Management*, Summer, pp. 45-54.

Cooper, R. 1990, 'Cost Classification in Unit-Based and Activity-Based Manufacturing Cost Systems', *Journal of Cost Management*, Winter, pp. 4-13.

Cooper, R. 1996, 'Costing Techniques to support corporate strategy: Evidence from Japan', *Management Accounting Research*, vol. 7, pp. 219 - 246.

Cooper R., Kaplan, R., Maisel, L., Morrissey, E. & Oehm, R. 1987, 'From ABC to ABM', *Management Accounting*, November, pp. 54 – 57.

Cooper R. & Kaplan, R. 1992, 'Activity-Based Systems: Measuring the Cost of Resource Usage', *Accounting Horizons*, September, pp. 1-13.

Cooper, R. & Zmud, R. 1990, 'Information Technology Implementation Research: A Technological Diffusion Approach', *Management Science*, vol. 36, no. 2, pp. 123 - 139.

Corsini, R. 1987, *Concise Encyclopedia of Psychology*, Wiley, New York, USA.

Covaleski, M. & Dirsmith, M. 1990, 'Dialectic Tension, Double Reflexivity and the Everyday Accounting Researcher: On Using Qualitative Methods', *Accounting, Organizations and Society*, vol. 15, no. 6. pp. 543 – 573.

Cross, R. & Baird, L. 2000, 'Technology is Not Enough: Improving Performance by Building Organizational Memory', *Sloan Management Review*, vol. 41, no. 3, pp. 69 – 78.

Cyert, R. & March, J. 1963, *A Behavioural Theory of the Firm*, Prentice-Hall, USA, pp. 123-125.

Damanpour, F. 1987, 'The Adoption of Technological, Administrative and Ancillary Innovations: Impact of Organisational Factors', *Journal of Management*, vol. 13, no. 4, pp. 675 - 688.

Damanpour, F. 1991, 'Organisational Innovation: A Meta-Analysis of Effects of Determinants and Moderators', *Academy of Management Journal*, vol. 34, no. 3, pp. 555 - 590.

Damanpour, F. & Evan, W. 1984, 'Organizational Innovation and Performance: The Problem of "Organizational Lag", *Administrative Science Quarterly*, vol. 29, September, pp. 392 - 409.

DiBella, A. & Nevis, E. 1998, *How Organizations Learn*, Jossey-Bass Publishers, CA, USA.

Dodgson, M. 1993, 'Organizational Learning: A Review of Some Literatures', *Organization Studies*, vol 14, no 3, pp. 375 - 394.

Downs, G. & Mohr, L. 1976, 'Conceptual Issues in the Study of Innovation', *Administrative Science Quarterly*, vol. 21, December, pp. 700 - 714.

Edmondson, A. & Moingeon, B. 1998, 'From Organizational Learning to the Learning Organization', *Management Learning*, vol. 29, no. 1, pp. 5 – 20.

Eisenhardt, K. 1989, 'Building Theories from Case Study Research', *Academy of Management Review*, vol. 14, no. 4, pp. 532 - 550.

Emmanuel, C., Otley, D. & Merchant, K. 1990, *Accounting for Management Control, 2e*, Chapman and Hall, UK.

Ferreira, L. & Merchant, K. 1992, 'Field Research in Management Accounting and Control: A Review and Evaluation', *Accounting, Auditing and Accountability*, vol. 5, no. 4, pp.3 - 34.

Firestone, W. 1993, 'Alternative Arguments for Generalizing from Data as Applied to Qualitative Research, *Educational Researcher*, 22 (4), pp. 16 – 23.

Foley, P. & Armstrong, A. 1997, 'Enhancing Organizational Performance by Using Individual Learning Effectively', Workplace Studies Centre Seminar, Victoria University.

Foster, G. & Young, M. 1997, 'Frontiers of Management Accounting Research', *Journal of Management Accounting Research*, vol. 9, pp. 63 - 78.

Garvin, D. 1993, 'Building a Learning Organization', *Harvard Business Review*, July-August, pp. 78 – 91.

Golden-Biddle, K. & Locke, K. 1993, 'Appealing Work: An Investigation of How Ethnographic Texts Convince', *Organization Science*, Vol. 4, pp. 595 – 616.

Gopalakrishnan, S. & Damanpour, F. 1997, 'A Review of Innovation Research in Economics, Sociology and Technology Management', *Omega, International Journal of Management Science*, vol. 25, no. 1, pp 15 - 28.

Gosselin, M. 1997, 'The Effect of Strategy and Organizational Structure on the Adoption and Implementation of Activity-Based Costing', *Accounting, Organizations and Society*, vol.. 22, no. 2, pp. 105 - 122.

Hammer, M. & Champy, J. 1994, *Reengineering the Corporation: A Manifesto for Business Revolution*, Nicholas Brealey Publishing, London, UK.

Hammersley, M. & Atkinson, P. 1983, *Ethnography Principles in Practice*, Tavistock, London.

Hedberg, B. 1981, 'How Organizations Learn and Unlearn' in *Handbook of Organizational Design*, vol. 1, eds P. Nystrom and W. Starbuck, Oxford University Press, Oxford, pp. 3 - 27.

Hendry, C. 1996, 'Understanding and Creating Organizational Change Through Learning Theory', *Human Relations,* May, vol. 49, no. 5, pp. 621 - 638.

Hopwood, A. 1983, 'On Trying to Study Accounting in the Contexts in which it Operates', *Accounting, Organizations and Society*, pp. 287 – 305.

Huber, G. 1991, 'Organizational learning: The Contributing Process and the Literatures', *Organization Science*, vol. 2, no. 1, pp. 88 - 115.

Ingram, R., Albright, T. & Hill, J. 2001, *Managerial Accounting: Information for Decisions, 2e*, South-Western College Publishing, USA.

Innes, J. & Mitchell, F. 1990, The Process of Change in Management Accounting: Some Field Study Evidence', *Management Accounting Research*, 1, pp. 3 – 19.

Johnson, T. & Kaplan, R. 1987, *Relevance Lost: The Rise and Fall of Management Accounting*, Harvard Business School Press.

Kaplan, R. 1983, 'Measuring Manufacturing Performance: A New Challenge for Managerial Accounting Research', *The Accounting Review,* vol. 58, no. 4, pp. 686-705.

Kaplan, R. 1986, 'The Role for Empirical Research in Management Accounting`, *Accounting, Organizations and Society*, vol. 11, no. 4, pp. 429 - 452.

Kaplan, R. 1994, 'Management Accounting (1984-1994): Development of New Practice and Theory', *Management Accounting Research,* pp 247 - 260.

Kaplan, R. & Atkinson, A. 1998, *Advanced Management Accounting, 3e*, Prentice-Hall, USA.

Kaplan, R. & Norton, D. 1996, *Translating Strategy into Action: The Balanced Scorecard,* Harvard Business School Press, Boston, USA.

Kato, Y. 1993, 'Target Costing Support Systems: Lessons from Leading Japanese Companies', *Management Accounting Research*, vol. 4, pp 33 -47.

Kim, D. 1993, 'The Link Between Individual and Organizational Learning', *Sloan Management Review*, Fall, pp. 37 - 50.

Kimberly, J. & Evanisko, M. 1981, 'Organisational Innovation: The Influence of Individual, and Contextual Factors on Hospital Adoption of Technological and

Administrative Innovations', *Academy of Management Journal*, vol. 24, no. 4, pp. 689 - 713.

Klemstine, C. & Maher, M. 1983, *Management Accounting Research 1929 – 1983*, American Accounting Association, Management Accounting Section.

Kloot, L. 1997, 'Organizational Learning and Management Control Systems: Responding to Environmental Change', *Management Accounting Research*, vol. 8, pp. 47 - 73.

Kloot, L., Italia, M., Oliver, J. & Brooks, A. 1999, *Management Accounting Systems and Organizational Learning in Victorian Local Government*, Research report, Australian Centre for Management Accounting Development.

Levitt, B. & March, J. 1988, 'Organizational Learning', *Annual Review of Sociology*, vol 14, pp. 319 - 340.

Libby, T. & Waterhouse, J. 1996, 'Predicting Change in Management Accounting Systems', *Journal of Management Accounting Research*, vol 8 pp. 137 - 150.

Lillis, A. 1992, 'Sources of Influence on Capital Expenditure Decisions: A Contextual Study of Accounting Performance Measurement', *Management Accounting Research*, 3, pp. 213 – 227.

Lillis, A. 1999, 'A Framework for the Analysis of Interview Data from Multiple Field Research Sites', *Accounting and Finance*, vol. 39, no. 1, pp. 79 – 105.

Lipe, M. & Salterio, J. 2000, 'The Balanced Scorecard: Judgemental Effects of Common and unique Performance Measures', *The Accounting Review*, Vol. 75, No. 3, pp. 283 – 298.

Lipshitz, R. & Popper, M. 1996, 'Building Learning Organizations: The Design and Implementation of Organizational Learning', *Journal of Applied Behavioral Science*, vol. 32, no. 3, pp. 292 – 306.

Malmi, T. 1997, 'Towards Explaining Activity-Based Costing Failure: Accounting and Control in a Decentralized Setting', *Management Accounting Research*, 8, pp. 459 – 480.

Merchant, K., Chow, C. & Wu, A. 1995, 'Measurement, Evaluation, and Reward of Profit Centre Managers: A Cross-Cultural Field Study', *Accounting, Organizations and Society*, vol. 20, no. 7/8, pp. 619 – 638.

Miles, M. & Huberman, A. 1994, *Qualitative Data Analysis*, 2nd edition, Sage Publications, CA.

McGill, M., Slocum, J. & Lei, D. 1993 , 'Management Practices in Learning Organizations', *Organization Dynamics*, pp. 5 - 17.

Moch, M. & Morse, E. 1977, 'Size, Centralization and Organizational Adoption of Innovations', *American Sociological Review*, vol. 42, October, pp. 716 - 725.

Nevis, E., DiBella, A. & Gould, J. 1995, 'Understanding Organizations as Learning *Systems' Sloan School of Management Research Paper,* MIT.

Nguyen, H. & Brooks, A. 1997, 'An Empirical Investigation of Adoption Issues relating to Activity-Based Costing', *Asian Review of Accounting*, vol. 5, no. 2, pp 1-18.

Nonaka, I. 1991, 'The Knowledge-Creating Company', *Harvard Business Review*, November-December, pp. 96 – 104.

Otley, D. & Berry, A. 1994, 'Case Study Research in Management Accounting and Control', *Management Accounting Research*, vol. 5, no. pp. 45 - 65.

Phillips, J. & Watkins, K. (editors), 1996, *Creating the Learning Organization*, American Society for Training and Development, USA.

Popper, M. & Lipshitz, R. 1998, 'Organizational Learning Mechanisms: A Cultural and Structural Approach to Organizational Learning', *Journal of Applied Behavioral Science*, 34, pp. 161 – 178.

Popper, M. & Lipshitz, R. 2000, 'Organizational Learning: Mechanisms, Culture, and Feasibility', *Management Learning*, Vol. 31, No. 2, pp. 181 – 196.

Porter, M. 1985, *Competitive Advantage*, New York: The Free Press.

Richardson, A. (editor), 1996, *Research Methods in Accounting: Issues and Debates*, CGA-Canada Research Foundation.

Roberts, E. 1999, 'In Defence of the Survey Method: An Illustration From a Study of User Information Satisfaction', *Accounting and Finance*, Vol. 39, No. 1, pp. 53 – 78.Rogers, E. 1995, *Diffusion of Innovations, 4e,* New York: The Free Press.

Ryan, B., Scapens, R. & Theobald, M. 1992, *Research Method and Methodology in Finance and Accounting*, Academic Press, UK.

Saunders, M., Lewis, P. & Thornhill, A. 1997, *Research Methods for Business Students*, Pitman Publishing, Great Britain.

Scapens, R. 1994, 'Never Mind the Gap: Towards an Institutional Perspective on Management Accounting Practice', *Management Accounting Research*, 5, pp. 301 – 321.

Senge, P. 1990, 'The Leader's New Work: Building Learning Organizations', *Sloan Management Review,* Fall, pp. 7 - 23.

Senge, P. 1992, *The Fifth Discipline: The Art and Practice of the Learning Organization,* Random House, Sydney.

Shank, J. & Govindarajan, V. 1993, *Strategic Cost Management: The New Tool for Competitive Advantage*, The Free Press, New York, USA.

Shields, M. 1995, 'An Empirical Analysis of Firms' Implementation Experiences with Activity-Based Costing', *Journal of Management Accounting Research*, Vol. 7, pp. 148 – 166.

Shields, M. 1997, 'Research in Management Accounting by North Americans in the 1990s', *Journal of Management Accounting Research,* vol. 9, pp. 3 - 62.

Shields, M. & McEwen, M. 1996, 'Implementing Activity-Based Costing Systems Successfully', *Journal of Cost Management*, pp. 15 – 22.

Shields, M. & Young, S. (Mark), 1989, 'A Behavioral Model for Implementing Cost Management Systems', *Journal of Cost Management*, pp. 17 – 27.

Shields, M, & Young, S, (Mark), 1992, 'Effective long-term Cost Reduction: A strategic Perspective', *Journal of Cost Management*, Spring, pp. 16 – 30.

Shrivastava, P. 1983, 'A Typology of Organizational Learning Systems', *Journal of Management Studies*, vol. 20, no. 1, pp.7 – 28.

Shultz, A. 1999, 'Experimental Research Method in a Management Accounting Context', *Accounting and Finance*, Vol. 39, No. 1, pp. 29 – 52.

Sidak, J. 1998, *A Report to the Minister for Communications, the Information Economy and the Arts on the State of Competition in Australian Telecommunications Services One Year After Deregulation*, Telstra Corporation Limited.

Spicer, B. 1992, 'The Resurgence of Cost and Management Accounting: A Review of Some Recent Developments in Practice, Theories and Case Research Methods', *Management Accounting Research*, vol. 3, no. , pp. 1 - 37.

Stata, R. 1989, 'Organizational Learning - The Key to Management Innovation', *Sloan Management Review,* Spring, pp. 63 - 74.

Starbuck, W. 1981, 'A Trip to View the Elephants and Rattlesnakes in the Garden of Aston', in *Perspectives on Organization Design and Behaviour*, eds A. Van de Ven and W. Joyce, Wiley, New York, pp. 16 7 - 198.

Starbuck, W. 1993, 'Keeping A Butterfly and an Elephant in a House of Cards: The Elements of Exceptional Success', *Journal of Management Studies*, vol. 30, no. 6, pp. 885 - 921.

Stewart, B. & Stern, J. 1990, *The Quest for Value*: The EVA Management Guide,

Swenson, D. 1995, 'The Benefits of Activity-Based Cost Management to the Manufacturing Industry', *Journal of Management Accounting Research*, Vol. 7, pp. 167 – 180.

Tani, T., Okano, H., Shimizu, N., Iwabuchi, Y., Fukuda, J. & Cooray, S. 1994, 'Target Cost Management in Japanese Companies: Current State of the Art', *Management Accounting Research*, vol. 5, no. 1, pp 67 - 81.

Telstra Annual Report, 1998.

Telstra Annual Report, 2000.

Telstra EVA Financial Management Training Manual, 1998.

Telstra Organizational Chart, September 1997, Internal Telstra document.

Telstra Prospectus, 1997, Appendix to the Public Offer Document.

Ticehurst, W. & Veal, G. 2000, *Business Research Methods*, Longman, Sydney.

Yin, R. 1994, *Case Study Research: Design and Methods*, 2nd edition, Sage Publications, USA.

Appendices

Appendix 1: Research Instrument: Learning Orientations Schedule

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
1. Knowledge source: whether knowledge development comes from internal or external sources as extremes	Internal ←						→ External	◆ Use of consultants ◆ Use of internal groups or involvement in external groups for developing and sharing new ideas. ◆ Innovation in non-accounting and accounting areas from internal developments, OR from imitating ◆ Levels of R & D investment

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
2. Content-Process focus whether focus on process-related improvement or product/service attributes.	Content ←						→ Process	Process improvement focus = BPR, TQM cf a focus on product or service attributes

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
3. Knowledge reserve whether knowledge and learning are viewed on an individual basis or as group/team-based.	Personal ←						Public →	Public = a focus on committing to organizational memory the knowledge and learning of individuals For example: ♦ Debriefing sessions when staff exit ♦ Rotation of job areas ♦ Information/knowledge sharing sessions ♦ Information documentation and storage practices.

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
4. Dissemination mode Formal, prescribed, organization-wide methods of sharing learning versus informal methods, such as role modeling and casual daily interaction.	Formal ←						→ Informal	♦ The formal focuses on various forms of written communication eg. Use of memos, reports, documentation. ♦ The informal focuses on sharing experiences within internal groups and teams, with less formality. ♦ What is the role of accounting information in each of these. ♦ How is the accounting information used in groups

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
5. Learning Scope relates to whether knowledge is focused on methods and tools to improve existing knowledge and practices; or on knowledge that challenges the assumptions about existing knowledge and practices.	Incremental (single-loop) ←						Transformative (double loop) →	Whether learning is targeted at : ◆ Improvements in existing processes, products and services; OR ◆ Seeking more deep-rooted changes by drastically altering the way in which things are done; embracing new ways and challenges to existing ways. ◆ What is management accounting information used for: eg the use of ABC, balanced scorecard; ◆ has it been used to support dramatic change and challenges to existing ways; OR to confirm/develop more incremental improvements to existing processes, products or services.

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
6. Value-chain focus Emphasis on learning investments in engineering/ production activities (design and make functions) or sales/service activities (market and deliver functions).	Design-make ←						Market-deliver →	♦ Greater focus of energies and resources on the manufacturing phase in value-chain OR more so in the marketing, post-manufacturing area. ♦ Strong links to management accounting information and management accounting innovation ♦ The use of management accounting innovation in making the decision to be one or the other.

Learning Orientation								
		Mostly	More	Even	More	Mostly		Prompts
7. Learning focus Development of individuals' skills or team and group skills	Individual ←						Group →	♦ Promotion of individual learning (personal mastery) cf group skill development. ♦ Impact of each in information requirements and the contribution of management accounting [innovation]

Appendix 2: Research Instrument: Facilitating Factors Schedule

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
1. Scanning imperative Relates to information gathering about conditions and practices outside the unit or organization, such as environmental scanning (ES).								◆ Extent of ES ◆ What ES is used for ◆ Whether management accounting information is a focus of the scanning ◆ Whether MAI influences the scanning or the scanning has influenced the MAI

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
2. Performance gap Shared perception of a gap between actual and desired results; performance shortfalls seen as opportunities for learning.								♦ Awareness of a performance gap – either via analysis of performance shortfalls or a new vision- opens the door to learning. ♦ How are negative variances viewed...to find blame or as opportunities for learning ♦ Evidence of the use of clear performance measures. ♦ Role of performance feedback and the need to challenge deeply held images. ♦ Role of management accounting information [and innovation] in assisting with performance evaluation and feedback. ♦ Any evidence of managers and others engaging in defensive behaviour to avoid 'blame' or when facing threat or embarrassment.

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
3. Concern for Measurement defining and measuring key factors when venturing into new areas; striving for specific, quantifiable measures.								◆ Measures as part of learning and not just monitoring and control ◆ Types of performance measures: ➢ Financial cf non-financial ➢ Standard cf innovative ➢ Any differences between levels in the organization ◆ Role of MAI and MA innovation in performance measurement development

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
4. Organizational curiosity Support for trying new things; curiosity about how things work; ability to "play" with things; "failures" are accepted, not punished; changes in work processes, policies and structures are a continuous series of learning opportunities.								♦ Acceptance of experimentation ♦ Existence of 'one best way' ♦ Encouragement of new ideas ♦ How new ideas are dealt with m- individual cf group-based. Any processes for dealing with new ideas? ♦ Role of MAI in encouraging organizational curiosity, eg has the existence of ABC encouraged questioning about the results and related organizational issues.

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
5. Climate of Openness Accessibility of information; open communication within the organization; problems/errors/lessons are shared, not hidden; debate and conflict are acceptable ways to solve problems.								◆ The extent of open boundaries ◆ Few barriers to communication or information sharing ◆ Looking for the existence of: ➢ Informal information sharing ➢ Level of defensive reasoning behaviour; how errors are viewed or dealt with and how managers deal with threat or embarrassment. ◆ Role of MAI and innovation in the environment contributing to or reinforcing the environment whether open or not ie does the MAI [innovative or otherwise] inhibit openness or rather does it facilitate it.

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
6. Continuous education Ongoing commitment to education at all levels of the organization; clear support for all members' growth and development.								◆ Evidence of an organizational commitment to long term education, learning and education development. ◆ % of budget devoted to education, training and development. ◆ Influence of commitment to continuous education to identification of new ideas and ability to embrace and assimilate new ideas.

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
7. Operational variety Variety of methods, procedures and systems; appreciation of diversity								♦ Support for a variety of decision-making processes; variety in ways of doing things such as a variety of tools in decision-making. ♦ Use of MAI and innovation to facilitate operational variety and diversity ♦ Impact of operational variety on demand for MAI and innovation

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
8. Multiple Advocates New ideas and methods advanced by employees at all levels; more than one champion.								◆ The number of champions for learning and innovation ◆ The number of champions and advocates for management accounting innovation through the organization.

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
9. Involved leadership Leaders articulate vision; are engaged in its implementation; frequently interact with members; become actively involved in educational programs								♦ Involvement of leadership in all three categories of knowledge acquisition, dissemination and utilization. ♦ Hands-on implementation ♦ Championing the learning, innovation effort ♦ Managers active at the operational level.

Facilitating factor	Little evidence		Some evidence			Extensive evidence		Prompts etc.
	1	2	3	4	5	6	7	
10. Systems Perspective Interdependence of organizational units; problems and solutions seen in terms of impact on the whole and not just a part. Interconnectedness of parts, processes and decisions.								◆ The ability of managers and leaders to see wholes and the interdependencies of sections of the organization and time-frames. ◆ Impact of past decisions today ◆ Ramifications of today's decisions tomorrow ◆ Linkages between sections of the value-chain ◆ Seeking 'system-wide' solutions

Appendix 3: Management Accounting Innovation Interview Schedule

1. Current features of management accounting system:

- Costing
- Budgeting
- Performance measurement and reporting
- Capital budgeting
- Special studies

2. Management accounting innovation adoption:

Innovation	Yes/No	When	Degree of Adoption				
			Initiation			Implementation	
			Awareness	Form a view	Evaluate	Trialed	Sustained
Activity-based costing/management							
Business process reengineering							
Value-chain analysis							
Target costing							
Balanced scorecard							
Strategic cost management							
Cost driver analysis							
Advances in operational control systems							
Other							

3. Management accounting innovation viewed as *technical* or *administrative* innovation.

Do you view management accounting innovation practices as causing changes to basic work practices OR more related to management within the organization?

4. Determinants of the management accounting innovation adopted

Characteristics of senior management	**Measure(s)**	
1. Length of service		
2. Educational level		
3. Cosmopolitanism		
Organizational characteristics		
1. Level of centralization	♦ Participation in decision-making ♦ Degree of freedom to make own decisions ♦ Readiness to accept failure	Level of participation in decision-making is: High Moderate Low 1 2 3 4 5 6 7 The degree of freedom for organizational members to make their own decisions is: High Moderate Low 1 2 3 4 5 6 7 The degree of readiness to accept failure is: High Moderate Low 1 2 3 4 5 6 7
2. Size	Number of employees	
3. Formalization	♦ Level of rules, manuals and job descriptions controlling employee activities ♦ Freedom to 'break the rules' as a form of inquiry and curiosity	The level of rules, policy manuals and tight job descriptions is: High Moderate Low 1 2 3 4 5 6 7 The degree of freedom to 'break the rules', to be inquisitive and curious is: High Moderate Low 1 2 3 4 5 6 7
4. Administrative intensity	Ratio of managers to total employees	

5. Absorptive capacity – accounting office	♦ Qualifications ♦ Level of professional development and training	Percentage of degree, post degree holders in accounting office % of budget devoted to professional development and training who has the majority access to professional development and training Rate the proactive level (as a leader of management accounting usefulness) of the management accounting office: High Moderate Low 1 2 3 4 5 6 7
Organizational Context Characteristics		
5. Age of organization	Age in years	

6. Competitiveness of the organization or division.	Level of competitiveness in five organizational-related areas	Level of competitiveness in: ♦ Supply market High Medium Low 1 2 3 4 5 6 7 ♦ Customer market High Medium Low 1 2 3 4 5 6 7 ♦ Market for staff High Medium Low 1 2 3 4 5 6 7 ♦ Product quality and variety High Medium Low 1 2 3 4 5 6 7 ♦ Price High Medium Low 1 2 3 4 5 6 7

6. Main uses of management accounting information

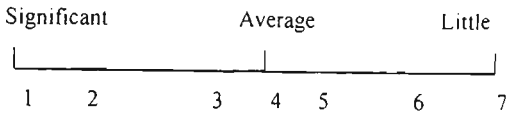
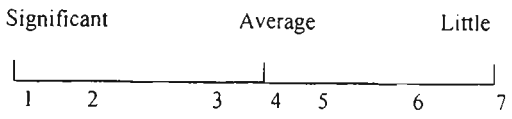
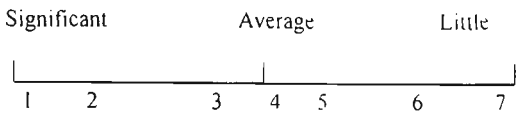
a. Rate the amount of management accounting information prepared for each of the following internal customers:

Accounting/finance staff	Significant Average Little 1 2 3 4 5 6 7
Production staff	Significant Average Little 1 2 3 4 5 6 7

Marketing/sales staff	Significant Average Little 1 2 3 4 5 6 7
Human resources and other service related areas	Significant Average Little 1 2 3 4 5 6 7
Engineering and design areas	Significant Average Little 1 2 3 4 5 6 7
Multi-function teams/groups	Significant Average Little 1 2 3 4 5 6 7
Senior management	Significant Average Little 1 2 3 4 5 6 7

b. i Rate the usage of management accounting information to:

Monitor and control	Significant Average Little 1 2 3 4 5 6 7
Identify discrepancies and errors	Significant Average Little 1 2 3 4 5 6 7
Raise questions	Significant Average Little 1 2 3 4 5 6 7
Identify solutions	Significant Average Little 1 2 3 4 5 6 7

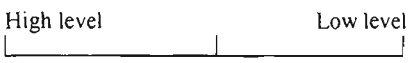
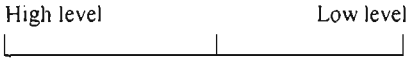
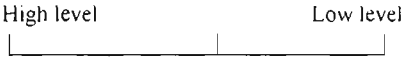
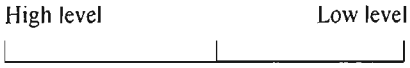
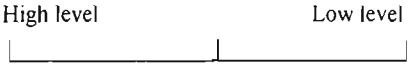
Question the way in which things are done	
Assist with identifying new ways of doing things	
Contribute to strategy formulation	

ii. Have any of the innovative management accounting practices contributed more to any of the above?

7. Individual and organizational defensive routines

Indicate the level of the existence of any of the following:

i. in the accounting/finance department
ii. throughout the organization

	Accounting/finance office	Organization
Continue to hold onto a project/process even though it has 'gone off the rails'		
Concern over the adoption of new techniques/practices in case they fail		
Cover up poor results/performance for as long as possible		

Appendix 4: EVA Schedules

EVA Interview Schedule: Group Controller

1. We have talked previously about why EVA was implemented. When did the implementation within Telstra commence?

2. How was the implementation arranged?

3. What is/was your role in the implementation process? Did the other group controllers to the operational units perform the same role?

4. What do you see as important with EVA with your client group

   - The calculation.... how performed?...what adjustments are made?

   - The drivers

   - The Link to the incentive program

5. What has been the reaction of your client managers to EVA and the EVA process?

6. During our previous chat you indicated that the EVA implementation was helping to support/complement the balanced scorecard. Any further thoughts on this?

EVA Interview Schedule – EVA Project Director

1. As an overview, how has the EVA implementation been structured?

    - When did implementation start?

    - Is your work focused on the very senior management who pass down to other levels?

    - Role of the group controllers to the business unit area seems significant

    - Role of the Centre for Leadership

2. Have each of the business segments gone about the implementation in the same way? Does it matter if it is or is not the same?

3. As a concept, has EVA been well received by senior management?

    - Does it appear to have been well received down through the organization?

4. Through the implementation process has the *process of implementation*, including key driver identification, been an opportunity for learning, as well as the financial result itself?

5. Do you see the EVA concept working in with the existing balanced scorecard or is it something quite independent?

    - Is EVA replacing other performance measures or supplementing/complementing existing measures?

6. EVA is incorporated into the incentive/bonus calculation for senior managers. How important has this been in 'selling' it to managers?

7. There must have been some frustrations along the way?

8. What problems do you foresee?

9. Being a technology-based organization, investments in technology-related projects may be required irrespective of EVA. How is this catered for?

10. At what point do you know your job is done?

11. A couple of extras:

    - Organizational memory – do you think organizations have memories?
    - Organizational curiosity – does EVA have any effect?
    - Climate of openness – does EVA have any effect?
    - Systems perspective – does EVA help at all with a 'whole organization' perspective?

12. Your background and how you came to be project Director for the EVA project?

Appendix 5: NUDIST Data Coding Tree

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sc.
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Appendix 6: Demonstration of Analysis and Data Reduction Using NUDIST output

Part A Learning orientations sample

Part B Facilitating factors sample

Part C Management accounting innovation sample

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Index Search node 1,2 Collect (1,1) from LOs

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[apacifico1 : 87 - 92]

Q

The role of the group drivers, that's been fine. Your work specifically and so the implementation team and your work has been very much with the senior management of those business units. Has the implementation process worked where your work say with the senior managers of those key ten business unit areas, and they've worked in groups with their people using.

A

Ok that is a good question, by the way there is something you need to add there, we worked with consultants as well. We had Stern Stuart to help us to define the framework so we really worked for six to eight months with them to put the framework in place.

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[bhill1 : 457 - 472]

Lets have some quick ones in these other areas is that all right?. These are more for the operational like guys like Des and Peter and others. Does finance use consultants a lot?.

Brian

Not at the local level they don't, at the corporal level they do, no we don't interview. We do occasionally I've got Price Waterhouse involved to dealing with internal control audit to this new system.

Albie

In your case your knowledge source if you like for finance is in house its not........

Brian

At the corporate levels say for tax or the E.V.A. thing you understand, the director would have bought in consultants so if we're desperate for knowledge you tend to have corporate people that would help you or if its a big enough issue they will hire someone.

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[bjam1 : 629 - 634]

A

Higher level of use of consultants? Say that with the E.V.A. you obviously use consultants initially with I assume .... Stuart.

B

Yes we do. We tend to be a fairly high user of consultants, yes we do.

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+++ ON-LINE DOCUMENT: CBELL1
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[CBELL1 : 313 - 323]

Undue work, you'd understand, try to organise your work you'd need to

from Training.

Innovation would you say TELSTRA is an invasive company?.

Peter

Yes both technically and I think its been pretty brave in some of the organisational things it has attempted to do, it hasn't all come off but I think that again was dur to our previous C.O. Noel Ward who actively worked towards deregulation and convinced the them and either government to regulate the Telecom industry. Then Frank .....has certainly been very active in that.

Albie

Do you think that innovation where we innovate by imitating or whether we innovate by leading if you like, initiating.

Peter

Well the reality is I think the majority of people innovate through imitation. That's why we have fads that's why we have all the various writers books suddenly become flavour of the month or .....becomes flavour of the month and the reality would probably be those companies who have been the real innovators are probably less driven by , all those people and companies are real innovators or left driven by fans so they don't have a lot of ..... in terms of what they're doing because they're very focused on what direction they're going. They may change over a period of ten or twenty years where as we might go through cycles in three to five years.

find something that allows you to identify easily with what a document is. This is one that I've found. I think with these learning orientations , you'd have some comment on. Knowledge source essentially refers to whether we draw most of our knowledge internally or most of it through the use of consultants and others.

C
Look it really depends, it's a broad question, you know, E.V.A. is different from M.F.P. M.F.P. is entirely internal for example, so we do use some consultants at some context but we are very strong on building the expertise and building the knowledge internally.

A
Do you think the senior managers in their segments are producing the demand for you guys to run your programs. Is their knowledge source external. Does it come from somewhere else or if it gets developed externally. You know I was at a professional development program and someone was talking about blah blah, we need to have a look at this.

C
I think that's a good question, I think, lets take Frank for example. The story is basically you know, that when Frank goes to America, he reads a book, and as soon as he gets off the plane everybody says. What did he read on the plane, and then goes off and buys it. So I think Frank did do a lot of reading around things and will come back in with those things. For example he was highly influenced by ..... Book on improving performance, managed basically by the organisation so that there is an external influence that comes in and obviously, Frank being the style of manager that he is, works very much from a personal from a personal experience point of view.
But at the same time, there is a lot of expertise in the organisation on knowledge on how business runs and so we try to develop that expertise internally. I don't think that it is necessarily a good idea to continually go outside.

++
+++ ON-LINE DOCUMENT: DesMcCarthy
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[DesMcCarthy : 436 - 441]
A
This knowledge source you obviously use consultants at bid for particular tasks, so the use is extensive

D
Yes a lot of it is in house but you tend to get again ..... , properties in that area so we do less in house and more outside.

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[khalfp1 : 187 - 196]
I just want to run through if I can, I've got two lists, well one is learning orientations that might influence levels of learning or whether the focus of learning is. Some of them are relevant to us, some of us are not. Say within the E.R. area itself, do you use consultants a lot. Most of the new ideas are generated in house or what is our knowledge source.

K
I would say fifty, fifty, I don't use consultants a lot but then you know, you pay them for what you want to hear.

A
You also made the point too before that you are interested in meeting the needs of what your line people tell you.

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+++ ON-LINE DOCUMENT: bhill1

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[bhill1 : 498 - 513]

Albie

Do you reckon organisations have memories, the organisation has a knowledge in reserve or is it only in the minds of the individuals?.

Brian

I don't know how to answer that, I used to think that there were some people that thought if they left unexpectedly the place would collapse, but it doesn't, it just keeps going. Basically what happens whoever is exposed to the issues finds a way through it badly or well and you don't really compare after that, the guys gone and its out of mind. So quite frankly I think the old memories, its a bit overrated. If you object and ask to do a pre - am post you might conclude that he is more inefficient because you've lost all these people who used to know how things ticked and the two measured that nobody does is that you just keep moving, keep moving and do the best you can.

Albie

One of the things that I'm interested is that I think organisations can sort of embedded processes that insure that not again so much at management level but things that need to be done. those the existence of those processes ensures that it happens anyway, it doesn't matter who the person was.

Brian

It matters but, that's what internets aiming to do anyway, its sort of streamline processes have it really visible step by step and so any fool can walk in with a minimal........ and know how to do certain things for quite a lot of things now, much more than we used to. Basically they've pulled enough people to cover that. Well there has to be, you lose enough people in an area and you can actually cripple the group because they were the only ones that knew how it worked. As I said people don't tend to measure that once its gone its gone, you focus and then deal with it and by and large people don't measure what it might have been they just move forward. Who knows maybe TELSTRA-s suffering very badly from getting rid of how many people we got rid of 30,000 people but who knows it might have been much better if they hadn't gone. So its a tough one to answer.

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+++ ON-LINE DOCUMENT: khalfp1

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[khalfp1 : 246 - 262]

A

You have a lot of documentation…………

K

Oh, a tremendous amount.

A

Say in E.R. is there much, is the informal sharing of information and knowledge more important than the formal.

K

It all depends what the issue is in relation to that, but certainly, informal is one of the most effective ways. I might take a loan of, he's not on my head count. A chap whose been around thirty years, if I've got a problem, he is the first person that I go to. Because hell know the answer, but he will also know the best way to get it.

A
And so therefore.

K
Hopefully it would be carried on but he's a real backroom boy, doesn't want to go further. Happy with what he is doing, well paid but knows, I'm sure he knows how valuable he is to making others far higher than him looking good.

Learning Orientations

Knowledge Source

The first of the learning orientations was labeled *knowledge source*. The focus of this orientation is at the extreme, whether knowledge development comes form internal or external sources. Given the size, structure, internal and external environment is plausible to expect Telstra to make a relatively high use of consultants.

Those managers with a more corporate responsibility tended to support a higher level use of external consultants as evidenced by the following:

> *"we tend to be a fairly high user of consultants"* (m1)

> *"we had .... to help us to define the framework, so we really worked for six to eight months with them to put the framework in place"* (m7).

Two other interesting perspectives emerged. First, the suggestion that external consultants were not heavily used at the local level. In this instance the local levels tended to use staff at the corporate level as the knowledge source . In this way the corporate staff are acting as internal consultants. As one local manager put it:

> *".....so if we're desperate for knowledge you tend to have corporate people that would help you or if its a big enough issue they will hire someone"* (m3).

Second, a training and leadership manager pointed out:

> *".....we do use some consultants .....but we are very strong on building the expertise and building the knowledge internally"* (m5).

This concept of building the knowledge and expertise internally is reinforced by the manner in which many of the training programs are conducted. The Centre for Leadership focuses its attention on facilitating training and leadership programs in the first instance for the senior management group. The diffusion of the knowledge and expertise throughout the organization is in the main, carried out by the managers:

> *"the top two hundred would teach the next six hundred, the next six hundred would teach the next five thousand etc."* (m5).

This concept of using the more senior group of managers to impart the newly acquired knowledge and expertise to subordinate levels is in line with the concept of using internal groups to share new ideas in the role of internal consultants. The Centre for Leadership plays a facilitating role in this diffusion process.

Content-process focus

The second of the learning orientations was labeled *content-process focus*. This orientation related to whether the organization focused its energies on process related improvement or improvement in the product/service attributes. Clearly within a communications and technology company there is a degree of emphasis on the attributes of the products and services provided. The area in which this research was conducted exposes the emphasis in areas other than the technology side of the business.

Overwhelmingly, the managers supported a fairly heavy emphasis on process improvement. Evidence from the two operational units supported a fairly strong emphasis in recent times on improving processes, with suggestions that this has not always been the case:

> *"It's totally reverse to the way that it used to be"* (m4) and,
> *"Yes, we've targeted some deliberate areas over the last few years in what we had..."* (m2).

Interestingly, in relation to pursuing changes in process, the concept of assessing who owned the processes arose as an issue in discussion with one of the managers. This seemed important in the context of making alterations to a smaller process which may have been part of a larger, umbrella process. The conclusion drawn by the manager that the changes needed to be completed all at once:

> *"There are always little processes but it has an umbrella coverage and we need to do it all at once, so we've done that with our purchasing cycle and then back into the system making all system changes that's needed. We've done it in the last twleve months with our maintenance cycles and in our processes in the system, and we've started looking at our customer reporting in the broadest possible sense and then to try to break them into reasonable chumks and come up with an overall view of it, an overall change."* (m6)

One manger indicated that the recent emphasis had been heavily on the processes, while presently there appears to be more balance. Another manager felt that a key role of her service area was to identify process improvements, so as to deliver the outcomes sought by line managers:

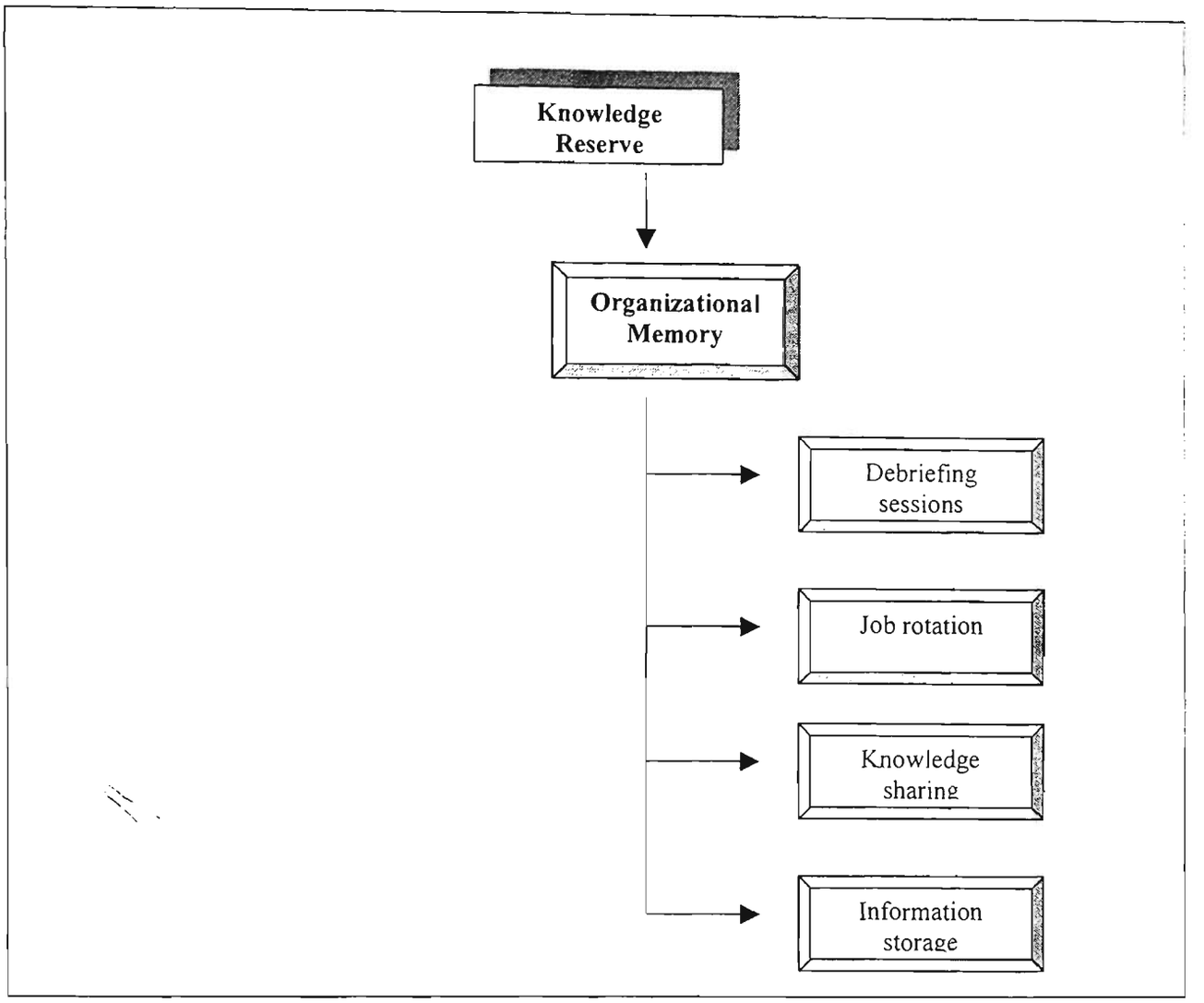
> *"I see my role as simplifying that process, so their outcomes are delivered in a more effective manner."* (m6)

The overriding impression gained in this area is that there has been significant emphasis on process improvement across each of the functional areas.

Knowledge reserve

The third learning orientation was labeled *knowledge reserve*. The focus of this orientation relates to whether knowledge and learning are viewed on an individual basis or on a group or team basis. Related to this are the concepts of individual and organizational memory as well as four sub-variables: debriefing sessions, job rotation, knowledge sharing and information storage. Diagrammatically the construct *knowledge reserve* has been operationalized as depicted in exhibit

Exhibit
Knowledge Reserve Construct And Sub-components



One of the interesting questions regarding the knowledge reserve is whether an organization itself has a memory, or whether the organization's memory is in the minds of its members. If the latter were true, then the organizational memory would simply be the sum of the memory of the individual members. Check what dibella and nevis have said on this. The question about whether organizations have memories and the links to individual memories was viewed as an interesting one:

"That is a very interesting question. I really would like to think about it." (m7)

It is apparent that people's views of what constitutes *organizational memory* are an important issue here. From the interviews conducted it seems two broad forms emerge:

- 'historical memory or knowledge', whereby the focus is on memories of the past
- 'how-to-memory or knowledge', whereby the focus is on how things should be done or must be done

~~On the historical memory, there appeared to be different views about its worthiness. From:~~

".....one of my pet theories is that one of the things we've never used a resource and its's probably a very cheap resource , is that people like me are getting very close to leaving the corporation. However, I'd be quite happy sitting in my lounge room looking over the beach for someone to ring me up and say, 'remember when bla bla blaa, what did we do?' I would do it for nothing. We don't tap into it. People leave the company, we're given a present and they have a dinner for them or whatever, and we kiss them goodbye and that's it." (m1) to:

"I used to think there were some people that thought if they left unexpectantly the place would collapse, but it doesn't, it just keeps going. Basically what happens, whoever is exposed to the issues finds a way through it badly or well. And you don't really compare after that, the guy's gone and it's out of mind." (m3)

On the question of whether an organization itself has a memory or whether it only exists in the minds of its members, there was a divergent view. Of those who responded directly, one supported the organizational view, two supported the individual view, while one was unsure. If it was to only be in the mind of individuals then the variables – *job rotation* and *information or knowledge sharing* as sub-components of organizational memory, increase in importance.

In relation to organizational memory (however defined), four variables were identified from the literature and explored in the interviews.

Debriefing sessions

The purpose of debriefing sessions would be to capture some of the individual knowledge held by the departing member. Importantly, in a large organization, the departing member may not necessarily be exiting the organization altogether but simply transferring to another section. A couple of issues emerged from the interviews. First, where the exit was occurring through redundancy initiated by management, then a significant amount of investigation that might feasibly be sought via a debriefing session would be carried out in the redundancy process. Second, it is one of management's role to ensure that some succession planning is in place, even though it may not be part of any formal process. Third, if debriefing sessions were held, the problem still exists as to what information from the exiting member you would be seeking and how that might be committed to the corporate memory as evidenced by:

".....it's difficult to sort of say what will I download? What is that I want to know?" (m1) and,

"You can look back at something that has happened in a corporation's history and say, they did that, they did this, that process looks fine, why didn't it work? If you ask someone that was there at the time , they'll say maybe, that's because Jack was an arsehole. The corporate memory tends not to say Jack was an arsehole, its not there. That's the bit we're going to find difficult to catch." (m1)

Job rotation

The idea of job rotation such as accounting and finance staff moving from one client group to another is offered as one means of spreading and extending knowledge acquisition. The environment that the research site has experienced over the last few years seems to have hindered the practice of job rotation:

"The rotating jobs and so on, no, there's more than enough change out there without rotating." (m4) and,

"Definitely attempts to take people around, look it's a bit unfortunate that .....you're really just shrinking, when you're shrinking you don't attempt to do that. If it stabilizes which it sort of has, we would attempt to start moving people around again, for the development of the person and to get fresh ideas....." (m3)

From one of the operational areas, some evidence of 'forced rotations' as a strategy to meet skilled shortages:

> *"If worse comes to worse what we've done is actually where you really have a shortage of skilled personnel you know someone has got to go on leave at times, we just move somebody down from interstate, who does the same thing or has that knowledge."* (m2)

Knowledge sharing

In the section on knowledge source reference was made to the use of senior managers to assist with the diffusion of new ideas through the subordinate management levels. The Centre for Leadership played a central facilitating role in this process. On new, organization-wide innovations the new knowledge is disseminated in the first instance at least in this way.

On whether the knowledge and information sharing was formal or informal, one manger suggested it was a fifty-fifty arrangement. Other managers supported the view that there was in place both formal and informal processes, highlighting the important and at times effective role of the informal processes for sharing knowledge and information:

> *"It all depends what the issue is in relation to that, but certainly informal is one of the most effective ways."* (m6)

Information storage

In relation to information storage two aspects emerge. First, if much if not all of the organization's memory resides with individuals, then one of the key information storage entities is the individual members themselves. In this way individuals may be viewed as knowledge and information receptacles. Second, one manager highlighted the role of the organization's intranet as carrying much of the organization's basic information, knowledge and processes.

Appendix 6 Part B

Fuller Search (node 1,16) Collect (2,1) from FFs.

+++ ON-LINE DOCUMENT: bhilll
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[bhilll : 538 - 545]
Albie

Is there much environmental scanning outside of what other TELCO's and other TELECOM's do in terms of their finance functions and how they provide finance support, are they similar big utilities.

Brian

Non at a business unit level but there is in TELSTRA. At the corporate level they've got..... the director you've got an accounting strategy group that tends to look at the best practice on various processes and functions. Because its management accounting, you really cant benchmark management accounting across companies. You have to suit what's needed for that style the issues of that organisation, its not good me trying to benchmark. What is benchmark ..... those things that have virtually gone like the ledger the transactions and the overall which is again the high level ..... in other words total finance people in TELSTRA to TELSTRA's revenue say the percentage or the cost of finance to TELSTRA to its revenue, that you can benchmark. But its not much value to a business unit area. But its done outside my level.

not suitable benchmarking mgt. acc

at business unit level = not much. more at the organisation level

+++ ON-LINE DOCUMENT: bjaml
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[bjaml : 487 - 511]
I want to run through, I've got these two other sheets on, one on core facilitate factors that might influence learning. So I'll get views on some of these. The term I've got here I use, environmental scanning. How much scanning of other Telcos' other large utilities go on to provide ideas or innovation for Telstra. So, finance and admin. or finance accounting, so lets have a look at what Singapore does.

B
Yes we do that in a number of ways, we either visit, we can visit like for example the boss and I in 1994 or 1995 we visited several Telcos' in the states. V.T. in London, Deutsche Telecom and the sort of subject matter was for that ..... Was S.A.P. software and how far they could progress with union activity based management and asset, Telco asset management, asset accounting. How the union accounting for the network assets. That's one thing and when people since you know we have currently our credit and collections guy is in the states doing something similar on some of the stuff. So we do that, we also use benchmarking type information.

A
Is that formalised or uniformalised. If you tell us this or if you give us that then we'll give you ours.

Use of information such as large consult firms

B
We're tending to use what we can get out of companies or firms like P.W. Coopers or ..... rather than directly.

A
The management accounting innovations actually have played a role in some of that so when you've gone over seas, that visit you went to the states and to the U.K. your interested in things like that, activity based costing and how they use that.

B
Yes, and we found in a lot of cases Albie that Australia was ahead of the

Env. Scanning mgt. acc. Innovations

game, we were quite surprised, I don't know if its still the case.

A
You know in some practices on some of those things I think that organisations in Australia are considered fairly innovative and up to date and are receptive to new ideas, and some of the guns overseas are quite aware of what some companies here are doing.

B
Yes it wouldn't surprise me.

A
I only met him once or twice but ....so I know, Australia Post or Telstra or whoever are doing such and such. When he comes out here, I wouldn't say regularly but every few years he is usually out here and he scouts around and finds out what is going on. Performance gaps, so when you do this K.P.I. and perhaps expectation of what the performance levels. Where there's a gap do we view that as an opportunity to learn and bring the two together. Its not used as a whipping exercise any more I wouldn't have thought.

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+++ ON-LINE DOCUMENT: DesMcCarthy
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[DesMcCarthy : 236 - 259]
D
What we've done, we've have been trying to network for twelve to eighteen months with other Telco's, international Telco's and its not getting very far because every time we put our head up everyone says give us all your information. I went over to the states and I went through there and the biggest one in the world is A.T.N.T. and I couldn't even find their property its so broken up. They've got a manufacturing ..... called ..... and that is brilliant. That's got a really good property set up and I learned a lot from them but its not the same as us, they are not a full line Telco.

British Telecom is but the trouble is for the same number of properties the same staff being housed, they've got about three and a half to four thousand property staff, its just not comparable. Most of the others are a fair way behind, we had Telecom South Africa was coming to meet us this week and he rang on Sunday night to say he cant, he was called back to South Africa by the C.E.O. The boards decided to sell all property all fleet all warehousing the whole .....

Now we have found out that they are now where we were six years ago, so we'll keep looking and we've got an offer that I will spend $100,000 and I will pick up the bill to benchmark with anyone. Ill pay the full thing and there'll be an independent audit to do it, I don't care. Every time that people start to come in you realise that there's not much we can learn here, and once we get this new computer system in we'll be light years ahead. The other part is now we're putting in ....., and the notices are going out today to the successful tender so all of our stuff which we bundled before is now being massively bundled. Not like A.N.Z. or NAB we've kept control, that means keeping our team here and its in line with what I described there that the people are to do strategy coordination. They re the three things, that is all we do, we don't do hands on, we don't do projects, we don't do anything just strategy coordination of control. Couple of those ones that have done significant out sourcing are bleeding and have been for about twelve to eighteen months because guess what, as we all suspect the fees go up. The level of performance goes through the floor and they've got all these very unhappy local managers all over the countryside. Dirty premises, security problems. When you've got a bank, that's serious, all this sort of stuff

A
Big contract maintenance becomes a huge problem then.

significant 'networking' + benchmarking (where possible) problem for prep. ii finding someone to do it with.

D
Oh its massive and its just hitting now, it usually takes about a two year cycle to get it to the surface but because of the way we were networking a couple of those have got serious problems because the costs have gone through the roof at the same time as the ..... has gone through the floor. If you don't have the control or the staff around to monitor, you don't know until its too late and then it takes a bigger cycle to actually fix it up.

A
Are there many in Australia, property values similar to yours.

D
Not in corporate real estate because its owning and occupying and doing all the leasing and all that sort of stuff.

A
Australia Post ..... doesn't come near it

D
No, ours is tied up in real estate, a lot of these is tied up in plant. When we talk about real estate III give you 2 . 6 billion but that's property, just property. Now that doesn't include all of the equipment in the exchange and all the other stuff, its just the real estate part of it as you would understand real estate. Where as in ..... they pull in a lot of what I call manufacturing for processing plants and so on. Now all of that you'll finds in the property assets. as such. We split all of that out and just sticked to what we look after which is the real estate side.

$2.6 b. in property (real estate) value

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+++ ON-LINE DOCUMENT: khalfp2
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[khalfp2 : 116 · 141]
A
Is there much environmental scanning that takes place, are much of those initiatives generated from within Telstra or by looking at what else is going on elsewhere?.

K
More of the latter, yes.

A
Do you look at other Telco,s or do you look at other.

K
Other Telcos, other large private corporations, just private industry for example, like we're about to embark on a huge exercise which really is ..... Banding, job evaluation, all our level six positions or what we regard as out level six positions to see what the value of work is. And move them onto contracts and onto company rates, because this is contained labour costs but we believe of ..... that happened in the past that that level is hugely overpaid. We have P.A.s here or secretaries that I suppose are picking up sixty five thousand a year. That's what my secretary is on. Not that she doesn't do a very good job but relative to the private sector, you know, that's a huge salary.

A
Even true, for a very good P.A.

K
Exactly Yes, I mean, I don't know I suppose what Paul Hanson's B.H P. s P.A.s get, but the P.A.s here for Ziggy wouldn't be on more than that because they're confined in certain levels, if you see what I mean.

A
They can't get out of that.

K
Exactly, so what we want to do is to give more scope to be able to move but also actually look at the value of the work. This will be behind us of course is that then those salaries will determined by market rates, not by an award., where a commission hands down a pay rise of you have an enterprise agreement. See that focus, it must be coming clear to you now, that sort of picture that they're all interlinking little bits and pieces in a jigsaw puzzle, that's all forming together. I suppose the people who worked on the outside a lot like Cartwright and O'Connell who have been bought in, this has been done before. I mean in C.R.A. where it was very heavily unionised etc.
So if you sit down and analyse it, where the unions probably usually are, you can see that this is all another step along the way to the top.

...
[khalfp2 : 149 · 164]
How do you go about it, or do you worry about identifying what these other places are doing. How do you identify good E.R. practices.

ER: Some external but not a lot - believe the 'in-house' practices are spot-on.

K
I don't at all and I suppose that saying that sounds like that's a real flaw because I believe that what we're doing here and the way we're doing it, is good E.R. practices. I don't go much in replicating what happens in other companies unless someone says, go to this place, they're doing a something really good thing with their staff.

A
Well someone must be picking it up anyway.

K
Oh exactly.

A
I'm not saying that you should be doing it, I'm not suggesting anything, but yes someone must be identifying.

K
Yes and I don't know if they read, you know the management books that come out or whatever, but i think generally though it would be a combination of experience of other places and their H.R. practices and academic material.

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+++ ON-LINE DOCUMENT: pmoritz1
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[pmoritz1 : 307 · 359]
We do internal bench marking and we do external bench marking, we have two bench marking clubs, one is based in the U.S. mainly the U.S. companies and the other one is Australia based benchmark.

fleet.

Albie

The U.S. beach marking is that against other Telecoms.

internal & external benchmarking - to the external some formal involvement in "benchmarking Clubs".

Peter

TELCOs and utilities yes that where we see we fit is in that TELCO utility type arrangement, because we had a number of plants like backhoes and tractors and trenches and things like that. The other utilities like water utilities electric utilities tend to have a similar structure although electric utilities are a lot more work baskets than we have. Generally they have a cross section of equipment that meets our operations as well.

Albie

And the internal is against.

Peter

Well the internal we can look at business year to business yeas. We can do it in other ways I mean we record everything higher raki in the company so the silos represent the ;business unit, or we can do it across their fleet which represents the different categories of vehicles so we might look at vehicles that can be used for a number of jobs so you might say we have various people out there in a 4 x 4 cab chasse a 4 x 4 utility or van and you might look at those because all of those have been used for the same type of work.

Albie

You have a cross business. yes. You also say that you compare fleet operation here with custom fleet or any other fleet operation in terms of bench marks for some of your key costs, yes, so that's another area scanning environmental areas.

Peter

there's two issues that you deal with there, one is your actual fleet operating cost and one is your cost to deliver all that service. It is a delivery cost and the other one is the actual operating cost. What does it cost us x cents per 1000 tyres for this category of vehicles and the Australian Post are getting marginally better. Were not in competition with Australia Post so we can talk about it, you cant do that with the J..M. Js or the R. Xs or things like that. They see that as competitive information and they wont talk about their pricing or how they manage it. People like Australia Post and other utilities, Brisbane city council .....

Albie

Do other places like TELSTRA, there's not many around, Australia Post is one. Do Australia Post run their fleet services in house.

Peter

Yes they do, three things that drive their fleet is motorbikes, push bikes, the postie vans that pick up the mail and then the trucks that do the mail centre delivery. They have out sourced their salary sacrificed sedans and things like that but I don't think they've toyed around with the others yet. In some ways Australia Post see themselves as a their competitors of the T.N.Ts and FINEMORES. They see themselves as a distribution company.

Albie

So in terms of whether were comparing costs to provide services, certainly in that case were using managing and accounting type information to benchmark our operation. On the other side there's still management accounting information because we've got to work out the cost of tyres per month on sedan cars and that sort of stuff. So the accounting information is an important component for scanning.

Peter

Oh absolutely, its the basis of the bench training. yes.

Albie

Do you do all that yourselves or does accounting.

Peter

accounting in this company, for our purposes, various people provide two activities. One is the standard accounting., the end of month staff and secondly they provide that expertise to help us in terms of budgeting and some analyses. A lot of the analysis is done by the internal people, the cost of operation type exercises is done by non accounting people. Yes within fleet.

type of non-accounting people..... for in-house calculations.

+++ ON-LINE DOCUMENT: bhill1
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[bhill1 : 122 - 125]
Most of the group that I'm involved with, the activity concepts aren't all that useful because they know almost back to out source contract manager fleets got 140 - 150 people managing hundreds and millions of business in terms of vehicles. Their activities per say don't make a lot of sense, there's not a lot of information to be gained by getting them to fill out time sheets etc.. The major costage incurred in fleet is related to the capital cost, whether they purchase a lease, how good the deals they do are so activity cost to the business is not all that useful. Properties are similar There are hundreds of men in the business but at the end of the day its all done by someone else and all you've got to use is about 90 to 100 people who are actually more client service orientated within TELSTRA and contact management outside in terms of people who do the service purvey.

So actively base management only actually useful where we tend to have quite a few people,..... have a heap of people like about 1200 and they're doing a lot of transactions, accounts payments, accounts receivable so there they do tend to have a local system given the information they need in terms of transaction per person and all the things you usually drive on at activity base. The rest of the group aren't getting a lot of value. TELSTRA itself is very keen of activity based management and the whole ledger has a cut by activity that's mandated but for my group, ... is one line so accommodation is one activity so this whole properties area is one activity for TELSTRA so its not that useful for the local properties group. Fleets is one of two lines but the answer is that TELSTRA wide is very interested in this particular group there's only a couple of areas that get value out of it and they have their own way of doing it so they do.....

+++ ON-LINE DOCUMENT: bjam1
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[bjam1 : 68 - 110]
Ok, that's fine. On the management accounting stuff, I want to run through some innovations to indicate the extent of adoption or not adoption. Activity based costing.

B
I'm sorry Albie, is this in my area or Telstra generally.

A
With both

B
I think we've embraced activity based costing and then we moved and did activity based costing studies in different areas of the group that I looked after, and in Telstra. We realised that was fine, hey!, we've done our activity based costing study, what now. There had to be more to it, so we moved on and what I call activity based management became our next phase if you like where we tried to use what we had learned in our activity based studies to manage the corporation. In other words we tried to get to planning on an activity basis and then reporting on the activity, rather than our typical planning approach, that used to be our input based, is what I would call it. We need this much labour, we need this much money for travel this much money for fares, this much money for postage and this much money for couriers or whatever.

We didn't know what it was being spent on, in the sense of was it supporting customers or building products or doing this or doing that, so we moved to activity based management. What we came to realise, we are still using it, we've got an activity based chartered accounts that operates across the whole corporation. What we've come to realise with

activity based management and activity based costing is that it's not all that helpful in a lot of areas. Its helpful in areas where you've got high volume, repetitive transaction type activity or repetitive process activity like fixing faults or connecting telephones if you like. Or paying accounts payable where there's a repetitive that's on going and you can use it very successful for seeking productivity improvements in process engineering finding how you can get some improvement out of activity in management.

But other areas it doesn't make sense like for the patch that I look after, you tend not to do internal audit for example on an activity basis. You tend to spend on internal audit, what you can afford and what you perceive to be the value you get from the risk analysis to work they do or the control type value that they add. Rather than they do a volume of audits or something.

A

So activity analysis isn't going to be as ………… deducted in accounting and finance.

B

It hasn't, we did try, and we started out in a part saying well we'll do it in accounting and finance and we didn't get very far. Legal, useless trying to do it in legal I mean there isn't one activity that can drive legal cost. There isn't one activity that drives finance costs, it tends to be something else that drives finance costs. It took us a while to wake up to that so we tried to get like a good army, everyone shelled to activity based costing. In the finish we sort of realised the cost.

A

Out in the business units where that work might have been, has that come at your instigation, well not yours personally but from within the group, or has it come from someone out in the business unit that said, listen we need something more here. Where does it initiate?

B

I think that's initiated from, that it's not the universal cure.

A

No that it was even tried.

B

Oh that it was even tried, yes that came out of finance it was really finance that did this. Who pushed it in this company. It did switch the lights on for some managers, who said, shit this is good how long has this been happening and we haven't been told. So for some managers they got a lot out of it and some of those are still using it and I would say great, I mean we are getting some real value out of it. It has helped in some sense as in our networks area where you've got a heap of joint costs when trying to allocate some product, so its been sort of helpful there. At the end of the day, there is still something missing.

A

The experience where it has been tried it appears to be more useful on a management basis than on just simply the numbers on the product cost side is a fairly common outcome. There is some of that ABC that still exist, it's in the chartered accounts…………

B

We have got an activity chart, its very high level in our chart, in the general ledger because we are very conscious, without going into too much detail otherwise you will lose the plot so its at a very high level. Those areas where they want to go deeper tend to do it on activity based costing …….type of approach rather than in the financial system.

A

So as I understand it say in fleet they might conduct a particular study using ABC concepts because they want to find somebody out.

B

Yes.

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[DesMcCarthy : 546 - 553]
A
How do you feel that you're influenced by some of these things, activity based costing or management.

D
If you tell me what it is.

A
Well it probably comes through Brian but the use of activity analysis to build cost information. You may not see it, business process re-engineering you would because re-engineering exit processes.

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[pmoritz1 : 119 - 164]
Yes well I guess just generally Id say that TELSTRA across the board has probably gone through the various and is still going through the various fads as they fall due. B.V.A. is the latest yes, balanced call card. Primarily as I said I have a neat bit of accountability I also have a number of other accountabilities that sit alongside as in terms of my staff numbers, service levels to my clients, staff morale, measures, yes to go with that. And they're handed down they're not instead. They are defined by the company there's some presentation or negotiation on how you set them at levels and that as part of the normal budget and management review process. So on a monthly basis we have a P.and L. that we get and we also get some subsidiary financial stuff in terms of our cash expenditures that we measure and we go with that in terms with our budgets so we measure each of those. The staff morale one is an annual one on the E.O.S. the employment opinion survey product, everyone does it.

Yes that's a sort of standard financial accountabilities but in terms of driving the business we look at the management cost per year per month. We bench mark that against the industry because that in a way is our commercial competitors.

Albie

~~The cost of running the operation per unit~~

Peter

Yes so we can pile our data into that format and look at it in terms of because our numbers are small the company went through an activity bases arrangement, wed already done an activity based analysis some years ago as part of a basis of establishing our pricing and charging mechanism. And we do do that and we do look at it but not the fine detail that as the original thing the company came through with this process with activity based costing and we had a look at it and because the company is so bloody big the senior managers tried to funnel everything down to a few key indicators. So fleet ends up being fleet but it means nothing to me you know. We have in our operation, it has broken down a few lines of business which are easily measurable for example like trainers I run them as a discreet business and that's easy, that's purely their revenue versus their expenses are cost recoveries they are here to unify that in any way.

I've got a small consulting group of engineers and we run that on the same basis but the major part of the ;business, the fleet management we have a division of charges in there in terms of how much it cost to have

Next:
Special Studies in the units:
Pricing & charging

a vehicle on line. How much does it cost to run it while it is on service. How much does it cost to decommission it and take it out of service and the difficulty we had when we looked at activity based costing to run that was that we are small and we have people working in each area, in each capacity. So to actually run it in a day to day environment says that we want you to keep a time sheet and record your time and administratively it is just a nightmare. So we just look at an activity based cost study type of basis. We just look at it as required and the accounting guys will sit down and talk to a regional manager about how much time their staff are now spending in their various activities and see if it still balances out.

Albie

Do you have any accounting people of your own here?.

Peter

Yes there are various people, they are posted , yes that's part of the organisational, there again, big organisation, they figure that they can deliver savings by aggregating every functional thing under the functional person, but it doesn't work, but anyway. They actually belong to Barry but they are posted here yes.

Albie

That cost of bringing a car on the line or decommissioning a car, is it a sort of activity .....

Peter

So we use it as a principal but we don't have a hard regular data daily.

Albie

Well I don't think that is appropriate anyway, I think some people misuse the whole thing.

Peter

Well we use it as a principal to analyse our cost because in principal in bench marking ;ourselves against the externals which is the cost per unit per month.

Albie

That's what it aggregated up to.

Peter

Yes as long as we can break it down in an appropriate time and it builds up to a movement, an effective movement in terms of either bringing the cost per unit down and that's how we use it.

...
[pmoritz1 : 928 - 945]
The funny thing was that people didn't realise they were doing A.B.C. it came through as a formal issue and when they were taken through what A.B.C. was about, "that's what we did to do that " you know so without having a title on it they knew they had used it once they saw what A.B.C. was all about.

Albie

.....so the structure of fleet services is the process improvement recognisees in that.

Peter

No, its not a formal team, its not there for ever its created for a purpose.

Albie

So we say we're going to change, we want to have a look at this.

Peter

And it overlays the existing operation, yes. We are going to go through a review though as part of our management meeting coming up and the guy that's running the quality process at the moment has made some suggestions for changes which we'll consider and probably change so where we had a process leader and they had certain responsibilities. We create a process team for reviewing parts or complete processes and that would be cross lined with business. Hes made a suggestion on how to manage the process which we will have a look at which we actually have a team to meet the process rather than an individual person. Nobody is sitting down on the side just doing progress improvement, if they've got a task to do in process, we have created full time positions for some of the big ones but most of the time its just part of our job.

Process teams related to BPR

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[apacificol : 7 - 54]

EVA Implementation node (3 2 8 1)

Q
The E.V.A. implementation overall, you're the project director, so how has it been structured, the actual implementation.

A
There are several aspects, one is the structure of how the implementation is being supported and so we had a steering committee, chaired by the C.E.O. because when you implement the EVA, you see EVA is not just a financial measure. The EVA is about a different way of doing business and you use an E.V.A. mind set and a methodology when you are planning. Also the decision making because you have to see what is the implication and define the EVA at corporate level. The defining of the EVA at business level to understand what are the financial leaders and you have to keep in mind and where the EVA value drivers that we ensure the achievement of their creational shareholder value. So using in the every day decision making.

Eva !
- planning
- dec. making
- inv. analysis
- monthly reporting
- drivers
- people's cont to eva improvement

You also use the EVA for investment analysis so any projects that require investment proposals ..... Then you have the monthly reporting framework put in place, I mean you keep your statutory accounting, you have to, I mean your profit is in the balance sheet but, we extract the information from the financial systems to report within the EVA company and the business unit. Then of course people need to understand what EVA is all about and how they can influence EVA. How they can contribute to share holder value or how can they transform the organisation and the mind setting for our value creation mind set.

Then of course the way that you, if people have the right behaviour and that's the reason that the relationship with management accounting, because I see management accounting as the behaviour of part of accounting. Then there is incentives that should develop an incentive scheme and then people are rewarded for their creation for shareholder value. It's like a wheel, its like in all the management processes implemented in EVA. The power of EVA when you put it into incentives is not only to reward people for their improvement for shareholder value in year one but what has been done in year one two and three. So it's a long term view that ..... Creation.

Q
So how do you go about deal, implementation process, when did you start?

A
The implementation process is considering that you do that then first of all you had to define the measure, so what is EVA? You had to decide if you have transferred pricing, you had to be fund revenue expenses. What is it? And you had to define the adjustments and you have to decide on what is going to be the cost of capital that you are going to ..... So the first thing is coming up with the measure and that takes quite a bit of time.

Q
Do the ..... steering committee do that?

A
No, we had a project team and the project team, well how it worked was, you either have a very strong project team centrally located or you could have the way that we decided to do down here, is the project office. It was just myself and my support and I got a project manager that came when the key concepts were agreed to help to manage the creation of the reporting framework.

So its borrowing resources from all across the organisation so as to make sure that there is sufficient ..... So you got a team of people, that

they work with me and we call it the finance team to work together to define the final measure. The financial measure for the EVA at ..... Then there is another team that is people from the ER and from finance that they look into the incentives. Then there was another little team that looked into education and communication and one where we went into business planning, where we had a separate little team with experts in business planning and introduced into the EVA .....

Q
You've created project teams as and when you have needed too.

A
That's right. There was another role implementation team that was they weren't having a lot of luck with the implementation team and the finance teams because they had a decision of a financial nature. So that implementation teams were specifically in-groups appointed to for each of the carers of the business. There may be six key areas, so it was a very interesting process because as you can imagine for six or seven people to agree, you have to wear a corporate hat. Quite often people, and they still keep on thinking, well I belong into this area and will the measure benefit my area so the challenge is to make sure that you bring them back to what is good for the whole of the company, not just one area. But you have the .....

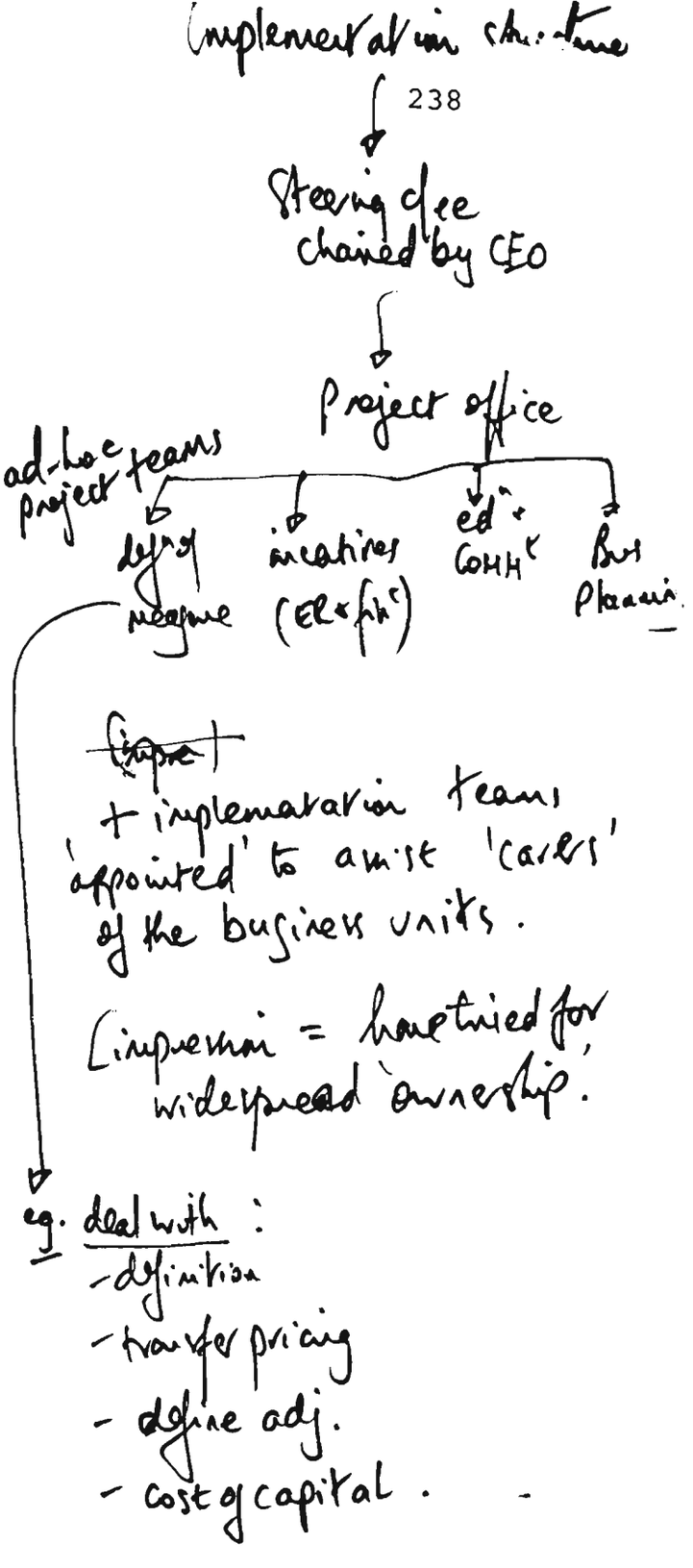
The managers would expect that their interest was protected so there is a lot of work to require their objectivity. Some other companies, what they do is just get a handful of senior managers maybe four or five senior managers and they do it and they ..... that much faster and then you might not have all the ..... and the culture of this organisation .....

Q
I've talked to some of the operational managers, and they seem really ....., ownership and involved.

A
Yes so the implementation is that you have those teams and so the individual teams, the implementation team which there was a bit of overlap with finance, and myself as the project director managing that team and it's a process ..... I was disappointed by. He's a fine director, he's a process owner to make sure that EVA is implemented, so I report to him but at the same time in that process I will be also reporting to the steering committee. You will get to a stage of milestones 100% like for instance. Even the selections of adjustments of EVA. The agreement or what is the cost of capital so paper and processes were presented to the steering committee for them to be comfortable that that's the way to go. So into developing a communication and education strategy and a program each and often work on .....so when we came to something that we could deliver as comfortable. The thing that he has taken perhaps the longest is the incentives because you could have quite a radical change in the way that you do incentives and really know what a totally new concept to work at two things. If you are in a crisis and you are desperate, then you go crunch and you go for a significant change because it's a question of survival. If you have a company that is going reasonably well and I think that we are doing quite well, then to do something radical when you have a corporation of about 55,000 people and quite a few thousand executives, but particularly the executives then they are going to be affected. Usually in a progressive way like the first year you don't introduce incentives, the second year you put part of the incentives through the EVA. To give people time to truly understand and then the third year, you might go to pure Stern Stuart recommended wage, introducing incentives.

There are two interesting books that Stern Stuart produced. I don't know if you have seen it.

Q
A question of value?



A
Yes and there's a later one that is a more simple book on EVA that they produced, and they explain the way to go about the incentives. The pure way and what other measures and modules that you can use. So that's one of the issues on implementation that has taken a bit longer. Then another interesting area is to make sure that EVA is truly understood, you've got to measure is to say as you go down the organisation, how many EVA measures are you going to have. Its not enough to have just a ..... measure because at the moment we have got about six operational units and about four support units. So if you look at the operational units, is the Telstra EVA out of ..... In a positive or negative way and you really have to have the means to see what is happening, and also to understand that maybe sometimes things that would be good for a business, it may not be for another, or it might not be good for Telstra. Therefore you really need to understand because it's all of our behaviour, EVA is all of our behaviour, and the selection of adjustment is there. The way that you handle the advice, the incentives, what is the behaviour that I am going to be generating. What is going to be the weight between lets say the Telstra EVA and the business unit EVA, because if you have a lot of weight in the business unit EVA. Then you really support, lets say a tribal approach that I look after my tribe but I don't care about the other ones. So what we have done with the incentives is and that is the culture of the place which is to have more emphasis on what is good for Telstra, right, not just what is good for the business unit.

use of eva to try + develop goal congruence + raising awareness of the 'organ' + what is good for the organ.

The definition of the measures that we have used for the EVA are business unit level, they are very good to insure that there is an awareness, that we are generous of our behaviour as much as we can. One of our challenges was the use of a share asset like, we got a joint asset which is a network and also capitalise software because imagine all the front house systems that we have for the customer contact and the dealings etc. etc. That is very much shared across the company so that was a big challenge, how are you going to do that. Are you going to treat some of the business units, to say because the assets are physically sitting in the balance sheet of one unit. All of the other units are using the network. Are you going to ignore it and have a contribution approach or are you going to elevate the assets. First we decided to go with the contribution approach but the ..... felt like that did not reflect, they needed access to generate the .....therefore we did a simplified nominal allocations of those network assets so when they look at them another revenue that is generating, generated about that unit. Your reflect that they have used certain amount of the traffic of the network.

issues ..... like dealing with 'joint assets"

...
[apacifico1 : 65 - 86]
So that's a very important aspect on the implementation to come up with relevant measures to decide what their behaviour that those measures will generate. You want the units to be encouraged to work together, but as you go down the organisation, are you going to have EVA calculations and how many tiers in the organisation. Initially we thought to go three, four, five tiers and really you definitely need to have the first and second tier, maybe the third one, depending on the type of organisation, but you put yourself into a straight jacket. You must have the second tier so you know if something is bot right at the corporate level and where is the problem and also to make sure that when you determine that you expect immediate growth for the organisation. You need then to understand how each of the other units are going to contribute to that growth. I t could be that from some units, you are going to be expecting a higher growth because of the type of market and product they have, right. What type of customers they have and from other units you might have a lower growth and from other units it could be ok to say it's going to be a ..... For that unit.

identification of relevant measures (or components of the scale) + the impact of these on behaviour.

That is ok because as a corporation it is best for that corporation to be ..... so that way then as long as each of them achieve their respective targets they are often choosing towards the corporate target. Otherwise you have the problem like some companies that they only had the EVA at

the company level and nothing below that you could have discussions behaviour. Now if I do this, it is good for the company but it is not good for me and therefore I am going to be penalising my incentives, so you don't do that, or visa versa.

Q
For each of those business units, did they make their own decision about how far down they then went with ..... how many tiers.

A
No the only decision they made is whether they wanted to go that third tier, that was the decision, right. So of all the units, actually only two units because of the type of business that we are in, had to go to the third tier. Because the business was so different, like in our wholesale area. There was one area that the international wholesale, another area was more of a domestic wholesale and the behaviour of the two units is totally different. Although you have a ..... EVA here you really had to go down to what you want from this market, and from this market otherwise it doesn't make sense. That was one of the exceptions and you really have to see that sometimes for whatever reason, you might have a unit at the second tier that is made up by very different elements. Yes you really need it because the element growth from the one and is different from the growth of the other. So that's what you have to have a look at.

Q
The implementation at that level for each of the business units was that managed more by the barrier equivalent like the controllers to those units?

A
Well lets put it this way, it was managed centrally with the input from those people, I mean they all had an input because there was an percentage from all the various units. For instance, when we defined the EVA, the team decided on the basic concept and then he was ..... in each area would make sense. Their concerns were addressed to say ok and then when you had a conception it was fine and then you actually had to start picking up the information and develop the software. When you have developed the software the programming for it, you really have to make sure that all the units ..... And the adjustments make sense. It was done centrally but given to them to check and we also had a use of testing which we tested centrally like any other development and then you give it to them to say. To you sir, that EVA represents your business. They also had twelve months which is actually this year when it is going to finish, for them to explore and they explained the variances and the EVA, and has anything been leaked out. So a couple of small things came out that they needed to be fine tuning in one of the adjustments so there was plenty of opportunity to provide input, tested and realign running the program.

What one of the units decided was that he wasn't necessary given that he was rather a ..... Genius. To go to a third tier. They made the choice to go to the third tier right and it was not compulsory. We did a program in ..... So it is automatically reported they didn't have to do any calculations but when we decided to change the contribution EVA for a .....EVA we did that at the business unit level and not at the third tier. So the third tier remains a contribution EVA.

Other areas didn't go to the third tier and you see one of the things about the EVA is the stability of the company. You really need an element of stability because the minute you start changing the business unit it becomes a nightmare. If there are simple changes then it is fine but what we have now is we have a significant change of our organisational structure so we have to totally recalculate EVA.

The cause has been the same so I am glad that we have been studying incentives this year and its going to be next year because we need the stability. Its not in other organisations and that happens and what ever

how far down in the organ✓ does the eva calculation go? 1st, second third 'tier'?
..... in some cases two, some 3

or business unit level - who was the implementation "managed" centrally with input from the controllers to the units + the unit mgrs themselves.

your incentives you have to recalculate whatever is your financial measure, but the theory about EVA is because you have to look long term and not just twelve months, it becomes harder to do that.

...
[apacificol : 116 - 140]
Have each of the business segments gone about the process the same way?

A
No because you look at the nature of the business and you look at the nature of the buy in, in the area. How they embrace the EVA, they all do it at their own pace and with their own issues so although the concept is the same, the way of embracing it is slightly different. You have to see us, or when they are ready. There is a time line, but within the time line there are certain things that must be done by a certain time, but that's ok. But for instance, what we are doing now is very important to value drivers because the measures, as I was saying to you, you've got the measure but as you go down the organisation, imagine for a level five or six executive or even a level four, they ask themselves. Ok I see Telstra EVA, I see the business from ..... But I am here.

Q
What is in it for them?

A
What can I do to create value. And so what we are doing is at the business unit level and below is to identify what each ..... What other key value drivers for each line of business, and what we have done for the customer business unit, we use also dynamic modelling. They could see if I improve this value driver by this amount or if I do this or that or the other, what ..... for the EVA. So this is very valuable.

Q
I know that in Barry's area, I've talked to him quite a bit about identifying the drivers and a couple of the operational people that I've talked about it are quite excited about their drivers, for some of them that's how they think about their business as operational managers

A
That's it exactly, and on purpose initially he would think that finance people would have the driver and I said to my boss, and he heard that, say look I know that at the end finals, and we had to explain verism and whatever, we had to do that.. But if I start putting in champions and if we put the finance people in as champions. Everybody will see us as a finance thing, and it is not. The people that will make or break the company is not finance, it really is the operational managers. The operational managers have to manage, not that they don't do it. Though I am saying that the focus on the full integration, of how I generate profits, and I know how I do my assets, and I am managing my assets better. I am insuring that the value creation happens and what I am going to give my people on the next level down. So that's why most of the champions I have tried ..... I didn't get them but their operational managers and they work so much better, because otherwise ok he will do it. The finance person, he will do it, but you don't have ..... but he is the .....manager. Then everybody looks like oh! ..... and it does create a little bit of competition because if you have six peers, the oversee managers and one of them is the champion, I think it works so much better.

Q
Now the process of implementation, including the key drivers. Is that providing much opportunity for well lets use the term, learning, about?

A
Yes, my comparison is although we have the training's for the Centre of Leadership that its more understanding of the □ EVA then to explain how the EVA was implemented in Telstra and what does it mean that. Its not until we do the drivers that it's like when you do economics or apply the

not each business segment has gone about the eva implem in the same way ------ depends on:
- the extent of the buy-in

use of value drivers rather the eva measure or calculation itself at "lower" levels in the organisati

use of operational managers (as champions) in the implementation process - rather than "finance-champions to carry out" 'impose' implem

economics. You do the theory but by the time that we finish with it even toward the end of the first workshop we usually use three workshops. Its full day, half day, full day progressively and we look at their strategy and then considering the strategy identifying the value drivers, that they support the strategy into EVA.

It forces the manager, encourages the managers to think laterally in the sense to when you look at the drivers to say. What is the EVA impact on that driver, even if you don't know financially, use your management judgement and not power? And you will reckon that he has a low impact, a high impact and a medium impact and how much can you control it. Now is it something that you can totally control better than others are, so what he is bringing is that people start thinking, oh! Well that. Imagine that they are improving end to end customer service, it could be a big driver or a ..... driver. So they have to think that there are elements of it that they can totally control. That there are elements of it that the need to support from maybe the IT people or from the network people or even in their own area, as they are service, they need the support from sales. So it can mark how important is the corporation and working together so issues like at times you hope you can do everything on your own but you broke the light and for us to succeed, we need to work together.

...
[apacifico1 : 147 - 154]
Q
Is that EVA replaced measures say at the corporate level or is it a new measure?

A
Oh good gracious no at the corporate level, what we have decided to do because we have just a restructure. You need to have some history. The Telstra EVA is absolutely perfect, it's done a lot of thinking, we tested it and we have the history of five years. So you can really see it and how the company has behaved even though whatever Telstra .....is a great measure. When you get to business unit level because we have changed the corporation so many times and now we have a big restructure it worked have been dangerous to, no. We are going to be reporting the business dislikes. We start now reporting now and ideally if we had a study organisation we could have started from July 99. With the business unit in EVA with a little bit of history, but because we changed it there is not history. You don't want an administrative nightmare, trying to reconstruct this business unit, totally different, we haven't had it before.

So he history starts on the 1st of July 99 with EVA's for each of them new businesses and hopefully after twelve months when you look at next year, we might decide ok maybe next year we might put the business into EVA, in ..... But at this stage lets focus on the Telstra EVA we have good competence citizens. However after I have said that we still going to report to the business unit EVA and will be expecting the GMD's and the financial controllers to check on the variances. Because if you don't have that and the Telstra EVA's all of a sudden goes up or down, even if it goes up, you have to see what has caused it. So you really need to ..... of going to the next layer down and say it comes from here and here. So we are going to report it, ... devise but we are going to report it every month to the business unit EVA

...
[apacifico1 : 202 - 212]
You said about success, and I was going to ask you briefly about an organisation why innovations like EVA. We've had to state three critical things for success of an implementation of that sort, what would they be?

A
First of all if anyone tells you that his CEO ..... If your CEO doesn't say ..... Firstly the CEO second one is that you must have good financial stamina, good practise on laws and good balance sheet at the

use] workshops with the managers

Corporate level eva reported 1/99
'2000

business unit + GMD level eva reported formally '2000

for success:
1) CEO
2) good financial stamina.
good practise on laws.
reliable balance sheet
+ profit loss statement

company level and at the business unit level, you must have that. If you don't then forget it, don't even waste your time.

Q
Good as in.

A
Accurate, calculated, well defined available. Otherwise what you have to do is first, many companies are very good in ..... But they are pathetic in balance sheets. They might have a balance ..... And that's when you start getting to the third tier. Unless you have a good balance sheet and profit and loss then forget it right, so you must have that right and then I would say that their readiness, their persistence and enthusiasm and an approach that you can develop ..... When you implement it, you go through the frustration and all the rest. But because you listen to everybody's issues, you had our communication program, or our training program and you did things when the time comes it is no surprise. We know about it and that you have enough people in the organisation that they can take it over. There is no one person or two or three that knows. You have got a hundred two hundred and an understanding of hundreds of people.

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[bjam2 : 9 - 21]
We talked about the E.V.A. implementation on your side a little bit but the section that you look after, when did that E.V.A. implementations commence?

B
We probably commenced seriously with the training and finance professionals that are going to be involved in its implementation. Then from about October, November '98, we've been training the top two or three levels of the business areas, or when I say training, briefing about E.V.A. and what it means. Then trying to, from that point on from October November, we've been trying to identify the E.V.A. drivers that we'll use as the measures of July '99 onwards.

A
So with your role and your equivalent..... the other four or five that do it to the other operational areas and so on, their roles being much the same, in that sense, so you guys were trained up go out and take that training to. The ways in which you've gone about it say with finance and ER and so on.

B
Yes we've conducted what we call workshops with those line areas in the support function. It's been actually run in conjunction with the Centre of Leadership, so it's been part of that groups program for managers in Telstra.

A
So the other group of controllers have based in on about their role in the same way that you have. The calculation that I can get out of here I assume is pretty stock standard in terms of E.V.A.