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The identification, development and application of information culture in the Western Australian public sector

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The Identification, Development and Application of Information Culture in the Western Australian Public Sector

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

Information can be found in government departments in many forms. It exists, for example, as performance indicators, statistics, economic analysis, policy advice, political know-how or opinions. Using information is a daily and oft repeated activity in government departments. Information is central to the achievement of outcomes and the delivery of services. It is critical to the government's success in the information economy. It is central to the development of products and services. It supports policy making and it underpins accountability. Government departments are built on the generation and use of information that is relevant to the largest of all customer groups, the citizens. Even though information is all-pervasive in government departments, how government departments relate to information, what value they ascribe to it, and how their attitudes about information influence their behaviours towards information, is not well understood.

The focus of this study was the values, attitudes, beliefs and behaviours which government departments in the Western Australian Public Sector exhibited towards information. That is, it investigated information culture. While there has been considerable research in the area of organisational culture, there is limited evidence of the study of information culture, particularly in the public sector. The abstract nature of information culture and the limited research mean that the concept is not widely acknowledged or appreciated. What constitutes information culture, its influence on an organisation, and the potential benefit of a high performing information culture are unresolved issues in the study of information culture.

In the context of the Western Australian Public Sector, this study revealed information culture as complex, systemic and reflexive. Intricate and influential relationships with organisational culture, information management and information use were identified. The key findings of this study led to the development of a model for information culture in the public sector, and a definition which reflects the systemic, complex and multidimensional nature of information culture.

This was a qualitative study within an interpretivist paradigm. Case study method was employed with the Western Australian Public Sector, in particular those departments which delivered services directly to the citizens, being the single case. The key participants were drawn from the public sector and academe. Interviews with best practice organisations and those who had undertaken research previously into information culture added to the richness of the data collection.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

I. Incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher degree or diploma in any institution of higher education;
II. Contain any material previously published or written by another person except where due reference is made in the text of this thesis;
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Date: September 9, 2010

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Undertaking this research has been a challenging, rewarding and enjoyable journey. I would like to acknowledge and thank the people who assisted me to complete the journey and this thesis.

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This study would not have been possible without the participants who gave freely of their time to discuss the research. I appreciated their openness and their willingness to provide their experiences and insights.

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List of Abbreviations

A	Application
A (with identifying number)	Academic
BP(with identifying number)	Best Practice
CEO	Chief Executive Office
CIO	Chief Information Officer
CKO	Chief Knowledge Officer
CTO	Chief Technology Officer
D	Development
DG	Director General
DPC	Department of the Premier and Cabinet
DOIR	Department of Industry and Resources
EAC	Economic Audit Committee
FMA	Framework, Methodology and Area of Concern
I	Identification
IBV	Information Behaviours and Values
ICT	Information and Communication Technology
IKM	Information and Knowledge Management
IMP	Information Management Practices
IOU	Information Outcome Use
IS	Information Systems
IT	Information Technology
ITP	Information Technology Practices
IUE	Information Use Environment
MIS	Management Information Systems

MPC	Ministry of the Premier and Cabinet
OECD	Organisation for Economic Cooperation and Development
OeG	Office of e-Government
P(with identifying number)	Practitioner
R(with identifying number)	Researcher
TIAC	Technology and Industry Advisory Council
WAIPC	Western Australian Information Policy Committee

1 Introduction to the Thesis

1.1 Information Culture and the Western Australian Public Sector: Setting the Scene

Imagine that you are a member of the Western Australian Public Sector. You have been asked to undertake a review of a policy position or a piece of legislation. You could have been asked to develop and deliver a new service. After giving careful consideration to what you need to achieve and how you will do this, you decide that you need to review and analyse any existing information. You need to understand why the service is required or how the policy position arose. Some lessons from the past or evidence of previous successes and failures might shed some light on the situation. Perhaps some performance indicators would be helpful. Are there financial implications? Once you have this clear picture of the past you set out to build the future. This might involve some community consultation, interaction with relevant government agencies, interrogation of the Internet and current research on the matter at hand.

With all this work completed, and recognising that your project needs to be done within the legislative framework, you bring together a cross-section of the skills and experiences in your agency to organise and make sense of it all. The staff bring their personal knowledge and lessons learned from the past as well as their specific discipline knowledge. You add these perspectives to the community views, current research and previous situations, and work together to find the most suitable organisational outcome.

What if:

- The background material and statistics you needed were not available?
- The people with the knowledge both personal and professional were not around?
- The people did not want to share their knowledge and experience?
- The agency was only interested in using hard data?
- The systems were not capturing the right information?

What if:

- The leadership of your agency were not convinced of the value of decision-making based on sound information; they preferred to act on gut instinct?
- The senior managers used information as a weapon, withholding it or using it as a political tool?
- The information professionals were working against each other in organising the internal and external information?

What if your agency did not have the positive values, attitudes, beliefs and behaviours towards information? What if the ways in which it collected, organised, and distributed information did not assist you in carrying out your responsibilities as a public servant to the best of your abilities? What if your agency did not recognise the multidimensional nature and strategic importance of information?

Information can be found in many guises in government agencies. It can be an entity such as knowledge, evidence, statistics or opinions. It can be a process such as sharing, learning or adding value. Using information is a constant and daily occurrence in agencies. Government agencies are built on the generation and use of information that is relevant to the largest of all customer groups, the citizens. This information has multiple roles to play. For example, it is critical to the government's success in the information economy, it is central to service delivery, it supports evidence-based policy development and it underpins accountability.

This scenario depicts a somewhat ideal view of information and information management in a government department. It suggests that there is a productive relationship between positive values, attitudes, beliefs and behaviours towards information, its information culture, and the way in which information is managed and used to achieve outcomes and deliver services. Unfortunately the picture painted in this vignette does not reflect the actuality and reality of how government agencies value and use information. Even though the public sector has frameworks and contexts to encourage the positive relationships with information, these do not translate into practice. There is a disconnection, a discrepancy between the frameworks and the context, and the use and organisation of information.

1.1.1 Contextual Influences

Western Australia is Australia's largest state in area, occupying approximately 2.5 million square kilometres, or 33% of the area of Australia. Perth, the capital city, is

considered one of the most isolated cities in the world. It is closer to many cities in Asia than it is to major Australian cities such as Melbourne and Sydney. While the State has a third of the land mass of Australia, it only has approximately 10% of the population with an estimated resident population of 2.25 million. It has Australia's fastest growing population (Australian Bureau of Statistics, 2010).

The geographic expanse of the State, its sparse and scattered population and its remoteness from the bigger States of Australia present the Western Australian Government and its public sector with particular challenges in delivering services to the citizen.

In 1901 Western Australia became a State in the Federation of Australia. Under the Australian Constitution, certain powers of government were given or ceded to the Federal Government and the State Government was responsible for the remainder. The State has a four year election cycle with elections being contested by two major parties namely, the Labor Party and the Liberal Party. As governments can choose to call elections prior to the end of the cycle, periods of governing can last less than the full four years.

Such changes in government impact on the public sector. With a change in government comes change in policy and direction. There may also be changes to the way in which the public sector is required to operate and the structure and focus of government agencies. There may be significant changes to the number of agencies and the number of public sector employees. For example, the change in government, and consequent change in policy direction, which occurred during the course of this research led to changes in Ministerial portfolios with agencies amalgamated, restructured and abolished.

Changes of this nature have strategic and operational consequences for government agencies over the short and long term. In the context of this study this can be seen in:

- The loss of corporate intelligence and intellectual capital through staff leaving, in particular senior staff;
- Reduced opportunities to share and use information when agencies using different systems and technologies are amalgamated;
- Information being underutilised or mislaid when agencies are disbanded or abolished and insufficient measures are put in place for long term retrieval and use;

- Changes in policy priorities which limit or end investment in information-related issues and activities. For example, the abolition of think tanks or the closure of libraries.

Any of these consequences can have the potential to impact on the degree to which, and way in which, government agencies provide policy advice and support to Ministers. They can also impact on how services are delivered to the citizen.

Western Australia is experiencing a period of economic growth fuelled by a robust resources sector. The growth in this sector has also contributed to growth in the construction and services sector. This period of sustained growth across the State led by the resources sector has resulted in labour shortages even though the population continues to increase. As a significant employer in Western Australia, the Public Sector has felt the effects of these labour shortages and the population increase. It faces the dilemma of developing ways to deliver services to more people across a great geographic expanse with less appropriately skilled and experienced staff.

The volatile and demanding external and internal environments in which the public sector operates are influencing government agencies to find new and different ways to deliver programs to the citizens. These need to be delivered effectively with efficiency and efficacy. Usually, they need to be done within strict timeframes and with limited or stagnant resources. Within the public sector there is now a keen focus on performance management and outcome based management. Agencies are either encouraged or required to coordinate activities, outcomes and service delivery. This implies the need to be more proactive in sharing and reusing information within and across agencies. Another factor is the growing importance of security. The rise of terrorism places great pressure on government departments to be up-to-date and proactive with their intelligence. There is an imperative to analyse and distribute this intelligence in a timely fashion to a cadre of government instrumentalities including Parliament itself.

In addition, the public sector is subjected to even more information challenges. For example, financial pressures mean that government agencies are asked to ‘work smarter’ with smaller budgets and a reduced workforce. To ensure the quality and quantity of service delivery under these conditions implies collaboration and sharing within and across agencies, immediate access to supporting information and knowledge, and an appreciation of the need to manage that information and

knowledge to underpin decisions. The current Western Australian Government is proposing to change the governing legislation to make senior appointments to the public sector, term of government appointments. The potential staff turnover that this could precipitate, and that is already in play because of the ageing of public sector employees, puts increased pressure on retaining corporate memory. Added to these challenges is increased attention on what government agencies do and how they do it. The public sector and its departments are now subject to much more scrutiny by Parliament and 'watchdog agencies' like the Auditor-General, and by a more informed, discerning and educated citizenry. Audit trails, evidence of action or inaction, how and why decisions were made and the outcomes that ensued are all required. Government agencies are being asked to demonstrate how they used the information at their disposal, and why they did or did not use it, or did or did not seek more information.

To meet the demands of new programs and service delivery, departments are turning their attention to different ways of working including partnerships with other departments and with the private sector. With the trend towards online service delivery more and more government information is in the public domain. These new ways of working generate yet more information challenges. They bring into question how information will be managed, used, reused and shared. Can the integrity, accuracy and reliability of information be assured when it is being made available across the public sector and with the private sector? How can government agencies guard against misinterpretation and misuse of information?

1.1.2 Government Frameworks

In the context of this study, the medley of challenges and changes can be addressed and ordered, in part, through the application of a selection of government frameworks. That is, frameworks with direct or indirect references to how government agencies need to relate to and interact with information. Even though some of these frameworks were not necessarily developed explicitly to address information, they have implications for how public servants relate to information. These frameworks are provided, and put in place by both Parliament and the public sector, and in some cases by the citizens. Examples of such frameworks which could be used to influence and guide relationships with information across the public sector are:

- The Legislative framework;
- Accountability and governance; and
- Performance management and reporting.

All three are interrelated and work interdependently as well as in isolation. They are presented here in a linear sequence to assist the reader.

The legislative framework is devised and used by Parliament. Of relevance to this study is the range of legislation that sets out for agencies the responsibilities and requirements for managing information. This occurs directly and indirectly. For example, public records legislation outlines direct responsibilities for recordkeeping and retaining the history of government actions. Legislation about financial management is also about access to and use of information. Freedom of Information, Privacy, Evidence and Electronic Transactions Acts and Criminal Codes, all have a relationship to information use and management. In part, the legislative framework influences the public accountability required of government agencies. The citizens as well as Parliament require evidence of this accountability. Forums and mechanisms are established to monitor and review that accountability and to ensure good governance. The evidence of that accountability and governance lies in the information generated, collected, stored and used by agencies.

The public sector works with Ministers and Parliament in developing a robust policy framework as part of legislative and accountability requirements, in order to guide and precipitate service delivery and program development. Information use and its management are central to being able to develop that policy and deliver those programs. Such information can come in many guises such as research, political know-how, technical expertise, statistics or economic analysis. Furthermore, the public sector uses performance management and reporting frameworks to ensure it meets its legislative responsibilities, to meet accountability requirements and to operate efficiently and effectively in delivering outcomes and programs. Citizens would recognise the outworking and demonstration of these frameworks as annual reports, performance indicators, strategic plans, and ultimately, services and products. These represent the use, analysis and distribution of government information.

Still, in the face of all these information challenges and changes, and the frameworks to assist with addressing them, it appears that government agencies demonstrate little if any disposition towards valuing information and using it appropriately. The apparent neglect is never more evident than when one compares the systematic and deliberate way in which agencies are prepared to invest in, use and manage finance, human resources, and information technology. The paradox here is that information as an entity, and the ways in which it is used, underpins financial and human resource management. Without information, agencies would not need information technology and information systems. Why are agencies reluctant to attend similarly to information?

This is not to say that information is the only element involved in the activities of a government department, or that it is more important than sound financial and human resources management and a technological infrastructure. However, it is at least as important as these, and deserves the attention of management and decision-makers. The strategic value of information to outcomes and service delivery cannot be overlooked or underestimated.

These challenges involve more than government departments organising their records section, developing new databases and using their libraries and opening them up to the public. They go to the core of how a government department generates and uses its information, acknowledges the use and sets up an environment to ensure the most appropriate and robust use and reuse of that information. How government agencies view this information; the values, attitudes, beliefs and behaviours towards information and information use, and the ways in which they collect, organise and process information, reflects the information culture present in each agency. An information culture can have an impact on the ways in which, and the success with which, government agencies achieve outcomes, deliver services to the citizen and demonstrate accountability.

Public sector employees generate and use information on a daily basis, and they may do so extensively and unknowingly or without thinking. They use many types of information (statistics, policy economic analysis, and community opinion) in a variety of mediums (documents, reports, personal communication). Even so, it is likely that their first frame of reference would be the formal and structural presentation of information within the department. That is, departmental information is found in the records repository, the library or the information technology section. As such information may then be considered as someone else's responsibility and removed

from their day-to-day responsibility. These attitudes and beliefs translate into particular behaviours towards information that render less than optimal use of information.

The researcher has observed and experienced that information in the public sector is primarily considered in the context of traditional formats of information, namely published material in libraries, records, and databases and information systems or technology. As part of this study, the researcher aimed to demonstrate that this approach reflects a one-dimensional or single concept of information. Furthermore, the researcher wanted to explore whether or not it was possible to highlight that information is more complex and all pervasive, and a common and core element in assisting government agencies to deliver their strategic outcomes. In doing so, the researcher wanted to confirm whether or not government agencies would benefit from developing a positive information culture to guide the ways in which they interacted with information in all its forms.

This study was predicated in part, on previous studies into information culture and the assumption that there was a link between information culture, and successful service delivery and outcomes for government agencies; that the quality and quantity of information available for decision-making, the citizen's ease of access to and use of information, and the ways in which technology and other infrastructure was developed and used were related to information culture. Previous studies identified the benefits of a positive information culture to the private sector. This study aimed to clarify whether or not a sound information culture in the public sector would improve the possibilities for robust strategic outcomes. Would it mitigate the difficulty, expense and time, to make appropriate investments in information practices, infrastructure and resources to support service delivery and policy development?

1.1.3 Information and Government Outcomes

Whatever the focus on strategic management, strategic outcomes, service delivery and policy development, whether directly or indirectly related to the citizen, the ability to deliver outcomes and services rests on an information foundation. That is, the ability to generate, store, access, use and disseminate information. In turn, a government agency's capability to manage information well depends on its information culture. This relationship is described in Figure 1-1.

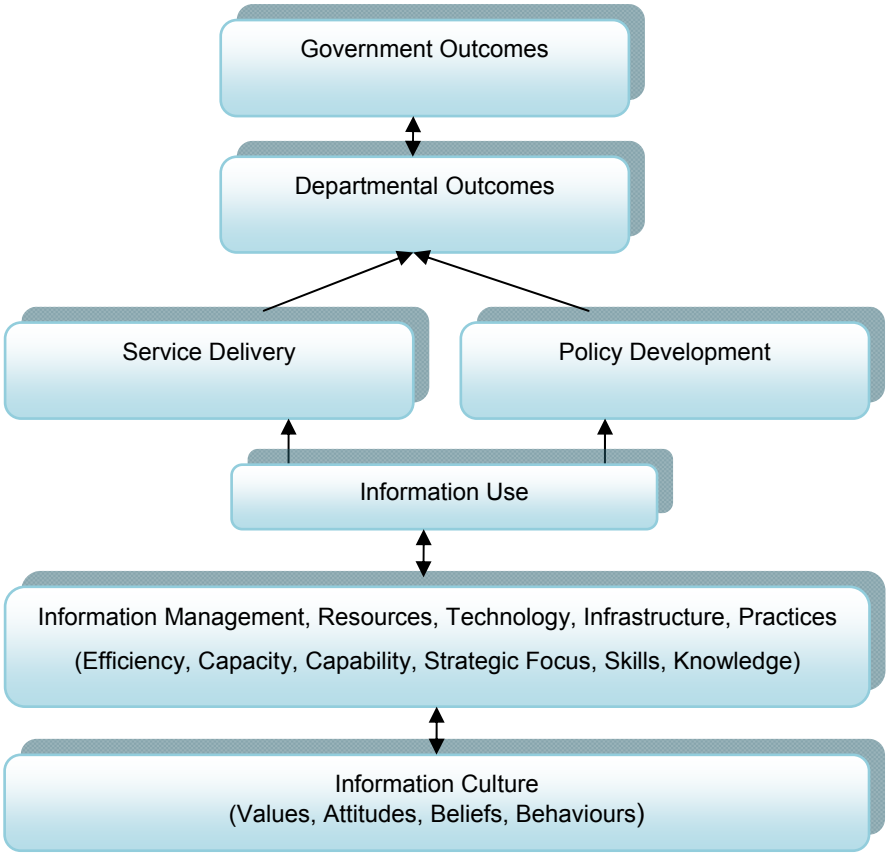


Figure 1-1 The Potential Relationship between Information Use and Government Outcomes

Previous research has demonstrated that the quality and success of decision-making. Thus, the delivery of outcomes is linked to the quality and timeliness of the information culture required to underpin information and justify these decisions (Ginman, 1988; Kirk, 2002; Marchand, 1996). As demonstrated in Figure 1-1 there is the potential for a link, not only between information and outcomes, policy development and service delivery, but also between these activities of Government and the public sector and an information culture (Curry & Moore, 2003).

However, as illustrated previously in the opening scenario, it appears that there may be a disconnection in the public sector between information culture and the achievement of government outcomes. Moreover, the scenario painted the possibility that, consciously or subconsciously, government agencies fail to make the potential links illustrated in Figure 1-1. Certainly, they practice information management to different degrees, they invest in and use information technology and information systems and they make use of information. More often than not, this is not undertaken in the sequence depicted in Figure 1-1. The use to which

information is put or to which it needs to be applied is seldom the drive of strategic decisions around information management and the implementation of technology. An agency is unlikely to be aware that it has an information culture that influences what it does to or with information.

In the next ten to fifteen years the Government will face a number of challenges and opportunities as direct and indirect results of the current social, economic and technological environments. It will need to develop strategic responses to these challenges and opportunities. Developing and implementing strategic management for the delivery of outcomes for a population that is growing rapidly, overcoming skills, knowledge and labour shortages in the short and long term, and building for innovative, competitive and sustainable contributions to the old and new economies are but a few examples of the challenges ahead. As the Technology and Industry Advisory Council [TIAC] (2008, p. 1) warns, "while the economy is booming, it is hard to focus public and private resources on the longer term.…The policy challenge is to build these sustainable sources of growth now, while opportunities abound."

The genesis of this study was the researcher's conviction that information and information use could and should play a more significant role in the public sector's delivery of services to the citizen and in the achievement of outcomes. That, the public sector's values, attitudes, beliefs and behaviours towards information and information use, its information culture, needed to be analysed with the view towards demonstrating the social, economic and technological benefits of a positive information culture.

The published studies of information culture, although limited in number, have demonstrated the advantages that accrued to organisations which developed their information cultures. Even though the study of information culture in the public sector was almost non-existent, the researcher was stimulated to build on the benefits and understandings of the previous studies. In doing so, the researcher wanted to demonstrate that the public sector, in whole and in part, had the need, the basic infrastructure and the ability to identify and develop an appropriate and high performing information culture.

1.2 Introduction

Chapter One sets the scene for the research. It introduces the thesis and its purpose. In doing so it builds on the story used to convey the spirit and intent of this

study. The vignette gives insights into the researcher's motivation for undertaking the study. It paints a picture of the possibilities and potentials that lend force to the researcher's keen interest in this study. This motivation is developed through an exploration of the major issues impacting on the context in which the study was undertaken, namely the Western Australian Public Sector. The purpose of the study is articulated, together with the research problem and the research question which instigated the study. Finally, the structure of the thesis is outlined.

1.2.1 Information Culture and the Information Economy

Having outlined the impetus for this study and signalled potential links between an information culture and strategic management and outcomes, the next section highlights further demands being placed on the public sector. It addresses the challenges associated with the information economy which face the Western Australian Public Sector. It also demonstrates the links between meeting the strategic challenges and information culture.

1.2.2 Information Economy and Globalisation

As early as the 1970s Touraine (1971) and Bell (1976) forecast a society and an economy where the products, processing and manufacturing of the industrial economy would be in decline, and there would be a rise in an economy and society that was based on services and the information sector. Barney (2004) later described this as a time when the control and ownership of the means of production was not the source of power; when power came from the control of systemic knowledge and information. The terms used to describe this economic and social condition include the knowledge economy, the information economy or new economy. They are used interchangeably to describe the situation in which information and or knowledge are used for economic advantage (Florida, 2002, p. 6).

Hayward (2001) reminds us that we have made the shift from the industrial economy and that we have been living in the information economy for some time now. The valuable commodities of this economy are intangible assets such as innovation and creativity, ideas, research, brands, education and customer relationships, rather than the tangible assets of the industrial economy such as products, furniture, buildings and inventory (Leadbeater, 1999). Hayward (2001) says that the information economy is highly competitive and subject to rapid changes, and that the exponential rate of technological developments, globalisation

as a driver of economic growth, and the wide availability of inexpensive communications networks mean that to be successful, organisations need to be knowledge-driven, flexible and creative.

Drucker (2001, p.4) describes an economy and a society in which information and knowledge are the touchstones of success, and in which knowledge/information workers are "the dominant group in the workforce." Furthermore, Drucker (2001) says that society and its economy will be characterised by globalisation and competitiveness and influenced by developments in information and communication technology. However, Drucker (2001, p.19) introduces a paradox in speaking of the growth of the information economy. Even though more information than ever is available to organisations, it can be argued that people in those organisations know less than ever before. The internal and external information made available by information technology needs to be in a form that is more consistently useable. It needs to be organised for better use.

In a similar vein, Giddens (1999, paras. 2, 33) spoke of "a world of transformations" and "a global cosmopolitan society" influenced by "a mixture of economic, technological and cultural imperatives." According to Giddens (1999, para. 12) this globalisation "has been influenced above all by developments in systems of communication, dating back only to the late 1960s."

As Mulgan (2003) emphasised, governments are not immune to the changes wrought by the information economy, globalisation and developments in information and communication technologies. According to Mulgan governments have always generated and used information and knowledge. Now, says Mulgan, there is a greater demand by government for information and more pressure on them to use information more productively and innovatively. Long (2001, pp. 1-17) spoke of the challenges brought by the information age and faced by governments. These challenges arise from social as well as technological contexts. As part of this information age, citizens are better informed and are actively seeking access to more and more information. The pressure is on governments to respond to this demand.

1.2.3 Western Australia and the Information Economy

According to an Organisation for Economic Co-operation and Development report [OECD] (2001) on the information economy, Australia is well-placed to become a strong competitor in that economy with approximately fifty percent of Gross

Domestic Product attributable to information and knowledge industries and over thirty percent of the workforce defined as knowledge workers. In January 2001, the Australian Prime Minister, in announcing additional funding for research and development, said that Australia needed to improve its economic strength through "expanding frontiers of the knowledge economy" (cited in McKeon & Weir, 2001, p. 5).

On behalf of the Western Australian Government, the Technology and Industry Advisory Council [TIAC] (2003) produced a series of reports under the banner *Towards a Western Australian Knowledge Economy.* In its third report entitled *Creating Western Australia's Knowledge Infrastructure*, TIAC said:

> Western Australia is not immune. The need to create a strong and vibrant Western Australian knowledge economy with high quality 'knowledge infrastructure" as its foundation should be seen as both a challenge that has to be met and an opportunity that should be grasped. (p. v)

Western Australia's robust economy and extensive mineral wealth notwithstanding, has a "broadly peripheral status in relation to the world economy" (TIAC, 2002, p. 8), and needs to address the challenges of that peripheral situation in the light of the new economy.

To summarise, Western Australia is part of the information economy. The Government of Western Australia has a role in ensuring that the State is well-placed in this economy, through the support and provision of enabling information technologies, access to information, the development of a robust legislative and policy environment, and continuous education and training. In the context of this study, agencies within the Western Australian Public Sector which deliver services directly to the citizens are generators and users of information and have the potential to influence and impact on the State's position in the information economy through the delivery of services and other outcomes related to this new economy.

1.3 Background Summary

In summary, information is core to the business of government. It represents a key government resource. Government's ability and capacity to operate effectively within the information economy is determined to a large extent by the way in which it manages its information and knowledge. As a precursor to achieving this, Government departments need to create information cultures that demonstrate

positive values, attitudes, beliefs and behaviours towards information, and the ways in which they organise information for optimum use. In doing so they increase their capacity and productivity, and in turn have a robust impact on the efforts to secure Western Australia's place in the information economy.

The underlying principle of this philosophy is that government intentionally and systematically values, encourages positive attitudes towards, and manages its human and financial resources. Similarly, government would benefit from applying the same value and management sets to information. Just as the use and management of human and financial resources involves and requires more than the application of technology, so does the use and management of information.

This study examined the links between information culture and the achievement of organisational outcomes and thus, potentially, uncovered opportunities for government agencies to strengthen their role and the State's role in the information economy.

1.4 Purpose of the study

The primary purpose of this study was to identify and typify a positive information culture in the context of agencies within the Western Australian Public Sector which deliver services directly to the citizens. Central to this purpose was securing more clarity around the definition and composition of information culture.

Government is a significant generator and user of information. Underlying the purpose of this study was the opportunity to identify ways in which government departments could make better use of information in support of services and products. That is, government resources can be used more expeditiously, providing citizens with a greater return on their investment.

In addition to contributing to the body of knowledge associated with information culture, the study aimed to identify practical steps that could be taken to improve information culture and thus the achievement of strategic outcomes.

1.5 Significance of the Study

This section of Chapter One addresses the significance of the study. The four areas identified relate to the contextual and environmental influences on the public sector which are identified in Sections 1.1 to 1.2. The four areas are:

- Improving public sector management;
- The information economy;
- e-Government; and
- The information professionals.

The research outcomes of the study are also considered in the light of the significance of the study.

1.5.1 Improving Public Sector Management

Western Australian Public Service Directors-General (DGs) and Chief Executive Officers (CEOs) are responsible and accountable for a specific set of outcomes in support of the business of government. According to guidelines for agency strategic management produced by the Department of the Premier and Cabinet [DPC] (2007, p.1) discharging these outcomes responsibilities and accountabilities includes the following:

- Continuously align outcomes and services with all relevant goals and strategic outcomes specified in [the strategic plan]; and
- Apply [the strategic plan] as a framework for strategic management activities including: strategic planning, budgeting, service delivery, ongoing performance monitoring, evaluation, corrective/improvement action and reporting.

As these guidelines highlight, in addition to aligning with the strategic plan, government agencies need to be mindful of additional policy directives and legislation. There are relationships between some of these policy directives and legislative requirements and information use and information culture. Examples of these relationships are highlighted in the following examples:

- The Public Sector Management Act 1994, in part, requires CEOs to “plan for and undertake financial, **information** and other management”;
- The Financial Management Act 2006 requires that agencies account for the management of their resources including financial and human resources, physical assets, **information systems** and **intellectual property** and **corporate knowledge**;
- Outcome based management requires **reporting** structures, **evaluation** and improved **performance information**; and

- Linking all the above are the recommendations of the Machinery of Government Report (2001) that government agencies work collaboratively, achieve shared outcomes and address joined-up government. (DPC 2007, pp. 4-5)

All of the above have a relationship with information. They can involve the use, management, generation, access to or delivery of information. These relationships are both strategic and operational, and there is a reliance on information as a resource and or information management. The results of this study have the potential to build on the positive results of earlier studies (Curry & Moore, 2003; Kirk, 2002; Marchand, Kettinger and Rollins, 2001a) and to highlight ways in which government agencies can improve the information foundation on which these accountabilities and responsibilities are built.

1.5.2 The Information Economy

According to Lenihan, Valeri and Hume (2002, p. 1) "information is the way of the future. It is to the knowledge economy what oil was to the industrial economy. It will be a key source of innovation, power, wealth, influence and prestige in the 21st century." The challenge for governments in the information age and the information economy is management of the increasing amount of information, and to make that information available to citizens in a manner and form that optimises their opportunities to increase wealth, productivity and quality of life (Lenhian et al., 2002).

In 1997 the report for the Australian Government, the Information Management Steering Committee emphasised the importance and critical significance of information management reform if the Government is to remain relevant and competitive in the information age. Not only would this reform help generate greater returns on public investment but it would also assist in achieving outcomes.

1.5.3 e-Government

The Office of e-Government [OeG] in its *e-Government Strategy for the Western Australian Public Sector* (OeG, 2004, p. 2), states that the people of Western Australia increasingly expect that government will provide high quality services designed and tailored to meet their needs. This sentiment is supported by the Canadian report from the Centre for Collaborative Government (2003, p. 3) which claims that "information will be a key resource in the future and government will be a

key provider of it to meet Canadian's needs." The report (2003, p. 2) also states that "governments must learn to manage and use information differently. In particular, information must be shared across organizational boundaries and organized in new ways that maximize its usefulness for government, business, civil society and citizens."

The Government of Western Australia's e-Government Strategy (OeG, 2004, p. 2) adds a further challenge in identifying that the public sector will need to change its processes and approaches in order to, not only deliver services, but also address the ways in which the machinery of government will operate as e-government. According to the Australian Government Information Management Office (2002), for government to meet the demands and needs of the citizen and to tailor services, it must look at ways of better managing information and improving business services. While technology may enable the service, it will not determine the service.

The e-Government Strategy for the Western Australian Public Sector (OeG, 2004, p. 26) offers six principles for achieving the e-government transformation process, namely:

- Citizen-centric;
- Accessibility and choice;
- Trust, confidence and security;
- Better governance;
- Collaboration and integration; and
- Accountability.

While the strategy offers a framework for enacting e-government transformation, it does not address the values, attitudes, beliefs and behaviours that may be needed in agencies and across the public sector to effect these principles. That is, it does not address information culture.

These examples signal the changes that are required at a whole-of government level, an agency level and at an individual level, if governments are to succeed in the e-government environment and continue to meet the needs of the citizen. Since generating, managing and providing access to information is fundamental to government and e-government, a positive information culture is a key element to success in delivering services tailored to meet the citizens' needs.

1.5.4 The Information Professionals

While this study will focus on service delivery agencies in general, the findings of the study may be of relevance to the information professionals who also work in these agencies. In the context of this study, information professionals include librarians, records managers, knowledge managers, information technology managers and information systems managers.

With the increase in the amount of information being produced by governments in both hard and soft formats, the quest to find more and better online service delivery channels and to meet increasing demands from citizens for better access to government and its information, the skills, foresight and information culture of information professionals needs to keep pace with these rapid changes. Macgregor (2005) suggests that the electronic world and its rate of change are having an impact on the nature of information and on the information society. Macgregor also asserts that the corollary of this situation is the way this then changes the practices of information professionals, especially in regard to the provision of services. Drucker (2001) warned of the rise of the knowledge worker with all employees working with and managing information, not just the information professionals. As an adjunct to this point Winterman, Skelton and Abell (2003) wrote of the changing information use environment and the need for information professionals to respond proactively.

Education for information professionals may take into account managing information in the twenty-first century and beyond. However, in the context of this study, the education and practices of information professionals in the Western Australian Public Sector may benefit from a consideration of the relationship between the different groups of information professionals in departments. An improved understanding of the strategic positioning of information and information use is another potential learning (Broadbent, 1992; Winterman et al., 2003). The findings of this study may assist information professionals to reassess their roles and relationships in the public sector, and thus the changes to the education and training that they and their public sector colleagues need.

Traditionally, information professionals have been the group of public servants most associated with information and information management. However, that situation may be changing across the public sector. Drucker's (2001) view of the rise of the knowledge worker and the growth of the information economy (Lenihan et al., 2002)

combine to question the education of public servants per se and how they are skilled to appreciate and use information.

1.5.5 Research Outcomes

The significance of the study also relates to two of the research outcomes, namely:

- The body of knowledge was increased by the development of theoretical understandings related to information culture in the public sector; and
- A practical outcome to assist public servants in developing a positive information culture to support strategic outcomes.

1.5.5.1 The Body of Knowledge

The investigation of the historical and contemporary literature on information culture and related concepts revealed a paucity of research in this area. The study of information culture was popular in the late twentieth and early twenty first century. Ginman's work (1988) with thirty-nine companies was the first significant study of this nature. It was the catalyst for further work by other researchers including Abell and Winterman (1995), Hoglund (1998) and Owens, Wilson and Abell (1996). The early part of the twenty-first century saw studies by Curry and Moore (2003), Marchand et al. (2001a) and Travica (2005a, 2005b). Of late there has been doctoral research by Oliver (2004), and a significant body of work emanating from the University of Toronto, led by Professor Chun Wei Choo (Bergeron et al., 2007; Choo et al., 2006; Choo, Bergeron, Detlor & Heaton, 2008). A fuller discussion on these studies and others may be found in Chapter Two.

All of the studies considered for this thesis reported links between a positive information culture and improved and successful business performance. However, only two of these studies focussed on the public sector. Curry and Moore's (2003) research was undertaken in the Scottish National Health System. The work done at the University of Toronto studied three institutions, one of which was a public sector organisation (Bergeron et al., 2007; Choo et al., 2006, 2008). The results of the studies together with the private sector focus prompt questions about the impact of a positive information culture on the public sector. Would a positive information culture have the same or similar impact in the public sector? What steps could be taken to create such a culture? Given the limited research and the gap in the research timeline, was it still a valid concept to investigate?

By undertaking a study of information culture in the public sector, the researcher was aiming to address, to an extent, the lacunas in the body of knowledge surrounding information culture, for example, gaining a clearer understanding of the concept of information culture and its features, moving towards a common definition of information culture and providing an appreciation of the aspects of information culture in the public sector.

1.5.5.2 Practical Outcomes

Through an improved understanding of information culture in general, and in the public sector in particular, the researcher aimed to identify actions and initiatives that could be undertaken to raise awareness of information culture and its potential, and to develop means of improving the culture. The value of contributing to the body of knowledge notwithstanding, practical solutions could afford public service officers and information professionals the opportunity to demonstrate and experience first-hand any benefits from a positive information culture. Such practical demonstrations would also serve as positive examples to senior management wishing to improve their delivery of strategic outcomes.

Any success in achieving the theoretical and practical outcomes would afford the researcher the opportunity to promote and present the concept of information culture across the public sector in Western Australia and in research environments. Any lesson learned by the researcher and the practitioners could be put to valuable use in the workplace and in research environments as contributions to future research.

1.5.6 Significance of Study Summary

In summary, each of these four elements, namely improving public sector management, the information economy, e-government and the information professionals has relationships with, or is reliant upon, information use and information as a resource, and/or the management of that resource. Governments in general and the Western Australian Government in particular, through the agency of its departments, generates and stores enormous amounts of information. Harnessing that information is the basis of success in delivering government products and services. Departments and officers responsible for the outcomes of those departments could be assisted to prosper in the information economy and meet the needs of citizens, effectively, efficiently and with efficacy, through the

application of positive information cultures. Also, information professionals who work in government could benefit from the effects of improved information cultures.

As identified in the research outcomes and questions, the researcher wanted to contribute to the body of knowledge on information culture and to identify practical solutions that promote and encourage the concept of information culture across the public sector in Western Australia.

1.6 The Research Problem Leading to the Research Goal

Within the context of the service delivery agencies in the Western Australian Public Sector the research problem addressed by this study was:

> How to identify, develop and apply a positive information culture to assist public sector agencies to achieve strategic outcomes and deliver services.

In support of this research problem, the research goal for this study was described as:

> To identify information culture in the Western Australian Public Sector and develop and implement practical solutions at a meta level to assist government agencies in achieving their strategic outcomes.

1.6.1 The Research Questions

In sequence, the research problem is addressed and solved by achieving the research goal, and the research questions are informed by the goal. Consequently, the research questions developed in the context of the research problem and goal and informed by the literature review undertaken in Chapter Two are as follows:

Question

> In the context of service delivery agencies within the Western Australian Public Sector, can a positive information culture be *identified (I) developed (D)* and *applied (A)* to assist in achieving strategic outcomes and delivering services?

Sub Questions

- What typifies a positive information culture? *(I);*
- What are the identifiable components or elements of information culture? *(I);*

- What issues need to be addressed in order to influence and improve an information culture so that it assists in achieving outcomes and delivering services? *(D);* and
- What practical solutions could be implemented to influence and improve an information culture in a government agency? *(A)*

1.6.2 The Research Outcomes

Three outcomes for the study were derived from the sequence of the research problem leading to the research goal and thus the research questions. These three outcomes were:

- The body of knowledge was increased by the development of theoretical understandings related to information culture in the public sector;
- A practical outcome was achieved to assist public servants in developing a positive information culture to support strategic outcomes; and
- The researcher and practitioners were assisted in meta level learning in regard to the two previous outcomes and the research process.

1.7 Terminology

Throughout the thesis, Australian literary conventions were used. The exceptions to this occur with direct quotations when the idiom and spelling of the participant or the author were used. There are instances where terms are defined in the thesis to aid understanding. These definitions are also included in the Glossary which forms Appendix A.

1.8 Overview of the Thesis

The thesis comprises eight chapters each of which is described in the following sub sections. The sequence of the chapters and the structure of the content of each chapter reflect the research process undertaken by the researcher during the course of this study. This sequence and the research process are also reflected in the structure of the timeline as presented in Chapter Four.

1.8.1 Chapter One: Introduction to the Study

Chapter One introduces the thesis and its purpose. The significance of the study is highlighted with references to the research problem and the research questions which instigated the study. The chapter includes a discussion on the key elements

which motivated the study, namely the information economy, the Western Australian economy, and the public sector's contribution to these economies and other strategic endeavours which are linked to government as the largest producer and user of information.

1.8.2 Chapter Two: Literature Review

In this chapter contemporary and historical literature on topics related to the research problem and research goal were critically reviewed and analysed. The topics covered in this chapter include the identification and definition of information, information and knowledge management, information use, information in the Western Australian Public Sector, information culture and organisational culture. The popularity of evidence-based policy in the public sector and its relationship to information is explored. Through this review a working definition of *information culture* is posed together with reasoning on why the term 'information' was used to encapsulate the current use of information and knowledge in the Western Australian Public Sector.

1.8.3 Chapter Three: The Research Process

This chapter presents a comprehensive discussion of the research process undertaken to conduct this study together with the rationale behind the choice of the method and data gathering techniques. The first considerations of this chapter are the study domain, research problem, goal, questions and outcomes. These were then used to guide the selection of an appropriate research method and data gathering techniques. This is followed by a description of the data collection and data analysis processes. Finally the boundaries and limitations, researcher biases and the verification process are presented.

The case is presented for a qualitative study within the interpretivist paradigm utilising the case study and a selection of qualitative data collection techniques.

1.8.4 Chapter Four: The Research Design

Chapter Four builds on the justification of the method selected in Chapter Three. It describes the processes undertaken to collect and analyse the qualitative data which formed the foundation of the study. To illustrate the manner in which the analysis was undertaken, a specific example of the process is presented. A brief profile of the case study and participant groups who were the key source of the data is presented. This chapter begins with an overview of the stages used to gather and

analyse the data. It concludes with the ethical considerations and timeline of the study.

1.8.5 Chapter Five: The Identification of Information Culture

This chapter presents the discussions and findings in regard to the *identification* phase of the research. The presentation in this chapter is designed to address the research goal and the research outcomes through the research questions which focussed on the identification of an information culture's components and what typifies a positive information culture.

The resultant findings are critically compared with the literature on information culture and the related concepts. Common understandings and divergent findings which evolved from the comparison of the case study and the literature are documented.

1.8.6 Chapter Six: Developing a Positive Information Culture

Building on the findings in Chapter Five, this chapter considers the reflexive relationship between the *identification* and *development* phases which emerged from the data analysis. That is, the key attributes and elements that constitute an information culture which were identified in the first phase are now considered in developing or influencing the achievement of a positive information culture.

1.8.7 Chapter Seven: The Application of Information Culture

Two key aspects of applying a positive information culture are identified as a model of information culture in the context of the Western Australian Public Sector and a definition of information culture. Chapter Seven discusses the model in detail. The model which emerged from this study is compared with those used in previous studies into information culture. Additionally, this chapter considers a definition of information culture based on the issues which emerged from the data and the literature.

The information culture model and the proposed definition of information culture provide a foundation for discussions on the practical aspects of applying an information culture such as strategic planning and thinking, leadership, education and information use.

1.8.8 Chapter Eight: Conclusion

Chapter Eight provides an overview and review of the findings of this study. The thesis concludes with a review of the research problem, research goal and research outcomes and questions in the context of the findings and actual outcomes. It addresses the theoretical and practical implications of the study, the limitations of the study and the verification process. Opportunities for further research are presented.

Not only was this study a vehicle to learn more theoretically and practically about the central theme of information culture, it also presented more personal learning around the research process and the findings. The researcher reflects on her learning and on the outcomes of the research.

1.8.9 Appendix A: Glossary

In some instances more than one definition existed for the terms used in this study, and in some areas there is great debate and confusion surrounding definitions. Therefore, a Glossary was developed to guide the reader in understanding and appreciating the terms used. Where appropriate the terms are also explained and discussed in the relevant sections of this thesis.

1.8.10 Appendix B: Data Collection

Copies of the interview questions used in the four data collection stages of the research process are included here. Samples of the data supporting the key themes and categories which emerged from the analysis are presented in this appendix.

1.8.11 Appendix C: Chart of the Western Australian Government

This appendix presents a list of government agencies within the Western Australian Public Sector. During the course of this research the names and number of government agencies changed. The chart produced by the Public Sector Commission (2009) is representative of the agencies for the duration of the study. A list of service delivery agencies compiled by the researcher from this chart is also in this appendix.

1.9 Chapter One Summary

The Western Australian Public Sector, like other government jurisdictions generates, captures, stores and uses significantly large amounts of information. How it uses, manages, values and relates to information impacts on the ways in

which services and products are delivered to citizens. Those relationships developed with information in agencies, that is, agency information cultures, are the basis of this study.

This chapter provided an overview of the issues which were closely aligned to the Western Australian Public Sector's ability, at both a meta level and departmental level, to have a successful impact on its strategic environment through a positive information culture. Having established the key elements which prompted and were of significance to this study, the chapter then discussed the purpose of the study. The research problem and subsequent research goals and questions which instigated the study were addressed. The structure of the thesis was outlined.

The following chapter addresses the analysis of the literature relevant to this study.

2 Literature Review

2.1 Literature Review Introduction

This chapter focuses on the literature on information, information culture and related terms such as information orientation and information ecology. It also addresses the concept of information use and the dilemmas of definition associated with data, information and knowledge. The chapter begins with a general overview of the context of the study, the public sector, in particular, the Western Australian Public Sector. Topics discussed are the delivery of outcomes to the citizen, the relationship between these outcomes and the Western Australian economy and the information economy. The challenges and opportunities indicated by both economies that may be related to information and information culture are discussed. The *Global Knowledge Hub* and *A City of Ideas and Innovations* are presented *as* opportunities*.* Information management and e-government are addressed as challenges. The roles and responsibilities of the public sector in delivering outcomes are outlined. The final contextual issue is the rise in importance of evidence-based policy. In conclusion, organisational culture is described and defined in relation to this study.

2.2 The Western Australian Public Sector

Important to the rationale of this study is an understanding of the current environment in which the Western Australian Public Sector operates and in which the study was conducted. The key elements of the environment which are reviewed in this chapter are the Western Australian Government's strategic plan, the current robust Western Australian economy based on a booming resources sector, and the need to build for innovative, competitive and sustainable contributions to the old industrial economy and the new information economy. Concomitant to this is a discussion of the roles and responsibilities of members of the Western Australian Public Sector which have the potential to benefit from or influence information culture. The key challenges described herein are the basic tenets of public servants and evidence-based policy development and implementation. These are raised and discussed in the context of the government as a significant generator and user of information.

2.2.1 The Delivery of Outcomes to the Citizens of Western Australia

The Western Australian Government's strategic plan *Better planning: Better futures* (DPC, 2003) identifies five key goals for the public sector, namely:

- Better services;
- Jobs and economic development;
- Lifestyle and the environment;
- Regional development; and
- Governance and public sector improvement.

The plan provides the Government with a clear focus and strategic direction for operating in the current social and economic environment. It acknowledges the complex environment in which the public sector has to operate in delivering outcomes on behalf of the Government. It provides a framework for management in the public sector and for planning for the challenges of delivering outcomes to the citizens of Western Australia (DPC, 2003, p. i).

Government agencies are required to:

- Continuously align their outcomes and services with all relevant goals and strategic outcomes specified in [the strategic plan]; and
- Apply [the strategic plan] as a framework for their strategic management activities including: strategic planning, budgeting, service delivery, ongoing performance monitoring, evaluation, corrective/improvement action and reporting. (DPC, 2007, p. 1)

To assist government agencies in aligning with and contributing to the Government's strategic goals, the Department of the Premier and Cabinet (2007, p. 2) produced a set of guidelines. As these guidelines highlight, in addition to aligning with the strategic plan, government agencies needed to be mindful of additional policy directives and legislation including:

- The Public Sector Management Act 1994;
- The Financial Management Act 2006;
- The agency's constituent legislation;
- Outcome based management;
- The principles identified in the Machinery of Government Report (2001); and
- Relevant Premier's Circulars.

There are relationships between some of these policy directives and legislative requirements and the rationale for this study. As highlighted, some of the relationships are:

- The Public Sector Management Act 1994, in part, requires Chief Executive Officers to "plan for and undertake financial, **information** and other management";
- The Financial Management Act 2006 requires that agencies account for the management of their resources including financial and human resources, physical assets, **information systems** and **intellectual property** and **corporate knowledge**;
- Outcome based management requires **reporting** structures, **evaluation** and improved **performance information**; and
- Linking this all together are the recommendations of the Machinery of Government Report (2001) that government agencies work collaboratively, achieve shared outcomes and address joined-up government. (DPC, 2007, pp. 3-5)

Having outlined here the "framework for the [strategic] management of the public sector, its people and resources in achieving the long-term goals of government" (DPC, 2007, p. 3) and initiated links between an information culture and strategic management and outcomes, the next section addresses the challenges facing Government in Western Australia. It also demonstrates the links between meeting the strategic challenges and information culture.

2.2.2 Strategic Outcomes and the Western Australian Economy

Even though the world experienced financial dilemmas and other global uncertainties, during 2007 the Western Australian Economy grew by 9.7per cent and contributed twenty percent of the growth in the national economy (Nicolaou, 2008, p. 5). In 2007 Western Australia had a $136 million economy and unemployment was 2.7per cent which was the State's lowest rate for thirty years (Carpenter, 2007, p. 2). The population is rapidly rising, consumer sentiment is high and real estate and housing are in high demand. The economic expansion Western Australia is experiencing is due to a booming resources sector. The then Western Australian Treasurer, Eric Ripper, highlighted the extent of this prosperity when he said, "This may be the greatest mining boom we have ever seen. It's trickling right through the economy" (Daley, 2006, para. 12).

According to the State's then Premier, Alan Carpenter (2006) Western Australia's boom times are not without challenges or complexities and the future growth and prosperity of the State depends on how well these challenges are met. The Government needs to make decisions for tomorrow not just today.

The need to meet the challenges of a diversified economy and build on the boom conditions is a theme that is raised in a variety of quarters. As the following examples illustrate, there is also the common thread to diversification founded on making better use of information.

2.2.3 The Information Economy

The value and importance of the State's resources sector to the State's economy, notwithstanding, the Western Australian Government had recognised the need to build a diversified and robust economy on a variety of industries. In order to do this a number of new and emerging industries and opportunities were identified. Of interest to this study was the focus on the knowledge-intensive service industries, the information and communication technology industry and the potential for developing a focus on science and innovation (Carpenter, 2006, 2007; Department of Industry and Resources [DOIR], 2007; TIAC, 2008). For example, DOIR (2007) stated:

> The Government also recognises that while the resource and primary industries will continue to play a dominant role in the Western Australian economy well into the future, the challenge is to build a more diversified economy with growing capabilities in areas that will thrive in the global economy. (p. 2)

2.2.4 Global Knowledge Hub

Supporting this need to build on the boom economy and plan for the future, in February 2008 TIAC recommended that the Government build a "Global Knowledge Hub." The development of such an entity would require the Government to invest in infrastructure, relationship building and policy development. Directly and indirectly this would involve an investment in sound information and knowledge (TIAC, 2008).

2.2.5 A City of Ideas and Innovation

The population of the city of Perth has grown from 5,200 in 1994 to 12,500 in 2006. The Government is planning on that figure doubling in the next ten to fifteen years

and introducing 50,000 new jobs (MacTiernan, 2008, p. 17). However, as the then Minister for Planning and Infrastructure, Alannah MacTiernan (2008, p. 25), said of Perth's ability to be a city for the old and the new economies, "If we are to be a city where ideas are born – where ideas can grow – we need to be able to attract and retain the people that can deliver the critical skills, specialisations and entrepreneurial skills."

The resources boom has led to a greater understanding of the need for greater diversity in the planning of the city for economic stability in both the new and old economies. The city of Perth needs to "create fertile ground for the emergence of new science and technology" and planning for Perth needs to recognise that comparative advantage for the new economy is gained from "knowledge and the creativity of its people" (MacTiernan, 2008, pp. 6-7).

From the perspective of this study, the call to participate in the information or new economy through such endeavours as new approaches to knowledge creation, planning cities for innovation, or encouraging the emergence of new science and technology, also requires a recognition and improvement of the values, attitudes, beliefs and behaviours towards information. That is, the need for a robust information culture at the meta level of the public sector as well as at an individual agency level.

2.2.6 Information Management

The continuation of the resources boom is putting pressure of another kind on the public sector, a pressure related to the need for sound information management. For example, DOIR is experiencing unprecedented demand on processing mineral title applications, mineral exploration reports and improving online information delivery systems. In addition, DOIR has invested in a number of partnerships to develop projects to promote greater knowledge of the State's resource potential. Other government departments are under similar pressures to deliver services. These demands are further compounded by the labour and skills shortage being experienced across the public sector and the State in general (DOIR, 2007, p. 2).

2.2.7 e- Government

The Western Australian Office of e-Government identified that it was imperative that the Government responded to the effects of the resources boom by reassessing its capability to respond to the expanding and increasing service delivery demands of

citizens and business (OeG, 2008, p. 2). Building on this imperative, the OeG's Business Plan for 2008-2009 (2008, p. 3), states that in order to meet these expanding demands there must be fundamental changes in the business processes of government agencies. Furthermore, states the OeG, to achieve these process improvements changes in governances and leadership, culture, service delivery and technology are necessary.

In the context of this study, there was a further level of change that was required. In addition to change at the meta level of the public sector, a fundamental change at an individual agency level was also needed. That is, a fundamental improvement in the values, attitudes, beliefs and behaviours towards information. Sharing infrastructure, business process re-engineering, improved information management practices and access to information are itemised as important to improving the service quality and service efficiency of electronic service delivery (OeG, 2008, p. 5-6).

Without a positive information culture across government and within government agencies, it would be difficult to foster and sustain the investments, practices and infrastructure needed to deliver the e-Government objectives of the Western Australian Government. If agencies do not understand and appreciate the value of information as a linchpin of government services, then achieving outcomes, delivering quality services and developing sound policy will be compromised.

2.3 Achieving Strategic Outcomes

Within the public sector there are a number of challenges which can be linked to the need for a robust information culture at both the agency and whole-of-government level. Two of these are discussed in detail here, namely key responsibilities of the public sector and the trend towards using evidence-based policy for strategic outcomes.

2.3.1 Key Responsibilities of the Public Sector

Stanley (2000) describes the three basic tenets or responsibilities of public servants as:

- Providing frank and fearless advice to Ministers;
- Assisting Ministers in promoting, explaining and defending public policy; and
- Implementing government policy.

These three responsibilities are not creations of the twenty-first century. Rather they grew out of the Northcote-Trevalyan report of 1853 which helped to shape the modern public service. While the public service and the Westminster System in Australia have undergone waves of reform, in the main, these responsibilities are still part of today's public service.

This triumvirate of duties can be viewed as the cornerstones of the ways in which public servants deliver strategic outcomes for the Government, Ministers and the citizenry. While the strategic outcomes delivered to the recipient groups might vary in their final form as products and services, these tenets are at their foundation. For example, providing scientific and practitioner advice on the impact of climate change on agriculture, facilitating changes to electoral boundaries, preserving cultural and environmental sites and providing community services are all examples of service delivery. All can be argued as falling within the gamut of the three basic responsibilities. To deliver any of the outcomes and the services which evolve from them involves discharging all or some of these three tenets.

There is another thread common to these public service responsibilities. That is, all three have at their core the need for or use of information in some form or other. It could be information as an entity such as evidence, conversation, anecdotes, corporate intelligence or statistics. It could be information as a process such as sharing, learning, creating or adding value.

To provide frank and fearless advice the bureaucracy needs to create, have and use the best information; the full history, fact not fiction. What is provided to the government and to the citizen needs to be based on robust information in full recognition of any relevant legislative framework. Being frank and fearless means being practical and sensible, and able to meet the changing environment. Central to this is the information on which advice is based. Public servants also need to be agile and flexible with access to information and the ability and capacity to use it when the environment changes. When the political masters read the situation, interpret the views or mood of the citizens and make a decision, public servants need to be armed and able to change to meet the new environment without losing the frank and fearless, the practical and the sensible.

Similarly when assisting Ministers in promoting, explaining and defending public policy and implementing government policy, there is a need for robust factual information and agility in using that information to support public policy. This is not

about manipulation. This is about being accountable, responsible and responsive and having confidence in the basis of the decision-making process that led to the policy. It is about having a firm information foundation. When it comes to implementing government policy, documenting the process, gathering and recording the lessons learned, adding value for future application and using information as history and for history, are key information actions; the past, present and future of government policy. In so doing public servants are reducing the possibility of leaving themselves open to criticism, error and improper interpretation. They are increasing their accountability and credibility.

To discharge the three key responsibilities well and to, in turn, deliver the appropriate outcomes, there is the need to take the view of information to the level of strategic endeavour using information in all its guises. It needs to move beyond the operational process and custodial roles of information as embodied in information systems, libraries and records management.

From an interpretation of Stanley's (2000) three key duties or responsibilities as a form of strategic endeavour underpinned by an information foundation, some practical and pragmatic views of the value of information in strategic management begin to emerge. For example, information is a basis for:

- Enabling departments to operate;
- Supporting departments in delivering services and products;
- Supporting sound decision-making;
- Supporting strategic performance and achievement;
- Providing evidence of actions and the reasons for such actions;
- Informing and advising Government and Ministers; and
- Informing the citizenry.

Information and information management are as important to government departments as are sound financial and human resources management and infrastructure. However, the strategic and wider value of information can be overlooked or underestimated. For example, job descriptions for senior managers in the public service and competency frameworks refer to the need to manage finance, human resources, information technology and information. When we examine the ways in which public servants are assisted and guided in managing these, we see an emphasis on the finance and human resources and often large amounts of money and effort going into information technology. There is relatively little

emphasis on the entity or process of information. An indicative example of the strategic importance given to the finance and human resources and the operational focus given to information is found in the Corporate Governance Guidelines for Western Australian Public Sector CEOs (Ministry of the Premier & Cabinet [MPC], 1999). In part this provides advice to senior public servants on managing information in the context of accountability and responsibility. This advice is principally at an operational level, and narrowly focused on a portion or format of information, namely public records and to some extent data in systems. Under the heading *Information Resources*, the Guidelines (MPC, 1999, p. 12) describe the senior managers' responsibilities as relating to:

- Retention and disposal schedules;
- Storage of records;
- Backup copies of data files; and
- Legal deposit.

This reflects a one-dimensional or single concept of information. There are higher order responsibilities that need to be encouraged. At the very least, senior managers need to appreciate the possible strategic impacts that accrue from these operational processes and the information culture that must underpin the strategic use of information.

Low level, narrow approaches to information and its role militate against the possibility of capitalising on the breadth and depth of information and the many concepts, hierarchies and contexts of information to support the achievement of strategic outcomes. For example, these approaches cover information as a commodity along with the concept of an information production chain (Braman, 1987, p. 237), how to measure or capture "information-as-thing" or knowledge, opinions and belief (Buckland, 1999, p. 351), or information in the context of the community being served (Madden, 2000, p. 347).

None of this is to say that we should not be focusing on the management of money, people and technology, that this is not strategic or important. It is, and so is the strategic management of information. Bringing the same rigour and focus to information, making it part of our organisational culture and creating an information culture that is integral to strategic outcomes can be beneficial to government agencies.

The Department of the Premier and Cabinet (2006) released a Leadership Development Strategy which included a series of five individual leadership development profiles. As the website states:

> It reflects the strategic workforce priorities and leadership skills needed in a modern professional public sector. It also identifies the essential capabilities required for those in Level 7 to Class 4 classifications and emphasises the attributes and behaviours a contemporary leader needs to be successful released.

The profiles refer to such attributes and behaviours as:

- [A]dvice to government that reflects **analysis**;
- Draws on **information** … and monitors **information channels;**
- Addresses any **critical information** public sector issues;
- Capitalises on **innovation;**
- Facilitates **information** accessibility and sharing;
- Strives for continual **learning;**
- Applies intellect and **knowledge**;
- [P]rovide a rich **intelligence** network;
- Draws on **knowledge** of key stakeholders;
- Promotes **information exchange;**
- Work effectively when all of the **information** is not available;
- Gathers and investigates **information** from a variety of sources;
- Translates **information** for others;
- [**H]arnessing** technology; and
- Drives a culture of **achievement**.

These and other attributes and behaviours in the profiles reflect to varying degrees the values, attitudes, beliefs and behaviours towards information and the ways in which leaders should generate, collect, organise, distribute and use information which would be evidence of a positive information culture. They are also evidence of a need to use information as an entity and to engage in information as a process. The strategy and attached profiles recognise the role and value of information in "a modern professional public service" (DPC, 2006). While the examples of information-related behaviours and attitudes in this Leadership Development Strategy (DPC, 2006) are broader in their intent and application than those

articulated in the Corporate Governance Guidelines (MPC, 1999) both are focused on individual traits rather than organisational traits in relation to information.

Williamson (1997, p. 347) asserts that there are links between the individual's values, attitudes and beliefs and those of the organisation, and that there is a transfer from one to the other and that the transfer is iterative. So in the context of using an information culture to bolster strategic outcomes, the question remains as to how we can best develop and use these traits at an individual and organisational level. That is, how do we build a positive information culture?

Mulgan (2003, p. 4) listed nine different types of knowledge or information which were required to assist public servants in carrying out their duties. These included:

- Statistical knowledge;
- Policy knowledge;
- Economic knowledge; and
- Public Opinion.

In describing the current state and importance of these types of knowledge to the work of public servants Mulgan (2003) states:

> In many governments, the ability of civil servants to be intelligent users and customers … has fallen behind. The sheer pace of change and the need to make full use of the knowledge … has also put a premium on different ways of organising knowledge. (p. 4)

During a presentation to the Australian Strategic Policy institute, the then Australian Public Service Commissioner, Lynelle Briggs (2005) offered another perspective on the diversity of information and the actions, attitudes and beliefs that public servants would need in making the best use of information. In the context of strategic thinking, she said in part, that someone who harnesses information and opportunities would:

- Seek to acquire knowledge, and is open to new information and different perspectives including across boundaries;
- Value finding out about Australian and global best practice (public and private sector) and consider the workings of the organisation within this context;

- Demonstrate business acumen by thoroughly researching the market that the organisation operates in (and opportunities offered and constraints imposed) to yield greater efficiencies and improve quality of service; and
- Keep abreast of major technological changes and their impacts. (Focus Strategically, para. 2)

As policymakers are making decisions about the "shape of society as a whole, not just simply to guide individual transactions" (Braman, 1989, p. 242), the way in which that complexity of information is valued and attitudes, beliefs and behaviours associated with it comes to the fore.

These examples of the multifaceted and multidimensional nature of information and the range of opportunities that present for the application and creation of information demonstrate the strategic value of information. They also highlight the need to elevate the relationship that the public service has with information beyond that of operational process and custody. Process and custody are important as a means to an end. They are not the end result.

How government departments view information, the beliefs, values, attitudes and behaviours towards information, and the ways in which they generate, collect, organise, distribute and use information reflects the information culture present in each department. An information culture can have an impact on the ways in which, and the success with which, government departments achieve outcomes and deliver services to the citizen.

2.3.2 Evidence-based Policy

Evidence-based policy is growing in popularity across the public sector. Academics debate its relevance and courses in public sector management address it. As information in a variety of formats is at the core of evidence-based policy, and as it is used more and more in the Western Australian Public Sector, this section addresses key elements of evidence-based policy.

Over ten years ago the Labour Government in the United Kingdom (UK) introduced the concept of evidence-based policy. The white paper *Modernising Government,* (Cabinet Office, 1999a) stated the Government's intention to make better use of evidence in policy development as the following extract demonstrates:

> This Government expects more of policy makers. More new ideas, more willingness to question inherited ways of doing things, better use of evidence

> and research in policy making and better focus on policies that will deliver long term goals. (p. 16)

Tony Blair, as the then UK Prime Minister, clearly articulated his vision for policy development and implementation based on evidence (Carson, 2003, p. 1). As Oakley (2000) and Davies, Nutley and Smith (2000) remind us, Blair's proposal to use evidence-based policy was not a new concept. It had been a practice long in use. According to Solesbury (2002, p. 96) while there was new commitment to evidence-based policy which gave "a fresh urgency and a new twist to the issues", it was not about the ascendancy of social science but rather, "the shift in the nature of politics; the retreat from ideology, the dissolutions of classed-based party politics, the empowerment of consumers."

On the other hand Campbell (2003, p. 89) saw that the trend towards evidence-based policy came from "the risk society" that is questioning the role of expertise and science as well as demanding that governments pay due attention to, not only basing their decisions on more rigorous evidence, but also to the good management of that evidence.

Kevin Rudd set the scene for evidence-based policy making in Australia, when in November 2007, as the then Leader of the Opposition he said in an interview with Tony Jones (2007):

> I'm a Labor modernizer. Always have been, always will be and what that's on about is good evidence-based policy in terms of producing the best outcomes for this nation, carving out its future in a pretty uncertain century where things fundamentally are changing. (para. 38)

Further emphasising his commitment to evidence-based policy, Prime Minister Rudd, (2008, The Government's Agenda for the APS, para.1), in addressing the Federal Senior Executive Service, listed seven elements of the Government's vision for the future Australian public service. Element number three was "Developing evidence-based policy making processes as part of a robust culture of policy contestability." In support of this approach Prime Minster Rudd (2008, Evidence Based Policy, para. 2) said, "Policy design and policy evaluation should be driven by analysis of all the available options, and not by ideology.…We're interested in facts, not fads.…Policy innovations and evidence-based policy making is at the heart of being a reformist government."

The use of evidence-based policy is not confined to the Federal level of government. In Western Australia, there are a number of examples of evidence-based policy in practice at the State Government level including crime prevention, women's policy development, education, mental health and spatial information.

Scholars and practitioners have differing views on, not only the value and practice of evidence-based policy, but also its meaning (Head, 2008; Marston & Watts, 2003; Parsons, 2002; Sanderson, 2002). Moreover, Marston and Watts (2003, p. 114) state that it is difficult to get any clarity or agreement on the meaning of evidence-based policy as it is usually viewed as self-explanatory. Young, Ashby, Boaz and Grayson (2002, p. 215) propose that evidence-based policy revolves around two related assumptions, namely "referring to the way in which policy is made" and "the evidential nature of social science itself." According to Davies (1999, p. 109) evidence-based policy can be considered in terms of integrating experience and expertise with the best available sound evidence from systematic research. It is about seeking to provide practical relevance to policy making, and ensuring quality evidence is available for future research.

Marston and Watts (2003, p. 145) reinforce that there is nothing particularly novel or controversial about the idea that policy should be based on evidence, and highlight that a chief point of contention is what can properly count as evidence in policy making. For example, the UK Cabinet Office (1999b, p. 33) describes evidence as "Expert knowledge; published research, existing research; stakeholder consultations; previous policy evaluations; the Internet; outcomes from consultations; costings of policy options; output from economic and statistical modeling."

Regardless of the preferred definition of evidence-based policy or evidence itself, there is an element common to evidence-based policy, and that is information. There is a relationship between research, information, policy and practice, even if these relationships are "loose, shifting and contingent" (Nutley, Davies & Walter, 2002, p. 9). Emphasising the foundational role of information, the UK Cabinet Office's (1999b) report *Professional policy making for the twenty-first century* by the Strategic Policy Making Team said:

> The raw ingredient of evidence is information. Good quality policy making depends on high quality information, derived from a variety of sources - expert knowledge; existing domestic and international research; existing statistics; stakeholder consultation; evaluation of previous policies; new research, if

> appropriate; or secondary sources, including the internet. Evidence can also include analysis of the outcome of consultation, costings of policy options and the results of economic or statistical modeling. (p. 33)

Complementing this, the Comptroller and Auditor General (2001, p. 34) stated that reliable and comprehensive information is essential in determining the need for a new policy or a change of policy, and ensuring that such decisions are more evidence-based. Underscoring the importance of information to evidence in the Australian context, the Prime Minister, Kevin Rudd (2008, Reinvigorating the Westminster Traditions of Independence and Continuity, para. 3) said in an address to the heads of Federal agencies that "the Government must receive the best advice, based on the best available information and evidence."

While issues of the acquisition and production of information as evidence, and what actually constitutes evidence may be the subject of ongoing debate (Carson 2003, p. 8; Oakley, 2002, p. 26-27), the majority of scholars and practitioners engaged in this debate do recognise the link between information and evidence (Cabinet Office 1999b; Comptroller & Auditor General, 2001; Head, 2008; Nutley et al., 2002; Solesbury, 2002; Wyatt, 2002; Young et al., 2002). The Economic and Social Research Council UK Centre for Evidence-based Policy and Practice (2006) states on its Evidence Network site that, "One of the defining features of the EBPP [Evidence-based Policy and Practice] movement is its emphasis on the effective use of information resources."

A review of the information types which underpin the evidence used in policy making reveals that information comes in formats traditionally and not traditionally associated with information management (Cabinet Office 1999b, p. 3). To some extent this diversity of form and format is due to the complex and interdependent nature of the problems and issues that need to be addressed by governments, and the interplay of networks that come to the fore with the more collaborative approaches to government. Complex issues and contexts and cross-cutting policy areas require a comprehensive, cross-cutting and eclectic information base that can match different perspectives that need to be addressed in today's policy environment (Agranoff & McGuire, 2003; Cabinet Office, 1999b, p. 37; Head, 2008, p. 4).

Examples of the traditional and non-traditional types of information needed to underpin the evidence used in today's complexity of policy development and delivery are:

- Process loops, community engagement, multi stakeholder consultation and partnering across the stakeholder sector (Head, 2008, p. 3);
- Performance indicators and business trends (Head, 2008, p. 2);
- Secondary analysis and systematic reviews of existing data and research findings (Solesbury, 2001, p. 5);
- Journals, books, official publications and reports and contextual information (Grayson & Gomersall 2003, p. 31); and
- Political know-how, scientific and technical analysis and professional expertise (Head, 2008, p. 4; Solesbury, 2001, p. 8).

Even though evidence-based policy is not a contemporary concept, some issues related to ensuring a quality information environment have not yet been resolved. The areas in need of attention include researcher skills, information management, the information base and information systems development. The following illustrates these areas of concerns.

2.3.2.1 Researchers

Researchers need the requisite skills to be proactive in scanning for new, relevant research whether it is in published literature, databases and web sites or gathered from forums and personal contacts. They also need to have the skills to critically analyse the information presented to them regardless of format (Davies, 2004, p. 16; Gray, 2001, p. 111-112; Nutley et al., 2002). Emphasising the importance of these skills is the advice given by Grayson and Gomersall (2003):

> Researchers - especially those engaged in review activity - need to be empowered through initial information skills training, continuing professional development, and the ad hoc advice and support of information experts if they are to produce work of the highest quality for policy making and practice. (p. 33)

2.3.2.2 Managing Information

The need to critically address the ways in which information is captured, stored and accessed has been highlighted by researchers (Gray 2001, pp. 106, 112; Head, 2008, p. 2; Sandars & Heller, 2006, pp. 342-343; Solesbury 2001, p. 8; Young et al., 2002, pp. 221-222). Nutley et al. (2002, pp. 4-9, 12) advise that government agencies need to develop a more strategic approach to the creation and

accumulation of information and knowledge as well as making more effort to share information and disseminate results.

The report *Professional Policy Making for the Twenty-First Century* (Cabinet Office, 1999b, p. 37) states that there are a number of constraints to accessing evidence-based advice. These constraints include the volume of information and the risk of information overload. The report then advises that to ensure that policy is soundly based on evidence it is necessary to improve government departments' capacity to make the best possible use of evidence and access to evidence.

2.3.2.3 Improving the Information Base

Gray (2001, pp. 102-108) asserts that in some areas there is an absence of high quality relevant research, published literature is incomplete and electronic databases have limitations. According to Bell (2004, pp. 26-27) government agencies need to address their process for information gathering and subsequently for their learning processes. Bell says that, "Information sharing, surveys, community meetings, focus groups, organised debates, web-based discussion forums, advisory committees, parliamentary committees, commissions, task forces, etc. are all extant institutional mechanisms which could be expanded."

2.3.2.4 Information Systems

Researchers have also called for improvements in information systems, including management information systems, decision support and knowledge management systems and organisation learning systems and approaches. (Head, 2006; Parsons, 2002, pp. 50-53). Solesbury (2001, p. 6) stated, "Sophisticated information systems are part of this but equally important is the organisational culture – the willingness to share information, to be open to external influence and to be ready to learn from experience."

In summary, from the analysis and review of the situation surrounding evidence-based policy making in the public sector reported herein, it has been determined that this is a practice that is relevant to, and of growing importance to, both the Australian and Western Australian Governments. There is increasing pressure on government departments and their public servants to practice evidence-based policy development and implementation.

This popularity has increased even though academics and practitioners are still debating the definition and description of evidence-based policy. The rise in its use

has been variously attributed to a focus on risk management, the changes in the nature of politics and the diminishing role of ideology (Campbell, 2003, p. 89; Solesbury, 2002, p. 99).

Whatever stimulated the resurgence of evidence-based policy, and regardless of how it is practiced, “the raw ingredient of evidence is information” (Cabinet Office, 1999b, p. 33). The quality of that information, how it is valued, used and disseminated is central to the quality of policy development and implementation in government. Even though evidence-based policy making is over a decade old, issues still need to be addressed to ensure a quality information environment for evidence-based policy. The areas in need of attention include researcher skills, information management, the information base and information systems development.

Generating, managing and providing access to information is fundamental to government. Public sector agencies have invested in information and knowledge management systems, employed information professionals and subject area experts and provided professional training and development programs, and still there has been the call to improve the information base available to policy makers.

2.4 Defining Information

Definitions of information abound, and researchers and practitioners from different fields have been grappling with the meaning of information for many years. For example, definitions have come from, and are applied to, the information sciences (Buckland, 1999; Dretske, 1981; Orna, 1990), economics (Arrow, 1984), systems thinking (Checkland & Holwell, 1998b), mathematics (Shannon & Weaver, 1949) and communications (Machlup, 1983). Each definition has a specific and valid meaning in the context of the particular discipline. Madden (2000, p. 343) notes a reluctance in some disciplines to define information. On the other hand Losee (1997) says that this lack of an agreed definition may have arisen because definitions of information are usually specific to a discipline or a context. In some cases, definitions of information have been developed to encompass more than one discipline or phenomenon of interest. These more general definitions of information allow for more dialogue and the development of frameworks that cross boundaries (Losee, 1997, p. 254). Karim (2004, p. 357) offers another perspective by taking the problem of definition to an organisational level, saying that definitions differ because organisations perceive and process information differently. The burgeoning of

information technology has created another problem with defining information today. Davenport (2000, p. 5) says “Information technology outshines information itself in the world.”

There is a breadth and diversity of definitions of information. This is borne out in the following definitions. Davenport and Prusak (2000, p. 3) define information as “a message, usually in the form of a document or an audible or visible communication.” Orna (1999, p. 8) says that information “is what human beings transform knowledge into when they want to communicate it to other people.” Oppenheim, Stenson and Wilson (2003a, p. 159) claim that information is “an entity which has identifiable and communicable attributes.” All of these definitions have emerged from the field of information science, the domain most closely associated with this study. They exemplify the diversity of definitions from just one discipline.

The above definitions notwithstanding, Madden (2000, p. 344) claims that there has been a reluctance in the information sciences to define information. The preference is to talk in terms of concepts. McCreadie and Rice (1999) propose some concepts of information as being a representation of knowledge, data in the environment, a resource or commodity and part of the communication process. Instead of applying a definition or using concepts Buckland (1999, p. 351) discusses information from the standpoint of three principle uses of information as process, as knowledge and as thing. Further, Buckland (1999, p. 351) says that this type of approach assists in widening information beyond the communication debate and challenges the idea that information is merely the system of storage and retrieval. Comparing these delineating approaches of concepts and principles of uses with that of definition, the potential for more diversity of application and a more suitable or appropriate match with context and purpose is enhanced. The focus and the debate are moved from meaning to intent and benefit and from theoretical to practical.

Losee (1997) advocates the creation and use of a discipline free definition of information. In contrast to this approach Braman (1989) and Kirk (1999) make a case for a hierarchical approach to the set and subset, or facets of information. The premise of such an approach allows for the context, in which information is used, and the scope and complexity of information (Braman, 1989, p. 233). In addition, they present a broad base upon which to relate information to use in organisations and to reflect the nature of organisations in which the information is found, created and used (Kirk, 1999).

Information is an “ambiguous” and multifaceted concept (Buckland, 1999, p. 351). Definitions such as those cited herein do not capture the essence and the breadth of information in the Western Australian Public Sector. In addition, they spawn debate over what is information and what is knowledge, and by extension, what is data. A focus on semantics, as opposed to purpose and application, is evident. In the context of this study, government information needs to be seen holistically and completely if government is truly to be understood as the most significant generator and user of information in Western Australia. The benefit and purpose of information in context needs to be acknowledged and leveraged. Information in the realms of this study is more than technology, libraries and records systems. It is more than a resource or an element of communication or a format. It is all of these and more. Hence the preference in this study is to view information from the perspective of concept and principles of use, and in the context of hierarchies rather than prescribing a definition of information.

Shenton (2004, p. 368) says it is crucial to define information when undertaking a project on information behaviour. Furthermore, Shenton attributes this necessity to the multiplicity of concepts that exist. The researcher supports the view of a lack of definition of information and acknowledges that there are a large number of concepts related to information. McCreadie and Rice (1999) and Levitan (1980) have identified over 30 concepts between them. As information behaviour is at an individual level and information culture is at an organisational level, it may be prudent to adhere to Shenton’s advice (2004). However, to propose to develop a definition of information for the purposes of this study is to overlook the complexity of the Western Australian Public Sector, the individual agencies, the relationship with the citizens requiring information and services, and the diversity of information itself. The definition may need to be so broad as to be meaningless, or so large as to be cumbersome.

For this study, an understanding and agreement on information concepts and hierarchies may be more beneficial, and this may vary from situation to situation as information is related to, and reflective of, the organisation and its environment. Appropriate to a holistic systems approach is the idea of allowing these concepts and hierarchies to emerge from the data and be refined through an iterative research process. Shenton (2004) does offer advice on the appropriate stages at which to define information for a study or project about information behaviour, and

these can be selectively applied to the when, what and how of information concepts and hierarchies in an information culture study such as this.

2.5 Data, Information and Knowledge

The popularity of knowledge management during the mid to late 1990s gave rise to debates over the differences, if any, between data, information and knowledge. Involved in this debate is the transformation process that takes place between the three entities.

Allee (1997), Choo (n.d.), Davenport (1995) and Nonaka and Takeuchi (1995) provide four examples of the differing but similar definitions of data, information and knowledge. All refer to a transformation process that exists between the three entities. Corresponding definitions of information and knowledge management also abound (Davenport & Cronin, 2000; Orna 1999; Todd & Southon, 2001; Wilson, 2002).

Information and knowledge are different and complementary resources that are collected and managed by organisations. While opinions may differ on the definitions of information and knowledge and the management of these, both information and knowledge are valuable and necessary to an organisation and the appropriate use and management of them is paramount. Nonaka and Takeuchi (1995, pp. 57-58) say that knowledge and information are both about meaning in that each of them is context-specific and relational. Therefore they are similar in some ways. However, knowledge and information are also different. Information is more factual; knowledge is about beliefs and commitment.

Misunderstandings, debates and ambiguities can and do arise from not only the definitions of information and knowledge and their management, but also from their use in theory and practice. Therefore, to minimise the potential for debates and misunderstandings to deflect this study, “information” and “information management” are the preferred terms used in this study.

Raising information to the level of concept and viewing information as multidimensional makes the arguments about the differences, relationships and transformation processes between data, information and knowledge superfluous for the context of this study. Regarding information in terms of concepts, purposes and hierarchies enables flexibility and accommodates complexity (Braman, 1989, p. 235). It also accommodates all three terms and the relationships between them.

2.6 Information Culture

Central to this study is the scope, definition, intent and context of information culture. A review of the literature to date has revealed that while the term has been, and is in use, it has not always been well-defined and no one definition has wide acknowledgement or acceptance. There is a paucity of research into information culture, particularly in respect the public sector. This is demonstrated in this section, as are the ways in which the various elements which are identified as comprising information culture also differ. Terms and concepts similar to information culture such as information orientation and information ecology have been identified. These terms will also be addressed in this section.

2.6.1 Information Culture Defined and Described

Information culture is a term and a concept that is variously used in the literature. It has been used in reference to, or in association with literacy (Ponjuan, 2002; Ramirez, 2002), society (Bellows, 1991; Chepaitis, 1997) and information technology (Hauschild, Licht & Stein, 2001; Khan & Azmi, 2005). However, the focus of this study is on a more holistic view of information culture in the context of organisations. In the light of the paucity of research into information culture in this context, and in particular in the public sector, and the divergent views on the subject, this section will firstly provide an overview of the key research uncovered. It then provides an analysis and a comparative narrative of this research.

Marchand (1996, p. 14) defines information culture as “the values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information.” According to Marchand (1996, p. 14) information culture is one of the critical elements of a company’s change management program. Marchand also says that it is no longer relevant to view information culture merely as part of organisational culture.

Four types of information cultures are identified by Marchand (1996, p.15) as:

- Functional culture: managers use information as a means of exercising influence or power over others;
- Sharing culture: managers and employees trust each other to use information (especially about problems and failures) to improve their performance;

- Inquiring culture: managers and employees search for information to better understand the future and ways of changing what they do to align themselves with future trends/directions; and
- Discovery culture: managers and employees are open to new insights about crisis and radical changes and seek ways to create competitive discontinuities.

Marchand (1996, p. 15) explains the importance of aligning information culture with business strategies as a critical element in achieving competitive advantage.

Davenport (1997, p. 4) introduces the idea of an information ecology which he says is an organisation's information environment, including its information culture, its behaviours and work process, information politics and technology. In the context of information ecology, Davenport (1997, p. 84) defines information culture as "the patterns of behaviours and attitudes that express an organisation's orientation towards information."

Both Davenport (1997) and Marchand (1996) base their arguments for better information cultures, in part, on the fact that in all companies, at least a proportion of their value lies in their knowledge and a percentage of their work force is made up of knowledge or information workers.

Similar to Marchand (1996), Davenport (1997, p. 84) typifies information cultures. He distinguishes them as:

- Open or closed;
- Factually oriented or rumour and intuition-based;
- Internally or externally focused;
- Controlling or empowering; and
- Having preferences for information channels or media.

In 2003 Curry and Moore reported on a study undertaken for the Scottish National Health Service on the importance of accessible information. At the outset of their study Curry and Moore (2003, p. 91) outlined the following requirements for access to information in the Health Service. These can be readily translated into the Western Australian Public Sector-wide context, namely:

- The public (citizens) need and want information on services – availability, standards, initiatives, performance;

- The sector (as individual agencies or collectively) needs information in order to develop effective services, to monitor performance, to meet needs; and
- The sector needs to be able to share information across and within the sector and with external bodies.

Curry and Moore (2003) acknowledge that there is not a consensus definition for information culture and offer their own as:

> A culture in which the value and utility of information in achieving operational and strategic success is recognised where information forms the basic organisational decision making and information technology is readily exploited as an enabler for effective Information Systems. (p. 94)

As part of their study Curry and Moore (2003) propose a conceptual model of the evolution of information culture. It has six elements:

- Communication flows;
- Cross-organisation partnerships;
- Internal environment;
- Information management;
- Processes and procedures; and
- Leadership.

Similar to Davenport (1997), Curry and Moore (2003) assert that more than a technological infrastructure is needed to achieve access to, and appropriate use of information. An information culture that encourages good information management and actively supports people using information and developing good information practices is required.

In addition, Curry and Moore (2003) claim that a mature information culture is not separate or distinguishable from the organisational culture. A mature information culture exists when an organisation has evolved into one in which information access and use are part of everyday activities. While an information culture cannot be imposed from the top down, senior management must support and drive it through the organisation and highlight links to the organisation's culture. This reflects Curry and Moore's (2003) premise that information culture does not exist in its own right. It is only able to exist within, and needs to be nourished by, the organisational culture.

Martin, Lycett & Macredie (2003, p. 270), in a study of the gap between business and information technology, included references to technology and systems in their definition of information culture. They defined it as, “a system of shared meaning, manifested in the formal and informal information systems that are enacted through people, processes and technology.”

Chepaitis (1997, p. 195) offers a definition of information culture that is not dissimilar to that of Curry and Moore (2003), Davenport (1997) and Marchand (1996). It is stated as consisting of “values, beliefs and behaviours related to information ownership and information management.” While Chepaitis’ (1997) definition is offered within the context of states and economies, the principles implied in the definition and the influences articulated are relevant to this study. For example, Chepaitis (1997, p. 195) says that information cultures can be influenced by professional associations, historic events, the behaviours of external partners and other events that introduce discontinuity. Just as Curry and Moore (2003) and Davenport (1997) have drawn relationships between information culture and information systems so does Chepaitis (1997). The two most important components of an information system are people and information, not the hardware and software, and information systems that are used within information cultures. The use of systems can be influenced by the prevailing culture (Chepaitis, 1997, p. 195).

When working with Trusts, Hindle (1997, p. 185) referred to information culture as “a working environment where the workforce sees information as a key resource for improving performance.” Six elements are proposed by Hindle (1997, p. 185) as comprising an information culture:

- Information flows that are horizontal and vertical;
- Individuals have access to the information they need to do their job;
- Decisions are based on informed judgement;
- Everyone sees information management as part of their role;
- Sharing information in order to build effective working relationships; and
- IT is seen as a tool to enable the achievement of business outcomes.

Hindle’s (1997) work with Trusts was focused on the importance of continuous improvement and the role of a positive information culture in that pursuit. His definition of information culture implies a link between not just information and performance, but also information use and performance. Hindle (1997, p. 184) covers the four basic principles of continuous improvement as being:

- Focus on customers;
- Understanding of the processes;
- Involving the people; and
- Exploiting the technology to maximise the return from the three previous points.

The intertwined nature of continuous improvement and information culture is succinctly and credibly exposed by Hindle (1997). Moreover, he cites the positive impact that an information culture thus used has had on the management of Trusts in the health sector. In conclusion Hindle (1997, p. 186) provides a model for progressing towards an information culture for continuous improvement.

In her Doctoral dissertation on information cultures in the Finnish insurance industry, Widen-Wulff (2001) defines information culture as:

> [A] context in which needed information is communicated so that the company has the largest possible use of the information inside (and also outside) the company. The company information culture consists of individuals, traditions, systems and values that belong to the company. (p. 8)

According to Widen-Wulff (2001, p. 9) information cultures need not be viewed as being good or bad, positive or negative. Rather, they are different from organisation to organisation, dependent on desired outcomes and aims. They need to be active and adaptable. Previously Widen-Wulff (2000, Section 2, para. 1) had stated that it was very difficult to define information culture. She proposed five stages in which to analyse and understand information culture. Those stages are:

- The information environment;
- Information as a resource;
- Work processes;
- Innovation; and
- Business performance.

In 1988 Ginman reported on a study that analysed the factors determining information culture in a business environment. Ginman (1988) defined an information culture as occurring when:

> [T]he transformation of intellectual resources is maintained alongside the transformation of material resources. The primary resources for this type of transformation are varying kinds of knowledge and information. The output

> achieved is a processed intellectual product which is necessary for the material activities to function and develop positively. (p. 93)

Furthermore, Ginman (1988, p. 94) describes the areas that were studied and considered as aspects of information culture. They are:

- The CEO's approach to information;
- Company characteristics; and
- Personal characteristics of the CEOs.

These aspects were correlated to organisational culture, the organisational lifecycle and market success. According to Ginman (1988, p. 97-104), successful business outcomes occurred when an organisation had a well developed information culture.

Ginman's work on information culture in the late 1980s was the catalyst for further study in Europe and the United Kingdom. Ginman was a founding member of the Åbo Consortium which was set up by the Department of Library and Information Science, at Finland's Åbo Akademi University in May 1992. Building on Ginman's study, this group of researchers from Scandinavia and the United Kingdom investigated information cultures and business performance. Other members included Professor Johan Olaisen of the Norwegian Business School and Professor Tom Wilson and Angela Abell of the University of Sheffield.

Information culture, business performance, communication and service quality were the focus of articles by Olaisen (1990, 1991) and Olaisen and Revang (1991). Links were confirmed between a sound information culture and performance. Furthermore, Olaisen (1990) made distinctions between information as a strategic resource, information management and information technology.

In 1995 the publication *Information Culture and Business Performance* edited by Grimshaw was released. It contained a series of case studies including those on the clothing and textile industries (Abell & Winterman, 1995), electric and electronic industries (Barrulus & Wilson, 1995), the pharmaceutical industry (Koenig, 1995) and companies (Wilson, 1995). The following comments from Abell and Winterman (1995) encapsulate the common findings reported in the collection of studies:

> The literature presents an ideal corporate culture which builds information into an infrastructure supporting a flexible, skilled and knowledgeable workforce. This culture facilitates the collection and management of information

> technology into the management and dissemination process and provides information which is valued by and supports all employees.
>
> This investigation has shown that the use and management of information are major factors in business performance. (p. 51)

Owens et al. (1996) researched the relationship between business performance and information systems. This study indicated that organisations were confusing information technology (IT) with information management and information. The organisations developed a much stronger focus on IT and its storage and retrieval facilities than they did on information itself. Without an appropriate senior management focus on information as an asset, without an information ethos (culture), appropriate implementation of information systems and business performance were compromised.

Robert W. Bauchspies Jr. was a researcher-in-residence at the Research Centre for Library and Information Studies at Gothenburg University in Sweden during 1995-6. Writing on his research, Bauchspies (1998, p. 5) defined information culture as "information activity understood in cultural context." His work investigated cultural contexts in a range from the individual to the global community. He found that "cultivating a high degree of information culture ... in accord with organization mission is desirable" Bauchspies (1998, p. 28).

In 1998 Hoglund reported on a case study of information behaviour in a pharmaceutical company. He investigated information culture, organisational culture, information behaviour, policy and learning in organisations. The findings of the study indicated that positive relationships existed between information culture and business performance. According to Hoglund (1998, p. 82) information culture is not a well used concept, particularly when compared to organisational culture. Hoglund (1998, p. 84) found that information culture was "difficult to define and measure."

Oliver (2004, 2008) undertook an exploration of information culture with particular reference to national and corporate characteristics and information management. She investigated information management, including libraries and recordkeeping programs, in three universities in Australia, Hong Kong and Germany.

Oliver (2004, p. 288) aimed to "enhance understandings of the interactions of organisational culture with information and its management, i.e., of the information culture in the organisations." In particular she asserted that, "the values accorded to

information, and attitudes towards it are indicators of 'information culture' within organisational contexts and that these values and attitudes are likely to be shaped by interactions within and across the various layers of organisational culture – national, occupational and corporate." Moreover, Oliver (2008, p. 379) found that six key factors differentiated information cultures in organisations. These factors were:

- Recognition and acceptance of societal requirements for managing information;
- Recognition and acceptance of organisational requirements for managing information;
- Attitudes to sharing information;
- Utilisation of information technology;
- Trust in written documentation; and
- Preference for low or high context communication.

Furthermore Oliver (2008, p. 379) observed that these factors were influenced by "the overarching societal information management framework and attitudes and values accorded to information."

Travica (2005a) proffers a definition of information culture in the bounds of a concept he calls the information view of organisations (IVO). In this definition Travica (2005a) discusses information culture in terms of:

> Stable beliefs (assumptions, values, norms, attitudes) and behaviours (work practices, rituals, social dramas and communication) that refer to organisational information and IT. Infoculture is the part of the organisational culture that evolves around information and IT. (p. 215)

IVO suggests that the traditional views of organisations as having cultural, political and structural elements should also be applied to information and information technology (Travica, 2005a, p. 211). The study using these definitions was undertaken in the private sector and the work on information culture focused primarily on beliefs and behaviours towards information and technology. It was carried out in the context of organisational types (Travica, 2005a).

From 2006 – 2008 articles emerged from the Faculty of Information Studies, University of Toronto on a study of information culture. The study investigated information culture and information use in three Canadian organisations. These

organisations were a legal firm, a public health organisation and an engineering company. The study makes a distinction between information culture, information values, information beliefs, information management and information use. Information culture is suggested as having the greatest impact on information use. In this study Choo et al. (2006, p. 492) state that, “We consider information behaviours as lying at the intersection of three sets of influences: information management, information culture and information use.”

Information culture is defined by Choo et al. (2006, p. 492) as “the socially transmitted patterns of behaviours and values about the significance and use of information in and organisation.” Later in the study, information culture is referred to as being “reflected in the organization’s values, norms and practices with regard to the management and use of information” (Choo et al., 2006, p. 493). Information management, on the other hand is defined as “the formal approach made by an organization to maximize the availability of useful resources to solve individual and organizational information problems” (Choo et al., 2006, p. 492). Information management with its information strategies, policies and systems is viewed as distinct from information culture with its information values, norms and behaviours (Choo et al., 2006, p. 496).

Other aspects of information culture and information management are introduced in the findings of this study, For example, the authors say “the influence of information culture on information use outcomes appears to be significant, the effects of information management are less clear in this study” (Choo et al., 2006 p. 507). Furthermore, Choo et al. (2006) found that:

> While organizational culture affects behavior in general, we suggest that a part of culture that deals specifically with attitudes about information – the perceptions, values, and norms that people have about creating, owning, sharing, applying information – exercises a significant effect on information use outcomes. (p. 508)

Choo et al. (2006, p. 508) also reported on the impact of “the strongly held information values and behaviours of sharing, proactiveness, transparency and informality.”

This variety of elements and descriptors used in this study to understand information culture, and the different phrases used to define it, underscore the lack of clarity across this area of study. Choo et al. (2006) agree with Bauchspies (1998)

and Hoglund (1998) when commenting that information culture is a difficult concept to define. Contributing to the difficulties and differences may be the fact that "This concept of 'information culture' is largely missing from current research" (Choo et al., 2008, p. 803). It could perhaps be considered that, the concept is missing from the research because information culture and its components are difficult to determine.

The aforementioned studies indicate in combination and in isolation, that there is neither one agreed definition of information culture nor one approach to identifying and typifying information cultures. For the purpose of this study the researcher has elected to use Marchand's (1996, p. 14) definition of information culture as the working definition for the study, namely "the values, attitudes, and behaviours that influence the way people sense, collect, organise, process, communicate and use information."

Marchand's (1996, p.14) definition does not include all of the terms and concepts used in the range of definitions of information culture. For example, it does not use beliefs, norms, perceptions or assumptions. It is however, indicative of the definitions used in other studies. It captures the spirit and intent of the other definitions. No one definition from a single study could include all the terms and concepts from the other studies.

Bauchspies (1998), Choo et al. (2006) and Hoglund (1998) commented on information culture as a difficult concept to define. The lack of clarity and consistency in the definitions of information culture is not peculiar to information culture. For example, even though it is a well-research area, there are differing definitions of organisational culture (Deal & Kennedy, 1982; Hofstede, 2001; Schein, 2004).

While the studies have established a link between information cultures and business outcomes and improving business performance, this has been done using differing sets of criteria or elements to characterise information culture. In each case the research has not elaborated on why a particular set of criteria or elements was chosen. Also, there is no indication of the relationship between the elements used and the context of the organisations being studied.

From these observations, implications for this study begin to emerge. These implications can be used to assist with identifying key elements to be pursued in the study. While there have not been a large number of studies into information culture,

both the lack of research and the research undertaken indicate key common areas of interest. Five such areas are:

- A clear understanding of information culture leading to a comprehensive and consistent definition;
- What constitutes information culture, that is, what are its components;
- What, if anything, does information culture influence and what influences are there on information culture;
- What is the relationship, if any, between information culture and organisational culture; and
- What is the relationship, if any, between information management and information culture.

From the range available, a definition of information culture has been selected as indicative and appropriate. However, with the limited number of available studies providing a diversity of understandings, it is not possible to characterise information culture as a specific and agreed set of elements. This will be determined in the study. The potential to identify, develop and apply the elements of information culture and match these to the organisational needs will be an important outcome of this study. The relationships between information culture, information management and organisational culture need to be explored to gain a fuller understanding of information culture.

Significant in the context of this study, is that the literature search revealed that the research into information culture has focussed, in the main, on the private sector. An exception is the study by Curry and Moore (2003) which was undertaken in the public sector. Those by Choo et al. (2006, 2008) included a public sector organisation. While many of the principles related to information culture in the private sector may be transferable to the public sector, they have not been tested widely in the government arena. It is recognised that there are synergies and similarities between the public and private sector, but there are also significant differences. These may influence information culture. For example, the private sector is driven more by market forces and the financial balance sheet than the public sector, the relationship between the citizen and the government departments individually and collectively is different to that between the customer and the business or company, government departments have stakeholders and companies have shareholders, and while businesses and companies have accountabilities, the

public sector has a much stronger focus on, and is driven by, a complexity of accountabilities, responsibilities and governance.

2.7 Information Ecology and Information Orientation

A concept used in the literature that, on first inspection, could be synonymous with information culture is that of information ecology. Davenport (1997), Detlor (2001), Hasenyager (1996), Hassan (2002) and Nardi and O'Day (1999) variously define and represent information ecology.

In introducing the concept of an information ecology, Davenport (1997) establishes a relationship between it and information culture. Davenport (1997, p. 4) describes an information ecology as "an organisation's entire information environment." To give greater meaning to this concept, Davenport (1997, p. 4) adds that an information ecology comprises four parts:

- Information culture – an organisation's values and beliefs about information;
- Information behaviour and work processes – how people use information;
- Information politics – that which inhibits or stops information sharing; and
- Information technology – what systems are already in place.

Detlor (2001) builds on Davenport's (1997) model as the conceptual framework to his study on electronic commerce initiatives in organisations.

In contrast to these views of information ecology, Nardi and O'Day (1999, p. 50) use ecology as a metaphor for organisational complexity and diversity. An information ecology within an organisation is viewed as a complex system which can co-evolve with the organisation (Nardi & O'Day, 1999, p. 50-51). An information ecology is defined as "a system of people practices, values and technologies in a particular local environment." In information ecologies the spotlight is not on technology, but on human activities that are served by technology (Nardi & O'Day, 1999, p. 49).

An alternative view of information ecology is presented by Hassan (2002). This view considers an increasing and expanding environment of interconnectivity, of and between, computerisation and globalisation. A complementary, and at the same time, contrasting version of an information ecology is held by Hasenyager (1996). It is complementary in that it revolves around computerisation and information technology. It is contrasting in that it is within the environment of the organisation rather than globalisation. The focus is on the importance of the relationships needed between the technology and business operations (Hasenyager, 1996, p. 87).

For the purposes of this study Hassan's (2002) approach to information ecology is too narrowly focused on information technology and too widely applied to social and economic drivers. The relationship between technology and business operations is of interest to this study. However, it represents but one aspect of the organisational environment that may impact on, or be part of, an information culture. The work undertaken by Davenport (1997) and Detlor (2001) is of relevance as it provides a context for information culture and alludes to other possible significant considerations. Similarly the concepts and elements adopted by Nardi and O'Day (1999) provide in principle support to the concept of information culture at the core of this study.

Marchand et al. (2001a) introduce the concept of an information orientation in organisations. The best performing companies, according to Marchand et al. (2001a, p. 54), have an information orientation which comprises good information technology practices, information management practices, and information behaviours and values. These values and behaviours are related to the individuals in the organisation, rather than the organisation itself. By supporting and encouraging all three capabilities, this research found that organisations had an increased potential to improve business performance.

As part of their studies, Marchand et al. (2001a, p. 55) constructed an "Information Orientation Dashboard" against which to measure or benchmark an organisation's information capabilities. Some of the items on the "Dashboard" reflect the elements of information culture articulated by Marchand's earlier work (1996) as well as that of Curry and Moore (2003), Hindle (1997) and Widen-Wulff (2000, 2001). These commonalities include, but are not restricted to, processes, sharing, innovation, flow, access and technology itself.

Marchand et al.'s work (2001a) is entirely focused on the business performance of private sector companies. The principles and concepts of information orientation will have some applicability to the Western Australian Public Sector, particularly in the general consideration of the capabilities that might be required for a successful information culture. It may not have total validity and transferability. It will inform this study. Like other approaches (Ginman, 1988; Widen-Wulff, 2000, 2001), its applicability is targeted at the private sector and business performance. In the public sector there is the need for improved business performance, but not necessarily that driven by 'the bottom line' or market share. It is the achievement of strategic outcomes which may or may not have direct financial ramifications. It may be more

in the context of efficient and effective service delivery within an environment of openness, transparency and accountability.

2.8 Information Use

A recurring theme in the literature on information culture was that of information management and the role it played or had to play in improving cultural dimensions. Another, but less obvious and not so highly emphasised theme was that of information use (Choo et al., 2006, 2008; Curry & Moore, 2003, Marchand et al., 2001a). Initially the researcher had gleaned from the literature that there would be a strong link between information culture and information management, and that this situation arose from most of the studies being done in the information science domain.

As the study progressed and the data emerged, the theme of information use became more important. A further review of the literature was precipitated by the data. It confirmed the links made to information culture and revealed specific studies on information use relevant to this study. It also highlighted an implied view of information use in the works on information culture. The sense of information use is conveyed by terms such as sharing, reuse, learn, and in the benefits and improved performance demonstrated. For example, Marchand et al.'s (2001a) "Information Orientation Dashboard" was designed to help companies improve business performance associated with information use.

Earl (1995, p. 2) highlighted the importance of information use in saying that, "increasingly there will be organization-wide measures to measure collective competence in the ability to use information. Such measures may help raise consciousness of how important it is to be able to use the critical asset of the information age." Davenport (1997, p. 86) complements these sentiments when saying, "It's the use of information - not its mere existence - that allows managers to make better decisions about products and processes, to learn from customers and competitors and to monitor the results of their actions."

Wilson (1981, p. 5) remarked that information use was one of the "most neglected areas" of research in information science. Later, Wilson (1994, Scope of the Field, para. 4) commented on that situation saying, "At that time I noted that more attention had been given to how people used information sources and services than to other areas ... such as ... information use .... There has been some improvement in that situation over the last thirteen years." More recently Choo et al. (2008, p.

794) made the observation that, although information use is “a fundamental concept, there are no broadly accepted “definitional or methodological approaches.”

Taylor (1986, 1991) adds another dimension to using information when he introduced the concept of “information use environments” (IUEs). His approach to using information had three components, namely the information user, the uses of information and the contexts within which the users decide how and whether or not to use information for particular purposes (Taylor 1991, p. 218). Taylor coined the term IUEs to describe the contexts of information use. According to Taylor (1986, pp. 25-26) an IUE consists of “those elements that (a) affect the flow and use of information messages into, within and out of any definably entity: and (b) determine the criteria by which the value of information messages will be judged.” In elaborating on these elements Taylor (1991, p. 221-231) said that they could include:

- The problems people experience and how they resolve them;
- The different kinds of information available to people;
- The structure and past experiences of an organisation; and
- The procedures, both formal and informal, for making decisions.

The studies by Choo et al. (2006, 2008); Kirk (2002); Marchand, Kettinger & Rollins (2001b) and Taylor (1982, 1991) indicate that the use made of information by the organisation is an indicator of information culture. Information management is one aspect that supports and assists information use.

2.9 Organisational Culture

Schein (2004, p. 12) proffers that the concept of organisational culture has been the subject of academic debate for more than twenty-five years without any real consensus or resolution in regard to definition. In support of this claim Schein (2004, p. 13) offers eleven different descriptions of culture. In addition, Schein (2004) provides his own definition or organisational culture as:

> A pattern of shared basic assumptions that was learned … as it solved problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems. (p. 17)

Westrum (2004, p. 22) sees the culture of an organisation as akin to the personality of an individual. In a similar vein to Schein (2004), Westrum (2004, p. 22) defines organisational culture as "the organisation's pattern of response to the problems and opportunities it encounters."

The concept of organisational culture is pertinent to this study as information culture is being researched in the context of public sector organisations. The government departments studied will have organisational cultures that may or may not have a relationship with, or impact on, their information culture.

As discussed previously, opinions on the relationships, if any, between information culture and organisational culture differ in the research identified thus far. According to Marchand (1996, p. 14) it is not relevant to view information culture merely as part of organisational culture. It is an entity in its own right. In comparison, Curry and Moore (2003) claim that a mature information culture is not separate from the organisational culture. Further, Curry and Moore (2003) posit that information culture does not exist in its own right. It is only able to exist within, and needs to be nourished by, the organisational culture.

Widen-Wulff (2001) describes information culture as a form of the organisational culture and its function is as a source of identity, so as to be able to define and support organisational aims. As part of the organisational culture, information culture focuses on cooperation, communication and information behaviour. In contrast Ginman (1988, p. 104) found that information culture needed to correlate positively with the business culture in order to realise achievement of outcomes.

Westrum (2004, p. 23) offers a different view of information culture and organisational culture. He refers to the ways in which organisations value, process, use, transfer, validate and maintain the relevance and timeliness of information as "information flows." Further, Westrum (2004, p. 23) says that "information flow" is a "type marker" for organisational culture.

Brown and Starkey (1994) looked at organisational culture from the point of view of its impact on information and communications. The genesis of this study was "the belief that one needs to understand the culture of an organization to make sense of that organization's way of managing its communication processes and their information outcomes" (Brown & Starkey, 1994, p. 807). They found that organisational culture may be one of the factors that not only influences information and communication decisions, but also contributes to the problems that may arise in

this area. The various cultural traits were linked and interwoven as were the elements of information and communication.

Hofstede, Neuijen, Ohayv and Sanders (1990) identified three layers of culture which can exist in and or influence an organisation. Firstly, there is the national culture followed by an occupational culture, and finally those characteristics unique to the organisation. According to Hofstede (2001, p. 9), culture is "the collective programming of the mind that distinguishes the members of one group or category of people from another." At the centre of these layers of culture is a set of values (Hofstede (2001, p. 9). In describing culture, Hofstede (1998) reflects on the pervasive evidence of culture as it can be seen in the ordinary activities of life such as eating and meeting others.

The literature on information culture revealed the potential for relationships between organisational and information culture (Bauchspies, 1998; Curry & Moore, 2003; Ginman 1988; Hoglund, 1998; Travica, 2008). The existence and influence of the third layer of culture, namely occupational culture has also been the subject of comment and research (Best, 1996; Bloor & Dawson, 1994; Bundred, 2006; Curry & Moore, 2003; Deal & Kennedy, 1982; Duff, 1998).

Regardless of the findings or assertions about the relationships between information and organisational cultures, it is clear from the above studies that both cultures can, and do, exist in organisations. It is the type, variety and extent of interrelationships and correlations that are at issue. For the purposes of this study, it will be considered that government departments in the Western Australian Public Sector have both information and organisational cultures. The former is the focus of this study.

2.10 Chapter Two Summary

In summary, while there is a paucity of research in the area of information cultures in the public sector and limited research in the area generally, those studies that have been consulted to date, including Choo et al. (2006, 2008), Curry and Moore (2003), Ginman (1988), Marchand et al. (2001a), Owens et al. (1996) and Widen-Wulff (2000, 2001), have drawn credible correlations between a positive information culture and business performance. From the researcher's perspective it follows that a positive information culture within Western Australian government departments could also have an impact on the performance of the business of government, most

particularly in the areas of achievement of outcomes and service delivery to the citizens.

A definitive study of information culture in the public sector in Western Australia or elsewhere has not been identified. The lack of a study is not to be taken as an indication of the irrelevance of information culture to the public sector. An analysis of the Western Australian Public Sector in particular, and the public sector in Australia in general, has identified ways of working and influences on the sector that have direct and indirect relationships with information. There are areas which could benefit from a positive information culture. Each of the areas has at least the potential of relationships with, or is reliant upon, information as a resource, and/or the management of that resource.

By identifying some key challenges and opportunities facing Government in achieving outcomes for the Western Australian economy in both the short and long term, and exploring the role of the public sector in assisting the Government to deliver on its strategic outcomes, this chapter sets the scene for the creation of a value chain that links the achievement of government outcomes, information use and information culture. This value chain is demonstrated and strengthened throughout the thesis.

The following chapter addresses the research process and methodology used in this study.

3 The Research Process

3.1 Introduction to the Research Process

This chapter presents a comprehensive discussion of the methodology or research process undertaken to conduct this study together with the rationale behind the choice of the research method and data gathering techniques.

The literature abounds with many and varied definitions and interpretations of research methodology, research method and data gathering methods (Creswell, 2003; Kaplan, 1964; Silverman, 2000). For the purposes of this study the terms were defined and applied as follows:

- Research Methodology
  The "description, explanation and justification" of the process used to identify the most relevant approach to the research. How the best approach and methods were determined and why they were determined to be the most appropriate to the research (Kaplan, 1964, p.18);
- Research Method
  The "traditions of inquiry" or the specific approach used to undertake the research (Creswell, 1998); and
- Data Gathering Methods (Techniques)
  The ways in which the data to be used within the research method can be gathered (McNiff & Whitehead, 2006).

The use of these definitions notwithstanding, in some cases where authors are quoted using these words, the meanings applied by those author may differ from these definitions.

As advised by Given (2006, p. 378) and Myers (1999, p. 3) it is crucial for the researcher to understand the circumstances surrounding the research in order to select the most appropriate method. Therefore, the first considerations of this chapter are the study domain, research problem, goal and questions which were then used to guide the selection of an appropriate research method and data gathering techniques. This is followed by a description of the data collection and data analysis processes. Finally the boundaries and limitations, researcher biases and the verification process are presented.

3.2 Study Domain

Information Science is the domain most closely aligned with this study. Hawkins (2001) defines information science as:

> An interdisciplinary field concerned with the theoretical and practical concepts, as well as the technologies, laws, and industry dealing with knowledge transfer and the sources, generation, organisation, representation, processing, distribution, communication, and uses of information, as well as communications among users and their behaviour as they seek to satisfy their information needs. (p. 49)

The Online Dictionary of Information Science (Reitz, 2004) defines information science as:

> The systematic study and analysis of the sources, development, collection, organisation, dissemination, evaluation, use and management of information in all its form, including the channels (formal and informal) and the technology used in its communication. (Index “I”, para. Information Science)

In discussing information science and the work associated with information Wilson (2000, p. 8) puts forward the proposition that information science and its associated activities are conducted in the context of organisations. Therefore activities related to and surrounding information science, are undertaken for the people in the organisation and by the organisation for the benefit of the community at large. The relationship between information science and the organisation implies a relationship between information science and management activities within an organisation.

This study was about information culture within the Western Australian Public Sector and the relationship between information culture and the strategic outcomes of service delivery agencies within that sector. Thus there was a relationship between information culture and how the government agencies are managed in order to achieve strategic outcomes.

Both the definition of information science and the context in which information science is conducted and the complementary discipline of management within the public sector support its choice as the appropriate domain.

3.3 The Research Problem and the Research Goal of the Study

As demonstrated in Chapter Two, there is little evidence of research into information culture and the impact on management, and thus a paucity of specific research about information culture in the public sector and the impact of information culture on the delivery of strategic outcomes. The studies that have been identified appear to have used different research methods.

According to Patton (2002, p. 213-215) a key starting point in selecting a research method is an understanding of the intended goals or purpose of the research. Complementing this view Denzin and Lincoln (2005a, pp. 1-31) and Silverman (2000) suggest that the pivotal points impacting on the choice of a research method are the research problem and the research question. Given (2006, p. 378) reminds the researcher, that "understanding the intended goals of qualitative research is an essential starting point in selecting appropriate methods, and in assessing the results of studies that use those methods."

With this advice in mind the next section discusses the research problem and the goal of the study. A section on the research questions follows this discussion. The research problem, goal, outcomes and questions were then used to determine the research method and techniques.

3.3.1 The Research Problem Leading to the Research Goal

Within the context of the service delivery agencies within the Western Australian Public Sector the research problem addressed by this study was:

> How to identify, develop and apply a positive information culture to assist public sector agencies to achieve strategic outcomes and deliver services.

Chapter One discussed the genesis of this problem within the parameters of the significance of this study and the purpose of this study.

The review and analysis of the current literature in Chapter Two also identified the paucity of research on this problem and thus demonstrated the limited potential for existing information science theories, concepts and frameworks to address this problem. This situation revealed that this study was therefore largely exploratory research.

In support of this research problem, the research goal for this study was described as:

> To identify information culture in the Western Australian Public Sector and develop and implement practical solutions at a meta level to assist government agencies in achieving their strategic outcomes.

3.4 The Research Questions

In sequence, the research problem is addressed and solved by achieving the research goal, and the research questions are informed by the goal. Consequently, the research questions developed in the context of the research problem and goal are as follows:

3.4.1 Question

> In the context of service delivery agencies within the Western Australian Public Sector, can a positive information culture be *identified (I), developed (D) and applied (A)* to assist in achieving strategic outcomes and delivering services*?*

3.4.2 Sub Questions

- What typifies a positive information culture? *(I);*
- What are the identifiable components or elements of information culture? *(I);*
- What issues need to be addressed in order to influence and improve an information culture so that it assists in achieving outcomes and delivering services? *(D);* and
- What practical solutions could be implemented to influence and improve an information culture in a government agency? *(A).*

3.5 The Research Outcomes

Three outcomes for the study were derived from the sequence of the research problem leading to the research goal and thus the research questions. These three outcomes were:

- The body of knowledge was increased by the development of a theory related to information culture in the public sector;

- Practical assistance for public servants in developing a positive information culture to support strategic outcomes and service delivery was produced; and
- The researcher and practitioners were assisted in meta level learning in regard to the two previous outcomes and the research process.

In addition to describing the desired outcomes of this study, these statements also provided a means through which the researcher measured or evaluated the success of the study.

3.6 Research Paradigm

At the highest and broadest level, research methodologies can be divided into two approaches, namely the quantitative and qualitative approaches. The quantitative mode can also be referred to as the scientific tradition and the qualitative approach is known as naturalistic inquiry (Burns, 1990, pp. 2-14; Lincoln & Guba, 1985).

Qualitative research became popular in the 1970s and came out of the social sciences (Myers, 2004). According to Kaplan and Maxwell (1994) this approach developed in response to the need to understand phenomena from the viewpoint of the participants, to understand people, their social and cultural contexts and how people relate to these contexts. Quantitative methods, on the other hand, were originally developed in the natural sciences in order to understand natural phenomena (Myers, 2004). Moreover, Myers (2004) observed that:

> The motivation for doing qualitative research, as opposed to quantitative research, comes from the observation that, if there is one thing which distinguishes humans from the natural world, it is our ability to talk! Qualitative research methods are designed to help researchers understand people and the social and cultural contexts within which they live. (Overview of Qualitative Research, para. 4)

Further contrasting qualitative and quantitative approaches, Given (2006, p.378) quotes Mayan (2001, pp. 5-6) in stating that qualitative research is "commonly used to describe phenomena about which little is known, to capture meaning (in the form of individual's thoughts, feelings, behaviours etc) instead of numbers and to describe processes rather than outcomes."

Silverman (2000, p. 8) developed a "reasonable approximation" of the main features of qualitative research based on the work of Hammersley (1992, pp. 160-172). The

“approximation” is presented in the form of “preferences of qualitative researchers.” These preferences are:

- Qualitative data - an analysis of words and images;
- Naturally occurring data – observation and unstructured interviews;
- An exploration of meanings rather than behaviours;
- The rejection of the natural science model; and
- Inductive, hypothesis-generating research rather than hypothesis testing.

As this study is qualitative in nature, focusing on people in their social and cultural contexts and how people relate to their environment, the following section discusses the paradigms and philosophical perspectives of qualitative research.

Guba (1990, p. 17) defines a paradigm as “a basic set of beliefs that guide action.” The paradigm within qualitative research is based on four philosophical perspectives. These perspectives are:

- Ontology;
- Epistemology;
- Axiology; and
- Methodology.

To these four cornerstones Creswell (2003) adds “Rhetoric”, and Tashakkori and Teddlie (1998) have added “Logic.” The following table, Table 3-1, encapsulates those philosophical perspectives and the matching qualitative characteristics as identified by the scholars (Creswell, 2003; Denzin & Lincoln 2005a; Firestone, 1987; Guba & Lincoln, 2005; Tashakkori and Teddlie, 1998).

Table 3-1 Characteristics of Qualitative Research

Philosophical Perspective	Qualitative Characteristics
Ontology: the nature of the reality.	Reality is subjective; Multiple as it presents the views of participants.
Epistemology: the nature of the relationship between the researcher and that being researched.	Researcher is not independent and interacts with that being researched. Subjective.
Axiology: values and the role of those values.	Biased; Value bound.
Method: the nature of the process.	Emergent; Bound by context; Accuracy and reliability obtained through a process of verification.
Logic: deductive or inductive.	Inductive process.
Rhetorical: the language used.	Informal; Evolving.

Creswell, Hansen, Clark Plano and Morales (2007, p. 238) remind researchers that they should begin their study with an analysis and interpretation of the philosophical perspectives, questioning the nature of reality (ontology), what is known and how they know it (epistemology), the acknowledgement and inclusion of their values (axiology), the nature of the emergence of the research (methodology), and their writing structures (rhetorical).

Within these philosophical perspectives there are a number of classifications or categories. While scholars are in general agreement on the philosophical perspectives of qualitative research, there are differences of opinion about the research paradigms. Fitzgerald and Howcroft (1998) identified two broad paradigms, namely positivist and interpretivist. Guba and Lincoln (2005, pp. 191-215) on the other hand, have recorded four “alternative inquiry paradigms.” These are positivist, postpositivist, critical theory and constructivist or interpretivist. By comparison Denzin and Lincoln (2005a) use five classifications: positivist, postpositivist, constructivist or interpretivist, critical and feminist-poststructural. In identifying these categories Denzin and Lincoln (2005a) assert that a researcher may take a position or positions within all of these paradigms. Supporting this view, Given (2006, p. 377) says that research paradigms are “quite fluid.” She goes on to state that in many cases researchers “are now trying to expand beyond a single approach to obtain the best possible evidence.”

In order to determine the most appropriate paradigm for this study three common classifications offered by researchers and scholars were identified. The classifications are positivist, critical theory and constructivist or interpretivist (Denzin & Lincoln, 2005a; Guba & Lincoln, 2005; Klein & Myers, 1999; Myers, 2004; Tashakkori & Teddlie, 1998). Table 3-2 presents a comparison of these paradigm classifications in qualitative research. Using the high level classifications presented in Table 3-2, together with the supporting sentiments from the literature, the researcher determined that neither the positivist nor the critical theory paradigm were appropriate to the study. Studies within the positivist paradigm are centred on natural phenomena and the relationships between those phenomena, and they are based on direct, objective observation. The role of the research is to test theories and to provide material for the development of laws (Bryman & Bell 2003, p. 14). Three phenomena of interest in this study, namely values, attitudes and beliefs, could not be directly observed. Bryman and Bell (2003) and Burrell and Morgan (1979) argue that studies undertaken in the management area are subjective rather than objective. As this study was undertaken in a subjective environment where there was not a strong theory base, the positivist paradigm was not used by the researcher. The focus of critical theory is on gathering historical perspectives and insights and is based on revising and resocialising existing theory. It seeks not just to understand theory or the society which provides the context for that theory, but also to critique and change that society (Patton, 2002, pp. 130-131). As this study was undertaken in an area with limited theoretical development, critical theory was not considered an appropriate paradigm.

Table 3-2 A Comparison of Paradigm Classifications in Qualitative Research. (Source: Guba & Lincoln, 2005, p. 195)

Classification →			
Paradigm ↓	**Positivist**	**Critical Theory**	**Interpretivist**
Ontology	Naïve realism-"real" reality but apprehendible	Historical realism-virtual reality shaped by social, political, cultural, economic, ethnic and gender values; crystallized over time	Relativism-local and specific co-constructed realities
Epistemology	Dualist/objectivist; findings true	Transactional/ subjectivist; value-mediated findings	Transactional/ subjectivist; co-created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative	Dialogic/dialectical	Hermeneutical/ dialectical
Axiology	Excluded- influence denied	Included-formative	Included-formative

Denzin and Lincoln (2005b, p. 189) remind the researcher that today there is a blurring of paradigm differences; that there is no single "truth." This sentiment is complemented by Lincoln and Guba (2000) who state that there will be no one conventional paradigm that will suit or be used by social researchers. Balancing these thoughts with the consensus opinions represented in Table 3-2, the researcher was guided to deduce that the interpretive paradigm provided the most appropriate philosophical approach within which to achieve the research goals and the research questions of this study. According to Guba and Lincoln (2005, pp. 191-215) an interpretivist paradigm means adopting a relativist ontology, a transactional epistemology and a hermeneutical/dialectical methodology. In using this paradigm the researcher is aligned to producing reconstructed understandings of the social world.

Orlikowski and Baroudi (1991), who wrote of research in organisations, say of interpretive research that it attempts to understand phenomena through meaning that people assign to them. Similarly Kaplan and Maxwell (1994) remind the researcher that the interpretivist paradigm has at its core the complexity of human sense making. It does not predefine dependent and independent variables (Bryman & Bell, 2003; Klein & Myers, 1999; Myers, 2004). Also, in support of the appropriateness of these views of the interpretivist paradigm to the information science domain Dervin and Nilan (1986) say:

> [It sees] information as something constructed by human beings. It sees users as beings who are constantly constructing, as beings who are free (within system constraints) to create from systems and situations whatever they choose....It focuses on understanding information use in particular situations....It focuses on the user. (p. 16)

The interpretivist paradigm also enables and encourages the participants in the study to influence the questions and the findings. The initial question in the positivist approach can limit what is learned from the study (Williamson, Wright, Burstein & Schauder, 2003).

The goal of this research was to *identify* information culture in public sector organisations leading to the *development* and *application* as a means to assist these organisations in improving their strategic outcomes. In keeping with the underlying principles of the interpretivist approach this implies the investigation of organisations, people and technology and the interactions between them as well as the meanings this interaction creates. In the light of the comments and opinions about the interpretivist approach (Dervin & Nilan, 1986; Kaplan & Maxwell, 1994; Klein & Myers, 1999; Myers, 2004; Orlikowski & Baroudi, 1991), it was evident to the researcher that the study was interpretivist in nature. Also, as the study was in a social environment in which the information was embedded, it had multiple perspectives and was dynamic rather than static, the interpretivist approach was most appropriate (Klein & Myers, 1999; Patton 2002, p. 96-103).

3.7 Research Method

Having identified the most appropriate philosophical approach to this study it was then timely to examine the “specific ways (methods, analysis)” in which to collect

and analyse the information that had a bearing on the research goal and question (Denzin & Lincoln 2003, p. 30).

The range of qualitative and, in particular, interpretivist research methods is considerable and includes ethnography, case studies, action research, grounded theory, phenomenology and narrative (Creswell, 2003, Denzin & Lincoln, 2003; Denzin & Lincoln, 2005b; Patton, 2002). With this range of methods available to the researcher, an important guiding principle was the advice from Myers (1999, p. 3) when he said, “Clearly, it is important for anyone considering employing a certain research methodology to be aware of the potential benefits and risks beforehand, and to know in which circumstances it might or - might not be – appropriate.”

Bryman and Bell (2003, pp. 28-29) admonish the researcher not to overlook “the importance and significance of practical issues” in choosing a research strategy or method. A second consideration is the area being investigated and the individuals and groups who are the subject of the study. To quote Bryman and Bell (2003, p. 29), “there will be many circumstances in which the nature of the topic or of the subjects of an investigation and the constraints on the researcher loom large in decisions about how best to proceed.”

As this study was about identifying a practical outcome as well as making a contribution to the theory, or as Bryman and Bell (2003, p. 29) said “a coming-together of the ideal and the feasible”, practical considerations were acknowledged along with the philosophical underpinnings of the study. The practical considerations of this study are evidenced in such decisions as the boundaries of the research, the goal, the exploratory nature of the study and the availability of a diversity of subjects.

Another viewpoint on the selection of a research method comes from Creswell et al. (2007). Creswell et al. (2007, p. 239) state that researchers make selections “based on considerations such as the audiences’ familiarity with one approach or another, the researchers’ training and experiences with different forms of qualitative designs, and the researchers’ and departments’ partiality to one approach or the other.”

The methods available to the researcher proposing to undertake qualitative research are many and diverse. The considerations and cases posed by the various experts and presented here, on the best ways in which to select and use research methods provide insightful and valuable guidance. Notwithstanding this guidance, it could be argued that most, if not all, research methods could be, with sufficient

diligence, applied to a study. However, the key to successful application and use is the degree to which the method is right for the particular body of research or how well it fits with the proposed study. The viewpoints of the researchers presented herein can be interpreted as assisting the researcher to determine which method best complements the study or is 'fit for purpose'.

The researcher had a twofold purpose in analysing and selecting a research method. Firstly, there was the need to identify the most suitable method, the one with the best fit. Secondly, it was important to use a research method that was effective in collecting information pertinent to answering the research question and meeting the research goal. To assist with meeting these twin purposes, the researcher considered those methods often used in studies undertaken in similar environments and fields of endeavour. That is, those used in the information science domain and in the management discipline. For example, related disciplines such as organisational culture, knowledge management, business improvement and information systems influenced the selection of the research methodologies for initial consideration. Based on these considerations and the recommendations of scholars in the area of qualitative research, the researcher selected four key research methods for in-depth consideration, namely ethnography, grounded theory, case study and action research (Creswell, 2003; Denzin & Lincoln, 2003; Myers, 1999; Patton, 2002; Silverman, 2000).

3.7.1 Ethnography

3.7.1.1 Definition and Description

Ethnography is the earliest distinct tradition of qualitative inquiry (Patton 2002, p. 81). Myers (1999, p. 2) says that ethnographic research is one of the most intensive research methods because the researcher is at the research site for prolonged periods of time observing people and their organisation and contexts. According to Vidich and Lyman (2000, p. 38) ethnography is "devoted to describing ways of life of humankind … a social scientific description of a people and the cultural basis of their peoplehood."

Ethnography has its origins in anthropology. Its key tenet is that any group of people who are together and interact for significant periods of time will evolve a culture. Traditionally, the primary method used by ethnographers has been participant observation in which the researcher is immersed in the social and cultural context being studied. The language, interactions and behaviours of the group within the

culture are intensively studied and recorded. Ideally, ethnographers were expected to spend two years living in and observing the culture in order to obtain sufficient material for their social science study. Such an approach was believed to produce information that was true and reflected the "natives' own point of view about reality" (Tedlock, 2005, p. 467). Furthermore, says Tedlock (2005, p. 467), this approach to participant observation led researchers to produce "public (monographs) from private (memoirs) and objective (ethnographic) from subjective (autobiographical) realms of experience." In the late 1990s a variation of participant observation was created in "the observation of participation" (Tedlock 2000, pp. 445-484). This modified practice aims to connect the public and private realms experienced in participant observation. Given these tensions Creswell (1998, p. 61) cautions that if a researcher is considering the use of ethnography, then he or she should have both a grounding in cultural anthropology and social-cultural systems and ethnographic concepts.

Different schools or styles of ethnography such as the holistic, the semiotic and the behaviourist have emerged since its genesis in the early twentieth century (Sanday, 1983). To these schools can be added subtypes of ethnography such as feminism, critical ethnography, performance ethnography, autoethnography and public ethnography (Denzin & Lincoln, 2005b). The emergence of these schools and subtypes has translated into ethnography being practiced in such areas as education, health sciences, organisations, globalisation, technological developments and politics (Creswell, 1998; Patton, 2002). These developments and divergences says Creswell (1998, p. 59) have diluted the "orthodoxy" of ethnography as a means of interpreting social and cultural groups, and therefore a researcher needs to be explicit about which school or subtype is being used in a particular study.

In discussing the relative strengths and weaknesses of ethnography Myers (1999, p. 5) states that the key strengths of the method are its intensity and depth, and its ability to challenge a researcher's assumptions. On the other hand, ethnographic research takes longer than most other research methods in the field work, the analysis and the write up (Creswell 1998, p. 61; Myers 1999, p. 6). As an ethnographic study is usually conducted in one culture it does not have much breadth and thus only leads to an in-depth understanding of that particular context or culture (Myers 1999, p. 6).

3.7.1.2 Application to this Study

This study was to be undertaken at the meta level of the Western Australian Public Sector and aimed to produce both a theoretical and practical outcome. Ethnography will give the researcher a rich understanding of the phenomena but does not help the researcher with developing a solution or bringing about change. Using ethnographic research would have demanded prolonged access to a significant number of public sector agencies. It would have involved intimate observation and recording of not just cultural language, behaviours and interactions but also potentially sensitive political and commercial situations. Access for an extended period of time to a number of agencies would have been difficult to negotiate. Also, a breadth of information as well as depth of information was required for this study.

When considering the suitability of ethnography as a research method and if it was the best fit with the study, the researcher identified three key shortcomings, namely:

- The need for access to large numbers of participants and agencies over a prolonged time period;
- The weaknesses associated with being able to develop a solution to a problem or provide a practical outcome; and
- This study required a depth of information not just a breadth.

So ethnography was not considered to be the most suitable for the purpose and circumstances of this study.

3.7.2 Grounded Theory

3.7.2.1 Definition and Description

The foundational work on grounded theory may be found in the work of Glaser and Strauss, particularly in their book *The Discovery of Grounded Theory* (1967). Subsequent works were produced which modified and elaborated on their original research (Glaser, 1978; Glaser, 1992; Strauss & Corbin, 1990; Strauss & Corbin, 1994). The premise on which grounded theory research is based is that it discovers or builds a theory from participant data and not from other sources (Crotty, 1998). It is relevant to and used extensively in social and organisational contexts having originally emerged from the social sciences, sociology in particular. However, where there are *a priori* theories in sociology, grounded theory asserts that theories are grounded in the data from the field, especially in the interaction and actions of

people and their engagement in social processes. (Creswell, 1998; Strauss & Corbin, 1994).

While grounded theory is an evolving, inductive form of qualitative research, it is a systematic approach utilising specific data collection steps (Creswell 1998, p. 58). The importance of this systematic approach is emphasised by Glaser (2001, p. 12) in saying “By systematic, I still mean systematic every step of the way; every stage done systematically so the reader knows exactly the process by which the published theory was generated.”

The researcher collects data in the field, typically from interviews. The process of analysing this data begins almost immediately and then more information is gathered in the field, then more analysis is undertaken and so the process continues. Through this process categories of information emerge and the researcher aims to collect and analyse until no more units of information can be found. That is, to saturate the categories (Strauss & Corbin, 1990). Constant comparative decoding (Glaser, 1992; Glaser & Strauss, 1967) occurs through taking the information gathered in the data collection and comparing it to emerging and existing categories. A conceptual model is developed out of this process and it is continually modified as new data is explored and new concepts are integrated into the emerging theory. The emerging theory is inductively discovered, bounded and confirmed (De Villiers, 2005, p. 116).

Strauss & Corbin (1990) highlight four criteria for a well-constructed grounded theory, namely:

- Fit: the theory fits the substantive data;
- Understanding: all involved in the area of study are able to comprehend the theory which emerged;
- Generality: the theory can be applied in various contexts; and
- Control: the emerging theory provides control with regard to action towards the phenomenon.

Grounded theory is most appropriate for social situations which require rich and context sensitive analysis (Baskerville & Pries-Heje, 1999; Hughes & Wood-Harper, 1999). It emphasises human actions, process management and contextual elements. User’s goals and aspirations are taken into account thus increasing the opportunities for high relevance (De Villiers 2005, p. 117). According to Creswell (1998, p. 58) grounded theory is of most benefit when the researcher has limited or

little knowledge of the area of inquiry and when the researcher can meet the challenge of disassociating from any previous theoretical ideas so that the theory can emerge. In a similar vein, De Villiers (2005, p. 117) cautions that the researcher's bias and subjectivity may influence conceptualisations and interpretations.

Warning of some possible shortcomings of the research approach, Silverman (2000, p. 145) says that grounded theory "can also degenerate into a fairly empty building of categories or into a mere smokescreen used to legitimate purely empiricist research." Additionally, Creswell (1998, p. 58) advises that researchers face the challenge of knowing when categories are saturated or when the theory has achieved sufficient detail. Offering another perspective, Seale (1999, p. 102) cites Brown (1973) as saying:

> [Grounded theory] may only be profitable in a fairly limited range of circumstances. The type of material best given to the development of grounded theory ... tends to involve relatively short-term processes, sequences of behaviour that are directly observed or can be easily reported upon, and behaviour which has a repetitive character. Something missed can often be observed again. (p. 8)

Alvesson and Skoldberg (2000) state that grounded theory fails to get to the deep underlying issues. It is never free of theory and has a positivist bias which does not complement qualitative data. There is also the question of how prior knowledge can be incorporated into the process.

3.7.2.2 Application to this Study

The researcher in this study was very experienced in and had considerable knowledge of the information environment of the Western Australian Public Sector. This situation was antithetic to the view that grounded theory is of most benefit when the researcher has limited or little knowledge of the area of inquiry (Creswell 1998, p. 58). The aim of this study was to produce both theoretical and practical outcomes.

Two of the four criteria for sound grounded theory identified by Strauss & Corbin (1990) are not well-suited to this research, namely:

- Fit: the theory fits the substantive data; and

- Understanding: all involved in the area of study are able to comprehend the theory which emerged.

With regard to the first point, there is little or no pre-existing theory associated with the study. Adding to this theory base is important. Equally, it would be beneficial to acknowledge and include what theory exists and to reveal any underlying concepts and ideas in the practical environment of the public sector. Considering the second point of understanding, given the limited research in the area of information culture, and thus the likelihood that participants will have limited exposure to or understanding of the concept, the necessary level of comprehension is unlikely. When considering the context of this research and the participant groups, there is a high probability of misunderstandings or limited shared understandings as there may not be a common vocabulary, or indeed, systems and processes.

So taking into consideration the intention of grounded theory to generate theory, together with the relative strengths and weakness of grounded theory, the researcher determined that this approach to research inquiry was not the most appropriate to use. Furthermore, the study domain of information science is both deep and broad and information culture is a complexity of values, attitudes, beliefs and behaviours. As such it would be difficult to directly observe or easily report on all the actions, interactions and engagements with processes and systems. Determining when enough data had been collected to reach saturation would also be problematic.

To summarise, grounded theory is a well-used and robust research method. It has been successfully used in qualitative research for many years. For the purposes of this study, four issues have been identified as demonstrating that grounded theory may not provide the best fit or be the best complement for addressing and meeting the research problem, goal and outcomes. The four issues identified are:

- The difficulties in capturing the potential complexity of interrelationships in information culture;
- Having the theory fit the substantive data and incorporating the existing, albeit limited, theory associated with information culture on which to base this study;
- Grounded theory is not helpful in determining practical outcomes; and
- Data is handled at the abstract level of categories and variables; that it takes an almost positivist stance with less emphasis on the social context.

3.7.3 Action Research

3.7.3.1 Description and Definition

Action research has been used as a qualitative research approach for the past sixty years. Kurt Lewin (1947) is credited with its genesis. Since its introduction, action research has grown in popular use being applied in such areas as education, information systems, organisational development and management. During this time action research has not stagnated. Supporting this view Kemmis and McTaggart (1988, pp. 21-22) suggest that "[action research] had passed through several phases and exists in a diversity of forms in a variety of contexts, but it still has a lively 'breaking edge' on intellectual work."

The literature presents a number of definitions of action research, and there does not appear to be any one formally accepted definition (Altrichter Kemmis, McTaggart & Zuber-Skerrett, 2002). According to Altrichter et al. (2002) this lack of consensus is acceptable and reflects the nature and purpose of action research in that it is fluid, flexible, adaptive and iterative.

The definitions of action research range from simple definitions such as "learning by doing" (O'Brien, 1998, What is Action Research, para.1) to more complex ones such as that from Gilmore, Krants & Ramirez (1986):

> Action research ... aims to contribute both to the practical concerns of people in an immediate problematic situation and to further the goals of social science simultaneously. Thus, there is a dual commitment in action research to study a system and concurrently to collaborate with members of the system in changing it in what is together regarded as a desirable direction. Accomplishing this twin goal requires the active collaboration of researcher and client, and thus it stresses the importance of co-learning as a primary aspect of the research process. (p. 161)

There is also debate around the scope or extent of action research. This debate revolves around whether action research is a research method or a broad approach to social science research (Kemmis & McTaggart 1988, p. 21). With regard to the extent or scope of action research Bryman and Bell (2003, p. 304) argue that there is no single type of action research. It can be broadly viewed as an approach in which the researcher and the client work together to diagnose a problem and develop a solution. According to Baskerville (1999, p. 6), the term action research is

used to describe a general class of methods in social inquiry rather than a single research method, and more specifically to an identified sub-class of those methods. Supporting this view Reason and Bradbury (2006, p. xxviii) say that action research is "a diversity of practices which together constitute the family of action research approaches."

Reason and Bradbury's (2006) *Handbook of Action Research* has identified the following forms of action research:

- Participatory Action Research;
- Feminism;
- Emanicipatory Action Research;
- Soft Systems Methodology;
- Co-Operative Inquiry;
- Clinical Inquiry; and
- Experiential Action Research.

Other forms include Canonical Action Research (Davison, Martinson & Kock, 2004) and Self-Study (Capra, 2003; McNiff & Whitehead, 2006).

The different forms of action research notwithstanding, there is a common understanding of the key elements of action research and its core guiding principles. The literature reveals that most action research advocates support the premise that action research consists of iterative cycles of planning, acting and reflecting or evaluating. The descriptions of action research offered (Altrichter et al., 2002; Dick, 2000; Kemmis & McTaggart, 1988; O'Brien, 1998) reflect a number of key common characteristics. They are as follows:

- A cyclical process;
- An emergent process;
- A participative process;
- Joint problem solving; and
- Critical reflection.

Action research is used when the study or situation requires flexibility and the involvement of people in the research. It is often used by practitioners who wish to improve the understanding of their practice or workplace (O'Brien, 1998, When is Action Research used?, para. 2). As described by Auer and Follack (2002, p. 775) another reason for using action research is that the resultant outputs and outcomes of any study have both a practical and theoretical application. Action research's

defining factor and that which differentiates it from other forms of qualitative investigation is the emphasis on practical outcomes (Bryman & Bell, 2003, p. 292).

Coghlan (2001, p. 49-50) reminds researchers that action research is of particular use and relevance to those researchers wishing to address issues of organisational concern. For example, systems improvement, organisational learning and change management. These are real events which need to be managed in real time, they can benefit from both action and learning and can contribute to the development of theory relevant to what really goes on in organisations.

There is a perception that action research is easier to conduct than other forms of research, but according to Dick (1993) this is not the case. However there are, says Dick (1993, Why would anyone use action research?, paras. 5-6), valid reasons for choosing an action research framework. These reasons include:

- It can be used in work or community situations; research methods can be integrated with practice;
- Practitioners using action research have the potential to learn from their experience;
- From the researcher's perspective it can deliver a thesis which has direct relevance to practice and can deliver workplace outcomes; and
- It is usually participative and can thus be ethically satisfying.

Cunningham (1993) says that given there are various forms of action research, a researcher may choose to use a single or a combination of methods to inform their action. Additionally, in applying this mix of methods, a researcher may choose to emphasise different parts of the action research cycle. For example, more or less emphasis on experimentation, theory, planning or change. Further to the debate on emphasising different aspects of action research, Kemmis and McTaggart (1988, p. 22) say that there are disagreements between action research advocates about the relationship between theory and practice. While most researchers support the notion that theory and practice are dialectically related, they usually emphasise one over the other.

3.7.3.2 Application to this Study

A number of weaknesses in action research have been identified including a lack of repeatability, lack of rigour, too much focus on action and not enough on research and a lack of internal and external controls (Dickens & Watkins, 1999, p. 131;

Bryman & Bell 2003, p. 305). These weaknesses are countered by Baskerville (1999, pp. 2-3) who states, “Action research produces highly relevant research results because it is grounded in practical action aimed at solving an immediate situation while carefully informing theory.”

Action research is of particular use and relevance to those researchers wishing to address issues of organisational concern (Coghlan (2001, p. 49-50). It is designed to focus on one organisation or social context. As this study is at the meta level of the Western Australian Public Sector, with a focus on those departments which delivery services to the public, it is wider than one single organisation. It involves a complexity of issues and variables.

The limited number of studies into information culture means a limited knowledge base and a lack of a consistent theory base. This would make it difficult to engage participants because action research assumes a shared understanding, and a common base and language to facilitate the iterative process. The absence of a theory base and the possible limited appreciation of information culture in the public sector would particularly hinder the *identification* phase of this study. In turn, this would weaken the *development* phase of the research.

A particular goal, and perhaps therefore, a constraint was that the study was to be undertaken at the meta level of the public sector in Western Australia. It would be difficult, if not impossible, to organise an action research study across a large number of public sector agencies. A further practical difficulty is that action research implies the implementation of findings from the diagnostic phases of the research. So, securing agencies willing to assign resources for a lengthy period and to participate in implementing the findings is problematic.

Whilst it is true that this study includes consideration of implementation issues, an actual implementation phase is not absolutely necessary. The identification of potential ways to improve practices and strategies is considered sufficient given the amount of earlier territory to be covered in identifying and developing information culture. In any case, implementing changes in information culture for research purposes would be difficult and time consuming given the number of government agencies involved.

In summary, there are four main indications of the reduced suitability of action research for this study, namely:

- The sparse theory base associated with information culture and thus the lack principles and theory leading to difficulties in engaging participants;
- The desire and intent to focus on the sector (meta level) rather than a single organisation;
- The practical difficulties of conducting action research across a sector; and
- Difficulties in relation to accessing organisations and participants across the sector.

For the above reasons action research is less of an appropriate fit for the requirements of this study.

3.7.4 Case Study

3.7.4.1 Definition and Description

The case study method is widely used as a qualitative research method across a broad range of disciplines including education, public administration, economics, information systems, management and political science (Grunbaum, 2007; Yin, 1994, 2003). In these contexts specifically and all contexts in general, the case study is used to answer the how and why questions of a phenomenon or when the researcher is seeking to understand a particular phenomenon (Cepada & Martin, 2005; Grunbaum, 2007; Rowley, 2004; Yin, 1994).

While the case study has been in popular use as a qualitative research approach for the past thirty years there is no one agreed definition of the case study. Winegardner (1998, p. 1) states, that regardless of the growing use of the case study, the perception of the case study remains blurred. An example of a definition is that offered by Yin (2003) who defines the case study as:

> An empirical enquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident … [the case study] copes with the technically distinctive situations in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from prior development of theoretical propositions to guide data collection and analysis.(p. 13-14)

Stake (2005) makes the point that:

> Case study is not a methodological choice but a choice of what is to be studied.…We could study it analytically or holistically, entirely by repeated measures or hermeneutically, organically or culturally, and by mixed methods – but we concentrate, at least for the time being, on the case. (p. 443)

According to Merriam (1988, p. xiv), the qualitative case study is, "an intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process or a social unit."

Using the case study approach can assist the researcher to explore and or explain a situation, to describe a situation, to test an existing theory or generate a new theory (Darke, Shanks & Broadbent, 1998; Eisenhardt, 1989; Grunbaum, 2007; Yin, 1994, 2003). The case study method is recommended as a workable research approach for three key reasons (Benbasat, Goldstein & Mead, 1987; Cepada & Martin, 2005; Eisenhardt, 1989; Patton, 2002; Yin, 1994). These are:

- By studying the phenomenon in context, in a natural setting, the researcher can generate theories from practice;
- The case study allows the researcher to understand the nature and complexity of the processes taking place in a context. That is, it answers the how and why questions; and
- It is an appropriate way to explore areas where research studies are few or where the theory is new or nonexistent.

According to Cepada & Martin (2005, p. 857) the robust case study has three main components:

- The conceptual framework;
- The research cycle; and
- The literature-based scrutiny of developed theory.

Grunbaum (2007, pp. 82-83) says that, regardless of the definition of a case study or the discipline within which it is used, seven generic characteristics can be attributed to the case study, namely:

- The object of the study is always in some way related to people, in particular to their interpretation or perception of a given phenomena. The individuals are studied in their natural environment;
- A contemporary phenomenon is the focus of the study, not historical studies;

- The researcher takes a holistic perspective in attempting to understand and explain what happens and why it happens. Thus the contextual factors of the study are important;
- Case studies are primarily qualitative and the objective can be descriptive, exploratory and/or explanatory. They can generate theory or modify existing theory;
- The researcher has no control over crucial events which emerge or evolve from the study;
- The researcher applies numerous data sources (triangulation) in order to build understanding and rigour; and
- Rich contextual accounts are produced from the case study.

Depending on the research goals, the level of rigour required and the context of the research, the case study can be single or multiple case in design. A single case is used where it is a unique or revelatory case or where a single case meets all the requirements for testing a theory (Yin, 1994, pp. 38-40). On the other hand, using the multiple case design enables the researcher to undertake comparisons and cross case analysis. In addition, they allow for the investigation of a phenomenon in diverse settings and to provide replication (Yin, 1994, p. 46). The number of cases undertaken is linked to the intent and focus of the research question and there is no ideal number of cases (Darke et al., 1998, p. 281). Nevertheless, Eisenhardt (1989, p. 545) recommends between four and ten cases as being a suitable number for theory building.

Two areas central to the success of the case study are the review of the existing body of literature and the identification of an appropriate unit of analysis. The former provides the researcher with the information and contexts to position the research question and to identify the structure and scope of the project. From this exercise the unit of analysis and the number of cases can be determined. The unit of analysis may be an individual, a group, an organisation or a phenomenon (Yin, 1994, pp. 21-24).

Both qualitative and quantitative data collection methods can be used in the case study. Typically, the case study uses a combination of data collection techniques such as interviews, questionnaires and observation supplemented with document analysis (Yin, 1994, p. 14). This combination of methods provides triangulation and

assists in developing rigour in undertaking and reporting the findings of the case study.

The value and benefit of using the case study notwithstanding, some shortcomings or weaknesses with the approach have been identified. Grunbaum (2007, p. 79) has articulated a concern about the lack of clarity around the unit of analysis concept used in the case study. He considers that the vague understanding surrounding this term has a negative impact on both the authenticity of the case study results and the transferability of those results. Additionally, says Grunbaum (2007, p. 79), the lack of clarity has consequences for the definition of the case study, "At the moment conceptually stringent guidelines are not available to differentiate between unit of analysis and the case in relation to a number of predetermined premises."

Another perceived shortcoming of the case study is the apparent inability to draw generalisations from the findings. Such generalisation is analytical generalisation not statistical generalisation in which an existing theory is used as a means by which to compare the empirical results of the case study (Rowley 2004, p. 212). It has been suggested that this apparent shortcoming can be overcome by using two or more case studies to support the findings thus demonstrating replication; the greater the replication, the better the rigour.

Yin (1994, pp. 9-10) has further highlighted some practical difficulties that may be encountered in undertaking case studies. The researcher can find themselves in a quandary trying to design and scope the case study to ensure that the research question can be sufficiently and appropriately answered. Significant amounts of data are usually collected and managing this data can be challenging. As the rigour of case study research has been questioned, it is important to ensure that the reporting of the results is done in such a way as to demonstrate the rigour of the processes and the validity of the findings and conclusions (Darke et al., 1998, pp. 284-285; Rowley, 2004, p. 212; Yin, 1994, p. 10).

According to Galliers (1992, pp. 144-162) the data collection and analysis phases of the case study can be influenced by the researcher's background and biases and the researcher's interpretation of both events and documents.

3.7.4.2 Application to the Study

The complexity and layers of information and organisational factors in this research, and the relationships between these factors together with limited theory base to this

study, suggested that the case study approach may be an appropriate method of enquiry. As this is a study of a "contemporary issue", information culture, in the "real –life context" of the public sector, and there are a multiplicity of variables and relationships associated with the issue and the context, using a case study is appropriate (Yin, 2003, pp, 13-14). The case study is primarily recommended for the development of new theory or for the modification of existing theory. It is an approach that complements the exploratory nature of the research (Stake, 1995). Thus it could assist in addressing the three outcomes of this study, in whole or in part.

The extent of the appropriate fit of the case study method with this study can be further verified by the application of Grunbaum's (2007, pp. 82-83) seven generic characteristics of the case study. This verification is presented in Table 3-3.

Table 3-3 Correlation of Case Study Characteristics and this Research

Characteristic	Research Response
The object of the study is always in some way related to people, in particular to their interpretation or perception of a given phenomena. The individuals are studied in their natural environment.	Participants will be required to offer interpretations or perceptions of information culture in the Western Australian Public Sector. Participants will be studied in familiar environments and those associated with information culture and the public sector.
A contemporary phenomenon is the focus of the study, not historical studies.	Information culture is the contemporary phenomenon.
The researcher takes a holistic perspective in attempting to understand and explain what happens and why it happens. Thus the contextual factors of the study are important.	The study is at a meta level with a focus on the systemic and contextual issues of information culture.
Case studies are primarily qualitative and the objective can be descriptive, exploratory and/or explanatory. They can generate theory or modify existing theory.	This is exploratory research. There is little if any existing theory on information culture. The existing theory will be considered and included in the study as appropriate.
The researcher has no control over crucial events which emerge or evolve from the study.	The researcher will be facilitating the process not controlling it or the outputs.
The researcher applies numerous data sources (triangulation) in order to build understanding and rigour.	Appropriate means will be employed to ensure rigour and build understanding.
Rich contextual accounts are produced from the case study.	The research method and the data gathering techniques used will focus on a breadth and depth of data.

While case study may be appropriate to this research it is acknowledged that it has limitations. Most pertinent to this study are the debates surrounding the unit of analysis, the ability to generalise results and managing the potential volume of data (Grunbaum, 2007; Rowley, 2004; Yin, 1994). The researcher proposes to use a single case study. That is, service delivery agencies in the Western Australian Public Sector. To assist in overcoming any possible issues of verification and generalisation, within the case study a variety of participants will be involved to enable comparisons. Also, Checkland and Howell's (1998a) approach to recoverability and validation known as "Framework, Method and Area of Concern" will be used. A full description follows in Section 3.7.4.3. By using a qualitative software package, NVivo, and by adopting sound guidelines and protocols for data analysis, the researcher is prepared for the potential of large volumes of data.

3.7.4.3 Framework, Methodology and Area of Concern

Checkland and Howell (1998a) have developed a process to assist in recovering a research process and demonstrating replication and validity. They developed the process "based upon a prior declaration of the epistemology in terms of which findings count as knowledge will be expressed" (Checkland and Howell, 1998a, p. 9).

While quantitative research can be replicated and thus validated and defended, such defensibility and transfer of results is sometimes questioned of qualitative research. In the light of this perceived paucity, Checkland and Howell (1998a) developed a form of validation, namely the "Framework, Methodology and Area of Concern" (FMA) approach for recoverability of the research.

The development of the FMA is based on the understanding that there are three elements that are common to any piece of research, namely a framework of ideas (F), the methodology (M) and an area of concern (A). The three elements are linked and inform each other. The framework is used in a methodology to study an area of concern or interest.

Checkland and Howell (1998a, pp. 13-14) argue that it is important to declare the elements of FMA at the beginning of an investigation. This then means that the research results can be defended and the approach reproduced.

According to West and Stansfield (2001, p. 253) there is criticism surrounding the need to state the FMA at the beginning of the research. However, West and

Stansfield (2001, p. 254) say that is unfounded, and that “it is simply a statement at a point in time of one’s awareness of the theoretical underpinning of the methodological approach being adopted in the research.”

Having critically analysed the ontology and epistemology underpinning the fundamentals of this research, some principal FMA elements were identified and applied to this investigation. Given that the literature review indicated a paucity of research and thus theory development in the area of information culture, particularly in the public sector, the framework of ideas was implicitly confined to those few studies undertaken in the area. The methodology chosen to guide and inform the study was investigated in detail as described in this chapter. Pivotal to the choice of methodology was the need to ensure that the research questions and the research problem could be addressed by the information collected (Myers, 1999, p. 3; Denzin & Lincoln 2003, p. 30). The area of concern relates to the research problem from which the goal and the research questions derived. The research problem addressed by this study was:

> How to identify, develop and apply a positive information culture to assist public sector agencies to achieve strategic outcomes and deliver services.

Therefore the following core elements of the FMA are:

- Framework of Ideas: The framework can be both formal and explicit and informal and tacit. The formal and explicit aspects adopted are based on the work of Choo et al. (2006, 2008), Curry and Moore (2003), Davenport (1997), Ginman (1988), Marchand et al. (2001a, 2001b) and Widen-Wulff (2000, 2001) on the presence of information culture in organisations, the possible models of information culture and the terms associated with that culture. It also relates to the value and importance of managing information for strategic benefit and competitive advantage.

  The informal and tacit frameworks are based on researcher experiences and researcher biases, and may also include the significance of the research. In this case, the tacit ideas and issues included the researcher’s association with the public sector and the information science domain, the commitment to the importance and value of strategic information management and information use, the complex nature and identity of information, and the potential significance of information and information culture to public sector

management, the information economy, e-government and the information professionals.

- Methodology: The researcher used a subjective, interpretive systems thinking and learning approach with case study as the research method. It was a practical approach based on observations, interviews and questionnaires (individual and group) and an analysis of the literature.
- Area of Concern: The area under consideration was information culture in service delivery agencies in the Western Australian Public Sector. The extent and understanding of information culture and the public sector were captured in the literature review. The perception that information culture could be identified and improved so as to have a positive impact on the agencies' performance grew out of the previous research. The definition and composition of information culture were also considered. Aspects of note within the public sector context included strategic planning and policy development, achievement of outcomes, the ability to participate in the information economy and an improved understanding of the strategic positioning of information.

3.8 Data Gathering Methods (Techniques)

Creswell (2003, p.185-7) indicates that there are four basic types of collection procedures for qualitative research. The four types are:

- Observations;
- Interviews;
- Documents; and
- Audiovisual.

While using one of these procedures will enable a researcher to obtain data for a study, employing a combination of them can assist with establishing a more robust data set. Thus, for this study the researcher chose to use a combination of data collection options. Four different sets of group and individual interviews were conducted. These were audio-recorded and transcribed. The first set focussed on academics and practitioners, the second set involved best practice organisations and the third set gathered data from those researchers who had undertaken research into information culture. The final set involved follow-up interviews with a representative group of participants to seek feedback on aspects of the study's

findings. Conducting interviews and supporting this with audio techniques gave the researcher additional opportunities to review what was said by participants, the emphasis with which it was said and the context within which it was said. As a third collection option, the researcher maintained a journal throughout the study. This contained observations made during the interview stages and memos made before, during and after the interviews. The literature was analysed constantly as the data gathering process proceeded and findings emerged. The interplay of these stages is discussed further in Section 3.13.

The four sets of interviews were used in an eight stage procedure detailed as follows:

3.8.1 Stage 1A: Individual and Groups Interviews with Educators and Public Sector Information Practitioners

The initial stage of the research phase targeted educators and specified practitioners. The aim was to elicit their views on information culture, the elements of information culture and the impact of information culture on the achievement of outcomes and service delivery objectives.

The practitioners who were invited to participate were those who worked in the government agencies which delivered services directly to the citizen. The practitioners were working in areas related to information or information management such as librarians, knowledge managers, records managers, information technology managers, information systems managers and management information systems managers.

The educators targeted in this stage were those who had responsibilities for teaching information practitioners.

The data collection in this stage took the form of semi-structured individual and group interviews. The practitioners and educators were all in Western Australia, but logistics were an issue because of the dispersed nature of the various participants and groups involved. This required flexibility in planning and scheduling. In all but one case, a face-to-face process was used. A telephone interview was used in this one instance in order to accommodate a respondent who was located in the far northern regions of Western Australia. Every effort was made to ensure that the interview experiences including the environment were similar.

3.8.2 Stage 1B: Interviews with Public Service Managers and Educators

This stage of the data collection process was introduced to supplement the initial results which revealed a very narrow and operational perspective. This stage was undertaken in an attempt to garner a more strategic and holistic perspective in keeping with the aims and objectives of the study. These were face-to-face semi-structured interviews.

3.8.3 Stage 2: Best Practice Interviews

To augment the information gathered in the first two stages, and in order to provide examples of best practice and to identify the obstacles, challenges, lessons learned and successful strategies, a series of interviews were conducted with organisations which had an acknowledged reputation for positive information cultures. Semi-structured face-to-face interviews were conducted.

3.8.4 Stage 3: Researchers who had Studied Information Culture

This stage involved gathering comments from those who had undertaken research into information culture. These participants were introduced to provide a better understanding of the context and challenges of a study of information culture from a more intimate perspective. As the researchers were located in a number of different countries, they were invited to complete a questionnaire.

3.8.5 Stage 4: Data Analysis and Findings

All the data gathered throughout the preceding stages was analysed with the assistance of a qualitative software package, NVivo. Using the package facilitated the management of the volume and complexity of the data gathered. Codes, categories and themes were identified to enable a robust analysis of the data. They also aided comparisons and verifications with the literature. Adding further to the analytical process at this and subsequent stages were the three aspects of information culture used in the research questions, namely *identification, development* and *application.* Findings emerged and were tested and reassessed against the categories, codes and the *identification, development* and *application* aspects as well as the literature.

3.8.6 Stage 5: Further analysis and refinement of the contribution to the theory base

At this stage the analysis focussed on the refinement of the findings in regard to the identification of information culture. That is, the findings which focussed on the

definition and composition of information culture; those findings which could be considered as contributing to the body of knowledge about information culture. The applicability of these findings was also addressed.

3.8.7 Stage 6: Further analysis and refinement of the potential for practical outcomes

The opportunities and benefits of developing a positive information culture were considered in this stage. The breadth of findings on the issues surrounding and influencing the development of such a culture within public sector agencies was highlighted. This was followed by an improved appreciation of what might be involved in attempting to apply the learning about developing information culture in the public sector.

3.8.8 Stage 7: Presentation of key findings, including theoretical and practical outcomes

The findings from Stages Five and Six were consolidated into a presentation that formed the basis of a final semi-structured interview. The interview was conducted with a representative sample of participants. This tested the findings. Comments and reactions were gathered and incorporated as appropriate into the theoretical and practical outcomes. During this stage, the researcher also made two formal presentations of the study, including the findings. Feedback from these forums was also considered.

3.8.9 Stage 8: Finalise Thesis

This stage was the consolidation of the study into the final thesis.

A detailed description of how the issues associated with the stages, and how the participants were chosen may be found in Chapter Four.

3.9 Data Analysis

Data collection and data analysis were conducted simultaneously. The simultaneous approach to these processes is one that is recommended for qualitative research in general (Marshall & Rossman, 1989). The researcher coded and categorised the data gathered. As this study was exploratory and in an area of limited research, the categories and codes emerged as the data was gathered. The categories and coding changed and expanded as new thoughts and ideas emerged and as previous issues and solutions were tested, and in some cases, discarded.

Appendix B contains the categories and themes used in the study, including the coding used for participants. The examples of the data collected and analysed against the categories and themes is also presented.

The audiotapes of the group and the individual interviews were transcribed verbatim. An ongoing review of the literature relevant to the study and other documents was undertaken. All the empirical material gathered throughout the study was analysed using the qualitative data analysis software, NVivo.

In accordance with the requirements of Edith Cowan University's Human Research Ethics Committee, all of the material gathered, including the audiotapes was kept in a locked filing cabinet by the researcher. Any material which could be attributed to individuals or groups was coded to preserve confidentiality and anonymity.

3.10 Participants

The initial participants were educators and public service practitioners. The educators were those who had responsibilities for teaching information professionals such as librarians, knowledge managers, records managers, information technology (IT) managers, information systems (IS) managers and management information systems (MIS) managers. These educators were chosen because it was assumed that as educators of these groups, who worked with and had the potential to influence information culture, they would have an understanding of and opinion on issues associated with information culture.

Personal email invitations were sent to all such educators at the two Western Australian Universities which had large Schools or Departments specialising in information and computer studies.

The first practitioners who were asked to participate were those who worked in the government agencies which delivered services directly to the citizen. The practitioners were working in areas related to information or information management such as librarians, knowledge managers, records managers, IT/IS managers and MIS managers. The information practitioners were a target group because it was assumed that they would have a knowledge of and interest in information culture.

Invitations to participate in the research were issued via information science ListServs and government email lists established for the information professions.

All of those academics who taught public policy and public administration had at some time held, or still held, senior management positions in the public service. This group of participants was identified through a peer referral process.

Referrals and recommendations from senior public service managers in government agencies who managed information and information technology areas were used, together with examples in the current literature, to select the best practice participants. These interviews were conducted at State and Federal levels of government. One of the interviews was conducted in a private sector organisation which had a world-wide reputation for best practice substantiated in the literature and by peer referral. None of the organisations identified were in Western Australia.

Invitations to participate in the study were sent to all the information culture researchers who could be located by the researcher through an investigation of the literature. Emails were sent to the researchers, explaining the research and inviting them to participate. Data gathered from this source had the potential to corroborate, challenge or clarify issues merging from the previous data. Additionally, the researchers provided a more personal view of information culture and a more detailed appreciation than might have been revealed in the formal literature.

3.11 Boundaries and Limitations of the Study

This section covers the boundaries and limitations of the study, its context and the participants in the study.

3.11.1 Boundaries

The study was confined to those departments of state within the Western Australian Public Sector, as defined in the *Public Sector Management Act 1994 (WA)* and the *Financial Management Act 2006 (WA)*. It was further limited to those departments of state that had been defined by the researcher as service delivery agencies. That is, agencies which delivered services directly to the citizen. Appendix C contains a chart of all the agencies in the Western Australian Public Sector at a point in time during this study. It was produced by the Public Sector Commission (2009). A list of service delivery agencies was compiled by the researcher from this chart. It is also in Appendix C.

Within these departments, specific attention was focused on the relationships, existing or potential, between information culture, the strategic decision-making process, the achievement of agency outcomes and service delivery.

The potential relationship between information culture and organisational culture raises issues in regard to the boundaries of this study. The literature is divided on whether or not information culture is part of or apart from organisational culture. For example, Curry and Moore (2003) claim that a mature information culture is not separate or distinguishable from the organisational culture. An organisation evolves into one in which information access and use is part of everyday activities. According to Curry and Moore (2003) information culture does not exist in its own right. It is only able to exist within and needs to be nourished by the organisational culture. According to Marchand (1996, p. 14) information culture is one of the critical elements of a company's change management program, and it is no longer relevant to view information culture merely as part of organisational culture.

The Information View of Organisations (IVO) suggests that the traditional views of organisations as having cultural, political and structural elements should also be applied to information and information technology (Travica, 2005a, p. 211). Travica's (2005a) study using these parameters was undertaken in the private sector and the work on information culture focused primarily on belief and behaviours towards information and technology. It was done in the context of organisational types.

These and other points of view on the relationship between information culture and organisational culture are considered in detail in Chapter Six of this thesis.

3.11.2 Context

The study was conducted within the Western Australian Public Sector, with specific reference to service delivery agencies.

The public sector entities which fell within the scope of this study are firstly, those entities which are public sector bodies under the *Public Sector Management Act 1994 (WA)*. Secondly, they were also those entities determined to be departments of state by the *Financial Management Act 2006 (WA).* They were also determined as service delivery agencies. That is, agencies which delivered service directly to the citizen and the citizenry.

For the purposes of this study service delivery departments were determined as those government departments which have direct contact with the citizen either as individuals or as the citizenry. That is, they are departments that deliver a service of one type or another to the citizen. For example:

- Department of Agriculture and Food;
- Department of Fisheries;
- Department of Corrective Services;
- Department of Industry and Resources; and
- Department of Sport and Recreation.

While these departments have direct contact with the citizenry through the delivery of their services and products, they do not necessarily just provide services to the citizenry. For example, the Department of Agriculture and Food delivers services directly to the agricultural community. It also conducts research for, and on behalf of, agricultural research and development bodies. In addition, it develops policy for the Government.

The definitions and determinations above mean that Statutory Authorities, Universities, Hospitals, State Trading Authorities and Courts and Tribunals were excluded from this study.

The study was considered to be at the meta level as it did not focus on one specific government agency. In investigating a collection of agencies as representative of the sector, it was taking a sector-wide perspective. Homogeneity of purpose, infrastructure, customer focus and resource types existed in this group of government agencies. Their service delivery focus notwithstanding, aspects of this group's functions, responsibilities, structures, infrastructures and resources are reflected in all government agencies

The people of Western Australia formed the common recipient group for the services provided. The departments provided their public services to this group across the length and breadth of Western Australia. As government departments they experienced and were bound by the same accountability and governance structures. For example, they were:

- Subject to the government budget process;
- Required to develop and implement their strategies and outcomes in support of the State's strategic plan;
- Required to have a performance management framework;
- Required to report annually to Parliament on their service delivery and outcomes; and
- Subject to high level external audit and governance processes by the Office of the Auditor General.

In addition, these departments, like the public sector in general, had a stable workforce. The geographic isolation of Western Australia meant that the public officers delivering these services were, in large measure, drawn from within the State. Staff easily transferred from department to department due to the homogeneity of the structures of government.

3.11.3 Study Limitations

As the study was confined to service delivery agencies within the Western Australian Public Sector, it may not be possible to generalise the results as applying to all public sector agencies. The results would be potentially transferrable to all agencies with a focus on delivering services to the citizen. Applicability to all types of government agencies could be problematic due to differing administrative, legislative, political and social responsibilities. However, the findings could potentially be extrapolated to apply to situations that involved the use of information in support of achieving strategic outcomes.

Given the common traits of government, others in similar environments may choose to generalise the results across Local or Federal government agencies, or indeed across other State government agencies which deliver services to the citizen.

The theory base established by previous studies into information culture has greater relevance to the private sector as that is where the studies were undertaken. However, there were some synergies between the private sector theory base and that of this study of the public sector. For example, the value of information culture to achieving business objectives or outcomes and the crucial role of leadership. In areas of compatibility and concurrence, this study may have application to the private sector.

A suggested limitation of the case study is the inability to generalise findings. However, Yin (1994) indicates that it is possible to generalise from a single case study. Rowley (2002) emphasised the importance of the generalisation of the case study so that it contributes to theory. To ensure that contribution, Rowley (2002) commented that:

> Generalisation can only be performed if the case study design has been appropriately informed by theory, and can therefore be seen to add to the established theory. The method of generalisation for case studies is not statistical generalisation, but analytical generalisation in which a previously

> developed theory is used as a template with which to compare the empirical results of the case study. (p. 20)

Moreover, Rowley (2002, p. 25) poses a question on the necessity of generalisation. She says, “Can case studies just be accepted as insights as they stand, with readers making their own interpretation, and taking the ideas from the case study into their own experience....If attempts to generalise are necessary, what does generalisation in this context mean?”

To enhance the opportunity to generalise this study, the research design was rigorously developed and tested. This was guided by the existing theory base. Chapter Four provides a detailed discussion of the research design.

3.12 The Researcher’s Role and Biases

Qualitative research using an interpretivist paradigm is value-laden as the researcher brings her or his opinions, perceptions, experiences, attitudes and beliefs to the process and, indeed, they may influence the research process (Creswell, 2003; Guba & Lincoln, 2005; Myers, 1999). As the researcher is primarily responsible for the data collection and analysis, it is inevitable the researcher’s values and biases become part of the research process. Given the role of the researcher and the close and lengthy involvement in the process, it is necessary to outline any researcher biases that may have been evident in this study.

The researcher is a member of the Western Australian Public Sector having spent over fifteen years in senior management positions. These positions have mainly been in the areas of information and knowledge management where the management focus was on strategic planning and policy development. Latterly, the researcher worked in the area of corporate and strategic planning and evaluation and policy development. Most of the experience gained in these areas has been in service delivery agencies.

The problem identification and articulation as well as the goals of this study grew out of the researcher’s intimate association with information and knowledge management within the public sector, and her practical experience and commitment to the relationship between information and strategic management and planning. While working in the information science domain the researcher was diligent in ensuring that the value of information to the business of the public sector generally, and the employing agency specifically, was included in strategic planning processes

at both the whole-of-department level and directorate level. By word and deed the researcher worked to highlight to executive management that the strategic management of information and knowledge was as important and valuable as the management of finance and human resources. In some cases, she worked to emphasise that there was an intrinsic and more crucial link between information and the business and the outcomes of the organisation.

While working in corporate and strategic planning and evaluation roles, the researcher demonstrated her commitment to the philosophy of the value and importance of strategic information management by incorporating the strategic view of information into her strategic planning and decision-making. She actively encouraged her senior colleagues and executive management to develop positive attitudes towards the strategic use of information by seeing information as part of the organisation and embedded in ways of working.

The researcher has written and presented papers in the area of strategic information and knowledge management, and prepared units of study at both the university and technical education level. In addition, the researcher has often been called upon to provide expert advice in these areas across the public sector in Western Australia and interstate. The researcher has been active in encouraging information professionals in the public sector to see information holistically and as integrated within the organisation, rather than as a specific format or system that had to be managed by an information discipline with a traditional custodial remit.

With this background and extensive experience, the researcher brought some biases to the study. In particular, those biases were in regard to the importance of acknowledging information as a government resource or asset, the value of a strategic approach to the management of information resources and the links to achieving organisational outcomes. Years of working at a senior management level in the public sector in Western Australian, including information management planning at the whole-of-government level, had honed the researcher's perspective so that it was focused on strategic rather than operational aspects of information management. The researcher's roles and responsibilities informed by her perspective also meant that she viewed information as complex. She was focused on the contexts in which information was created and used rather than seeing and using it in terms of formats. That is, as files, documents or databases. This world view placed the researcher's focus on information in terms of concepts and

purposes and hierarchies (Braman, 1989, p. 235), rather than on the operational and transactional aspects of information management.

A researcher's biases can lead to or be associated with risks to the study. In this study the researcher's declared biases could have presented:

- In the researcher hearing responses to questions within an holistic and strategic framework when some responses were being framed from an operational perspective;
- In the researcher setting questions which could lead respondents to make links between information and strategic outcomes or which discouraged responses of a more operational nature;
- In the researcher's experience and reputation in the public sector bringing out a bias in interviews so that they give the researcher what she wants to hear;
- In the researcher's experience influencing the analysis of the data collected; and
- In the researcher's disappointment with the results if the importance and strategic value of information is not clearly evident.

The researcher made every endeavour to remain objective throughout the study. Continual references to the literature, acknowledging the learning experiences and testing the findings with participants assisted with objectivity. Furthermore, introducing the best practice interviews and gathering intelligence from other researchers provided balance and perspective.

3.13 Verification of Research Finding

To ensure reliability and accuracy of the materials collected throughout the study, the following activities were employed.

- Triangulation. The material was collected using a variety of collection procedures, namely four stages of interviews, recording the interviews and documenting observations and analysis;
- Feedback from participants. The themes, issues and solutions revealed through the analytical process were confirmed through presentation and discussion with participants;
- Researcher bias. The values, assumptions and bias of the researcher were documented and declared;

- Research design. The research design was rigorously developed and tested. It was guided by the existing theory base;
- Reporting results. The results were reported in such a way as to demonstrate the rigour of the process;
- Generalisation. The degree to which the study could be generalised was indentified; and

The Framework, Methodology and Area of Concern approach was used to aid recoverability of the process. That is, the process could be used to explain and justify why the researcher took steps or decisions at a particular point in the study.

Figure 3-1 illustrates the verification process. It presents the relationships between the three data collection processes, namely, observations, interviews and audio. The four interview stages were a combination of group and individual face-to-face interviews which were audio-taped and transcribed. One telephone interview was conducted. The researchers who had studied information culture responded via a written questionnaire. These latter two situations were required due to issues of distance. The inclusion of the researcher's experience and the importance of the continuous use of the literature in the verification process are also presented.

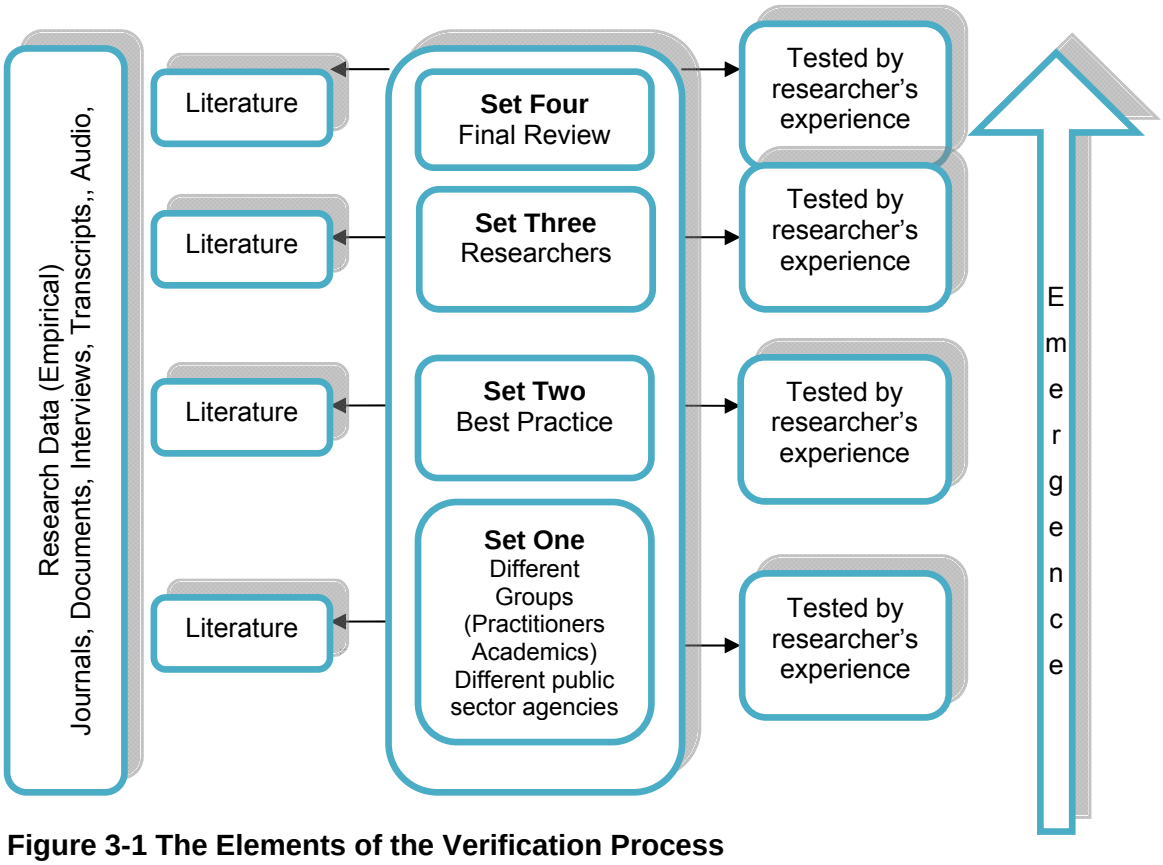


Figure 3-1 The Elements of the Verification Process

3.14 Chapter Three Summary

This chapter detailed the decisions underpinning the consideration and selection of the research methodology used in this study, including the philosophical perspectives, the research method and the data collection techniques. The analysis documented in this chapter resulted in the researcher electing to set the study in an interpretivist paradigm, utilising dialectical data collection techniques within a meta level case study.

The ways in which the study was bounded, defined and influenced was detailed in a discussion of the limitations and boundaries and the context of the study. The researcher's biases and the verification process concluded the chapter.

The following chapter covers the deliberations and decisions undertaken in the research design process.

4 The Research Design

4.1 Introduction

Building on the justification of the method selected and used in this study, Chapter Four describes the processes undertaken to collect and analyse the qualitative data which formed the foundation of the study. The data was analysed and presented against the framework provided by the sequence of the research problem, the research goal, the research questions and the research outcomes. As the sequence pivots around the issues of *identification, development* and *application* of a positive information culture, the findings were related to and reported against these issues and subsets thereof. This process is described and supported in this chapter as a data analysis flowchart and a conceptual framework. To illustrate the manner in which the analysis was undertaken, the example of the *Benefits* theme from the *identification* stage is presented. Also, the process by which participant groups were selected is presented. This chapter begins with an overview of the stages used to gather and analyse the data.

4.2 Overview of Stages of the Method

Eight stages were used in the method to collect information relevant to the research questions. The overarching research question reveals a focus on three aspects of researching information culture, namely the *identification, development and application* of information culture. They are also addressed by each of the individual sub questions. The stages are presented in Table 4-1 together with those aspects of *identification, development and application* and the research questions which they primarily address. To assist in understanding this correlation the research questions are repeated here.

Question

In the context of service delivery agencies within the Western Australian Public Sector, can a positive information culture be *identified (I), developed (D) and applied (A)* to assist in achieving strategic outcomes and delivering services*?*

Sub Questions

- What typifies a positive information culture? *(I);*
- What are the identifiable components or elements of information culture? *(I);*
- What issues need to be addressed in order to influence and improve an information culture so that it assists in achieving outcomes and delivering services? *(D);* and
- What practical solutions could be implemented to influence and improve an information culture in a government agency? *(A)*

Table 4-1 Description of the Eight Stages Used and Their Relationship to the Research Questions

Stage	Description	Contribution to Research Question
1A	Individual and group interviews - educators and public service practitioners.	*(I) (D)*
1B	Individual interviews -public service managers and educators.	*(I) (D) (A)*
2	Best practice interviews.	*(I) (D) (A)*
3	Researchers who had studied information culture.	*(I) (D) (A)*
4	Data analysis and findings.	*(I) (D) (A)*
5	Further analysis and refinement of the contribution to the theory base.	*(I) (D)*
6	Further analysis and refinement of the potential for practical outcomes.	*(A)*
7	Presentation of key findings, including theoretical and practical outcomes.	*(I) (D) (A)*
8	Finalise thesis.	*(I) (D) (A)*

4.3 Selecting the Participants

Glaser and Strauss (1967) introduced the concept of theoretical sampling, describing it as the way in which subjects are chosen because they represent the

major categories of people relevant to a study. Purposive sampling is a form of theoretical sampling.

As the name suggests, purposive sampling is chosen as a sampling technique because the researcher has a particular purpose in mind. According to Patton (2002, pp. 230-243) purposive or purposeful sampling is popular in qualitative research, and the subjects are selected because of certain characteristics. The strength and potential of purposive sampling resides in using “information-rich cases” which will “illuminate” the research question (Patton 2002, p. 230). Moreover, Patton (2002, pp. 243-244) identified sixteen different approaches to the sampling. One such approach is criterion sampling which involves a preset selection of specific criterion.

The participants were selected for this study using purposive sampling, in particular criterion sampling. This sampling was used as the researcher was very familiar with the context of the study, the characteristics of the environment and the key population of the study, so as to be able to identify the sample. Leedy and Ormrod (2001, p. 219) and Patton (2002, pp. 230-243) support this rationale for sampling.

In addition to a comprehensive knowledge of the environment, the researcher also used the research problem, goal, questions and outcomes to guide the development of the criteria used to select the sample of interviewees. The following criteria were developed:

Criterion 1: The participant is actively involved in aspects and activities related to information and information culture;

Criterion 2: The participant has a role in influencing or is in a position to influence information culture, directly or indirectly;

Criterion 3: The participant has a primary role in managing information and is employed in a public sector agency that delivers services directly to the public; and

Criterion 4: The participant has a primary role in decision-making and guiding strategic direction and works in a public sector agency that delivers services directly to the public.

Participants were expected to meet at least one of the criteria.

Table 4-2 presents the categories and numbers of participants who engaged in the study aligned to each criterion. As this research was conducted using the case

study method, the number of participants was considered appropriate in the timeframe available to the study.

Table 4-2 Interviewees Aligned to Each Criterion

	Criterion 1	Criterion 2	Criterion 3	Criterion 4
Academics	15	15		1
Best Practice	6	6	5	1
Information Practitioners	8	8	8	
Researchers	5	5	1	
Senior Executives/ Managers	4	4	4	4
TOTAL	**34**	**34**	**18**	**6**

Table 4-2 presents the participants in their primary categories. In some instances participants had a significant secondary role related to the context and criteria of the study. For example:

- Three of the academics also held or had recently held senior management positions in the public sector;
- Two of the academics were information professionals, one of whom was on secondment to a university and the other had very recently become an academic;
- Of the five researchers, one had undertaken the research while a practitioner rather than as an academic.

Having determined the purpose of the sampling, the criteria for the sample and then the categories of participants, the researcher undertook to secure interviewees.

Academics (A)

Using the contact pages on the websites for the two Western Australian Universities with Schools and Departments in all the areas related to information management, the researcher sent electronic invitations to the academics found therein. The researcher also secured the assistance of a researcher who was known to the

target group of academics, as well as a Head of School, to encourage the academics to respond to the invitation to participate in the interviews. In addition, one of the Universities had a large public administration and public policy School from which three academics were recruited for interview.

In reporting on the data analysis and findings, responses from the academics are recorded as 'A' followed by the number assigned to them as individuals. For example, A12.

Best Practice (BP)

The original design for the research did not include participation by best practice organisations. However, at the conclusion of the first round of interviews with information practitioners and academics, it became clear to the researcher that the information practitioners had a perspective of information and information culture which was confined to the area of their information specialisation. That is, if they were records managers their responses focussed on the management of records and the environment in which they worked.

Responses from the information professionals had a greater focus on the operational and custodial aspects of information management as opposed to the strategic and holistic view of information and information use and the relationships with information culture. A wider perspective was critical to the study being able to address the research questions and achieve the research outcomes. In part, this situation provided a valuable perspective on information culture in the Western Australian Public Sector. However, the researcher concluded that the perspectives exhibited in these initial rounds of interviews had the potential to confine the extent of the research and miss wider dimensions and understandings.

In addition to this observation, comments had been made by participants on the value of examining best practice in information cultures. Participant A1 cited a private sector organisation as a good example of how an organisation valued and used information. Participant P7 suggested the option of investigating the private sector. Participant P8 also referred to the good examples that may have existed in the private sector.

So the initial observations of the first round of interviews and comments from the participants encouraged the researcher to include a series of best practice interviews. These had the potential to add to the *identification, development* and *application* of information culture.

In reporting on the data analysis and findings, responses from the best practice participants are recorded as ‘BP’ followed by the number assigned to them as individuals. For example, BP6.

Information Professionals (P)

The researcher used a Listserv and electronic mailing lists to invite information practitioners to join the study. The librarians, record managers and information technology and information systems managers had mailing lists specific to their disciplines. An invitation was also sent via a Listserv that was used by the wider information disciplines. The researcher was specific about only including those practitioners who were employed in Western Australian Public Sector agencies which delivered services directly to the citizens.

In reporting on the data analysis and findings, responses from the Information Practitioners are recorded as ‘P’ followed by the number assigned to them as individuals. For example, P7.

Researchers (R)

As a result of an extensive literature search, the researcher had identified those researchers who had previously undertaken studies in areas related to information culture. Nine such researchers were located and five responded to the invitation to participate. All of the researchers who responded did so in a thoughtful and insightful manner. They were pragmatic and open about their studies and encouraging of this research.

In reporting on the data analysis and findings, responses from the researchers are recorded as ‘R’ followed by the number assigned to them as individuals. For example, R4.

Senior Executives/Managers

The researcher was specific about only including those senior executives or managers who were employed in agencies which delivered services directly to the community.

As the Senior Executives/Managers involved in the data gathering had primary roles in the categories of academics or best practice, their responses are coded under those categories. For example, A2 or BP1.

4.4 Considering Research Design

Chapter Two described previous research undertaken into information culture in the public and private sector and revealed that it was not an area in which a significant amount of research could be identified. Therefore, this investigation was largely exploratory. It did not have clear boundaries nor did it have extensive previous work from which to draw. As such, the researcher faced dilemmas of delineation. Firstly, the identification of a suitable boundary for the analysis, and secondly, deciding on an appropriate level of analysis.

Wolcott (2001) urges researchers to use a statement of purpose to guide the analysis, description, interpretation and write-up of the data. Such use enables the researcher to "find, declare and maintain a focus" (Wolcott, 2001, p. 17). In this study the researcher chose to use the sequence and intent of the research goal, the research questions and the research outcomes including the *identification, development,* and *application* described in Chapter Three to provide the statement of purpose and boundary.

The research problem, goal, questions and outcomes revolve around the *identification, development* and *application* of a positive information culture in the Western Australian Public Sector. As these words can be open to interpretation and have different meanings in different contexts, for the purposes of this study the following definitions apply:

- Identification: This includes the description of a positive information culture and the naming of the elements that comprise a positive information culture. A definition of information culture is also considered. Those aspects that indicate the rationale behind the need for or those that discourage the need for a positive information culture are addressed;
- Development: The actions that need to be undertaken to create and sustain a positive information culture. This includes strategies, systems and processes; and
- Application: The potential to implement a positive information culture in the Western Australian Public Sector. This includes options which could be considered for implementation.

The *application* is derived from the *identification* and *development* as these guide what may be required for a successful implementation, including the elements to be

built on and the obstacles to overcome. The relationships between them were gathered from an analysis of the literature and from the data.

To address the issue of an appropriate level of analysis in an area of exploratory study, the researcher decided to use content analysis, identifying themes and patterns and then confirming the analysis through testing against existing studies and models of information culture (Curry & Moore, 2003; Ginman, 1988; Marchand et al., 2001a). While these models do not necessarily provide a perfect correlation, they do provide a good indication of whether or not the analysis was identifying themes and patterns pertinent to the study.

4.5 Process of Data Analysis

The data collection is the foundation of the data analysis. According to Miles and Huberman (1994, pp. 10-12) data analysis is distilled to three key concurrent elements, namely:

1. Data reduction;
2. Data display; and
3. Conclusion drawing/verification.

These elements are focussed on the data collected, and are interrelated and contribute to an iterative and continuous process as illustrated in Figure 4-2.

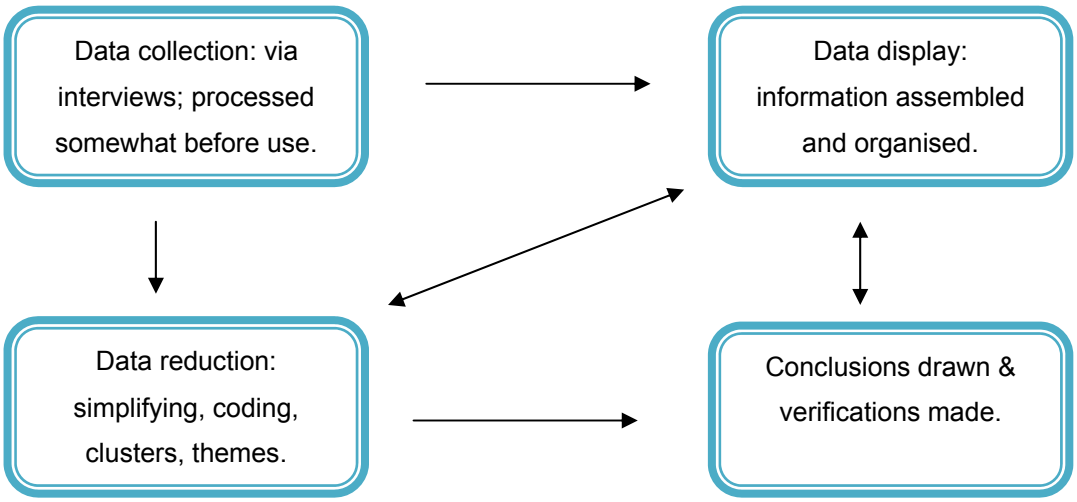


Figure 4-1 Key Steps in Data Analysis (Source: Miles & Huberman 1994, pp. 10-12)

4.6 Application of the Data Analysis Process

The application of this data analysis process to the study is described in the following sections. It outlines how the data collection was undertaken. The themes and codes used in the data reduction together with an overview of the software package used are considered next. How the data was displayed and the conclusions drawn and verified complete the section.

4.6.1 Data Collection

The initial phase of the data gathering was conducted during the period November 2006 to December 2006. This set of data gathering was centred on academics, practitioners and public servants (see Figure 3-1). As is often the case with qualitative studies there was emerging data. That is, data gathered early in the investigation influenced or guided the data collected at later stages (Leedy & Ormond, 2001, p. 143). In this study the data which emerged from the first set of data gathering led to a second and a third set, namely best practice examples and comments from those who had conducted research in the area of information culture. These were gathered in the period February 2007 to May 2007. The final set of data collection which focussed on obtaining feedback on the findings from a representative group of participants was undertaken in November to December 2009.

In order to become familiar with the data collected, at the conclusion of each interview, the researcher listened to each digital recording, making observations and notations. Prior to listening to each recording the researcher read the notes which were made during the interview process itself. The digital recordings were then transcribed. The researcher then read each transcription. By this stage the researcher was familiar with the data, and some initial analysis of emerging concepts was occurring. After the first reading the researcher did a second reading while listening to the digital recording. In this way the researcher was able to make observations and notations on the tones, emphases and emotions. Ashworth and Lucas (2000, pp. 300-304) say it is most useful to listen to the recording several times rather than attempting to do the initial analysis directly from the transcription. By using additional sources of information related to the interview, the researcher was more readily able to recognise, capture and use the emotion, tone and emphases used in the interview (Ashworth & Lucas, 2000, p. 306).

By using an iterative process of notes, transcriptions and recordings, it was possible to mitigate some of the limitations associated with using a transcript as a true and faithful replica of an interview. Lapadat and Lindsay (1999, p. 72) argue that a transcription can never be complete or objective, and that the transcription is not necessarily a conversational event. These authors make the point that there is not a one-to-one correspondence between conversational events and transcriptions saying that, “the process of transcription is both interpretive and constructive” (Lapadat & Lindsay, 1999, p. 72). This is supported by Kvale (1996) who warns that the transcription process is much more than a clerical process.

A researcher will often begin to analyse the data during the data collection process (Leedy & Ormond, 2001, p. 136). Given the emergent nature of qualitative studies, the distinction between data gathering and data analysis is not clear cut. Analysis can begin to occur concurrently with data collection as themes and concepts emerge while the researcher is in the field (Patton 2002, p. 436-437).

4.6.2 Data Reduction

According to Miles and Huberman (1994, pp. 10-11) data reduction is “the process of selecting, focusing, simplifying, abstracting and transforming the data that appear in written-up notes or transcriptions.” Data reduction is iterative and can be experienced in the data collection processes and continues until the final report is written (Leedy & Ormond, 2001, p. 136; Miles & Huberman, 1994, pp. 10-11; Patton 2002, p. 436-437).

Following Wolcott’s (2001) advice to articulate boundaries for data analysis via a clear understanding of the purpose of the study, the researcher applied the sequence and intent of the research problem, goal, questions and outcomes including the *identification, development* and *application* described in Chapter Three. In addition to providing a boundary and purpose, this sequence also enabled the researcher to keep the data and the data reduction in context.

At the highest level of the reduction process, the researcher’s decisions or analysis were guided by the data’s relationship to the *identification, development* and *application* of information culture. The data was segmented accordingly. There were cases where the data was relevant to more than one of these high level segments. For example, the recurring theme of leadership was relevant to both *development and application*. Issues around information technology and information systems

were relevant to all three segments. This reduction and segmentation was done within the parameters of qualitative content analysis using a coding process.

4.6.2.1 Content Analysis

Content analysis is a flexible tool that can be used to measure the semantic content or the "what" of a message or text (Cooper & Schindler 2003, p. 460). Initially, the focus of content analysis may have been on quantitative data, counting occurrences of a particular word or phrase. However, it has also evolved into being a tool for qualitative analysis with the identification of themes and patterns (Corbin, 1986). Content analysis can be used to analyse, not only documents, but also audio or visual data and or the transcripts of these media. In his seminal work on content analysis Krippendorff (1980) describes this expanded understanding of content analysis:

> In any single written message, one can count letters, words or sentences. One can categorize phrases, describe the logical structure of expressions, ascertain associations, connotations, denotations, elocutionary forces and one can also offer psychiatric, sociological or political interpretations. All of these may be simultaneously valid. In short, a message may convey a multitude of contents even to a single receiver. (p. 22)

Patton (2002, p. 453) complements this view when he describes content analysis as "any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings. Case studies, for example, can be content analysed." Cooper and Schindler (2003) state that content analysis is underpinned by a systematic process based on the selection of the units to be analysed. According to Cooper and Schindler (2003, p. 461), this unitisation scheme has four options for unit analysis, namely:

- Syntactical: based on words as the smallest and most reliable units;
- Referential: persons, events or objects to which an expression refers;
- Propositional: the relationships between the actor, the mode of acting and the object; or
- Thematic: higher level renditions revealed in relation to patterns in the content.

Boyatzis (1998, p. 7), Patton (2002, p. 453) and Stake (2005, pp. 448-449) describe content analysis as thematic analysis where the researcher identifies core meanings and issues through recurring themes and patterns.

For this study, the researcher chose to use the thematic option for unit analysis. The words, phrases and sentences in the data collected were analysed for recurring themes, and patterns. This was an iterative process. By reducing the data in this manner, the researcher was able to distil the data into more manageable categories which could be considered separately and any interrelationships identified (Corbin & Strauss, 2008; Miles & Huberman, 1994).

While the sequence and intent of the research problem, goal, questions and outcomes provided a boundary or purpose for the data reduction, the researcher did not use these as a premise or as assumptions. Such a use would then have involved deductive logic. Instead, the researcher used inductive analysis, discovering themes and patterns through interacting with the data and allowing findings to emerge (Leedy & Ormond 2001, pp. 31-32; Patton 2002, p. 453).

During this inductive phase the researcher developed a series of codes or categories for the content analysis as patterns and themes emerged. As the themes and patterns became evident through an iterative process of analytical choices, they were coded and categorised until the researcher was satisfied that the relevant themes, patterns and categories had emerged. In addition to identifying the recurring themes and patterns, the researcher was mindful of the data that did not fit into the categories and codes.

At this stage deductive logic was introduced to confirm or verify the content analysis. The researcher applied aspects of the models developed by previous researchers (Choo et al., 2006; Curry & Moore, 2003; Ginman, 1988; Marchand et al., 2001a; Widen-Wulff, 2000, 2001). These included leadership, the value of and valuing information, information systems and information technology and the benefits which accrued from positive information culture.

4.6.2.2 Coding

Bryman and Bell (2007, pp. 579-580) put forward the argument that the codification of qualitative data does not have the same level of rules and processes as that developed for quantitative analysis. They also support the view that it is not

necessary or desirable to have anything more than broad guidelines. Thus say Bryman and Bell (2007, p. 595), there is no one correct approach to coding data.

Rather than merely providing a means by which to reduce and segment text and aid the retrieval of text, codes give properties, connections and dimensions to the text (Coffey & Atkinson, 1996; Strauss & Corbin, 1990). Ryan and Bernard (2003, p. 277) state that regardless of how a researcher approaches coding, when the themes and categories have been identified and refined a significant amount of analysis has been done.

Miles and Huberman (1994, pp. 57-58) state that the coding is used to retrieve and organise data and the process by which this is done can be straightforward. As a starting point, Miles and Huberman (1994, pp. 57-58) suggest that the researcher creates a "start list" before reading the data, and even prior to fieldwork. The list can be drawn from a number of sources including research questions, hypotheses and conceptual frameworks. On the other hand, Coffey and Atkinson (1996, p. 32) suggest starting with codes drawn from previous studies or reading in the general area or building a coding framework around the researcher's own interests in the area.

Open coding was used in this study. That is, the ideas, concepts and issues were exposed in the data and allowed to emerge. Further they were not hindered in developing into or converging into other ideas, concepts and issues. As a complement to the thematic option for unit analysis for content analysis (Cooper & Schindler 2003, p. 461), the researcher applied the principles of the tri level coding process suggested by Coffey and Atkinson (1996, pp. 32-45). The three levels nominated by Coffey and Atkinson are:

- The use of wide codes and categories. This is essentially a basic process of reduction and simplification and a process of indexing data in text;
- Codes and categories based on a close examination of the language and expressions used by the interviewee; and
- The identification of themes that relate to underlying issues. They relate to the content but are constructed by the researcher. This moves the researcher towards "concepts of more analytic relevance."

Further, Coffey and Atkinson (1996, pp. 30) emphasise that the value of coding goes well beyond a pure mechanistic process. They say, "The general analytic approach is not to simplify the data but to open them up in order to interrogate them

further to try to identify and speculate about further features." Regardless of approach and intent, codes "are not cast in stone" and the researcher should feel free to change, discard, rename or expand (Coffey & Atkinson, 1996, pp. 46).

The process used by the researcher in applying the coding involved five key stages, namely:

- Coding began early in the data collection process. This allowed for growth in understanding and for the opportunity to reconsider the data gathering as understanding grew and the need for new data emerged;
- Initially the researcher read through the interviews noting any issues of key interest or significance;
- At the next reading the researcher began to develop an index of key terms that would become the basis of the coding. This index was generated making notations which included keywords and themes, in vivo comments made by the participants and terms the researcher considered as helpful to the coding;
- The researcher then reviewed this index of codes. The review was done in relation to the sequence of the research problem, research goal, the research questions and the research outcomes and to transcripts. Possible overlaps or duplications were considered. The codes were compared with and considered against the terms and categories used in previous studies to determine the most suitable terminology. Connections between the codes were identified. Some concepts and categories began to emerge; and
- With the consolidated and refined list of codes, the researcher once again interrogated the data. As the links and connections between the codes became clearer and the themes, patterns and categories emerged; the theoretical ideas embedded in the data also emerged. The reduced and coded data made analysis of the data more focussed and purposeful.

These last two steps of the process were iterative. The qualitative data software package, NVivo, was used throughout this process.

4.6.2.3 Software Package

The software package, NVivo, designed to assist with qualitative data analysis was used by the researcher. Using the software as a tool, the researcher was able to divide the data into sections, to attach codes to the data and then classify the sections of data. The software did not obviate the need for the researcher to

analyse or to make judgements. Rather, it assisted in displaying all the data and making connections between the codes. It also had a search and retrieval capability.

In addition to storing and managing the data, the software held other documents created by the researcher such as observations and memos. All these documents were able to be coded and linked to each other and to the coded and classified data from the interviews.

While using a software package enhanced the researcher's ability to manage a large volume of data, the researcher was mindful of Wolcott's (2001, p. 44) advice, that "Computers are so engaging that they draw researchers away from the central task of thinking about their research focus and into a data-entering ritual that is often tangent to the research problem itself."

4.6.3 Data Display

Data display is an organised presentation of information that allows the researcher to draw conclusions and identify possible actions. In the case of qualitative inquiry, this takes the form of extended and extensive text (Miles & Huberman, 1994). This form of data display can inhibit unbiased and exhaustive analysis. According to Miles and Huberman (1994, p. 11), as a form of display, raw and unreduced text is viewed as cumbersome and difficult to analyse because it is:

- Spread over many pages;
- Sequential rather than concomitant; and
- Extensive in size and not well ordered.

These characteristics make it difficult to both read and to analyse. Therefore, Miles and Huberman (1994, p. 91) recommend a more refined and systematic form of display, defining it as "a visual format that presents information systematically, so that the user can draw valid conclusions and take needed action." Overcoming these difficulties can be achieved easily by displaying qualitative data in matrices and networks supplemented by ratings, symbols, labels or short passages of text (Miles & Huberman (1994, pp. 91-93).

In this study the researcher used the software package to assist with the development of matrices, networks and linkages to display the data.

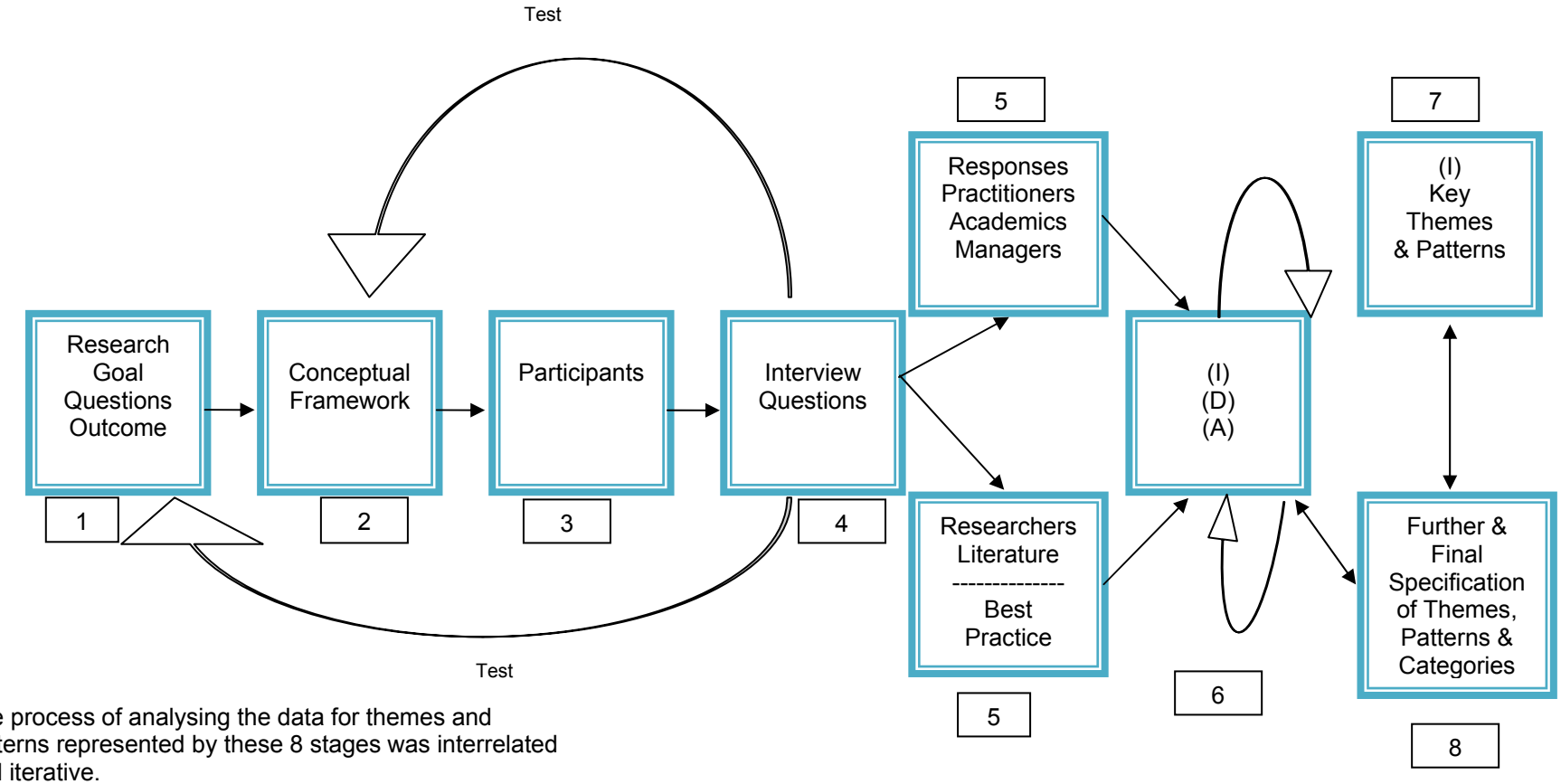
4.6.4 Conclusions Drawn and Verifications Made

Throughout the process of data collection and data analysis, the researcher was considering the meaning of the data, its context and the situations which were emerging. Apart from noting the patterns and themes, the researcher was considering different propositions and causal factors, noting and considering irregularities and pulling these together to form a conclusion.

This was not a linear process. Rather it was iterative and continuous, with data reduction and categorisation giving rise to more elements for data display. Both data display and reduction influenced the conclusion and verification.

Throughout the data analysis process, observations, notations, memos and the literature review were used to verify the findings. Previous research findings, comments from previous researchers solicited through the data collection stage, the best practice examples and the literature were used as the means of verification or triangulation at the conclusions of the data analysis process. Figure 4-2 illustrates this process.

A final process of verification was undertaken when the findings and the recommendations were presented to a representative group of participants. Their feedback was used to finesse the conclusions and the actions recommended in regard to the *identification, development* and *application* of information culture.



The process of analysing the data for themes and patterns represented by these 8 stages was interrelated and iterative.

Figure 4-2 Level Flowchart of Processes of Data Analysis

4.7 Detailed Example of the Process of Data Analysis

In this section the researcher details the steps which were undertaken in analysing the raw data in order to identify and extract the themes and patterns relevant to the context of this research. It also highlights how the explanation of the process in this chapter was translated and applied in practice to ensure a robust analysis. Such analysis identified those relevant themes and patterns. It also allowed for the emergence of other issues and ideas that would add to the richness of the analysis and ultimate conclusions.

The process was applied to all of the data in a consistent manner. As a demonstration of the process, the specific example of identifying the themes and patterns for the subset of data pertaining to the theme of *Benefits* of the *identification phase* of a positive information culture is presented here. The example is explained with the assistance of a graphical representation of all the stages undertaken in the analytical process (see Figure 4-2). This is supported by descriptive passages and tables of themes which emerged.

Appendix B contains the tables describing the themes which emerged from the complete data analysis which followed the process described here.

4.7.1 Context (Stage 1)

The analytical process, including the coding and categorisation revolved around the sequence of Research Problem → Research Goal → Research Outcomes → Research Questions. This sequence, in turn, guided the questions that were asked of the participants. To recapitulate this sequence:

Research Problem

> How to identify, develop and apply a positive information culture to assist public sector agencies to achieve strategic outcomes and deliver services.

Research Goal

> To identify information culture in the Western Australian Public Sector and develop and implement a practical solution at a meta level to assist government agencies in achieving their strategic outcomes.

Research Question

> In the context of service delivery agencies within the Western Australian Public Sector, can a positive information culture be *identified (I), developed (D)* and *applied (A)* to assist in achieving strategic outcomes?

Sub Questions

- What typifies a positive information culture? *(I);*
- What are the identifiable components or elements of information culture? *(I);*
- What issues need to be addressed in order to influence and improve an information culture so that it assists in achieving outcomes and delivering services? *(D);* and
- What practical solutions could be implemented to influence and improve an information culture in a government agency? *(A)*

From this sequence it was evident to the researcher that there were three key high level concepts around which to structure the data gathering and analysis, namely:

- *Identification*;
- *Development*; and
- *Application*.

4.7.2 Conceptual Framework (Stage 2), Participants (Stage 3) and Interview Questions (Stage 4)

Miles and Huberman (1994, pp. 16-22) speak in terms of developing a conceptual framework to bound or focus the qualitative research. They describe the function of a conceptual framework as, "[it] explains, either graphically or in narrative form, the main things to be studied - the key factors, constructs or variables- and the presumed relationships among them. Frameworks can be rudimentary or elaborate, theory driven or commonsensical, descriptive or causal."

According to Miles and Huberman (1994, p. 18) any researcher has an idea or indication of the general constructs that are likely to come into play in the research, and some idea of the elements that will populate these constructs. Developing a conceptual framework encourages the researcher to be focussed on the most important variables and their various relationships. This selectivity can then be used to guide both the data gathering and the analysis. Theory and experience augment the framework.

Bearing in mind Wolcott's (2001) advice to articulate boundaries for data analysis and Miles and Huberman's (1994, pp. 16-22) specific mention of a conceptual framework and its value, the researcher developed a conceptual framework guided by the sequence of Research Problem → Research Goal → Research Outcomes → Research Questions. This conceptual framework formed the basis of the data gathering and analysis.

The conceptual framework for this study is presented in Figure 4-3. The boundary offered by the framework and informed by the research goal and outcomes led the researcher to deciding the category of participants **(Stage 3)**. The participants brought their own experiences, biases and contextual issues to the research. That is, they had their own world view. The questions asked of the participants were based on the content and findings of the previous studies into information culture **(Stage 4).** That is, key themes from the studies such as impact of or benefit of a positive information culture and the components of an information culture were incorporated into the questions. In addition, some key ideas which needed to be expanded or explored further were developed in to questions. This included the definition of information culture and obstacles to developing a positive information culture. The questions were also focussed on the recurring aspects of the research problem, goal, questions and outcomes, namely the *identification, development and application* of information culture. These in turn contributed to both the initial and ongoing process of data analysis.

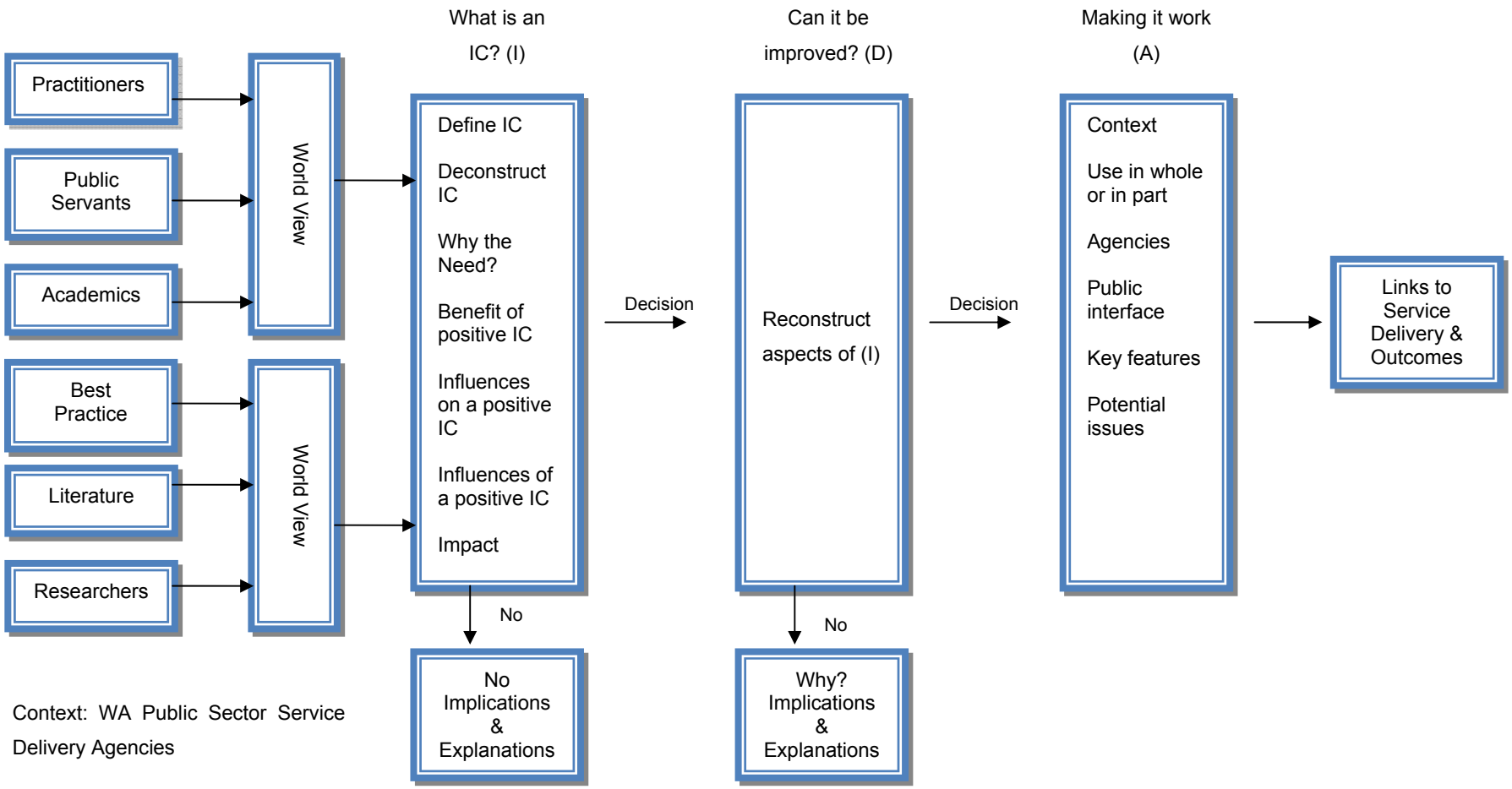


Figure 4-3 Conceptual Framework for Case Study of Information Culture and the Western Australian Public Sector

Chapter Three explained the categories of participants. Appendix B contains the sets of questions asked of the participants and are offered as an indication of the key variables and their relationships which were pursued as related to the *identification, development* and *application.*

In order to answer the research question and to achieve the research outcome, logically the first determination was a boundary for the concept of an information culture. The extent of the boundary is typified in the first two research sub questions:

- What typifies a positive information culture? *(I);* and
- What are the identifiable components or elements of information culture? *(I).*

These two sub questions were at the core of the identification of an information culture. The identification was the first phase of the sequence to understand what might be required to assess the potential to develop and use a positive information culture to benefit the achievement of outcomes in the Western Australian Public Sector. That sequence was about *identification* leading to an understanding of what needed to be *developed* and then *applied* for a positive outcome.

The *identification* marked the starting point for the data collection. It also marked the commencement of the data analysis.

4.7.3 Initial Coding (Stage 5)

The participants had been coded according to their primary role (see Chapter Three), so the responses were grouped according to these primary roles. For example, all responses from the academics were considered and the questions and responses coded to reflect that they had been asked of the academics and responded to by the academics. For example, Question A3 was the third question asked of academics, and the response of the seventh academic was recorded as A7. The responses were kept in these groups throughout the coding processes.

As the questions asked of the participants were semi-structured, the responses which resulted were free flowing, often lengthy, and covered a variety of aspects and topics. Therefore, the researcher chose not to group all the responses under the corresponding question. That is, the responses did not always relate merely to the key topic of the question. The responses provided information against a number of topics under discussion as well as additional issues. This separation of

the responses also meant that the responses from the researchers and the best practice participants could be better used for comparison and or verification

To illustrate the process undertaken to analyse the data, the example of extracting data related to the *Benefits* component of the *identification phase* is described here. The theme of *Benefits* was also evident in previous studies of information culture (Choo et al., 2006; Curry & Moore, 2003; Ginman, 1988, Marchand et al., 2001a).

The term *Benefits* was interpreted in the sense of and spirit and intent of such terms as a gain, a positive outcome or action, an advantage, improvement, profit, measure of success. The essence of this theme of *Benefits* was both corroborated and augmented by the terms used by the participants. For example:

- Improve its performance (Question A3 Participant A12);
- A greater chance (Question A7 Participant A2);
- Better ability to achieve (Question A7 Participant A3);
- Connection to business success (Question R2 Participant R4);
- Express satisfaction (Question A7 Participant A4);
- A productivity point of view (Question BP6 Participant BP2); and
- Helps overcome (Question BP8 Participant BP2).

Although the theme of *Benefits* and the associated patterns emerged from the full spectrum of questions, those which related most closely to the interpretation explained earlier were:

Academics and Practitioners

Q4. What attributes would you expect of a positive information culture?

Q7. What do you think would be some organisational outcomes from having a positive information culture?

Q8. What incentives are there for (or what would encourage) a government agency to improve its information culture?

Best Practice

Q5. What incentives or disincentives are there for organisations such as yours to change their attitude towards information?

Researchers

Q3. The various studies into information culture were able to demonstrate the value of a high performing culture to business objectives and competitive advantage. What incentives and disincentives or obstacles do you think there are to organisations developing and implementing programs to build high performing information cultures?

4.7.4 First Phase Analysis (Stage 6)

Conceptually, each question and the responses were initially coded at the *(I), (D)* and *(A)* level (see Appendix B). Key themes and issues in the questions which related to the boundaries set by the conceptual framework (see Figure 4-2) guided the first level coding. Some responses were coded to more than one category. Throughout this and subsequent coding processes memos were made by the researcher on any anomalies that arose or on other points of interest. These complemented observations and memos recorded during the data gathering. Even at this level, the coding was done by paragraph, sentences and phrases, whichever was most appropriate at the time. Subsequently there were refinement processes as more themes and patterns emerged.

Using the example of *Benefits,* when the questions were drafted this concept was identified as being part of the *identification phase.* It was also subsequently identified in other phases but the *identification phase* is the focus of this example.

4.7.5 Key Themes and Patterns (Stage 7)

During this phase the researcher set about identifying, coding and refining common themes. The coding was guided by the conceptual framework, the references in the literature to the identification of an information culture and the responses of the participants. The questions asked of the participants had also been informed by the research questions, the conceptual framework and the references in the literature. Hence, there were questions which referred specifically to the *identification* level. However, the researcher was diligent about coding all the responses to all the questions to ensure that no comments on this area were overlooked.

Once a more detailed analysis of the content under each category was completed the researcher was able to cluster and distil it in to six key themes. The data was then rigorously analysed against the six themes. The analysis was applied to all the data at the *identification* level to ensure that all relevant themes were identified in

paragraphs, sentences and phrases. The researcher was alert to any need to record findings under more than one heading. For example, leadership was seen as an incentive, disincentive and an element.

At this stage six key themes emerged associated with *identification*:

- Benefits;
- Defining;
- Disincentives;
- Elements;
- Incentives; and
- Organisational culture

Table 4-3 details the key themes and their components which emerged from this analysis.

Table 4-3 Themes Which Emerged from Stage 7 of the Analysis of the Identification Phase

Name		Sources	References		
Identification					
	Name		Sources	References	
	Benefits				
		Name		Sources	References
		Business Benefits		13	18
		Levels of Benefits		5	7
		Ways of Working		8	10
	Defining		16	32	
	Disincentives		15	29	
	Elements				
		Name		Sources	References
		Evidence		16	30
		Leadership		19	26
		Learning		3	5
		Support for Information		13	25
		Values (assoc with info)		14	24
		What dept values		7	9
	Incentives				
		Name		Sources	References
		Accountability		11	15
		Financial		6	9
		Information Need		8	13
		Legislation & Compliance		7	10
		Political		7	11
		Service Delivery		6	12
		Technology		3	5
		Ways of Working		3	20
	Organisational Culture				
		Name		Sources	References
		Organisational Culture		15	19

4.7.6 Further and Final Analysis and Distillation of Themes (Stage 8)

The data under each one of these six themes was again interrogated to reveal even more specific themes and patterns. In many cases this was a line by line analysis. The data which had been initially allocated to the two other meta levels of

development and *application* was also analysed line by line to ensure that data relevant to the *identification* was captured.

With specific regard to the example of *Benefits,* thirty-five references or comments were identified under this theme. These were then further categorised into three specific related themes, namely:

- Business benefit;
- Level of benefit; and
- Ways of working.

The following table details the analysis and coding for the *Benefits* theme. It is divided into the three specific themes. It acknowledges the question from which the theme was identified and the participant responsible for the comment. The words and phrases pertinent to the subthemes are highlighted in yellow. Appendix B lists, in full, the questions asked of participants.

At this stage of the data analysis, it became evident that there was a close relationship between benefits and incentives, and that this would need to be explored and explained in the documentation of the data analysis.

The researcher then mapped the themes recorded to test the relationships and to check relevance and overlap. The mapping was based on the context and intent of the data.

Table 4-4 Benefits Themes Which Emerged From the Analysis Including Statements in Context and With Associated Question and Participant Codes

Business Benefits
Question A2 Participant A6
compared with the really great things that information can do for you to improve your decision-making and all this kind of things but when it comes to the crunch, if you, in risk management terms that's where you lose out if you don't keep information properly so.
Question A3 Participant A12
information within the organisation that the organisation should be using to improve its performance and be its key performance indicators,

Question A7 Participant A2
I definitely think that there would be better outcomes. I think that you would get better governance in a variety of ways. I think you could get better policy advice for political decision makers. I think that you could get more inclusive and joined up type governance as a consequence. It works favourably for those sorts of things. I think that you could get more democratically inclusive governance because I think information culture has a strongly democratic component to it. And so I think there is a greater chance of involving stake holders in the community more if you have an information culture. Perhaps I am overly romanticising the value of a strong information culture but I think it has those broadly democratic tendencies. So I think that there is a variety of potentially beneficial outcomes that could be involved
Question A7 Participant A3
a better ability to achieve the primary outcomes
Question A7 Participant A4
to talk about how people are managed versus the information culture. If you know, if an information culture is working really well what are the benefits? You'll be able to see benefits on different levels. Firstly people express satisfaction with information systems that they've got. I spoke to the CEO of [Name of Organisation] and asked about some of the studies and he said, you know we know what works. Have you measured it? Don't need to. Everybody says it works, everybody's happy with it and when I asked all the people on a lower level, on both my own team and on outside stakeholders there was just total agreement that it worked. ... So based on my government experience people would say that its working really well and they'll express satisfaction, another way of looking at its benefits right now in my experience at [Name of Organisation] is that the bottom line will improve and partly its better decision- making, better feedback processes a greater understanding of what's happening a greater ability to control, to have control over the factors that impact over the performance of the business.
Question A7 Participant A8
Customer satisfaction generally, client satisfaction.

Question BP5 Participant BP2
From a productivity point of view the concept of running an information knowledge environment it just means that the organisation is just so much more efficient and so much more effective in what it achieves. It also gives us a tremendous platform from which to influence others if we can actually demonstrate actually our own mastery of the environment and I think that's actually something that has been evidenced in the last few years.
Question BP7 Participant BP4
Yes. It's having accurate data which you can find easily and you know is correct and current for decision-making, for either within the department or something you're advising the minister or somebody on the ground, you know. Can they do this or that?
Question P8 Participant P5
Some of the returns are about not so much saving money but cost containment, it is like needing to invest and doing it wisely, you can't not invest, you have to invest. So it is actually, it is an investment, and it's a leap of faith sometimes about value and it's not necessarily that you can measure it completely so it's, you know all this stuff about whatever the measures are going to be but working on what those values are, what the value to the business is.
Question P8 Participant P6
I was just going to say, it seems to be just making the right decisions, it is as simple as that
Question P9 Participant P6
Put a dollar figure on it.
It is about business benefit. I mean, I know because we are going through EDMRS and all that sort of stuff and people say don't come to us and tell us about compliance, you are wasting your time, because that is all about risk management, most people are prepared to take the risk because there is so much to do, so many pressing issues that they have got a DG breathing down their neck, or a Minister, about delivering outcomes and stuff like that.

So it is really about business benefit and how it can improve the business, nothing else.
Question P9 Participant P7
Absolutely, if you want to convince government to take this area seriously, you have to have case studies and a variety of evidence that is suggestive of business benefit.
Actually it is a lot easier I think. You recognise some of the benefits are quite dramatic, like, what might be the benefits of full cycle electronic records management and moving away from a paper based regime. I went to a government agency a week ago, which I probably can't name, and it was spending $2,000 a day on paper file activations with a private sector service provider, half a million dollars a year in file retrieval in the absence of a full cycle electronic record retrieval.
The benefits are there but the costs are hidden and really what, I think the argument can be sold, some of these hidden costs and some of the unrealised benefits need to be quite clearly communicated and often I think we fail to communicate that.
Question R1 Participant R3
Local authorities have moved on in terms of measuring their quality of service and in terms of sharing information using relevant IS. There seems to be a greater awareness that information has to be shared in spite of difficulties surrounding confidentiality of information.
Question R2 Participant R4
Also the connection to business success is difficult because business success is depending on so many factors (both internal and external). Therefore I think the researchers have preferred to focus on narrower aspects connected to organizational information behaviour – for example looking at social aspects, motivation, trust, attitudes, traditions, group behaviour. All of these could of course also be defined as parts of information culture.
Question R4 Participant R4
The connection to business success is something I have left out because I think it is more valuable to focus on the actual processes behind effective information and knowledge

sharing rather than trying to motivate its role for business success. This comes as a result in the long run.

Level of Benefit

Question A7 Participant A12

Maybe some of the CEO's would have kept their jobs. Who was the, without using names, who was the head of the [Name of Organisation]? If she had have known that the organisation wasn't looking after [client group] that had been reported to the agency. If she had have known all that she might have done something about it.

Question A7 Participant A2

I definitely think that there would be better outcomes. I think that you would get better governance in a variety of ways. I think you could get better policy advice for political decision makers. I think that you could get more inclusive and joined up type governance as a consequence. It works favourably for those sorts of things. I think that you could get more democratically inclusive governance because I think information culture has a strongly democratic component to it. And so I think there is a greater chance of involving stake holders in the community more if you have an information culture. Perhaps I am overly romanticising the value of a strong information culture but I think it has those broadly democratic tendencies. So I think that there is a variety of potentially beneficial outcomes that could be involved.

Question A7 Participant A4

I think it highlights you know kind of going up a level, to talk about how people are managed versus the information culture. If an information culture is working really well what are the benefits, gees a big question. You'll be able to see benefits on different levels. Firstly people express satisfaction with information systems that they've got. You know I spoke to the CEO of the [Name of Organisation] and asked about some of their studies, and he said we know what works. Have you measured it? We don't need to. Everybody says it works. Everybody's happy with it and when I asked all the people on a lower level, on both my own team and on outside stakeholders, there was just total agreement that it worked. Now the way they've gone about it is in a very sophisticated way, a very advanced way. So they were sharing things now, in terms of you know everybody had their own discussion board and everything on the discussion board was important. Whereas you know there's email and everything is lost to personal holdings and there is no organisational memory. Because they were using lotus, there was this huge organisational memory. People could join their organisational

memory and go through every discussion for the last 3 years and know exactly what's going on in all these topics. They had a structure. The team I was studying was writing computer programmes and when they didn't work they needed to converse and it was an incredibly good structure for that. So based on my government experience people would say that its working really well and they'll express satisfaction. Another way of looking at its benefits right now in my experience at [Name of Organisation], is that the bottom line will improve and partly its better decision-making, better feedback processes, a greater understanding of what's happening, a greater ability to control, to have control over the factors that impact over the performance of the business. So yeh that's the two areas that I can see, there's the levels of satisfaction people have and the other one actual tangible performance improvements.

Question A7 Participant A8

Customer satisfaction generally, client satisfaction.

Question A7 Participant A8

They would have employee satisfaction I think as well. If you're part of the organisation employees do feel loyalty and part of the organisation they need to know what's happening; they need to be a part of it.

Question BP6 Participant BP2

Yes, yes, yes we went through a massive business process improvement program a couple of years ago and it had a tremendous amount of staff input.

Question BP8 Participant BP2

I think probably because we can see the benefit of the information that comes out to actually improving the condition of the individual. We can see the benefit of as long its depersonalised. Why not make that information available for the benefit of people? And it comes back to that concept of informed decision-making. If you didn't give the person a piece of information they could make the wrong decision and in a sense context is important to that again too, and that probably has something to do with the information culture that you're talking about and that support for service delivery.

Ways of Working
Question A7 Participant A1
New ideas. Questioning of existing paradigms probably. You know there would be an openness to say "Oh look we tried that before and it didn't work. Why don't we try something else."
Question A7 Participant A2
I definitely think that there would be better outcomes. I think that you would get better governance in a variety of ways. I think you could get better policy advice for political decision makers. I think that you could get more inclusive and joined up type governance as a consequence. It works favourably for those sorts of things. I think that you could get more democratically inclusive governance because I think information culture has a strongly democratic component to it. And so I think there is a greater chance of involving stake holders in the community more if you have an information culture. Perhaps I am overly romanticising the value of a strong information culture but I think it has those broadly democratic tendencies. So I think that there is a variety of potentially beneficial outcomes that could be involved.
Question A7 Participant A3
If you don't have an information culture people don't value learning. You can get the learning word in there as well.
Question A7 Participant A5
Absolutely more information sharing
Question BP7 Participant BP1
In the same way you would expect a qualitative based decision to have similar sorts of things. What are the inputs, especially the key inputs? What are the key things that lead you to this conclusion? Often we talk about tests when you are doing an audit and I think that the better term to use is verification. But how do you verify what you have got. That's where I see a lot of decision evidence for decision-making is lacking that "OK we have got this piece of information but it doesn't seem to be based on, and we have got another piece of information that it is based on but this other piece of information doesn't seem to have any

provenance. Doesn't seem to have any standing and often there are things like that where a corridor conversation turns into a business decision. You would want to see some evidence there. Now how do you do that if there are no records or information kept that can then get very difficult How does someone justify a decision if they can't show you their thinking?

Question BP6 Participant BP2

The benefit from a productivity point of view being that when the organisation actually goes through and I'll give an instance, actually negotiating new contracts between the staff and management for the purposes of, you know employment contracts, the process in our agency is just a lot simpler and easier each time because of our openness. And so we have this situation where both sides tend to be very open in the negotiations with little hidden and the decisions or the agreement comes a lot quicker because there's no need to sort of research underneath because of hidden agendas or things like that. By being open the organisation can say this is how much money we actually have and the staff can make a decision then about how much they want to change or the extent to which they need to change in order to actually sort of get more of the cake. I actually find it an efficient and effective way to work. We get a lot of ideas about how to improve things actually that come from up as well as down. Yes, yes, yes we went through a massive business process improvement program a couple of years ago and it had a tremendous amount of staff input.

Question BP8 Participant BP2

Yes, we certainly think that that's been a great advantage to our organisation simply because it helps overcome too actually the changes in generations in the organisation because the information is probably there, the context in which it was created is there, and it tends to aid re-use as well too. You need to manage that information, or you need to manage that knowledge so that people can probably see what is greatest value versus lesser value. But it's still some advantage to doing that.

Question P8 Participant P4

There probably is, I don't think it's obvious it's far more subtle. It's a case of you don't know what you're missing, you don't know what's out there. Now if people are not in a good culture that encourages them to be open and trusting and to be valued for their opinions then you don't know what you don't know and I know that sounds ridiculous.

Question P7 Participant P5
Seamless business, end to end processes, that's what I'd expect, sort of fluid
Yes, be it if they are manual steps but a fluidness and a efficient, effective, that's what I'd expect.

The themes and patterns identified in this analytical process, together with some of the specific words and phrases, were then used by the researcher in developing the high level analysis leading to the findings, conclusions and recommendations of the study.

The process described using *Benefits* as an example was repeated for each question, category and theme of the study.

4.8 Ethical Considerations

This case study addressed a "contemporary" issue in a "real-life" context (Yin, 2003, pp. 13-14). It involved face-to-face contact with participants. This meant that the researcher had a close relationship with the participants and gained insights into personal and professional opinions, and into the workings of government departments. This type of research in this type of environment has the potential to be intrusive.

Ethical research requires that the researcher demonstrates a respect for privacy and confidentiality, and is sensitive in building relationships and trust (Rowley, 2004, p. 210). Conducting ethical research relates to the collection of data, the analysis of data and the publication of that data without causing harm to the participants. In addition to the ethical relationship with the participants, the researcher has an obligation to the research process and the data. For example, the researcher must be unbiased and objective, they must acknowledge the ideas of others and not misrepresent the findings so as to prove a point (Bryman & Bell, 2003, 2007; Hussey & Hussey, 1997; Rowley, 2004; Rubin & Rubin, 2005).

In the light of the above ethical considerations, this study used a series of protocols to guide and maintain ethical behaviour. The protocols were:

- All participants were well informed of the study and consented to be involved;
- Prior permission was obtained to record all individual or group interviews;

- The researcher's biases and personal opinions were disclosed;
- Codes were used to ensure the confidentially and anonymity of participants. References to organisations were removed;
- Hard copy, audio tapes and digital material were stored in a locked and secure environment; and
- Material stored on the researcher's computer was password protected.

In accordance with University policy and practice, at each stage of the study applications were made to the Human Research Ethics Committee and clearances received to undertake data collection.

4.9 Timeline for the Thesis

The timeline for this thesis is presented in Table 4-5.

Table 4-5 Timeline for the Thesis

Time Frame	Activities
2006	
January – May	Preparation of proposal.
June – August	Submission and presentation of proposal.
September –November	Preliminary activities and preparation for data collection. Commence data collection.
December	Data collection and analysis.
2007	
January – December	Data collection and analysis.
2008	
January – December	Analysis and commence write up.
2009	
January – December	Write up thesis. Final data collection.
2010	
January – June	Complete, review and submit thesis.

4.9.1 Chapter Four Summary

Chapter Four described how and why the researcher selected and used the research design for the study. It complemented the research methodology presented in Chapter Three. The data analysis was described using a high level flowchart and a conceptual framework to depict the process. The specific example of the *Benefits* theme from the *identification* phase was used to demonstrate in detail how the researcher applied the research design. The chapter concluded with the ethical considerations and the timeline for the thesis.

Chapters Five, Six and Seven which follow present the discussions and findings related to the *identification, development* and *application* phases of information culture. The next chapter considers the discussions and findings which emerged in relation to the *identification* phase.

5 The Identification of Information Culture

5.1 Introduction

This chapter presents the discussion and findings in regard to the *identification* phase of the research. Figure 5-1 highlights the area under discussion and illustrates the relationship between the *identification* and *application* phases. The discussion associated with the *application* of the *identification* phase is presented in Chapter Seven. The presentation in this chapter is designed to address the research problem and the research outcome through the research questions which focussed on the *identification* and *application,* namely:

Question

> In the context of service delivery agencies within the Western Australian Public Sector, can a positive information culture ***be identified (I)*****,** *developed (D)* and ***applied (A)*** to assist in achieving strategic outcomes and deliver services?

Sub Questions

- What typifies a positive information culture? ***(I)***;
- What are the identifiable components or elements of information culture? ***(I)***; and
- What practical solutions could be implemented to influence and improve an information culture in a government agency? ***(A)***.

Two key areas are addressed in this chapter on the identification of an information culture. These areas are:

- Defining an information culture; and
- Impacts on and of an information culture (benefits, disincentives, incentives and organisational culture).

The linkages between the *identification*, *development* and *application* phases are highlighted.

This chapter expands on the attributes and elements that identify an information culture, the benefits of a positive information culture, the incentives and disincentives to such a culture and the influence of organisational culture on

information culture. The systemic and reflexive nature of information culture began to emerge from the discussion and findings in this chapter.

Examples of the data may be found in Appendix B.

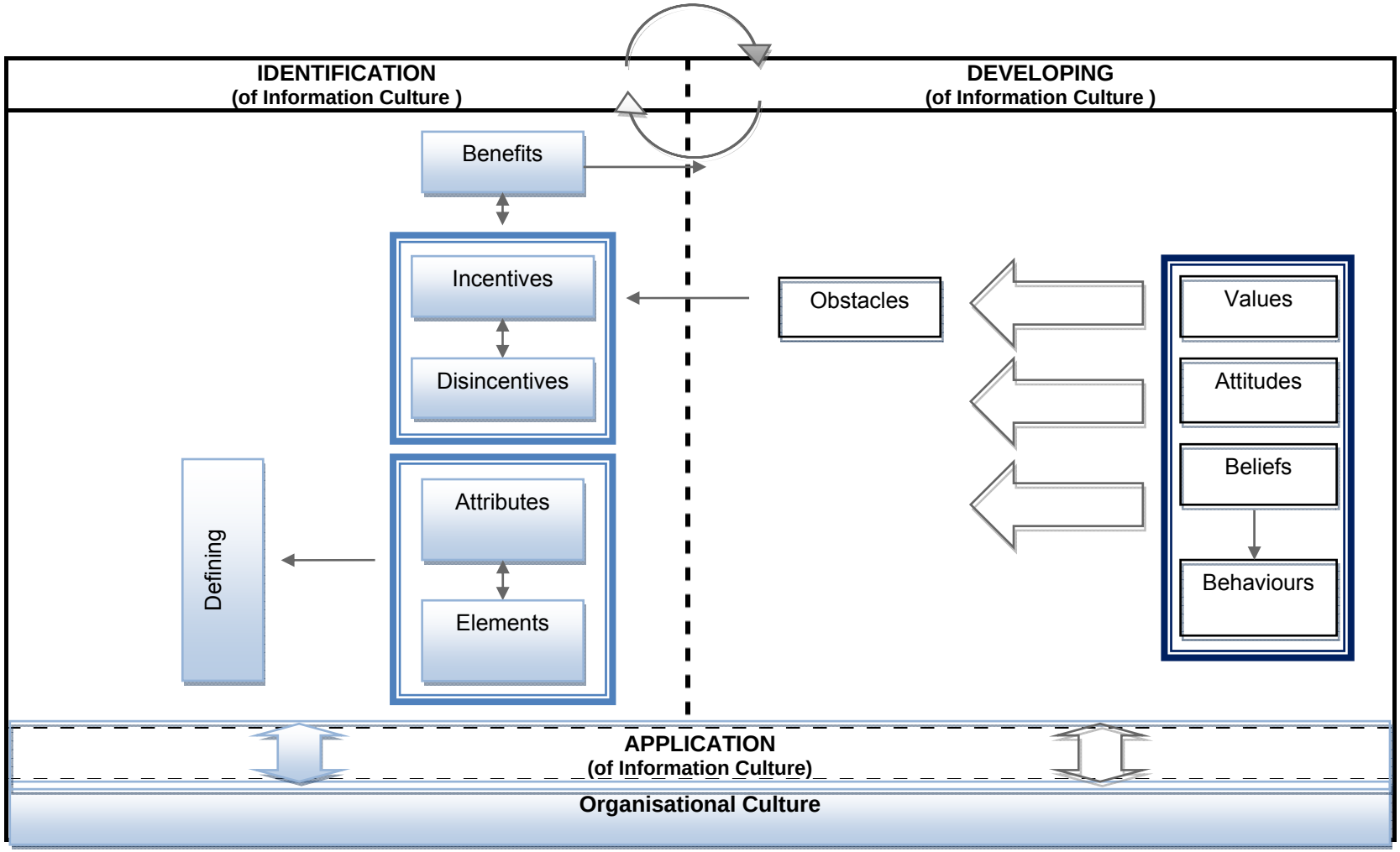


Figure 5-1 Key Themes and Categories Addressed in this Chapter (Highlighted in Blue)

5.2 Relationships and Linkages Between the Areas under Discussion

With regard to the *identification* phase, Figure 5-1 illustrates the relationships between the categories and themes which emerged from the literature review and the data gathered, including the viewpoints provided by the best practice interviews and those who had previously undertaken research into information culture.

Central to the understanding of the identification or defining of an information culture was an appreciation of the attributes and elements of an information culture. That is, the characteristics, distinctive features or qualities (attributes) that distinguish an information culture and the elements that separately and together provide the foundation for defining an information culture.

Also part of identifying and understanding an information culture, is establishing if there are benefits to a positive information culture and articulating what those benefits could be. Once the benefits of having a positive information culture are acknowledged they lead to and or relate to the incentives that would encourage an organisation to achieve a positive information culture. In some instances disincentives also exist and act as a discouragement or foil to identifying and or developing a positive information culture. With attention and action, disincentives may transform into incentives, or at least be neutralised. Figure 5-1 also refers to obstacles to the development phase of information culture and suggests that obstacles may impact on incentives. It may be possible to address the impact of these obstacles. In the context of this study obstacles are distinct from disincentives. An obstacle stands in the way of progress or achievement and needs to removed, surmounted or circumvented. On the other hand, a disincentive is a negative motivational influence or a discouragement to a particular course of action or behaviour

Bounding these endeavours is an organisation's culture. Such culture interacts with and influences the information culture and thus would also influence the other themes.

5.3 Attributes Contributing to the Identification of Information Culture

The attributes and elements of an information culture are central to defining and typifying an information culture. In this study they also provided the foundation

stones for the model of information culture which is described in this Chapter Six. The data analysis revealed a relationship between the attributes and the elements. The manifestations of attributes exhibit an influence on the elements. The attributes can be developed or enhanced and in turn have an impact on the elements.

This section focuses on the discussion and findings around attributes. For the purpose of this study, the attributes of an information culture were defined as its characteristics, distinctive features or qualities.

During the data collection process participants A1 and A3 made mention of the commonality of attributes between an information culture and a culture associated with any other entity, such as organisational culture. That is, the general classes of attributes, such as norms, values, practices, attitudes, behaviours and beliefs associated with culture, would also apply to information culture. These classes of attributes have been acknowledged and used by researchers of information culture (Choo et al., 2008; Davenport, 1997; Marchand, 1996; Marchand et al., 2001a; Oliver, 2003).

The working definition of information culture used by this study was “the values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information” (Marchand, 1996, p. 14). The researcher was guided by this definition and the recurring general classes of attributes in analysing the data pertaining to attributes. The meta level attributes, namely values, attitudes, beliefs and behaviours, were used as categories of identification.

Although these attributes have been used and acknowledged in the studies of information culture, there is scant evidence of any rigorous investigation of the meaning of the words. Definitions of the words have been provided in certain studies (Choo et al., 2008). In others they have merely been used to define or bound information culture (Curry & Moore, 2003; Davenport, 1997; Marchand, 1996; Travica, 2005a). Neither of these approaches provides a clear insight into or understanding of the attributes, nor do they assist in appreciating what the researchers meant in using the words. Furthermore, it does not aid the researcher in understanding what the participants meant when they used these words.

By introducing these words to any study, including this one, the researcher risks contaminating the interview. The researcher does not necessarily know what each participant means, and the participants are unaware of the meanings ascribed by the

researcher. Without discussions on the semantic issues, the researcher needs to ensure that adequate actions are taken to balance out the possible contamination.

Hofstede (1998, pp. 477-488) refers to values, attitudes and beliefs as “constructs.” Quoting from Levitin (1973, p. 492), Hofstede explains that a construct cannot be directly observed and can only be inferred from behaviour. Constructs do not actually exist, other than by definition. In explaining the different interpretations of such terms Hofstede (1998) stated that:

> No two of these terms are exactly synonymous, and many overlap to some extent. Some of the terms mean different things in different (sub) disciplines (e.g. values) and for different authors (e.g. climate); and even if they are meant to refer to the same thing, definitions vary (e.g. culture). (p. 477)

Even though Hofstede’s (1998) study was related to organisational culture, the underlying principles of his comments hold true for information culture and the attributes under discussion in this thesis. It highlights the need to be keenly aware of the context in which the words, values, attitudes, beliefs and behaviours are used by participants, the backgrounds of the participants and the biases and background of the researcher. Moreover, this situation raised by Hofstede suggests that further research into the meaning and understanding of values, attitudes, beliefs and behaviours as attributes of information culture would be helpful.

While the studies into information culture have not arrived at a consensus on the attributes of information culture, the literature on organisational culture is no clearer. Authors and researchers of organisational culture vary in their use of the determinants or attributes of culture. Schein (2004) refers to assumptions, beliefs and values and artifacts. Gibson, Mazneskis and Kirkman (2009) use the terms perceptions, beliefs, values and behaviours, and Whitley (1995) talks of actions, perceptions, attitudes, beliefs and values. Alvesson and Sveningsson (2008, p. 36) refer to “shared meaning, interpretations, values and norms.”

Even though the literature is divided on the determinants or attributes and the definitions thereof, this researcher saw the importance of defining the attributes used in the working definitions of information culture, namely the values, attitudes, beliefs and behaviours. Using definitions would assist in conducting an objective and thoughtful analysis of the data. After analysing a selection of the definitions of the attributes of culture, the researcher determined that there was some commonality of meaning even though different terms were used. For example, Schabracq (2007, pp. 61-62) explains that, “Our assumptions are the ideas from which we depart and from

which we reason and act. Assumptions are a matter of ... belief ... attitude reflects a belief." Alvesson and Sveningsson (2008, p. 37) refer to assumptions as "taken-for-granted beliefs."

Bearing in mind the issues raised by Hofstede (1998) and Levitin (1973) and the frequent and established use of the terms value, attitudes, beliefs and behaviours, the researcher took precautions to minimise possible contamination, and to assist conducting an objective and thoughtful analysis of the data. Firstly, definitions were applied to the meta level attributes.

Representative definitions of values, attitudes, beliefs and behaviours were selected from the literature to guide the data analysis. The definitions are as follows:

- Values

  Values are social principles, philosophies, goals, and standards considered to have intrinsic worth (Schein 2004);
- Attitudes

  Attitudes are conscious and selective judgements about a person, object, concept or event. Attitudes provide the mental predisposition to behave with consistency toward its subject (Hunsaker, 1987, p. 130);
- Beliefs

  Beliefs are a person's subjective probability judgement concerning the relation between the object of the belief and some other object, value, concept or attribute (Fishbein & Ajzen, 1997, p. 131); and
- Behaviours

  Behaviours are the actions that people take on a daily basis in response to stimuli, choices or situations (Gibson, Maznevski & Kirkman, 2009, p. 52).

In the context of this study values, attitudes and beliefs are the intangible expressions of an information culture and behaviours are the tangible expression.

A second set of precautionary actions came into play with data analysis phases. This involved a consideration of the context in which the interview took place, the content and context of the interview itself, and through a consideration of the individual interviews in the context of all the data gathered. With the benefit of hindsight, the researcher would also have used a probing technique during the data gathering to gain better understandings of the ways in which the participants used the words and ascribed meaning to inform their comments.

The four attributes were not always clearly delineated or bounded in the data. In some instances they were found to be interconnected and or sequential. So in analysing the data the researcher found complementarities and overlaps between them. The systemic nature of these findings is recorded as such in this section.

The following table presents some of the statements made by participants in relation to the attributes of an information culture. Using the definitions of the attributes of values, attitudes, beliefs and behaviours the researcher has assigned an attribute or attributes to each statement. From this table it can be seen that the actions, activities, views or feelings identified by the participants did not always fit neatly into just one category of attribute and that, in some cases, there was a natural flow from one attribute to the next.

Table 5-1 Attributes assigned to an extract of Participants Statements

Statement	Values	Attitudes	Beliefs	Behaviours
Value creation, manipulation and use.	۞			۞
Place appropriate values and see purpose of info in the organisation.	۞	۞		
Value and utility.	۞			۞
Information drives the applications and processes not the other way round.	۞	۞		۞
Systems behind information use align with needs of users now and in future; not systemised for their own sake.	۞	۞		۞
Everyone creates information and understands the importance without feeling burdened.		۞		۞
Information is the basis of every decision and everything that is done; cannot operate effectively without it; open shared thing; no perceived value in hording it.	۞	۞		۞

Alignment with the business.	۞	۞		
That the organisation has custody of information for better organisational services.	۞	۞		
Knowledge sharing; knowledge is respected and valued and trusted and secured.			۞	۞
Ownership responsibility; understanding why we are collecting information and its links to mutual use.	۞	۞		
People are successful and confident; People believe automatically that this is the way to work.			۞	۞
Information management and information systems on an equal footing and dialogue between the two.	۞	۞	۞	
Information will be automatically captured and people will access information without realising.	۞	۞	۞	۞

The complementary nature of attributes was also found in the literature. For example, sharing information may be expressed as a value and people can also have attitudes towards and behaviours relating to sharing. Trust in an organisation, its people and its information is referred to as an attitude as well as a behaviour. (Constant, Kiesler & Sproull, 1994; Jarvenpaa & Staples, 2000; Oliver, 2008).

The literature on the relationship or sequence between the attributes is also divided. Alvesson and Sveningsson (2008, p. 42) state that cultural change is not about imposing behaviours. Rather, it is about changing values. According to Vasu, Stewart and Garson (1998, p. 226) values or norms “shape perception” (attitudes) and “affect behaviour.” Trice & Beyer (1993, p. 2) say that “The first is the substance of a culture – shared, emotionally charged belief systems....The second is cultural forms – observable entities, including actions, through which members of a culture

express, affirm and communicate the substance to one another." Addressing the entirety of the sequence, De Long and Fahey (2000) revealed that values shape beliefs leading to an impact on behaviour.

Whitely (1995, p. 39) commences the sequence with values which she says "are so soft as to be invisible in terms of rational explanation. You can observe behaviours but it is necessary to look underneath for the values which are driving the behaviours....Next comes beliefs." As part of their "Theory of Reasoned Action" Fishbein and Ajzen (1975) created a sequence of relationships from beliefs to attitudes to intentions and then behaviours. According to Fishbein and Ajzen (1975) beliefs influence attitudes. These attitudes then guide intentions which influence behaviours.

Participants were explicit in citing that valuing information was the first attribute that needed to be in evidence. For example, Participant A3 said, "Firstly, they place an appropriate value on the information because they see where it fits into the purposes of the organisation."

Some studies into information culture confined the number of attributes. For example, Choo et al. (2008, p. 793) suggest that the attributes of information culture are values, norms and practices. Davenport (1997, p. 84) refers only to behaviours and patterns. Whereas Marchand (1996, p. 14) uses values, attitudes and beliefs. This situation suggests the inconclusive nature of information culture. It also throws into relief the different ways in which people use the terms to describe attributes. Nonetheless, there is some commonality of intent and meaning.

The literature and the data analysis combined to corroborate that values, attitudes, beliefs and behaviours can be considered as attributes of information culture. Furthermore, it also strengthened the argument presented here for the logic of a sequence of these attributes as shown in Figure 5-2.

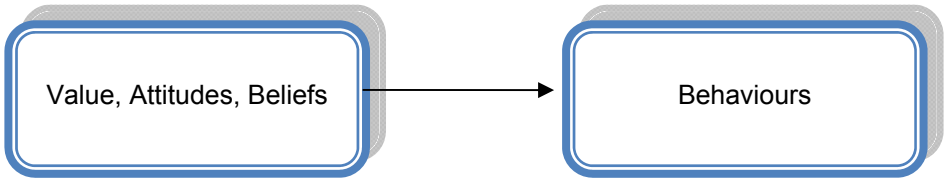


Figure 5-2 The Sequence of the Attributes of an Information Culture

Having established the attributes the next section will address the individual attributes, and where appropriate, the relationships which exist between them.

5.3.1 Attribute: Values

According to Deal and Kennedy (1982) values are key to the success of an organisation:

> As the essence of a company's philosophy for achieving success, values provide a sense of common direction for all employees and guidelines for their day-today behaviour....In fact we think that often companies succeed because their employees identify, embrace and act on the values of the organisation. (p. 21)

Highlighting the perceived importance of values was the number of comments and observations made by participants. Five main themes were evident in regard to values and valuing information, namely:

- The importance of value as the initial attribute and that this extends to, not only valuing information, but understanding the value of information;
- The strategic importance of a focus on the value of and valuing of information;
- Value is linked to the purpose of the organisation and the use of information;
- The systemic nature of value; and
- Information management and value.

5.3.1.1 Valuing Information and the Value of Information

The data gathered and analysed on value as an attribute revealed two dimensions to the value accorded to information in an organisation and the utility ascribed to it. That is, the value of information and the value placed on it. For example:

> Values and what's recognised as being valuable ... you are going to end up with something that is a culture with information as an adjective. (Participant A1)

> [H]ow the organisation values the information that it has or is the custodian of, to the betterment of that organisation's service to the public. (Participant A12)

5.3.1.2 Strategic Importance and Links to Organisational Purpose and Systemic Nature

Participant A3 associated value with a strategic understanding of "where it fits into the purposes of the organisation." He did then go on to refer to the "active use of information", systems "correctly align[ed] with the needs of users now and

anticipated into the future." In doing so he took a more systemic view and linked values with behaviours:

> So that they are not systemised for their own sake because they align with the purposes of the organisation now and into the future. The value and ... the behaviours therefore shown in terms of the way information is created, is not fragmented in each individual but there is relevance that the systems that enable sharing of information in co-development of information and ... joint use of information. (Participant A3)

These comments are not only an example of the theme of the strategic value of and information culture, but also the themes of information use, information management and the systemic nature of these themes.

The strategic importance of the attribute is demonstrated in this quote from Participant A2. He saw the crux of the situation as an appreciation of information, and from this would come the valuing of information. This would manifest itself in a methodological or systems approach to information that gave a strategic perspective to why information was key to the organisation and its outcomes. It would also be evident in a critical perspective on information. Participant A2 said:

> There would almost have to be some strategic notion of what is our best way of serving our organisation's needs through information ... and I think that if you want to have a strong culture you need to value and worship information ... and so I think the first thing is that it's valued.

It is of interest that these more strategic views were offered by academics who held or had held senior positions in government. They did not come from an information background.

Supporting the strategic value of an information culture is the following comment from Participant R2:

> The biggest issue is that many managers still consider the behaviors and values related to effective knowledge and information use intangible and not worth paying attention to. The ability to measure and clearly demonstrate value is the key to unlocking the relevance of these concerns in many companies.

The systemic view of information value was also evident in the comments from Participants A1 and A5 who spoke of information as the life blood and lifeline of the organisation.

5.3.1.3 Information Management and Information Use

The best practice participants and the researchers provided thought-provoking comments on the need to associate value with the purpose of the organisation, and that value was also closely associated with the way information was used by the organisation. The following quotes are examples of these sentiments:

> Values, attitudes and beliefs relative to organizational mission and function and the adoption and use of optimal methods and practices are provoked by better synergy over role and purpose and where there is unity that would stress better information practices and habits. (Participant R5)

> A lot of people here think about what they're providing for in 10, 15 or 25 years, not just the delivery in three years, and ... I know that the organisation is very conscious that the information or the output we provide can actually help Australians make better decisions about how this country will be organised in the future or should be organised. (Participant BP2)

While this best practice example demonstrated that the higher order responsibility and acknowledgement can be achieved, Participant P1 reinforced how important he thought it was to try to achieve it:

> I think in my perspective there is a tendency to think that information needs to be captured and not necessarily managed. Keep it for a rainy day. We need to have our finger on the pulse to ensure that information is available to us, but we are not managing it per se for the department or for use by a wider audience....So there is this tendency to say, well that's my information as opposed to the agency's and that is very hard to break down. (Participant P1)

This sense of government departments having a custodial role and being aware of what they are collecting and for whom they are collecting, a higher order responsibility was highlighted in the data.

These comments on ownership and knowing why information is important in many contexts can also be interpreted as the organisation's attitude towards information leading to the behaviours they might engender. If organisations and individuals in organisations were not well disposed towards information, if their attitude towards its value and purpose and how it should be managed was not positive, it would have a negative impact on the information culture.

The importance that is attached to valuing information prompts questions of what is it that is being valued, why is it being valued and how is that value manifest.

Participants linked valuing information with actions, in particular, information management actions applied to information as evidence of the value placed on it. Creating, manipulating, using, sharing and storing information were all cited as the corollaries of valuing information. The quality, currency, accuracy and timeliness were also indictors.

Regardless of the level at which value was perceived by participants, there was a clear indication that it was the precursor that led to attitudes or behaviour; that valuing information then led to the particular ways an organisation behaved towards information or the attitudes that it had. This is encapsulated in the comments by Participant BP2:

> We have an information culture because we value the importance of, not just simply the objects themselves, but actually how they're used and the way you actually add to them, and the way you work with them, and the way you share them and collaborate with them. It's as much about what you do around it as it is actually [about] the concept.

5.3.2 Attribute: Attitudes

An attitude is a conscious and selective judgement about a person, object, concept or event. An attitude provides a mental predisposition to behave with consistency toward its subject (Hunsaker, 1987, p. 130). Schabracq (2007, pp. 61-62) reminds the reader "that attitude reflects a belief." These statements suggest a systemic flow from one attribute to another. For example, first one develops values around information, perhaps informed by attitudes and beliefs or leading to attitudes and beliefs.

The first category for consideration relates to the organisation and information. According to Participant A12 there is a link between the organisation's value ascribed to information and how that information is used "[for] the betterment of that organisation's service to the public." The attitudinal inference being that the information is for use in public service. The need for this attitude was expressed by Participant P1 when he said:

> We tend to forget why are we capturing [information]; why are we managing it?...We forget why we do it, in terms of the wider the public and the wider audience.

Furthermore Participant BP2 talked about attitudes to use in terms of "a wider view of the benefit of society and a wider view of improving knowledge."

Attitudes to the ownership of information were seen as important by Participants A3, A4 and P3. For example, Participant A3 linked ownership to purpose in saying, “they see where it [information] fits into the purposes of the organisation. And that’s been thought through and is ‘owned’ generally.” “Ownership, responsibility, understanding why we are collecting it and it links to its mutual use ... and mutual accountability” were recounted by Participant P7 as important attitudes that were exhibited in his organisation.

Participant A4 supported the views about ownership of and accountability for information when he said, “I think you build up a picture of those organisations with a positive information culture. [They] will probably be where the business or the organisation will organise the information and those with a negative information culture will be where the information system area, IT systems area are seen as the owner of them or responsible for the information.”

Taking a slightly different but still supporting perspective, Participant R5 thought that “Values attitudes and beliefs [needed to be] relative to the organisation’s mission and function” and that there needed to be “synergy of role and purpose; unity that stresses better information management practise and habits.” As P5 said, there needed to be “alignment with the business.”

Addressing people’s attitudes and dispositions and ways of working Participant A4 spoke of people who were “content with the quality of information they are receiving.” They had “a proactive approach to information, information systems and information technology”, and were able to “operate in those domains strategically not reactively.”

Participant P5 reflected this as “People are successful and confident ... people believe automatically that this is the way to work.”

Attitudes to information that reflect a broad more encompassing understanding and appreciation of the entity came to the fore in interviews with four academics, two of whom had considerable experience in senior management in the public sector.

According to Participant A1 it was important for organisations and the people who work in them to understand and appreciate that there were different types of information and knowledge; that it came in many formats. It was not useful for an organisation to just rely on the “dead information in database, books and records.” Information and knowledge resided, for example, in customer behaviours and in “the happenings in other jurisdictions.” Participant A2 encouraged “an openness to

competing sources [of information].” He supported the attitude and understanding that “knowledge is a key component of production and activity and presumably knowledge of virtually any form.”

An attitude toward or belief that information has an economy, can be packaged for use and enhanced was a perspective put forward by Participant A10. This was supported by Participant A12:

> I see one of the key components ... [as] an organisation that treats its information as a resource rather than a by-product of the process. And I think organisations then use that resource to drive the applications and the processes that they build rather than the other way around. It’s the information ... as a resource that gains the value and how you value that ... is very important.

Information that was trusted, respected and secured was the subject of discussion by Participants BP1 and P4. This was seen as of particular importance when that information had to be shared. A positive information culture would also be one that had inclusive and cooperative approaches to sharing. This would mean, as Participant R5 said, “no content silos or gate keeping.” As Participant BP4 said, sections of an organisation or people in the organisation would not hoard or hide information because of “perceived power” or perceived advantage of having information others do not have.

5.3.3 Attribute: Beliefs

For the purpose of this study beliefs were defined as “a person’s subjective probability judgement concerning the relation between the object of the belief and some other object, value, concept or attribute” (Fishbein & Ajzen, 1997, p. 131).

There were not a significant number of comments specifically about the attribute of beliefs. This lack of specificity may have been a reflection of the participants not making a clear distinction between attitudes and beliefs. It may also have been connected to the emerging systemic and reflexive nature of the attributes. From the interviews it was apparent that there was a nexus between beliefs and attitudes.

Five participants made specific comments that expressed a belief in the power and influence of information, in particular, in relation to the organisation’s mission. For example:

> Values, attitudes and beliefs relative to organizational mission and function. (Participant R5)

> You can either share it or enhance it, or you can sort of control it and try to use it as a power base. I suspect both are valid or both sort of exist, but I'm not sure both are valid if you have a wider view of the benefit of society and a wider view of improving knowledge. (Participant BP2)
>
> Knowledge is a key component of production and activity and presumably knowledge of virtually any form. (Participant A2)
>
> It's a bit like the alignment with the business, whatever their part of the business, maybe ... it's the information culture versus the business culture and the service delivery component. (Participant P5)

Demonstrating the connectivity and layers of attributes were comments about the need for a conviction about the sharing, the security and integrity of and trust in information. These attributes had also been referred to as values and attitudes. These two comments exemplify these sentiments:

> A belief in the maximum sharing of knowledge, the willingness to always be somewhat unconvinced about one's knowledge, even if it seems very persuasive. (Participant A2)
>
> Whatever knowledge you are going to share is going to be respected and valued and trusted and secured in a way that you want it to be secured and not twisted in some way....I think that there has to be a lot of trust in an information culture. (Participant BP1)
>
> You will not get the truth. You will not get people sharing freely of their knowledge, their insights, their creativity, their inspiration their motivations etc....To me that is absolutely critical if any organisation is to grow and thrive in an increasingly competitive, and even I daresay, hostile environment. (Participant P4)

5.3.4 Attribute: Behaviours

The attribute of behaviours elicited the greatest number of comments from participants. That behaviours are more obvious and observable than values, attitudes or beliefs may account for this situation. Also, as the participants included current and former practitioners and public servants with workplace experience, their first hand observable experiences were with behaviours. Furthermore, in the light of the proposed sequence of attributes, behaviours demonstrate values, attitudes and beliefs.

The analysis of the discussions on those ideas and suggestions about behaviours revealed that the comments offered fell into three categories, namely:

- Behaviours related to technology and systems;
- Behaviours related to information; and
- Behaviours related to people.

The following section uses these categories to describe the sentiments expressed by the participants.

5.3.4.1 Behaviours Related to Technology and Systems

In describing the role of information systems and information technology in the information culture of his organisation, Participant BP2 said that systems and technology were seen as enablers rather than drivers. Early in the process of improving the way his organisation addressed information, senior management had viewed systems and technology as drivers. However, this view changed as the organisation matured in its views and attitudes towards information.

The importance of information systems and information technology as enablers is echoed in the views of Participants A3 and A12. According to Participant A3 it all begins with information as a resource and the systems behind that resource should "align with the needs of the users now and in the future." Participant A12 shared a similar thought when he said that organisations need to use that resource [information] to drive the applications and the processes that they build rather than the other way around." Participant P2 agreed with these view in speaking of the need for "IT solutions that would be operating in the background that would enable people to do their work."

Participant P3 shared an example about the difficulties inherent in getting an organisation to view information technology as an enabler. When his organisation was trying to develop an information management and technology strategy, they started the process with talking about information. Ultimately, though:

> It was easier to talk about IT systems and those sorts of things than information. They started off saying, why are we delivering this information and then it soon got down to IT systems because, at the end of the day, that was so much easier to find a solution. We have a saying in our section, come and tell us what the problem is do not come and tell us the solution and then we'll try and sort out what it is.

To describe the role of systems and technology in a positive information culture, Participant A4 painted a scenario where there was a proactive approach to information, information systems and technology, and the organisation operated strategically in these domains. Important parts of this picture were issues of ownership and accountability for the systems and technology. According to Participant A4 it was critical that the systems and technology were owned by the core business area of the organisation. Similarly, Participant P5 wanted the seamless integration of systems and those systems supporting the information environment. Describing the relationship between systems and core business a little differently, Participant P7 said it was about "framing information systems with management problems." Adding another dimension, he went on to say that it was important for an organisation to have information management and information systems "on an equal footing." To do otherwise was to lose control of the information asset and to manage it inappropriately. He said "I think information management has to be recognised as valuable as information systems if an organisation is going to function well."

Looking at behaviours around systems and technology from another perspective, Participant P6 thought that we are "already in a time and place where people do value information a great deal." The problem as he saw it was a lack of appropriate systems and infrastructure. The current set up allowed good behaviours at a local level such as branches, units and sections, but not beyond that. Participant BP4 made similar observations when he commented on the duplication of information and systems across departmental divisions. He talked of "a few attempts at making holistic, whole-of-department type systems and things." Then he flagged a bigger issue saying, "We also have the other problem of the joined up government, the whole-of-government type things....If we cannot do it between divisions, it's even harder doing it between departments."

5.3.4.2 Behaviours Related to Information as an Entity

The persistent themes presented in this category revolved around information use and information management. Examples of the recurring words used are seek, assemble, assess, enhance, storing, retaining, capturing, exchange, creation and manipulation. The systemic nature of the relationship between the attributes was in evidence as the activities used in relation to behaviour had also been used in relation to other attributes.

A more structured and formal approach to behaviours towards information was suggested by Participant A2 who suggested:

> It's about methodologies of assembling and assessing information, and many people don't have particularly rigorous modes of analysis ... simply, the more formal you are trained in and practice it, then I think there is good reason to think that the better the methodologies are.

An alternative view of the behaviours towards information use and information management was offered by Participant P2. In providing this view he was also making connections between behaviours related to systems, people and information itself. He spoke of how unreliable people and systems can be in managing information and suggested that strategies were needed that "don't rely on people's good will to do the right thing" and "solutions that allow people to capture [information] without realising it." Also, he mused on "providing a series of rules." Participant P4 also commented on rules:

> Well, definitely a system where everybody or the majority anyway, know the rules and are actually clear what those rules are meant to achieve. Then there would need to be support from management at all levels, but particularly from the top.

These seemingly prescriptive and compliance oriented views were at odds with those of Participants P1 and P3 who, when speaking about improving information culture, said it should not be compliance driven and Participant P6's report on his organisation's aversion to being told to do things because of compliance, risk management and accountability.

A warning on the potential ramifications of the relationship between the recognition of the utility of information and the use of technology was proffered by Participant A6. Ultimately she saw this as a management issue:

> Once you assert the value and utility of information, you have to accept the fact that with modern technology, that the uses will expand considerably, and it is a management problem or issue in dealing with how those expansions take place.

By linking value and utility this statement mirrors, to an extent, the sequence of attributes reflected in some definitions of information culture. The comments by Participants A2 and A3 about valuing information, supplemented by their comments about using and managing information, also link value and utility. The following

three definitions reflect this. The definition offered by Curry and Moore (2003, p. 94) also reflects the comments from participants on technology as an enabler. Curry and Moore define information culture as, “A culture in which the value and utility of information in achieving operational and strategic success is recognised where information forms the basic organisational decision-making and information technology is readily exploited as an enabler for effective Information Systems.” Choo et al. (2008, p. 793) reflect the value and utility in saying, “Those elements of an organization’s culture that influence its management and use of information. Thus information culture is manifested in the organization’s values, norms and practices that have an impact on how information is perceived, created, and used.” Finally, Marchand (1996, p. 14) states it as, “The values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information.”

In speaking about information management and information culture, Participant BP4 thought that a strong culture would be evidenced by an “advanced” approach to information management.

Reinforcing the behaviours associated with information management as integral to an information culture, P7 observed that “across the public sector” information and knowledge management were devalued and that there was “a perception that information systems will supply all the solutions.”

5.3.4.3 Behaviours Related to People

A specific set of information related behaviours were associated with people. In some cases comments were made about individual behaviours and in others, about the behaviours of groups or subcultures. There were also indications of behaviours the organisation could address in order to assist individuals and groups in their endeavours. In describing or nominating certain behaviours, the participants were focussing on those traits related to positive behaviours.

The idea of learning through debriefing sessions or lessons learned was highlighted by Participants A1, A3 and P3. Participant A1 referred to this as “embedding learning” and “some way of constantly learning.” This occurred when people in the organisation questioned whether or not they had the information to support a decision that needed to be made. If they did not have it, they would seek to find and use it. Participant BP1 acknowledged the need to place more value on debriefing.

In line with the philosophy of continual learning, Participant A2 was championing the cause of “rigorous modes of thinking” that need to be associated with information culture. He also supported “the willingness to always be somewhat unconvinced about one’s knowledge.”

The organisation establishing a reward system for good information behaviours was mentioned by Participant A1. In her example of her observations of a best practice organisation she noted their reward system. Likewise, in the best practice interview done for this study, Participant BP1 mentioned the competitions and rewards used by his organisation.

Encouraging innovation and change was seen as another organisational responsibility. Participant BP2 recognised the importance of this in his organisation. He said this led to a “real hot bed of collaboration and sharing of ideas.” Participant P4 spoke of staff being encouraged to fulfil their potential.

Leadership, which could be considered as a behaviour or an attitude which in turn are indicators of values, is an influence on how staff respond to information. This point made by Participant P7 supports the findings of the information culture study undertaken by Ginman (1988). In that study Ginman (1988) identified the CEO’s approach to information and personal characteristics of the CEOs as having impact on an information culture.

A counterproductive behavioural pattern raised by Participant P7 was the “battle lines drawn between information managers and information systems people.” He saw the potential for this type of behaviour to lead to “complete dysfunctionality.” A counterpoise to this is the importance and value of team work as described by Participants A3 and BP2.

As highlighted by Participant A10, different behaviours and skills were required for working in the physical and virtual spaces. She commented that the interactions needed in the two spheres differed. Using an example of a virtual reference station and a customer reference desk, she talked about the perception of a verbal culture as well as the role of body language and technology use. This can be pertinent to government departments delivering services via technologies such as the telephone, email and the internet. Specific skills sets, behaviours and training are required.

Influencing behaviours through the physical environment was an action raised by Participant BP1 who spoke of the physical changes made in his organisation to encourage information sharing.

An aspect of work place relationships is exposed by Participant A3. He talked about the behaviour of people in using information and the value that their behaviour can add to information. He said it was about “how people inter-relate through the passage of information, creation and sharing of information. You’ll find that the improvement of information is very much about people and what they do to deliver and gather it in organisations.”

He added the caveat, “I try and understand information culture in the context of all the other behaviours of the individuals and the collective in the organisation.” A further reminder on behaviours came from Participant P1. He said, “We forget why do we do it, in terms of the wider the public and the wider audience.” This could also be interpreted as evidence of an attitude towards or belief about information.

Participants A2, A8 and P7 made references to education and training. Given the complexity of the environments in which people work, the systemic nature of an information culture and the rapidity with which change is visited on an organisation, training and educating staff would be critical. Participant P7 made particular reference to education in the context of an organisation’s “information agenda.”

As previously experienced, the analysis of this information revealed crossovers and correlations between categories of behaviours as well as attitudes.

5.4 Discussing Attributes of Information Culture

Guided by the existing definitions of information culture, this study developed questions and subsequent categories for data analysis around the attributes of information culture, namely values, attitudes, beliefs and behaviours. Reflecting the lack of consensus and the paucity of research in this area, the attributes of information culture and the definition of information culture were used variously in the literature. Furthermore, definitions and understandings of the attributes were lacking.

The literature on organisational culture was inconclusive in establishing an agreed set of determinants or attributes. However, there was evidence of attempts to define and describe the attributes (Gibson, Maznevski & Kirkman, 2009; Hunsaker, 1987; Schein 2004; Whitely, 1995).

In relying on the attributes suggested in previous studies, the researcher risked bounding the questions on attributes. However, the breadth of the data gathered and the wide ranging views of the participants suggested that they were not constrained by the questions. Rather, they were guided by them. The data revealed

that in the view and experience of the participants, the attributes of information culture were not always clear cut or standalone. It was possible for an entity, activity or action to be considered as more than one attribute. For example, sharing information could be considered as an indication of an attitude towards information. Depending on the context, it could also be a behaviour. Gibson, Maznevski and Kirkman (2009, p. 52), support this complexity and the potential interrelationships between the attributes when saying "separating perceptions, beliefs, values and behaviours ... is somewhat artificial, since the four categories are highly related to each other."

In addressing the attributes of information culture, issues associated with language and meaning arose. Difficulties with understanding and defining "constructs" such as values, attitudes and beliefs were highlighted and considered in the light of Hofstede's (1998) comments.

The issues surrounding constructs and meanings were clearly in evidence in the discussions related to an analysis of attitudes and beliefs. The literature applies different meanings and relationships to the terms assumptions, attitudes and beliefs (Alvesson & Sveningsson, 2008, p. 37; De Long & Fahy, 2000; Schabracq, 2007, p. 61-62; Schein, 2004). Even though the researcher used definitions for attributes from the literature on organisational culture, the differentiation between the two constructs was problematic. Where participants had been explicit in identifying their comments as relating to either attitudes or beliefs, it was easier to apply an objective analysis. This situation highlights the need for further research to be undertaken on the meaning and use of the attributes of information culture.

While there may be a more fluid approach to the interpretation of attributes in general, and values, attitudes, beliefs and behaviours in particular, the literature and the findings of this study confirm values, attitudes, beliefs and behaviours as the hallmarks of information culture attributes. This provides a firmer foundation for further discussion on both *identifying* and *developing* information culture.

Although there was evidence of the fluidity in assigning attributes, there were consistent messages emerging from the data. These related to information as an entity, people and technology. These appeared at multiple levels, namely in relation to the organisation, groups of people and individuals. Examples of these themes are:

- Information use at strategic and operational levels;
- Information management including the use of technology and systems; and
- The importance of recognising the organisation's purpose and outcomes.

A clear trend emerging from the data analysis and supported by previous studies, was that values, attitudes, beliefs and behaviours constitute attributes of an information culture. Within an attribute and across attributes it was possible to glean the reflexive and systemic nature of information culture in general, and the attributes in particular. This was demonstrated by the quotations.

Attributes are important to this discussion on information culture, not only for the contribution they make to identifying and defining the culture, but also because they are a guide to or foundation for the *development* phase of a positive information culture. Having confirmed the desired attributes, it would be possible to conduct a gap analysis on what exists and what is needed. They could also be an important aspect of a cause and effect analysis of problems with an information culture.

5.5 Elements of an Information Culture

The elements of a culture, for the purposes of this study, were defined as the components of or what constitutes the culture; an inventory of what it is that comprises a culture. Those sections of the interview process which focussed on the elements of an information culture, gave rise to comments which indicated that, for the participants, there were also links between the elements, attributes and the definition of an information culture. In particular, while separate questions were asked about the elements and the definition, there were similar responses. Additionally, correlations were made between the attributes and the elements.

A clear distinction between the definition of and the elements of a positive information culture may be artificial. To an extent, the distinction may have been suggested by the interview questions. Two such questions were asked of the academics and practitioners, namely:

> Q2. How would you define information culture in the context of an organisation?
>
> Q3. What do you think would be the elements or components of an information culture in the context of an organisation?

One such question was asked of the best practice participants, namely:

> Q6. How would you (the individual) define *information culture?*

Silverman (2006, pp. 109-113) and Patton (2002, pp. 343-348) say that there is an openness, flexibility and naturalness that distinguishes qualitative research. By using a semi-structured interview process with open-ended questions this researcher was

aiming to build rapport with the interviewees and build an understanding of what was happening in the actual world of information culture in the Western Australian Public Sector. So, the separate questions notwithstanding, in the world of the participants there may not be a clear distinction between the definition of and the elements of a positive information culture.

A seemingly eclectic and disparate set of responses were gathered on the issue of the composition of an information culture. However, once subjected to analysis, themes and subsequent patterns emerged. The themes that emerged then merged into five key categories.

The five key elements identified as contributing to an information culture are:

- Strategic thinking and planning;
- Leadership;
- Valuing and understanding information;
- Organising to find information; and
- Using Information (Synthesising)

The elements identified by the participants and found in the literature can be categorised as existing on two levels, namely that which relates to information as an entity and that which involves an interaction with information. In some instances it was possible to identify instances where an example of one of the elements could apply to both levels. Examples of possible relationships are illustrated in Table 5-2.

Table 5-2 The Possible Relationships Between the Five Key Elements of Information Culture and Information as an Entity and Interactions with Information

Elements	Information as Entity (Examples)	Information Interaction (Examples)
Strategic Thinking and Planning	Developing an Information Plan.	
Leadership	Articulating clear messages about the value of information to the organisation.	Making use of information in performance management.
Valuing and Understanding Information	Information seen as a resource.	Willingness to share information.
Organising to Find Information	Information has qualities of accuracy, reliability and timeliness.	Information management making a contribution to outcomes.
Using Information (Synthesising)		Information for decision-making.

When writing about a case study on information culture and organisational climate in the pharmaceutical industry, Hoglund (1998, p. 78) made an observation about the findings of different studies into the same area. Hoglund acknowledged that a single study with a fault or a flaw could be disputed and its findings overlooked. However, if a number of different studies had similar findings, even if they studied different groups using different methods, it could be argued that a pattern was said to exist.

With this in mind, the researcher did a meta level comparison of existing studies on information culture, that could be said to have identified or discussed the composition of an information culture or related concept. Elements which appeared in more than one study were identified across these studies. Table 5-3 presents these commonalities against the five meta level elements identified in this study. Table 5-4 provides some examples of the information culture elements common to previous studies and this study.

Table 5-3 A Comparison of the Key Elements Identified in Previous Studies of Information Culture

Researcher/Author of Previous Study	Elements Identified
Bauchspies (1998)	• Positive Esprit du Corps • Clarity of Company Mission

	• Understanding of information importance and relevance to the organisation • Confidence in the technological and communicative competences of the individual self as well as fellow employees • Familiarity with existing protocols of information evaluation, valuation and transfer
Choo et al. (2008)	Influenced by a large number of variables including: • Mission • History • Leadership • Employee traits • Industry • National Culture
Curry and Moore (2003)	• Communication Flows • Cross-organisational partnerships • Internal Environment • Information Systems Management • Information Management • Professionalisation • Processes and Procedures • Organisational Culture and Leadership
Ginman (1988)	• The CEO's approach to information • Company Characteristics • Personal Characteristics of the CEO
Marchand et al. (2001a)	• Information Technology Practices: the capability to effectively manage IT applications and infrastructure to support operations, business processes, innovation and managerial decision- making • Information Management Practices: the capability to manage information effectively over the life cycle of information use, including sensing, collecting, organising, processing and maintaining information • Information Behaviours and Values: the capability to instil and promote behaviours and values in people for effective use of information
Martin et al. (2003)	• Shared understanding or organisational direction • Common language and terminology to enable dialogue • Informal behaviours i.e. dialogue that manifests shared understanding • A formal system that manifests shared understanding • Technology support that manifests shared understanding
Travica (2005a)	• Homoinformaticus • Groupomatics

	• Infostructure • Infoprocesses • Infoculture • Infopolitics • IS Management issues
Widen–Wulff (2000, 2001)	• Bigger changes in the organisation or its activities • Co-operation between units • Teamwork • Communication and feedback • Training • Creativity • Organisational aims • Middle management

Table 5-4 Examples of Elements Common to Information Culture from Previous Studies and this Study

Common Elements – Previous Studies	Meta Level Elements - This Study
• Issues around organisational structure and purpose.	• Strategic thinking and planning.
• Leadership and Management.	• Leadership.
• Information and understanding.	• Valuing and understanding information.
• Information Management and Information Technology and Systems.	• Organising to find information.
• Information Use.	• Using Information (Synthesising).
• Communication (including language).	• Using Information (Synthesising).
• Employees/Professionalisation.	• Valuing and understanding information.

The principles underpinning Hofstede's (1998, pp. 477-488) views on language and constructs were again taken into consideration. Even with definitions of attributes and elements guiding the discussions and the analysis, differentiating between the two could be viewed as subjective. Moreover, there were indications of the impact of attributes on elements. Just as the attributes of values, attitudes and beliefs become explicit through behaviours towards information, so the manner in which those attributes are applied to the elements of information culture reflect the nature of that information culture.

Participant A3, when questioned about the elements, referred to them as “reflections of an information culture.” This observation is not dissimilar to the comments of Participants P5 and P7 who spoke of the “evidence” or “outcome” of a positive information culture.

The following section details the analysis of the five key elements of a positive information culture. The systemic and reflective nature of this study again emerged from the analysis of the data about the elements. There were crossovers and correlations of ideas and concepts. During the analysis of these five meta elements it was revealed that it was possible to demonstrate a progression of links between them. This is represented in Figure 5-3 at the conceptual level. For example, clear messages from leadership will support the value of information as resource, leading to the appropriate and aligned implementation of systems and technology in order to exploit the utility of information.

These points of contact and interaction are supported by comments from participants, for example:

> I think also leadership impacts on a culture. How office holders in organisations perceive various issues in the information management, information systems landscape is quite important and becomes a communicated value which impacts on local culture and perception in information systems and information management. (Participant P7)

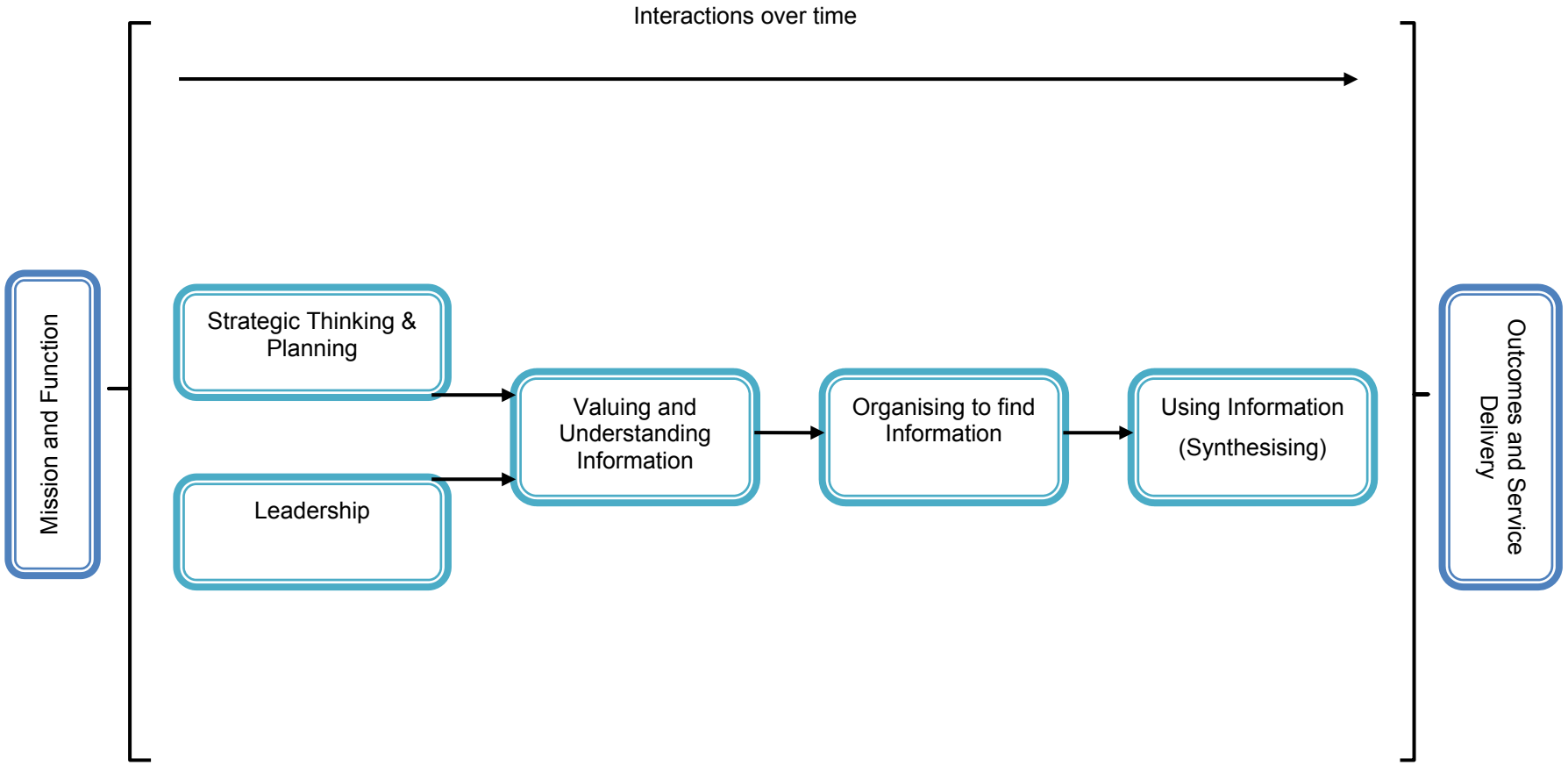


Figure 5-3 The Relationships Between the Key Elements of an Information Culture

5.5.1 Strategy and Leadership

Leadership was noted by nineteen participants has having a key role in a positive information culture. Four of the nineteen spoke of leadership as a necessary element of a positive information culture. All nineteen referred to it as crucial to the development and maintenance of such a culture. Not all references about leadership and leaders were positive. However, all references were emphasising the necessity of leadership. The following quote from Participant P1 illustrates the common intent of the comments on leadership:

> It's a very much an over-arching issue that needs to be looked at and that's the very single element for me. It's very important. We need that support, we need that assistance and someone that gets out there and champions the cause.

There was a reoccurrence of the evidence of the systemic nature of the concept of information culture. On this occasion it is the theme of leadership which occurs in both the *identification* and *development* phases of a positive information culture. The latter is discussed in Chapter Six.

Participant R3 made very strong comments on leadership both as an element and as a development issue when she said:

> True leadership should be about visibly managing by example and being prepared to take risks rather than about ego protection and self worth. Over the years I have found senior management to be the greatest stumbling block to progress of any kind.

Reporting on their study of information and business performance Owens and Wilson (1997, pp. 22-23) confirmed the important role of leadership and senior management support. They found that, "The majority of companies benefited from top management commitment to IT and information in general....IS development in the more successful companies has been led by the Chief Executive Officer." Elaborating on this last point Owens and Wilson (1997, p. 23) recorded that "The more successful companies have identified the leadership of the CEO in the restructuring of business functions to create an information culture in the companies which can facilitate the successful development of information systems."

According to the participants, leadership laid the foundation for a positive information culture. Participant R1 highlighted the importance of senior management leadership with "support for information norms and behaviours such as sharing, openness,

integrity" and the need to "create more opportunities for social interaction, trust-building, information-sharing." Participant BP2 put his views succinctly when saying there was a need for "leaders actually practising what they preach." Participant BP5 referred to it as senior management being prepared to "walk the talk."

Leadership combines with strategic thinking and planning to form the first stage of the elements flowchart (see Figure 5-3). Participant A4 stressed how important it was for an organisation and its leadership to act strategically:

> You know you've got a positive information culture when ... we have a proactive approach to information, information systems and information technology [and] ... that we operate in those domains strategically not reactively.

Offering an example of good leadership and the need to plan strategically for the use of information, Participant BP6 emphasised that her agency's leaders saw the importance of "knowing what was over the horizon", and understood the role of information in this regard. From Participant A1's perspective, those government agencies which had a positive information culture were ones in which the CEOs exhibited and articulated a "passion" for strategic vision.

Participant P4 stressed the role of information in achieving "goals, aims and objectives of [the] department, group, organisation, section." Participant P6 summed up information and strategic thinking saying that it was crucial to have information taken into account in the strategic planning process. As corroboration of this, Participant BP2's description of his agency supported the value of this approach. Participants BP3 and BP4 highlighted the problems that can arise when the strategic planning only takes technology into account and ignores information.

Confirming the critical importance of sound leadership to a positive information culture, Curry and Moore (2003) had this to say in commenting on their study of information culture in the Scottish National Health Service:

> Underpinning the whole conceptual model is effective leadership. Senior management are responsible for strategic direction and their actions will have a strong influence on the overall organizational culture....The adoption of an information culture requires senior management support with an emphasis on co-ordinated leadership rather than merely imposition from the top down....To move away from empire building and information hoarding, a collaborative, participative leadership style must emerge at all levels of organizational

> activity....An information culture cannot simply be imposed from the top, as this would not gain employee acceptance....Whilst the initial impetus and drive can emanate from any level, this activity must ultimately engage senior management support if it is to permeate the entire organization and not remain a mere sub-culture with limited influence. (pp. 98-99)

The then Australian Public Service Commissioner, Lynelle Briggs reinforced how important it was for senior managers to think and act strategically. In her address to the Australian Strategic Policy Institute in December 2005, she spoke about a Senior Executive Leadership Framework to assist senior management to think and act strategically. The four attributes for strategic thinking were given as:

- Inspires a sense of purpose and direction;
- Focuses strategically;
- Harnesses information and opportunities; and
- Shows judgement, intelligence and commonsense.

Of interest to this study is the acknowledgement of the strategic importance of information and information use. Briggs (2005, Focuses Strategically, par. 2) said:

> Someone who harnesses information and opportunities would:
>
> - Seek to acquire knowledge, and is open to new information and different perspectives-including across boundaries;
> - Value finding out about Australian and global best practice (public and private sector) and consider the workings of the organisation within this context;
> - Demonstrate business acumen by thoroughly researching the market that the organisation operates in (and opportunities offered and constraints imposed) to yield greater efficiencies and improve quality of service; and
> - Keep abreast of major technological changes and their impacts.

These points and more were raised in this study in the context of both identifying and developing a positive information culture. In particular the best practice experiences of Participants BP1, BP2, BP5 and BP6 reinforced the key role played by a strategic approach to information use, a focus on outcomes and the role of leadership as elements of a positive information culture.

5.5.2 Valuing and Understanding Information

In considering information as an entity, participants commented on the importance of viewing it as a resource and appreciating it had an economy. Participant A3 compared this consideration and appreciation of information to that applied to finance and human resources in government agencies. Adding to this Participant A10 said that a "positive organisation" was one "that understands and appreciates and therefore gives [information] the due respect."

Further emphasising the regard for information as an entity and as a resource were a range of ideal actions and activities raised by participants. For example:

- A willingness to be open to new information and ideas;
- A willingness to seek and disperse information;
- Taking a proactive approach towards information; and
- A preparedness to communicate, collaborate and share.

Emphasising the importance of valuing information as a resource, Participant A12 commented:

> I see one of the key components of information culture is an organisation that treats its information as a resource rather than a by-product of the process.

As an extension of this value, Participant A12 added that it was important for an organisation to acknowledge that the value of information to the organisation was so great and important, that this value should override an individual's need to withhold their information. Such an approach allows for information to be shared and augmented for greater application.

An issue that appears to be inherent with valuing information as a resource is the potential for people to hide or withhold information; the 'information is power' concept. A survey undertaken by Owens and Wilson (1997) identified two aspects of this situation which are highlighted in the following presentation:

> **The majority of the companies surveyed felt their knowledge base relied more on individuals rather than on systems.**
>
> The majority of companies surveyed felt their knowledge base resided in the accumulated knowledge and expertise of their staff. Representatives ... noted the danger of allowing 'information pockets' building up in certain key business functions, which held information but which did not ensure its distribution throughout the firm. (p. 23)

All the companies acknowledged the problems associated with having a knowledge base which relies on individuals. One company is taking steps to systematize its knowledge base.

The main problem, highlighted by a number of companies, with having a knowledge base that is based on individuals rather than on systems was that as staff leave, the knowledge base diminishes. (p. 23)

Jarvenpaa and Staples (2001) add weight to this argument in their study of information sharing:

A possible conflict arises because much of the organizational knowledge is controlled at the level of individual knowledge workers. Yet knowledge management argues for the management of knowledge at the level of the organization. It is assumed that, either morally or legally, the organization has the right to find, collect, store, and disseminate information that individuals have created or acquired. (p. 152)

The holistic and systemic nature of information culture is highlighted here. Valuing information, treating it as a resource has been identified in this study as part of the elements of information culture. The literature and the data revealed a potential issue, namely information hoarding or not sharing information. Sharing information was also identified as an attitude and in some contexts as a behaviour. Information as a resource, and the activities aligned to using that resource contribute to the *identification* phase of information culture. It is also important to the *development* phase. There are potential issues and problems inherent in the elements and attributes that may need to be addressed in order to enhance the culture. The identification of elements and attributes is important to the development of information culture. If the components are not known and understood they cannot be evaluated, monitored and enhanced.

Demonstrations of the systemic nature of the elements of information culture as well as the links between the elements and the attributes are found in the following comments from Participant A3:

So you would want to unpick and look at the values....You also raise questions about what are the values that underpin in all of those elements? What are the behaviours? How do they link to values?

Firstly, they place an appropriate value on the information because they see where it fits into the purposes of the organisation and that's been thought through and is owned generally. Then it comes down to this active use of

> information. I have always started from that end of the chain, and the systems behind the use correctly align with the needs of users now and anticipated into the future. So ... they are not systemised for their own sake because they align with the purposes of the organisation now and into the future. The value, and ... the behaviours, therefore shown in terms of the way information is created, is not fragmented in each individual.

While the sequence of the relationships or the cause and effect view offered here could be open to further discussion and refinement, the comments are valuable in confirming that information culture and its various facets are far from linear. There are complexities and lateral concepts and ideas that need to be considered. In commenting on all the aspects of information culture, Participant P5 said "it's all those realms, dimensions that are coming together."

Combining the importance of leadership with the role of valuing and understanding information, Participant P5 said that a Director General's recognition of the importance of information should lead to a governance structure around information.

Participant A3 suggested that there could be a flow-on effect from how the organisation and its people conceptualise the role of information. The conceptualisation would flow through to "definitions of roles of organisations ... the identification of roles for individuals and job descriptions ... competency profiles.... Put all of those together and they add up to either reflections of or elements of the culture.

5.5.3 Organising to Find Information

Among the common threads running through previous studies into information culture is information management. The extent of the focus and the emphasis on its role and function in information culture has varied from study to study. (Choo et al., 2006, 2008; Curry & Moore, 2003; Hindle, 1997; Marchand et al., 2001a; Widen-Wulff, 2000, 2001) Information management was also referred to in this study either directly as the practice of information management, or as aspects of that practice such as collecting, storing and disseminating. The function was variously viewed as the province of information professionals, the growing role of individual works, and or the responsibility of the organisation to enact and support. The latter was seen as having the potential to be linked to the leadership element. As Participant P6 remarked information management was "fundamental to getting a good business outcome."

Undoubtedly information management has a role to play in an organisation and in its information culture. However, from the perspective of this study that role is relative to the systemic nature of information culture. It is part of a sequence with a focus on or end point of information use. That is, information management must be in response to an organisational need and must have a purpose. In the context of Figure 5-3, an organisation sets a strategic direction which takes into account the role and value of information. That value is articulated and understood as a contributor to outcomes and service delivery. The information is then organised to assist the agency to demonstrate the value and utility of its information, with information management a key function here. Finally, the organisation of the information enables the active optimal use of information to achieve outcomes and the delivery of services.

The values, attitudes, beliefs and behaviours towards information influence all aspects of these elements, not just the information management. Given the reflexive and systemic nature of information culture, and the levels at which culture exists in an organisation, the attributes of information culture are likely to exist at all levels and exhibit influences at a variety of levels (Hofstede et al., 1990; Oliver, 2008). This being the case, information management could be considered as a behaviour that is influenced by values, attitudes and beliefs. It is also an element of information culture. So it is embedded in an information culture and contributes to the culture. It is not the only element of an information culture and it is not information culture.

The predominance of comments on information management in this study and the operational and technical focus given to it, may have arisen because of the number of information professionals interviewed, their mainly operational roles in agencies and the incomplete understanding of the concept of information culture.

Information culture is not a concept in common use or understanding. So participants are likely to have framed their responses within world views that are familiar to them. Compounding this, the interviews with the academics who taught the information professionals revealed that they have little opportunity in their courses, particularly at an undergraduate level, to address and discuss the organisational contexts and strategic contexts in which the students are likely to end up practicing. Thus, they go into the workforce with a very clear understanding of the practice of information management but not necessarily the strategic context in which they will practice it.

A comment representative of this dilemma came from Participant A4 when addressing Question A1:

> [O]ur courses are predominantly oriented towards the technical side ... so the wider view of how that fits into an organisation, I don't think gets covered....I think that's for a number of reasons. One is, typically, we have fairly technical people teaching the courses and they don't, even in their own day-to-day interaction or the way that they work, they aren't aware of those wider perceptions and ... we're just jammed in the amount of time that we have to actually teach....So we now focus very much on just the basics of what we can cover and hope that the students might pick up some stuff along the way....At a post graduate level ... I definitely know that we do look as information as a resource and to a degree how information, what kind of culture there is in the organisation towards information and then information technology.....[A]t an undergraduate level, no it will probably never get covered.

Information management is a focus or key emphasis in some of the existing investigations into information culture. There is evidence of a focus on information management that may be more than a mere identification of it as an aspect of information culture. It is some cases the definitions of information culture have information management as the central tenet. (Bauchspies, 1998, p. 5; Chepaitis, 1997, p. 195; Marchand, 1996, p. 14; Martin et al., 2003, p. 270). This is not to say that information management should not be considered or acknowledged. Rather, it is that this study has identified information culture as more complex, systemic and holistic than information management. A high performing information culture requires that an organisation and its leadership would need to address the range of attributes, elements and environments identified in this and other studies. They would fall short of a high performing culture if they focussed on information management to the exclusion of other considerations.

The emphasis on information management may be due, in part, to the general immaturity of understanding around information culture in practice and in theory and the lack of research in the area. The large amount of literature on information management, the firm understandings of information management, and the foundation that it provides for the education of information professionals, may also have influenced the view of the value and role of information management.

A counterpoint to this representation of information management is the position put forward by Choo et al. (2006, 2008). These articles provide different perspectives of

a study of information culture in three Canadian organisations. Both articles use a conceptual framework that appears to separate information management and information culture. Moreover, their work is built on the work of Marchand et al. (2001a) on information orientation.

Curry and Moore (2003) highlighted the role of technology in information culture, a contributing role that also came to the fore in this study. Participant A3 qualified this role by stating the need for technology to "correctly align with the needs of users now and anticipated into the future. So that they [technology/systems] are not systemised for their own sake because they align with the purposes of the organisation now and into the future."

Important to organising information in an agency was the ability and agility of staff to use the technology in place. The best practice interviews with Participants BP1 and BP2 reinforced this. They both shared their experiences of programs which were implemented to ensure the best use of systems. Participant A8 spoke of her experiences with staff being unable to fully exploit the technology at their disposal.

Participant A6 warned of the responsibilities that come with more sophisticated use of and access to technology. She said "you have to accept the fact that with modern technology ... the uses will expand considerably."

Jarvenpaa and Staples (2001, p. 152) expand on this observation by stating that information and communication technologies (ICT) have:

- Enabled greater dissemination of information;
- Increased social and technical connections;
- Reduced the economic cost of sharing information; and
- Facilitated the sharing of information within organisations and with other organisations.

Therefore, it can be extrapolated that ICT has the potential to have a positive impact on a number of elements of an information culture by making it possible to have information flowing through an organisation and to the citizen. With this comes the responsibility of managing that flow and the quantity and quality of information. As Leidner (2003) warns, a poor alignment of systems and technology with culture can have a detrimental effect on organisational performance.

The following issues related to organising information were also raised in the interviews:

- The need for policy, standards and infrastructure;

- Integrity, trust and sharing;
- A language and terminology understood by end users as well as practitioners;
- Training programs;
- Information that was accurate, easy to find and reliable; and
- Information is not confined to a format.

When discussing those elements that made his organisation a good example a positive information culture Participant BP1 stated:

> There has to be a lot of trust in an information culture because the only way to promote knowledge sharing is to make sure that whatever knowledge you are going to share is going to be respected and valued and trusted and secured in a way that you want it to be secured and not twisted in some way.

The structure of an organisation was identified as having the potential to impact on the way an organisation accesses and organises information. For example, Participant A1 thought that a flatter structure utilising project management was more conducive to a positive information culture. Participant A10 referred to the difference in operations that could occur dependent on the age and history of an organisation and whether or not they occupied physical or virtual space (Hofstede et al., 1998; Taylor, 1986, 1991).

Information culture may also be a function of the maturity or stage of development of an organisation. For example, Ginman's (1988) findings on the link between information culture and an organisation's level of maturity, and Boland and Tenkasi's (1995) advice about the introduction of "lateral organizational forms", augment these comments about an organisation's structure and form and information culture.

Participant R5 looked at the elements of information culture from a different perspective. That is, what constituted a negative or limiting information culture. He said:

> Marks of poor information culture include: lack of knowledge management applications, content silo-ing and gatekeeping, and inabilities to determine value to action relative to content and dissemination, etc.

Jarvenpaa and Staples (2001, p. 152) support the problems that arise from silos in organisations when they acknowledged that information flows are inhibited by "functional and divisional boundaries."

The complementarities of information management and information technology in organising information need to extend beyond the systems and the practices, to dialogue and cooperation between the various professions. Speaking from his experience and observations, Participant P7 offered the following reflections:

> I think what I would call cross frame dialogue between information management professionals and information systems professionals is absolutely essential for a healthy information culture in organisations because neither of these bodies of knowledge is a solution in its own right ... they require each other, and where this dialogue doesn't take place effectively there can be really graver and serious problems in terms of complete dysfunctionality of the information systems and information management.
>
> I think for an organisation to have a healthy information culture and to use its information and knowledge assets most efficiently and appropriately in terms of its business processes, it really needs to have information management, information systems on an equal footing. One of the worst problems I observe across the public sector is the de-valuation of information management and knowledge management and a perception that information systems will supply all the solutions of an organisation.

5.5.4 Using Information (Synthesising)

Information as evidence and information for decision-making, performance management and service delivery, were all identified in the data as examples of an organisation making active use of information and using information for a purpose.

Demonstrating the synergies between the value and use of information is a quote from Earl (1995):

> Increasingly there will be organization-wide measures to measure collective competence in the ability to use information. Such measures may help raise consciousness of how important it is to be able to use the critical asset of the information age. For one of the most practical measures of information value is information use. And one of the biggest constraints on information use is information capacity. Use is not just a proxy measure for information value. Use releases value. (p. 2)

In a complementary vein Taylor (1982, p. 343) explains that the value of information is associated with its use. Information is "given value" by a "user" who sees its "usefulness" and information has the "potential for value." The true value of

information is seen in its use. Therefore, a challenge facing organisations in general, and public sector agencies in the context of this study, is how best to use information to exploit its value. That is, how to use it to achieve outcomes and deliver services.

Learning and lessons learned were additional uses. The learning organisation received direct and indirect attention from the participants. For example, Participants A1 and A3 made specific references saying, “a learning organisation might be an information culture” (Participant A1), and “If you don’t have an information culture people don’t value learning” (Participant A3). Participant BP1 spoke of the learning activity in terms of “feedback loops” and “debriefing.”

Marchand et al. (2001b, p. 25) state that “an atmosphere of trust and openness necessary for employees to share all information willingly” is created when an organisation “treats mistakes and failures as opportunities to learn.”

Noteworthy activities are the sharing of information, the reuse of information, communication and collaboration. The subjective question surrounding these activities is whether or not they should be considered solely as evidence of the use of information. At their core are interactions with information. On the other hand, they could be viewed as evidence of the elements, valuing and understanding information or organising to find information. This researcher proposes that they primarily represent the element of using information and can also be considered as part of the valuing and organising elements. This stance is offered in recognition of the flexible non-liner nature of information culture.

Chapter Two referred to Taylor’s (1986, 1991) work on “information use environments” (IUEs) to describe the contexts of information use. Building on Taylor’s (1986, 1991) IUEs this study has identified a range of influences on and contexts within which information use happens. The attributes and elements described herein can both impact on the “flow and use of information” and the determination of the value of information (Taylor, 1986, pp. 25-26).

The issues about information use raised by the participants and the findings and observations made in the literature support the premise that information use is a critical aspect of information culture (Kirk, 2002; Taylor, 1986, 1991; Todd, 1999). Why would an organisation need a high performing information culture if it was not intent on making the best use of information for achieving outcomes and the delivery of services. Information culture is ‘the means to the end’, namely information use. As Davenport (1997) confirms:

> It's the use of information - not its mere existence - that allows managers to make better decisions about products and processes, to learn from customers and competitors and to monitor the results of their actions. Such advantage should not be left to chance, and can't be achieved without managing the human aspects of information. (p. 86)

From the perspective of this study, information use is a key component of information culture. As such, needs to be represented in any definition of information culture and any model of information culture. The attributes and elements of information culture need to be focused on the use of information.

5.6 Discussing the Elements of a Positive Information Culture

This section provided an analysis and description of the data on the elements of a positive information culture. It outlined the five categories that were identified from the themes covered by the participants. Relationships between defining an information culture and the elements thereof, as well as the relationships with developing an information culture, indicated the emerging systemic nature of an information culture. The findings were corroborated and verified where appropriate by the literature, comments from researchers in the area and participants from best practice organisations.

Throughout the analysis of the data, a recurring theme was the systemic and complex nature of information culture including its elements and attributes. It has been revealed as an interrelated and non-linear concept that is reflexive in nature. Given this nature, a systems approach to information culture is appropriate. The work of French and Bell (1995) confirmed that a systems approach ensured a holistic view and allowed for the interdependence of components and any sub systems. In their work on organisational culture for creativity and innovation Martins and Terblanche (2003) confirmed:

> [O]ne of the best approaches to describe organisational culture is based on the open systems approach. This conclusion is based on the fact that it offers a holistic approach that allows the investigation of the interdependence, interaction and interrelationship of the different sub-systems and elements of organisational culture in an organisation. (p. 73)

The meta level elements identified in this research were:

- Strategic thinking and planning;
- Leadership;

- Valuing and understanding information;
- Organising to find information; and
- Using information (synthesising).

These elements complement and augment the findings of previous studies into information culture as demonstrated in Table 5-3 and Table 5-4. The identification and understanding of these elements is central to the ability to appreciate and develop a positive information culture.

Information management emerged as an area of interest. In previous studies and in this data, information management was a recurring theme, with participants often confusing it with information culture. This confusion was evident when interviewing academics and practitioners. One best practice participant was also uncertain about the concept of information culture. The paucity of research into information culture, the abundance of literature on information management, and the omission of information culture from academic programs may be contributing factors to this situation.

An analysis of these five meta elements of information culture revealed that it was possible to demonstrate a progression of links between them. As part of the analysis it was also possible to demonstrate the interrelationships between the elements and the attributes of information culture. These relationships are pursued further in Chapter Six and are presented in Figure 6-2 and Table 6-1.

The systemic and complex nature of information culture continues to emerge from the study. It needs to be considered in developing a positive information culture. It also influences the defining of information culture and the construction of a model of information culture. These are considered further in Chapter Six and Chapter Seven.

5.7 Benefits of a Positive Information Culture

This section explores what an organisation, in particular, what a government department would gain from a positive information culture. As illustrated in Figure 5-1 there is a link between the benefits of and the incentives for a positive information culture. The latter is covered in the following section. Benefits are those advantages that an agency could expect to accrue as a result of a positive information culture. An incentive is a motivating force.

Previous studies into information culture and related concepts have identified the links between productivity improvements and other business benefits and

information culture. (Abell, 1994; Curry & Moore, 2003; Ginman, 1988; Hindle, 1997; Kirk, 1999; Leidner, 2003; Marchand et al., 2001a; Martin et al., 2003). With the exception of the study by Curry and Moore (2003) the studies were conducted in the private sector. This raises the question of whether or not benefits are also to be had in the public sector, and if so, what those benefits might be. A partial response to this is that every participant in this study offered at least one comment on the possible benefits that accrued from a positive information culture.

Even though there are differences in customer groups and business focus, there are commonalities between private and public sector organisations. Therefore, it could be expected that a public sector agency would benefit in some way from a positive information culture. A private sector organisation needs to be competitive, to deliver services and generate profits for its shareholders. A public sector agency is required to be accountable and responsible in its use of public monies and to achieve outcomes and deliver services for stakeholders and customers. Governments require their bureaucracies to be efficient and effective, and to discharge their responsibilities with efficacy.

Although the previous studies focused on the private sector some parallels for the public sector can be identified in their findings. Table 5-5 illustrates the benefits of a positive information culture in the private sector that can be translated to the public sector.

Table 5-5 Examples of Benefits of a Positive Information Culture in the Private Sector Translated to the Public Sector.

Private Sector Benefits	Equivalent Public Sector Benefits
• Competitive advantage.	• Efficient and effective service delivery.
• Better 'bottom line'.	• Improved outcomes and services.
• Support for decision-making.	• Support for decision-making.
• Creativity and innovation.	• Creativity and innovation.
• Support for risk management.	• Support for risk management.
• Alignment of technology and systems with organisation's missions and purpose.	• Alignment of technology and systems with organisation's missions and purpose.

The discussions around benefits were closely linked to value and the concept of the value of a positive information culture. The relationship between benefit and value occurred when participants interpreted both terms as referring to utility or being useful. The benefits and value emerged and merged when participants talked about the need to demonstrate the value of information culture and what would it deliver to the organisation. The comments on benefits were not always in direct response to a question on benefits. Sometimes they arose from discussions on other aspects of an information culture, including those on how to develop a positive information culture. Responses from the best practice participants were specific about how their organisations were able to demonstrate the value or the benefit. For example, they talked of better informed decision-making, risk management, capture and sharing of information that transcended generations of users.

The interpretation of and relationships between value and benefit demonstrated in this data are further evidence of the systemic and reflexive nature of information culture.

An analysis of the data indicated that there were three key themes associated with the benefits of having a positive information culture, namely:

- The Business benefits;
- The Levels of benefits accrued; and
- Ways of working.

5.7.1 Business Benefits

All of the participants made mention of the business benefits associated with a positive information culture. Some articulated it generally as business benefits while others made mention of specific benefits which they thought would be experienced by a government agency in conducting its business. These benefits were expressed as:

- Improved efficiency;
- Quality of service;
- Ability to measure quality of service;
- Performance improvements;
- Ability to measure performance;
- Improved service delivery;
- Better decision-making;
- Verification of decisions made;

- Continuous improvement;
- Support for risk management; and
- More innovation and change.

These benefits correlate with Table 5-4.

An indicative quote comes from Participant A12 who said:

> I would tend to think of the information within the organisation that the organisation should be using to improve its performance. Be it key performance indicators, or how ... this section of the organisation is performing ... it's that sort of information which I think to a large extent is a core part of the information culture of the organisation. How do you value the information that you use to improve your performance.

The best practices interviews supported the link between business improvements and information culture. Participant BP2 said:

> And it comes back to that concept of informed decision-making. If you didn't give the person a piece of information they could make the wrong decision ... context is important to that again too, and that probably has something to do with the information culture ... and that support for service delivery ... [we] actually find it an efficient and effective way to work. We get a lot of ideas about how to improve things that come from up as well as down.

Participant P7 linked strategic vision, efficiency and business improvements, and then added the dimension of hidden costs. He gave an example of where costs could be reduced and improvements made. In doing so he highlighted the challenges in trying to do this:

> If you want to convince government to take this area seriously, you have to have case studies and a variety of evidence that is suggestive of business benefit....I went to a government agency a week ago ... and it was spending $2,000 a day on paper file activations with a private sector service provider, $500,000 a year in file retrieval in the absence of a full cycle electronic record retrieval....The benefits are there but the costs are hidden. I think the argument can be sold. Some of these hidden costs and some of the unrealised benefits need to be quite clearly communicated and often I think we fail to communicate that.

Participant BP5 provided a case study from her organisation where she and her staff were able to demonstrate the financial and service delivery benefits of an

information use and information management project which was well-planned and executed, and for which the return on investment was clearly documented and presented.

While substantiating the financial value or benefit of a positive information culture, whether it is because losses are minimised or gains are made, is a more problematic task than might be expected. Orna (2008) warns that:

> The ability to assign a reliable, and preferably monetary, value to information would be a winner in gaining and keeping the attention of senior management; most organizations, however, have been reluctant to approach it, because they could not see how to do it. The difficulty arises partly from mistrust of qualitative measures and partly from the intellectual demands of methods for converting qualitative to quantitative. (p. 558)

5.7.2 Levels of Benefit

A number of scenarios are possible when it comes to identifying and seeing where benefits accrue in an organisation. Benefits can be in evidence at different places in the organisational structure or hierarchy. Benefits can accrue to customers, stakeholders and staff. They can be strategic or operational in nature. This variety of occurrences is referred to in this study as levels of benefit. In addition to the participants commenting on levels of benefit, the experiences of best practice organisations confirmed that benefits are manifest at different levels.

Participant A4 discussed the satisfaction experienced by staff as a level of benefit influencing improved performance and greater general understanding. He went on to talk of better organisational and individual memory. As a complement to this, Participant A7 spoke of the value of having and encouraging the organisation to be involved “at all levels.” When referring to levels of benefit, Participant A1 spoke in terms of “the breakdown of silos” and working across the hierarchy and diminishing “hierarchical power.”

The best practice interviews with Participants BP1 and BP2 reinforced this view of benefits being evident at different levels. For example, Participant BP2 drew attention to benefits to both the individual and the organisation, and then went one step further in highlighting the flow-on beneficial effect to the public. He said, “I know that the organisation is very conscious that the information or the output we provide can actually help Australians make better decisions about how this country will be organised in the future or should be organised.” This is particularly pertinent to this

study as it is focused on service delivery agencies and the achievements of outcomes.

5.7.3 Ways of Working

The benefits documented here refer to the manner in which and organisation conducts its business, delivers its services or achieves outcomes. It is about the positive strategic and operational impact on how people work and what they produce. From the data, these benefits were categorised as:

- The emergence of new ideas, innovation;
- Better outcomes;
- Improved governance;
- Improved opportunities to include stakeholders in processes;
- The sharing and reuse of information;
- Maintenance of the corporate memory;
- Greater openness and trust; and
- Seamless end-to-end processes.

Scrutiny of the information under the subheadings of business benefits, levels of benefits and ways of working reveals that there are opportunities to place benefits under more than one subheading. For example, improved opportunities to include stakeholders in processes could be both a level of benefit and a way of working, performance improvements, including better outcomes, could be considered as business benefits and better ways of working. Moreover, benefits such as sharing and reuse of information and openness and trust were also offered as examples of attributes and or elements of information culture. Regardless of the categorisation of these items and actions, it is apparent that they are evidence of or outcomes of the existence of a positive information culture as well as typifying or identifying an information culture.

The breakdown offered in this study is flexible rather than rigid and serves to illustrate the range of benefits that have been identified.

The earlier research into information culture had a focus on business improvements. While this research was largely undertaken in the private sector, the principles are reflected in the comments of the practitioners, academics and best practice sites which were part of this study.

Marchand et al. (2001a, pp. 69-72) conducted a two and a half year international research project investigating the relationship between business performance,

information technology, information management and the values and behaviours people ascribed to information use. This triumvirate of information technology, information management and information behaviour became known as information orientation. The study showed that companies that exhibited a high information orientation were able to demonstrate that they improved their business performance. The key to success was having the three elements in a strong state and working together.

Capgemini, a United Kingdom based company, conducted a survey of three hundred and fifty companies and public sector organisations in 2008 on the issue of effectively exploiting business information. They were endeavouring to make the connection between information and improving business performance. One hundred and twenty-five senior executives were interviewed. In the report of this survey *The Information Opportunity Report: Harnessing information to enhance business performance*, the private sector respondents said that a 29% increase in business performance could be achieved through better use of information, and the public sector respondents thought that an increase of 18% could be achieved (Capgemini, 2008, p. 28).

According to the report, organisations and their senior management do acknowledge the importance of information and how it is managed and used, “Organisations know they have powerful drivers, or motivations, for improving their exploitation of information” (Capgemini, 2008, p. 9). The senior managers who participated in this survey nominated business effectiveness, cost reduction, customer expectations, risk reduction and statutory obligations as the top five drivers for exploiting information (Capgemini, 2008, p. 9).

As has been demonstrated, the participants in this study identified a similar range of drivers and benefits for a positive information culture in the Western Australian Public Sector. The acknowledgement of the benefits of information and information use gives rise to the question of why agencies do not put more resources and effort into developing good approaches to information and information use. Those researchers who had previously undertaken studies into information culture may have provided some insight into the answer to this question. When invited to contribute to this study these researchers provided the following comments on efforts to improve information culture:

> The biggest issue is that many managers still consider the behaviours and values related to effective knowledge and information use intangible and not

> worth paying attention to. The ability to measure and clearly demonstrate value is the key to unlocking the relevance of these concerns in many companies. (Participant R2)
>
> There is a need for greater awareness of the role and importance of IC in affecting not just business performance, but the individual's sense of agency, creativity, and contribution to the organization**.** (Participant R1)

These comments suggest that managers and leaders of organisations need to be convinced of the value and benefit of planning for and investing in a strategy to improve information culture. Those in positions of responsibility have a large number of issues competing for their attention, and they are under significant pressure to deliver services and outcomes as expediently as possible. So, on the one hand, it is understandable that they do not address issues of information use. On the other hand, previous studies and data from this research are highlighting that there are organisational and individual benefits to doing so. The conundrum is how to do so in an already hectic working environment. Extrapolating the findings from this study suggest some potential solutions such as an inclusive approach to strategic planning and the role and function of the information professionals. This dilemma is addressed in more detail in Chapter Six on developing an information culture.

Broadbent (2002, pp. 335-338) put forward the argument that information professionals can make a significant contribution to convincing organisations of the benefits and value to be gained from information use and better approaches to information. She extolled information professionals to be "immersed in the culture of the organisation" and to "understand the executive perspective." A "trail of evidence" based on information performance would assist in raising the "value proposition" of information use. The positive practices and experiences of the best practice participants in this study support Broadbent's views.

Participant R4 warned of the complexity of information culture and thus the complexity of a program or strategy to identify and improve the benefits of the culture. Her comments reflect that neither the concept of information culture nor its benefits are linear and standalone. There are a range and diversity of issues to be identified, understood and possibly actioned. These comments add weight to the view of this study, that the notion and the reality of information culture are complex, systemic and reflexive and worthy of commensurate consideration.

Supporting the case for the complexity of information culture and difficulty of demonstrating the benefit and value of and in an information environment Broadbent (1992) said:

> We should not underestimate the complexity of the issues involved in identifying the value of services and products based on the importance and use of the information content itself. The major reason that many information professionals, and their managers, experience problems in identifying the value of their products and services is that this, in itself, is an extremely difficult challenge. (p. 66)

5.8 Discussing the Benefits of a Positive Information Culture

The complexity of information culture notwithstanding, there is evidence of the benefits of having and cultivating a positive culture. This evidence has been drawn from the literature and from the data gathered during this study. As demonstrated in Figure 5-1 a relationship exists between the benefits of having a positive information culture and the quest to develop or improve an information culture. Benefits are linked to incentives. Benefits may also be useful in analysing responses to obstacles and in balancing or countering disincentives. The benefits to be had can be used as leverage in convincing the leadership of an organisation to establish strategies and programs to improve an information culture. Furthermore, articulating and explaining the benefits to be accrued can be used to motivate staff to participate in information culture programs.

The earlier studies into information culture were able to demonstrate that benefits did accrue to organisations which exhibited a positive culture (Abell, 1994; Curry & Moore 2003; Ginman, 1988; Kirk 1999; Leidner, 2003; Marchand et al., 2001a; Martin et al., 2003). By comparing and augmenting the benefits proposed in the literature with those offered by the participants in this study, it was possible to confirm that benefits were to be had in the public sector.

Difficulties do arise in proving the financial benefits to public sector agencies. However, examples from the best practice participants, the views of other participants and the benefits per se found in the literature, mounted a convincing argument for performance and governance benefits. The researchers interviewed for this study confirmed the general issues and problems with proving the benefits of a positive information culture. Participant R4 said:

Also the connection to business success is difficult because business success is depending on so many factors (both internal and external).

One difficulty is to find a common view on what a high performing information culture actually is. There are different levels in the organization with different needs. There should be a common language to speak about information issues among other things. And common aims. I think this is surprisingly difficult in business organizations ... to adjust the goals to the different levels of the organization. Also a high performing information culture is different for every organization. It is important to evaluate every organization and identify their strengths and weaknesses when it comes to information and communication issues. It should be important also to identify the group identity and other kinds of social aspects in order to adjust information culture initiatives.

The connection to business success is something I have left out because I think it is more valuable to focus on the actual processes behind effective information and knowledge sharing rather than trying to motivate its role for business success. This comes as a result in the long run.

As an observation, when speaking of benefits, the practitioners had a tendency to view the idea from a more operational perspective, speaking in terms of the business benefits in general. The academics considered the benefits from a more holistic stance including references to the specifics of business benefits as well as the intangible and contextual aspects. This does pose questions in regard to practitioners hearing and heeding this perspective and having the ability to and interest in pursuing it. The best practice interviews have confirmed the breadth and depth of the benefits of a positive information culture and the value of having such a culture.

5.8.1 Incentives

With so many demands placed on it by a volatile environment, why would a public sector agency focus on its information culture and attempt to improve the culture? To get an insight into the possible reasons, each of the four categories of participants were asked questions related to this question. Even though there were specific questions on the issue, the researcher thoroughly coded all the data gathered for relevant information. For comprehensiveness, previous studies on information culture and related topics were investigated.

To provide a context to this section, the concept of incentives was interpreted as something that would motivate or encourage an agency to action or effort. An incentive could be positive in the sense of offering a reward or negative in the sense of avoiding failure or deficiencies. In coding this section of the data, the researcher identified six key themes as incentives for developing a positive information culture. They were:

- Accountability;
- Financial incentives;
- Political incentives;
- Legislation and compliance;
- Service delivery;
- Technological incentives; and
- Ways of working.

During the coding activity, the researcher noted that the participants' comments did not always fall into one distinct category. There were overlaps and complementarities. Even though a distinction has been made between the benefits of having a positive information culture and the incentives to having such a culture, on occasions the participants ranged between the two concepts. The researcher has made comments on these occurrences in the following analysis.

Fifty six sources provided ninety five references to incentives. Of particular note is the predominance of comments from the best practice participants. For example, half of the twenty references on ways of working as an incentive were provided by best practice participants as were all but four of the thirteen comments on information needs as an incentive. All of the comments on technology were made by the best practice participants. This situation may be due to the incentives being identified as part of the reason for an information culture program and the incentives being confirmed by the better practices in use. The incentives and or benefits may have been thrown into relief by the successful use of information. Participants BP5 and BP6 explained the benefits of working with senior managers who were leaders committed to improving the relationship with and use of information. With these positive experiences came an appreciation of the incentives and benefits.

5.8.2 Accountability

For the purposes of this study the following definition of accountability from the Australasian Council of Auditors-General (2009) was used:

> Accountability: The imperative to make public officials answerable for their behaviour and responsive to the entity from which they derive their authority. Accountability also means establishing criteria to measure the performance of public officials, as well as oversight mechanisms to ensure that standards are met. (The Elements of Good Governance, para. 2.3)

With this definition in mind, the researcher identified aspects of accountability in the data, namely:

- Performance measurement;
- Support for decision-making;
- Risk management; and
- Audit trails, verification and evidence;

Participant A1 took a systemic view of information culture and performance management. She described a relationship between the management of physical, financial and information systems and resources and performance. Well managed information support mechanisms would deliver the information needed to meet performance targets, manage budgets and assets, and support decision-making.

In addition to Participant A1, three of the best practice participants (BP1, BP2 and BP4) mentioned information for better decision-making as an incentive. Participant BP4 spoke of accurate, easily accessible information. Participant BP1 drew a comparison between a simple mathematical based decision and a qualitative based decision:

> [With] a simple mathematical based decision you would be able to see where the data came in and you would be able to see where the data got manipulated in some way, and you would be able to see the multipliers, the dividers whatever it was, the weighting factors. Then at the end of it you would say here's the decision based on whatever or based on all these inputs. In the same way you would expect a qualitative based decision to have similar sorts of things. What are the inputs, especially the key inputs? What are the key things that lead you to this conclusion?

He also questioned the validity and accountability of such activities "where a corridor conversation turns into a business decision." Without the evidence, "how does someone justify a decision if they can't show you their thinking"?

Managing risk or risk minimisation was cited by Participants BP5 and BP6 as an incentive. Participant BP5 referred to some of the specific high profile issues

experienced by a Federal government department where a good information culture and better information management could have minimised some of the problems and reduced costs. Participant BP6 spoke of risk in relation to valuing information stores and being able to access those stores. She described a situation in a department in which she had worked where problems resulted due to a lack of information management.

Participant P1 looked at risk management from a slightly different perspective. He commented that many government agencies may think that they are managing their risks when in fact they are not. He added that the volume of information is increasing rapidly and current systems cannot cope, security can be compromised as can privacy. Apart from these risks he said that "reputations are at stake and credibility ... maybe a few more DG's heads have to roll before they start taking this seriously."

Participant P3 had a view of the changing risks and internal and external pressures. His comment here also raises the risks inherent in a department's attitudes towards information, how they value it and what they then do with it. He said:

> Because of the immediacy of what we are trying to deliver ... you worry about the short term ones. You never actually worry about the long term ones ... I would have to agree, that despite all the change government has gone through, there has always been external forces that will change those things and it will be some issue that externally will do it ... there's a lack of understanding that information is actually for the community of WA rather than the individual department.

Two participants offered alternative views on the value of risk management as an incentive, Participant P7 said:

> Most people are prepared to take the risk because there is so much to do, so many pressing issues that they have got a DG breathing down their neck or a Minister, about delivering outcomes.

Participant P8 told of how his senior management view information management as being able to ensure that everything is kept confidential. He said, "it's about protect[ion]. Information is there basically to protect us. The information that we record is protecting, a risk management thing rather than it just being a fundamental part of the way people do their job." As a final simple encouragement on risk management Participant R5 said "Variance of risk needs to be properly assessed."

In writing of risk management and information, Hamilton (2000, pp. 209-228) draws attention to the important role that information has in assisting an organisation manage its risk effectively. He writes of the need to gather and use a complete range of financial and non financial information, to have the right people aware of and understand risk-related information.

While asserting that audit trails, verifications and evidence were important incentives Participant BP1 posed an alternative view for the public sector. He said "From a public sector perspective, I think there's an element of ... protection whether that is seen as being responsible and accountable or whether it's seen as being blame the other guy, I am not quite sure."

5.8.3 Financial Incentives

There were complementarities of thought in the responses about the financial incentives for departments. Participants referred to the cost savings that they thought could accrue from a better information culture and improved information management. The common theme was that departments needed to be made aware of the savings to be made and the efficiencies to be gained. Departments were not sufficiently aware of these to stimulate action.

Participant P7 said these were "hidden costs." On the other hand Participant BP5 gave a positive example of where she was able to show her organisation a return on the investment in better information management. She explained the problems they had in locating information that was in constant demand to assist with interpretation of an Act which involved providing benefits and support to the public. In some cases the information was required for a legal process. She explained:

> But when we'd finished it we actually wanted to evaluate it ... so we used anecdote circles for a process of evaluation....One of the anecdotes ... that just stays with us all is [of] one loss[to the Government] in the xxx tribunal that was $450,000.00. All we had to do was take that to the Secretary ... and it was like we got a return on investment.

Emphasising the issue of return on investment, Participant R5 said "In other words, identify, circumscribe and amplify the payoff."

Some participants raised concerns about the corporatisation of the public sector and the moves to make it more like the private sector and or devolve more responsibilities to the private sector. This was translated as a loss of focus on service delivery and responsibilities of government driven by the need for more and

better financial returns. There is evidence of the changing role of government and its relationship with the private sector. There is also a relationship between these changes and the demands which the community are making on government for more and better services to be delivered more efficiently (Keating, 1999; Keating & Weller, 2001; Keast & Brown, 2006; Shergold, 2005).

According to Box (1994, p. 43), even though this means changes to the ways in which government operates, and to some extent to the "traditional bureaucratic role" of the government practitioner, it is not the end of the practitioner. Rather he sees that new roles will emerge. For example, "serving as expert advisers and as facilitators of citizen discourse." He also sees that the old and the new roles will make use of the knowledge of the practitioner. From this it can be drawn that information and information use will be valuable to a government department regardless of the model of government in place. The way in which it is used and what is used may vary. The context in which it is used may be different as may the organisational and information cultures.

The tendency for governments and government departments to act like the corporate sector was highlighted by Participant A15. Using a current medical example he remarked on the 'mindset' which allowed governments to be more focussed on saving money in the short term instead of their community service obligations over the longer term. Given the ability and opportunity to demonstrate the potential savings to be had, it remains a concern that, in general, government departments do not respond to this incentive. As Participant P7 said "do they choose not to see it"?

A final comment from Participant P3 revolved around showing the departments the cost of all the inefficiencies. He said

> If you went into [each department] and showed the cost of all these inefficiencies....If there was some way of actually doing that, to within a degree and actually show them out of their budget. Probably 15% to 20% of their budget is frittered away with all these inefficiencies....I do not think there's going to be any other driver because the sole driver in government at the moment is efficiency and the dollar.

Although the participants spoke of the financial incentives to a government agency in having a positive information culture, the details of such incentives were not forthcoming or clearly articulated. To an extent, this lack of clarity could be due to the close links between those issues already identified as financial benefits and

those seen as financial incentives. As previously quoted by Participant R4, “Also, the connection to business success is difficult because business success is depending on so many factors (both internal and external).”

From her experience in the sector the researcher is familiar with the arguments often mounted by information professional in favour of investment in information management. The case put forward states that good information management, the storage, retrieval, collection of information, will save money and make information accessible. According to Van de Walle (2008) poor performance in government agencies is linked to how organisations and people use information and what information they use and do not use. He strongly recommends more research in this area.

The financial incentive has a relationship to the measurement of value of information to an organisation. Orna (1999) and Broadbent (2002) have argued that it is difficult to measure the value of information. Yet studies by Marchand et al. (2001a), Grimshaw (1995), Owens, Wilson and Abell (1996) have demonstrated the link between information and business outcomes. As these studies were conducted in the private sector, it may be that it is easier to demonstrate financial benefits and incentives. Perhaps the answer lies in the use to which information is put not its management. According to Badendoch, Reid, Burton, Gibb and Oppenheim (1994, p. 66), the most useful way in which to demonstrate the value of information is to see how it is used and the outcome of that use. They assert that it is more beneficial to focus on the utility of information rather than the dollar value. Oppenheim, Stenson and Wilson (2002, pp. 21-32) add to the dilemmas of information value in saying that it is not possible to identify an objective value of information.

The financial impact or value of information to an organisation has been the focus of much research over the years, and yet there is little if any conclusive result on how best to measure or demonstrate that value (Badendoch et al., 1994; Choo, 1995; Marchand et al., 2001a; Oppenheim et al., 2002; Orna, 1999). According to Orna (2004, pp. 131-135) senior managers remain unconvinced of the links between information and business performance and success. As such they are reluctant to invest in any measures to manage or use information better. Supporting this observation Marchand et al. (2001a, p. 248) say that “if one cannot measure ... the role of information use in business organizations, then discussions of the ‘knowledge economy’ or ‘information-based organizations’ are interesting, but not compelling.”

While it is possible to identify potential financial incentives and benefits of information and a positive information culture, there are challenges involved. Firstly, there is need for more substantiating research on the value of information and then there is the challenge of convincing senior management of how worthwhile it would be to pursue these incentives.

5.8.4 Political Incentives

The influence of politics on an agency's decision or need to address their information culture was raised by participants as occurring at three levels, namely, individual, departmental and government/ministerial. For example, Participant BP4 commented that the public embarrassment of "someone high enough", departmental head or the Minister, caused by them being given the wrong information could be a good catalyst for change. Embarrassment or dismissal of senior staff was also mentioned by Participant A12.

At the organisational and individual level Participant A4 felt that political influence was required to get senior managers to invest in a range of areas, not just information. Something had to be done to pique their interest as without their influence and support, success was unlikely. An "adverse finding" might be a driver in this case. The interview with Participant A1 elicited a comment on the significance of where power resides in an organisation and how that is linked to making political connections. By making organisations less hierarchical and giving more access to information and knowledge, the political power can be altered. Said Participant A4:

> It's this whole business of where power resides. And this saying 'knowledge is power', I think it is still very valid but I think that a lot of the knowledge that is being used to be powerful is actually political connections. It's ... who you know.

Participant BP1 offered an alternative view of the political power of information. He said:

> I think that there is this issue around being found out or it's my stuff and you can't have it until I've finished with it....I don't think it's really a power issue. It's more, if I don't give it to you, then I can't be blamed for doing something wrong. I think it's a real negative thing in that regard....It's like, it's my I[ntellectual] P[roperty] so I am not going to give it away, not because I don't want to share it, but because I am afraid that it's going to be criticised.

The literature recognises the existence of information politics and the effect that it can have on an organisation (Davenport, Eccles & Prusak, 1992; Reuters, 1994; Travica, 2005a). As information can be beneficial and advantageous to both individuals and organisations, there is the opportunity for people "to use it for their own advancement." This then gives rise to "information politics." Reuters (1994, p. 43)

Daft and Lengel (1995, pp. 171-215) introduce the concept of information processing or "information richness" as a means of assisting with the management and orderliness of an organisation. They developed an "information richness model" to explain how organisations can meet the need for information and also reduce uncertainty. "The premise ... is that organizational success is based on the organization's ability to process information of appropriate richness to reduce uncertainty and clarify ambiguity." According to Daft and Lengel, political behaviour in an organisation is related to information use. They view politics in an organisation as using rich information to make decisions about or reach consensus on addressing "uncertain problems."

Davenport et al. (1992, pp. 53-65) view information politics from another perspective. Based on the idea of information as organisational currency, the authors put forward the view that there is political power associated with the use and definition of information. The key to success in an information-based organisation is firstly, recognising and then managing the politics of information. Davenport et al. agree that this is a complex and difficult task which requires a change in organisational culture. Accordingly, "[Managers] must view information as important to their success and be willing to spend time and energy negotiating to meet their information needs." (Davenport et al., 1992, p. 64)

The literature and the data gathered from the participants indicated that there are synergies between information use and information and political advantage. However, the advantages that individuals gained from access to and use of information may be antithetic to an organisation achieving outcomes and delivering services. The individuals may choose to keep personal control of information that is useful to them. There would appear to be a strong link between information politics and information as power.

As information sharing and reuse has been nominated by participants and in the literature as a hallmark of a positive information culture (Jarvenpaa & Staples, 2000; Marchand et al., 2001a; Oliver, 2008), it suggests that the political incentives for the

organisation need to outweigh those of the individual if there are to be beneficial organisational outcomes. Individuals need to be convinced of the power and the benefits of sharing rather than hoarding information. Bundred (2006, p. 125) warned that sharing required "time and effort" and threatened the "traditional status and authority" of the individual.

5.8.5 Legislation and Compliance

The need for government departments to comply with the requirements of legislation, regulations, instructions and directives and performance reporting was seen as double-edged in encouraging the development of an information culture. For example, as Participant A2 said:

> It is legally necessary but the fact that it is legally necessary really has no bearing on the real question that you are asking about how well and effective the organisations can manage their tasks.

Participants P1 and P3 agreed that there was legislation to enforce certain information practices. However, it was having little real effect. Participant A7 supported regulation for long term success and the need to link this with the values which contributed to the success of an organisation. He could see that there could be "more negative publicity or legal problems" and that the solution might lie in "having the values but also [having] to contribute to the operations of strategic success."

After years of trying to convince her organisation of the value of information management using a positive perspective, Participant A6 said it was a negative report on compliance that finally got a response from the organisation's senior management. Hawley (1995, pp. 237-239) confirmed that information often only became a concern to senior management when they were faced with a negative consequence or a disaster.

There is a strong link between legislation and compliance and accountability. Public sector organisations are obliged to comply with Acts, regulations and directives. In part, these encompass the procedures and rules which bound accountability. Therefore, it could be argued that the incentives associated with accountability also have relevance in the area of legislation and compliance.

The findings in this area and those on accountability, finance and politics have indicated a trend towards negative incentives. That is, incentives in the sense of avoiding failure or deficiencies such as avoiding bad publicity and failure to comply

with legislation. With the focus on information management that had been evident in the data, it is surprising that the participants did not offer more comments and incentives on the potential for government departments to reduce costs through the management of information through it lifecycle or continuum, as well as the reduced costs that are said to accrue through minimising the time to access information.

5.8.6 Service Delivery

Improving service delivery covered areas of performance management, customer satisfaction, skills development, providing information to the citizens, productivity and service support.

Participant A12 told of the importance of internal information to improving service delivery as well as using information to support its performance indicators. Making the links he said:

> I think ... it is the information within the organisation that the organisation should be using to improve its performance and be it key performance indicators, or how is this section of the organisation is performing, versus that, and it's that sort of information which I think, to a large extent, is a core part of the information culture of the organisation.

Participant A3 made observations about service delivery and the value of information to performance and performance management. Firstly he emphasised that it would give organisations "a better ability to achieve the primary outcomes."

Alluding to the integral nature of information to government departments, Participant A3 then spoke of the value of a more "insightful and altruistic view" of "the role of the public service/sector" which would give a better understanding of "where information fits in the array of things that make service now and into the future possible."

Finally, with regard to information for improved performance, Participant A3

> I remember a CEO who totally alien to the organisation said to the Minister … we are going to cut the ... workplace accidents by 10% in three years ... and used ... information in the sense of setting a target, and then having performance information to drive an organisation. So there are not many cases where public sector organisations have really built themselves around, in some particular way, that performance and their achievement.

Even though Participant A3 was considered when commenting on incentives, he qualified his views by saying “I’m struggling to think of a range of positive incentives ... that ... may explain why it [information culture] hasn’t got the prominence.”

5.8.7 Technology

Given the high profile that information technology has in the information environment, there were few comments on incentives associated with technology. All four comments were made by best practice participants reflecting on their experiences.

Participant BP2 explained how his department had been involved with computing for many years and had technology well integrated with information. Technology was not seen as a driver but rather as an enabler. This view grew over time and was considered and advantage.

Participant BP5 relayed a case study about the value of using technology appropriately to get information into the hands of people who needed to make “decisions on the ground.” However her caveat was “but it wasn’t so much around the way they managed the information. In fact I wouldn’t have said that [name of Agency] ... was a particularly good information management organisation. [It was about] being encouraged to use authoritative information for decision-making.”

Technology as an enabler of change and service delivery is a theme associated with the information age or the information economy and a theme which is echoed in the literature on information culture (Davenport, 1994, 1997; Marchand et al., 2001a). The application of information and communication technologies has had an undoubted impact on operations and services in the public sector. To gain the most benefit from this technology, agencies must first know and understand what it is that they want to use the technology for and what they want it to deliver. They need to think as much about the information as they do the technology. This means that a strategic planning approach is required, an approach that starts with the information and knowledge outcomes and is supported by the technological outcomes (Earl, 2000b, pp. 16-22; Milner, 2000, pp. 101-105).

Further support for this approach is provided in the work of Marchand et al. (2001a, 2001b). Their work emphasises the importance of developing information management capabilities as well as information technology capabilities and building values and behaviours around information and information use.

Even though the value of technology as an enabler of service delivery is acknowledged, organisational and information cultures have the potential to limit the influence and impact of technology and systems. Despite improvements in "planning and implementation methodologies" information systems implementation and use are still facing the same problems. To ensure the return on investment in systems implementation and use, organisations need to take into account the role and influence of their information culture and to address the potential impacts (Leidner 2003; Travica, 2008).

5.8.8 Ways of Working

Responding to the question about incentives, Participant R3 saw increasing the knowledge base around organisational learning and knowledge management as assisting with breaking down some of barriers associated with using and sharing information. In a similar vein, Participant A7 bemoaned the workplace situation where people were not consulted on how to make processes and systems better, or were not encouraged to contribute to thinking and achieving outcomes. On the other hand, Participants BP2 and P3 shared positive examples of learning in the workplace in order to improve ways of working and add to the knowledge base.

Reuse and sharing of information were catalysts identified by Participant BP1, and collaboration and cooperation were drivers for Participant BP2. According to Participant P4, the need for an open and trusting environment in which people's opinions were valued was important.

5.9 Discussing Incentives for a Positive Information Culture

The private sector is usually very focussed on its financial and business outcomes. However, the focus on accountability in public sector means that the processes used to deliver services and outcomes are as important as the outcomes themselves. The processes are subject to close scrutiny (Denhardt, 1992; Shergold, 2004). Moreover, the service delivery model for government agencies and their relationship with the community and the private sector is changing. This has led to increased pressure to deliver more and better services with fewer resources. With this changing model comes the expectation of greater accountability and transparency in processes (Keating, 1999; Keating & Weller, 2001; Shergold, 2005; Keast & Brown, 2006).

From the perspective of information and knowledge use, this model of government administration and service delivery has a bearing on accountability and

transparency, performance management and reporting, risk management, decision-making and policy development. Such issues were raised by the participants in this study.

Milner (2000, pp. 50-51) said that while the value of information as an asset to the different sections of the economy was still problematic, the private sector was beginning to recognise and acknowledge the importance of the asset. On the other hand, the public sector had been slow to recognise this and to capitalise on the asset for innovation and better service delivery. Later in the decade, Riege and Lindsay (2006, p. 25) argued that knowledge is increasingly being recognised in the government as a strategic asset, and improved effective governing and public policy development "depends on a more systematic and effective capture, dissemination, transfer and application of knowledge."

The then Australian Public Service Commissioner Lynelle Briggs, in interview with Jennifer Alexander (2007) commented on the complexity of decision-making, problem-solving and delivery experienced in the public sector, and when compared to the private sector. She said:

> [W]e're still struggling with how to work across government. This is not something that our institutional, hierarchical, agency-based accountability and financial arrangements support as well as they might....I think the public sector has to be far more strategic and involved in complex problem solving than many people in the private sector at key leadership levels need to be. We're not about producing widgets or selling a product or making a profit. We're about trying to resolve a problem in the best way possible with the best outcome for all....I think the private sector can learn from us that everything isn't black and white: that there are shades of grey and that sometimes a little patience with the public sector is needed as it tried to manage a range of stakeholder groups and the different interests. (pp. 6-10)

Long (2001), in an address to the Institute of Public Administration Australia, argued that the changes being experienced in the public sector were being driven by "the rise of the Information Age." Long observed that government in Australia, particularly at the Federal level has focussed on the strategic elements of information technology for communication and decision-making, but have by comparison neglected the importance of addressing information itself. Says Long (2001):

> Information is powerful but intangible. Information is knowledge, communications, creativity, science, media, performance, education, strategy and tactics, architecture, planning, design and market intelligence. In a global environment where agrarian and industrial capacities are very widespread (even though not necessarily equitably distributed) information and its flow between individuals, groups and nations become *the* decisive factor in creating economic advantage. This is what the information economy means. (p. 9)

Given the elemental focus on accountability and governance in the public sector, and the need to be mindful of transparency of processes used to deliver services, the role of information culture in this arena was well demonstrated by the participants. Even though the role of government is changing, this focus on accountability and governance may also account for the lack of clarity around the financial incentives offered by a high-performing information culture.

It could be argued that there are similarities between incentives and benefits. A perceived benefit may be an incentive to improve an information culture. For example, being better able to achieve outcomes and deliver services, taking greater advantage of quality information use are meta level benefits of a high performing information culture. Studies into information culture have reinforced the business and performance benefits (Abell, 1994; Curry & Moore, 2003; Ginman, 1988; Grimshaw, 1995; Leidner, 2003; Marchand et al., 2001a; Martin et al., 2003). Given the potential impact of these benefits, agencies could well be encouraged to address information culture. However, the complexities of information culture are such that a direct link between benefits and incentives may not always be possible. Other factors will come into play. Choo et al. (2008) support this complexity when reporting on their study of three organisations in Canada, including a public sector agency. They said:

> We recognize that the information culture of an organisation is determined by a large number of variables such as its mission, history, leadership, employee traits, industry, national culture, and so on. In addition, information culture would also be shaped by the cognitive and epistemic expectations embedded in the way that tasks are performed and decisions are made. (p. 802)

With regard to identifying incentives for agencies to develop information cultures, Participant P4 summed it up saying, “I don’t think it’s obvious. It’s far more subtle. It’s a case of you don’t know what you’re missing. You don’t know what’s out there.”

That subtlety may be related to the nature of an organisation, and the extent to which information plays a role in an organisation. Comments from participants have indicated that it is possible to identify a range of incentives, and some of these have been based on experiences and case studies. Some of the offerings may be assumptions based on the participants' commitment to the value of information or information management. As Participants BP2 and A4 said, what is required is the commitment and investment of senior management. A compelling case is needed. That case may vary from department to department depending, for example, on their outcomes, their service delivery, the influence of any occupational groups within the department, the use of technology and the willingness to share information.

5.10 Disincentives

While the questions which were presented to the practitioners and academics in the first round of interviews included a question on incentives to improving an information culture (Questions A8 and P8), a question on disincentives was not included. However, during the interviews five participants (A1, A3, A12, A 15 and P6) made direct references to the disincentives to introducing a positive information culture that existed in the public sector. Indirect references to disincentives were also made by other participants. Two researchers' responses to question R2 were coded to the category of disincentives.

Figure 5-1 makes reference to disincentives and obstacles. Disincentives are distinguished from obstacles on the basis of the following:

- Disincentives are those factors, visible or invisible, that discourage an organisation and its leadership from considering the need to improve the information culture; and
- Obstacles are those factors, visible or invisible, which prevent, obstruct or challenge the organisation and its leadership in trying to improve the information culture.

In the interview process, Participant A3 asked the researcher if she was going to ask him specifically about disincentives. In the light of this, and given that references had been made to disincentives, when the researcher drafted the questions for the best practice interviews, she included a question about disincentives and incentives (Question BP5). Interestingly, only one of these six participants responded directly to the issue of disincentives.

The interconnected and systemic nature of information culture was demonstrated in this category. For example, legislation and compliance were nominated as disincentives and they were also cited as incentives. Some of the disincentives suggested were overt, obvious and tangible and others were covert, intangible and obscured by practices and history. Recurring and sometimes conflicting themes emerged. For example, three participants made references to the power of information and three made reference to the view that information was not important and that organisations had more important issues to address. Participants A1 and A3 said that they could not think of any “real” or “positive” incentives which is, in itself, a disincentive.

The disincentives inherent in the power and influence of an information culture were expressed in different ways. Participant A1, thinking more esoterically and philosophically, said that there was no incentive where there is “the idea of information that is disruptive, that is challenging, that is new.” Participant A15 also spoke of the manner in which information could be seen to have a negative influence. He said:

> I agree with what [Name] said about trying to protect the power base.... People can miss information or sometimes use it to protect themselves. Because at the end of the day what you say, what you give up, may come back and bite you. It can be used against you. A lot of the time, sometimes because of that sort of caution people tend to think the less I say, the less I give up and the safer I am and it is true.

Participants A9, A12 and P1 thought that legislation could be an impediment for the government sector and Participant P3 thought that compliance was not enough of an incentive and could discourage preferred behaviours. This view complements that of Participants A2, A3, P1, P3 and P7 in their responses on legislation and compliance as incentives.

There were also sentiments expressed about the relative importance of information and information culture to an organisation and the other issues demanding attention. Both Participants A8 and A15 spoke of the distraction at the government and public sector levels caused by the election cycle. Participant A8 recounted that changes could potentially occur at government, ministerial, senior management, and even staff level, with every general election period. As a result “everyone goes into ‘on hold’ mode.”

Musing on the lack of “a range of positive incentives”, Participant A3 remarked on the why and what of disincentives. As a starting point he said that it was “difficult.” He gave the senior manager’s perspective of the return on investment if an organisation did decide to improve its information culture with the following statement:

> I suppose ... the returns are often quite slow. The public service these days is, at least generally, on a fairly quick turnaround in terms of life of organisation, life of individuals in senior positions. So some of the work that one does for information potentially has quite a lag before all the benefits will be visible. So in terms of getting quick runs on the board and earlier recognition of success, the behind the scenes work which creates an information culture probably isn’t always getting the recognition it deserves.

By way of contrast and comparison Participant A3 used the promotion of human resource management in the public sector as a case study of improving focus and attention. He did, however, add a note of caution saying, “but I’m not sure about the same environment around information, what would it take”? Further insight can be gleaned from his next comments about the necessary environment and the change mode that might be required. He said, “before you get into change mode, we need a lot more insight into what it is about the public sector that gives information the status it currently has.”

The difficulties of the long term benefits were echoed by Participant P6 in saying:

> It’s because it has to be a long term commitment and because the runs don’t suddenly appear on the board. It is long term. It is hard ... I mean with IT I think it is quite easy to quantify, but certainly in information management it is really hard to get tangible returns right away.

These comments about the lack of appreciation of the benefits and the impatience with long term returns on investment, prompt a questioning of why it is that the public sector does not or cannot see the value. In particular, as Participant A3 offered, there are pockets within the sector which have good traditions and there are examples of other disciplines raising their profile.

The good traditions may be associated with some of the various professional groups and disciplines that exist in government departments. The influences of these professions and their educational backgrounds has been raised by participants and recorded as part of this analysis. For example, Participants BP2 and A3 spoke in

positive terms of the influence of professional backgrounds. Participant A6 presented an excerpt from a case study of a government department that was a high end user and generator of information, and had a high percentage of staff with a particular professional background. Contrary to expectations, the information flow was not good in this department, due mainly to the staff perception of how they were treated. She said, “to get the best out of certain members of staff in certain tasks, you have to provide them with a certain amount of autonomy.... Understanding these differences between different people and their roles are really important.”

What of other public sector experiences that would have, at least implied, a need for better information cultures? Why have these not prompted a more positive response at an individual agency level or whole-of-government level? For example, the ‘WA Inc’ Royal Commission (1992) which detailed many shortcomings in the way government managed its information, the Gordon Inquiry (2002) *Putting the picture together: Inquiry into response by government agencies to complaints of family violence and child abuse in Aboriginal communities*, which highlighted the need for government departments to share information and make information readily available, and many recent investigations’ and findings of the Crime and Corruption Commission in Western Australia which related to the use and misuse of information. There was also the instance of a policeman in the far north of the State who was confronted and shot by a criminal at large. The officer did not know that the man who faced him was a wanted criminal because the various State government police systems were not compatible and could not share information. Why it is that incidents such as these do not provide the public sector with sufficient impetus and incentive to overcome the disincentives and build better information cultures remains an unanswered dilemma.

In 2006, the Chief Executive of the Audit Commission in London, Steve Bundred wrote of the lessons which were not learned by the British Government in handling services and processes reliant on information and knowledge. He presented examples of where there was little or no recognition of the need to share and reuse information. Information technology was not used appropriately to facilitate sharing across and within agencies. Professional subcultures produced divisions which worked against comprehensive service delivery and decision-making as did differing cultures across agencies. Said Bundred (2006, pp. 127), “the failure to share information between services can have a very high price.”

Examples from the literature, the data and the researcher's own experiences raise the key question of what is impeding senior management in seeing the need to use and manage information more appropriately, to improve information cultures. Bundred's (2006) examples and those offered by participants demonstrate disasters that could be mitigated. Yet there is little practical evidence of steps being taken to improve the situation. As previously mentioned, Participant A6 and Hawley (1995, pp. 237-239) confirmed that information often only became a concern to senior management when they were faced with a negative consequence or a disaster. However, there is a compelling argument that says that even in the face of negative consequences, senior management is not responding. How to get senior management buy-in remains a challenge for the public sector.

Other disincentives are related to the lack of visibility or understanding of the beneficial links between the business and information culture. Participant A15 observed that the public sector was becoming more like the corporate sector in its focus on finance at the expense of social benefits or community service obligations. This could be a paradox when considered in the light of Participant P6's comments about cost:

> I don't think they [senior management] understand the cost to the organisation at times to get that information because it is not available to them. They just need to ask for something and everyone will go through hell and high water to get it and it might have cost $2,000 to get that bit of information. Whereas if it had been managed appropriately and all that it would be at your fingertips.

These comments about financial disincentives and the corporatisation of the public sector are further evidence of the complex nature of information culture. Financial issues and corporatisation can be both an incentive and a disincentive dependent on the organisational and wider environments.

A disincentive with less visible roots was raised by Participant P4. He talked about the effects of "unwritten ground rules" on individuals and the organisation. As people are not always conscious of these and or do not question them, "They just assume that that is the way it is." He referred to these as "unacknowledged, almost prejudices or preconceptions." McDermott and O'Dell (2001, p. 77) found that these aspects of organisational culture and subculture are not only often unarticulated but difficult to article and invisible.

5.11 Discussing Disincentives to Improving an Information Culture

While there was only one interview question that made a specific reference to possible disincentives to improving an information culture, direct and indirect references to issues which could discourage an organisation from addressing its information culture were raised by participants. Of note is the fact that even though the best practice participants were asked to discuss disincentives as well as incentives, they provided more of the latter than the former. This may be based on their positive experiences with a positive information culture. There may also be a 'halo effect' created by these experiences.

Another noteworthy issue is the group of comments from the senior public servants who participated in the study on the lack of any real incentives. The very nature of their work means that they are dealing with a multiplicity and complexity of often competing priorities, as well as responding to the political environment. The practical reality may be that they do not see the need for a positive information culture. Alternatively, they may not appreciate the role and influence of the culture and the potential to impact on the way they do business. In the opinion of an experienced researcher in the area of information culture, Participant R3, said senior management were both central to success and a major impediment to appreciating the worth of information culture. She said:

> My belief is that senior management need to be "encourageable" in the first place. True leadership should be about visibly managing by example and being prepared to take risks rather than about ego protection and self worth. Over the years I have found senior management to be the greatest stumbling block to progress of any kind. If you have reasonably enlightened senior managers, the best approach is to emphasise the benefits of developing a high performing information culture.

Further investigation of these possibilities would be beneficial.

The interconnected and systemic nature of information culture emerged from this data. Examples of legislation and compliance, financial issues and the hoarding of information to shore up a power base were offered as evidence of disincentives. They were also offered as examples of incentives and or benefits. As culture and information culture varies from organisation to organisation, influenced by external and internal factors, so the extent and type of disincentive may also vary (Choo et

al., 2008; Ginman, 1988; Hofstede et al., 1990). Another contributing factor to the complex and systemic interplay between incentives, disincentives, benefits and obstacles may be related to the stages of development, lifecycle or change that an organisation is experiencing (Ginman, 1988; Miller & Friesen, 1983; Van de Ven & Poole, 1995).

5.12 Organisational Culture

Although this study was not focussing on organisational culture, the potential relationships between organisational and information culture cannot be ignored. Hofstede et al. (1990) identified three layers of culture which can exist in and or influence an organisation. Firstly, there is the national culture followed by an occupational culture, and finally those characteristics unique to the organisation.

The literature review of information culture revealed explicit references to the possible links between the two cultures (Bauchspies, 1998; Curry & Moore, 2003; Ginman, 1988; Hoglund, 1998; Travica, 2008). Participants supported these links in their responses. They also made observations and comments that corroborated the views of Hofstede et al. (1990). Additionally, the participants' comments about the impact of the education, and professional background of information professionals and public servants, on information culture and associated practices reinforced the view of Hofstede et al. (1990) that there is an occupational culture.

Participants A3, BP2 and P7 commented on aspects of occupational culture. All three talked about the nature of an information culture being influenced by the professional groups in an organisation, the type of organisation and extent to which information played a role in an organisation. For example, Participant A3 said:

> So, typing of organisations may be just another area you may consider as a subset of issues because when you think about it there are organisations where information plays a greater value because of the nature of the work the nature of the professions.

Participant BP2 said of his organisation "the nature of the organisation helps the way we work and enables us to ... make something of this when others haven't."

Three of the researchers who participated in this study (R1, R3 and R4) shared the view that information culture was part of the wider organisational culture. Participant R3 went on to say that organisational culture varies from institution to institution. This infers that the information culture would also vary. Supporting the idea of an information culture being part of the wider organisational culture were comments

from three participants, namely A4, A6 and A7. Participant A2 put a different emphasis on the relationship, musing that people and their information awareness can grow to be an organisational culture.

Participant A10 offered a more global perspective for the differences in culture, in particular in organisational culture. When responding to the question about the attributes of an information culture, she made observations about the impact of the global nature of communication and technology as well as the influence of the history and age of and organisation.

> I think that age and physicality ... are variables that actually have an effect in this day and age....We're far more global. We're far more instantaneous than organisations have been in the past. So organisations with a history sometimes have a lot more baggage and organisations that are very physically restricted also have things that they have to deal with within their culture that actually set some of their parameters. Where a, say the global village idea or multinationals working in virtual spaces and new companies don't have perhaps the history affecting the culture that new contemporary organisations do.

This influence of the history and practice of organisations as well as the characteristics unique to an organisation put forward by Hofstede et al. (1990), was echoed by Participant P4 in answering the question about the elements of an information culture. He talked about "unwritten ground rules" determining and affecting the ways in which people thought and acted and the potential this had for hindering development of an organisation.

> I often find that ... rules or systems or codes of conduct or whatever are set up for how you're supposed to behave and what is expected. But the reality is very different and that's largely due, in my opinion, to not only personal differences which can play a big part or personal characteristics and world views, but also what could be called the unwritten ground rules of an organisation....They just assume that that is the way it is. They don't actually question or really analyse or even understand how they came to know or approach a problem or anything for that matter.

In responding to the question about the elements of an information culture Participant P6 touched on the almost imponderable aspects of culture that relate to the way people behave, and perhaps, the unwritten ground rules. He gave an example of a behaviour pattern in his organisation which was used to display

displeasure with what was happening. He did not know where it came from or why, and remarked that “people create culture.”

As described in Chapter Two Oliver (2008) undertook an exploration of information culture with particular reference to national and corporate characteristics and information management. In this study Oliver identified six key factors which differentiated information cultures in organisations. Oliver (2008, p. 379) observed that these factors were influenced by “the overarching societal information management framework and attitudes and values accorded to information.”

Choo et al. (2008) investigated information culture and information use in three Canadian organisations. They were exploring the links between information culture and information use. Choo et al. (2008, p. 802) refer to Ginman’s (1988) early study into information culture which found that there was a link between information culture and an organisation’s stage of development. Together with Ginman’s (1988) findings and observations on the influence of an organisation Choo et al. (2008, p. 802) remind the reader that an information culture could vary and change in line with the changes in an organisation’s phases of development.

The sentiments expressed by these authors about the organisational influences on an information culture matches with some of the views put forward by participants to this research. For example, the structure of an organisation, whether it operates in a virtual or physical space, its use of technology, the way it is managed and the influence of professional subcultures.

5.13 Discussing Organisational Culture in Relation to Information Culture

While there is acknowledged research into organisational culture and organisational types (Deal & Kennedy, 1982; Kotter, 1992; Schein, 2004; Westrum, 2004) there is scant research into the relationships between organisational culture and information culture. This study acknowledges the existence of organisational culture and the possible and potential relationships and influences on information culture. However, the focus of this study was information culture as an entity and the identification of its core components. The researcher acknowledges the need for further investigation of the interplay between the two cultures.

5.14 Chapter Five Summary

Chapter Five discussed two key areas associated with the identification of a positive or high performing information culture. These areas were:

- Defining and identifying information culture; and
- Impacts on and of an information culture (benefits, disincentives, incentives and organisational culture).

In addressing the definition of an information culture this chapter explored the attributes and elements of an information culture. The impact on and of an information culture were considered under the categories of the benefits of a positive information culture, the incentives and disincentives to such a culture and the influence of organisational culture on information culture.

The systemic and reflexive nature of information culture emerged from the discussion and findings in this chapter. Relationships, interactions and impacts between attributes and elements were revealed. Furthermore, there was evidence of the common and divergent views on the benefits of a positive information culture as well as the incentives and disincentives to improving an information culture. This variety of views may be as a result of organisational culture and or other internal and external factors such as the history of the organisation, its physical and virtual presence and the influence of professional subcultures.

The interconnected and fluid nature of the findings also threw into relief the importance of a common understanding of the language and constructs used in information culture. Further investigation in this area is recommended.

Table 5-6 encapsulates the findings from the *identification* phase which emerged from the literature and the data analysis. These deliverables address the research sequence from research problem to research outcomes.

Table 5-6 The Findings Which Emerged from Chapter Five and Which Address the Research Sequence

The Findings (Deliverables) Which Emerged
• The emergent reflexive and systemic nature of information culture.
• The attributes of information culture, namely: values, attitudes, beliefs and behaviours.
• The sequence of the attributes.
• The elements of information culture, namely: strategic thinking and planning, leadership, valuing and understanding information, organising to find information and using information (synthesising).
• The sequence of the elements.
• The alignment of the attributes and elements.
• The identification of semantic issues associated with the language used to describe and understand information culture.
• The relationship between information culture and organisational culture.
• The benefits associated with a positive information culture.
• The incentives and disincentives to developing a positive information culture.

Chapter Six addresses the discussion and findings in regard to the *development* phase of the research.

6 The Development of a Positive Information Culture

6.1 Introduction

Chapters Six and Seven complement the presentation of the discussion and findings in Chapter Five. Together these three chapters address individually and collectively the *identification, development and application* phases of the study as represented in Figure 6-1.

This chapter presents the discussion and findings in regard to the *development* phase of the research. The discussions and findings associated with the *application* of the *development* phase are presented in Chapter Seven.

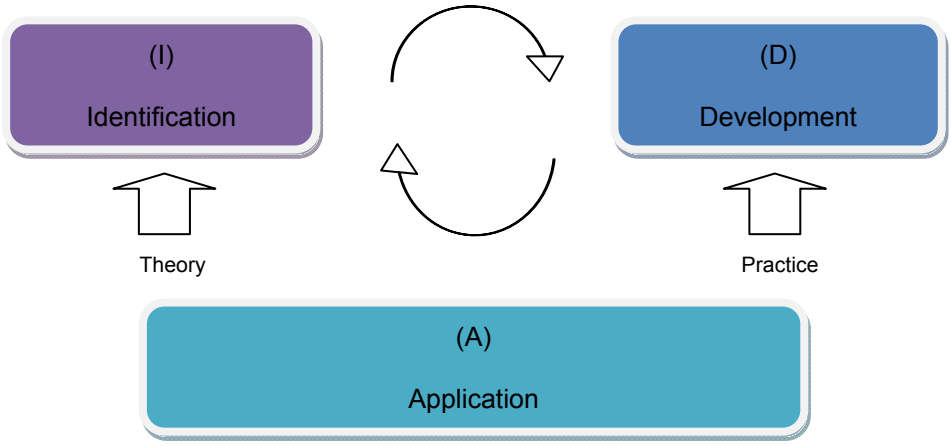


Figure 6-1 The Relationship between the Identification, Development and Application of an Information Culture

These three components were used to guide the analysis, description, interpretation ad write-up of the data (Wolcott 2001, p. 17).

The *identification, development* and *application* of information culture as represented by these three components were directly derived from the research problem. The presentation in this chapter is designed to address the research problem and the research outcomes through the research questions which focussed on the *development* phase. Chapter Three contains a complete description of this research sequence.

While a distinction was drawn between the identification and development phases in the data gathering process, the analysis of the data revealed a reflexive relationship between the two phases. That is, having identified the key attributes and elements

of an information culture, which constitute an information culture, it follows that these are the items and components that would need to be considered when developing or influencing to achieve a positive information culture.

Chapter Five identified the attributes of an information culture as:

- Values;
- Attitudes;
- Beliefs; and
- Behaviours.

Relationships and linkages between these attributes were also explored in Chapter Five. In addition, Chapter Five categorised the elements of an information culture as:

- Strategic thinking and planning;
- Leadership;
- Valuing and understanding information;
- Organising to find information; and
- Using information (synthesising).

Relationships and linkages between these were also explored in the chapter.

Building on the findings related to attributes and elements and the relationships within the attributes and elements in Chapter Five, the potential for relationships or alignments between attributes and elements emerged. The literature and the data analysis combined to suggest an argument for the logic of a sequence of these attributes and an alignment of the attributes and elements. Given the reflexive and interrelated nature of the attributes and elements revealed Chapter Five, the alignment and sequence suggested are not considered as static or purely linear. The suggested alignment and sequence are displayed in Table 6-1 and Figure 6-2.

Table 6-1 The Alignment of the Attributes and Elements of Information Culture.

Attributes	Elements
Values, Attitudes and Beliefs	• Strategic thinking and planning • Leadership • Valuing and understanding information
Behaviours	• Organising to find information • Using information (Synthesising)

These symbiotic relationships are also further evidence of the complex, multidimensional and systemic nature of information culture.

As a result of the findings which emerged in Chapter Five, it was possible to further develop and enhance Figure 5-1 which illustrated the relationship between *identification, development* and *application* phases of an information culture with the alignment of the attributes and elements. Figure 6-3 presents the enhanced understanding which will be addressed in this chapter.

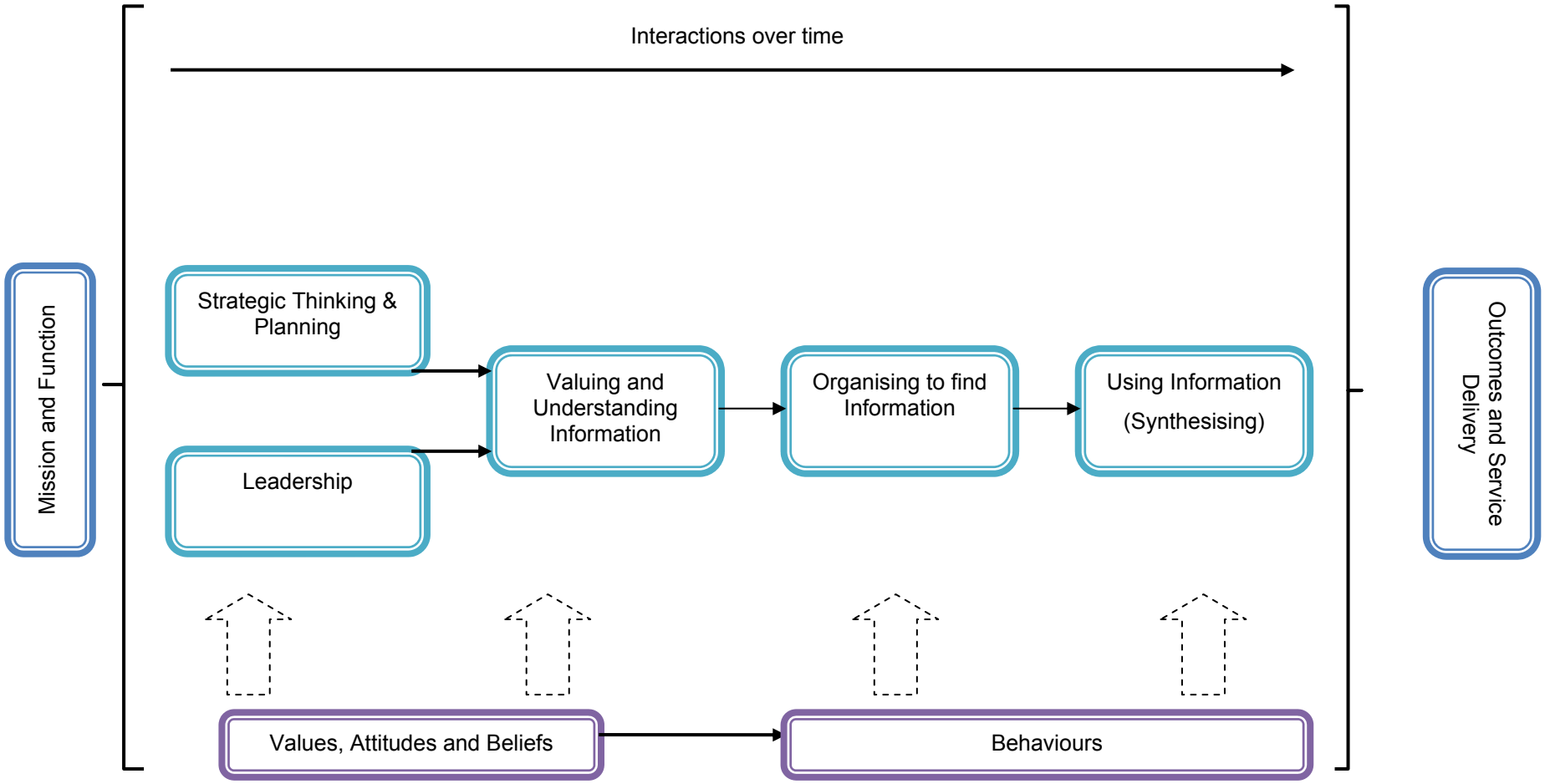


Figure 6-2 The Key Elements of an Information Culture and Their Alignment with the Attributes of an Information Culture

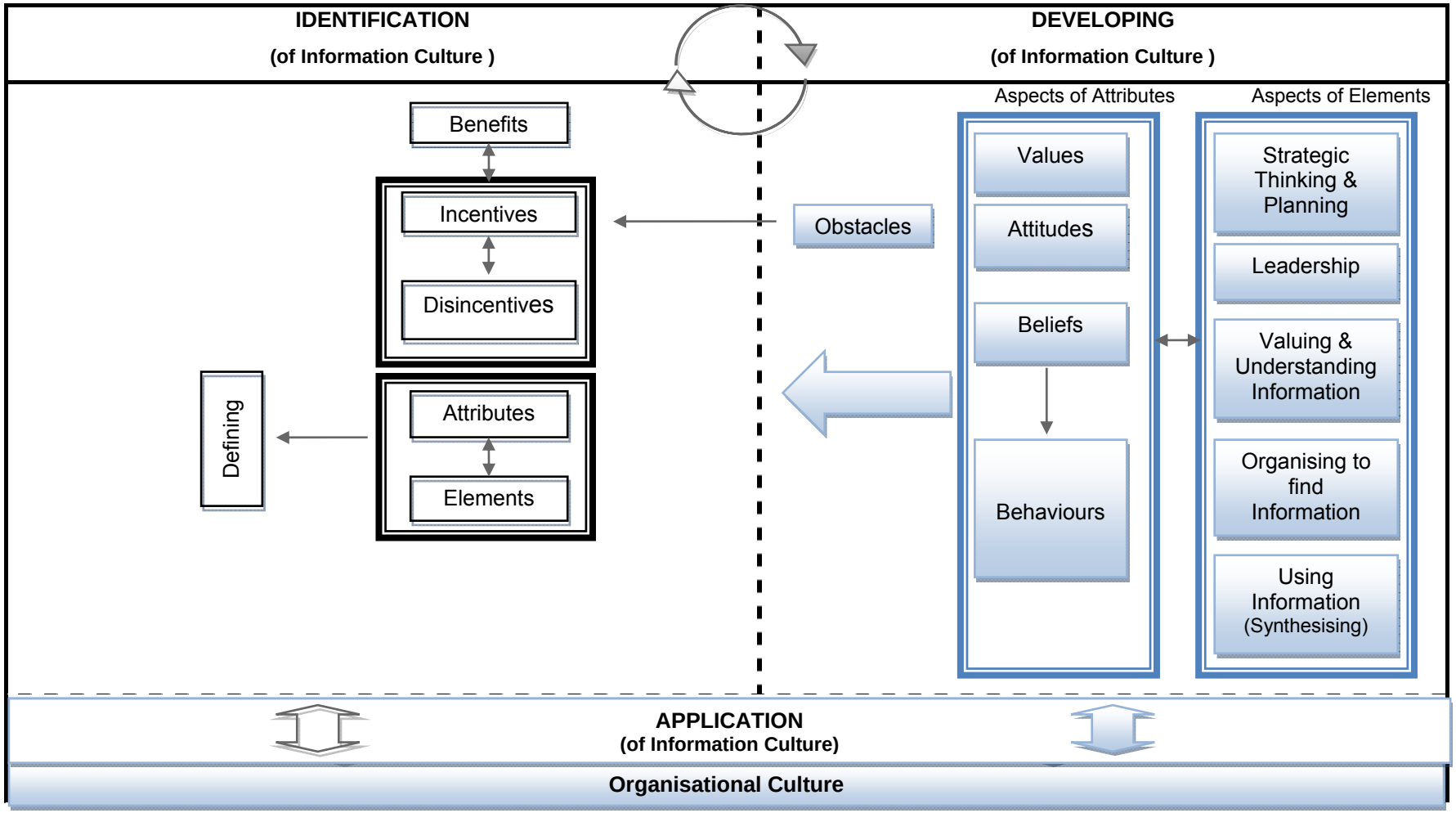


Figure 6-3 Understanding of Key Themes and Relationships Addressed in Chapter Six (Highlighted in blue)

Chapter Six draws on the relationships between the attributes and the elements and the relationship between the *identification* and *development* phases in presenting the discussion and findings pertinent to developing or influencing a positive information culture. It also includes aspects of organisational culture and contextual issues relevant to developing a positive information culture.

When questioned about developing a positive information culture, the participants tended to respond with what they thought needed to be developed rather than how they thought this could be developed. There were references and intimations of the importance of an issue. Why a particular aspect needed attention was also addressed. These tendencies and approaches are detailed in this chapter.

In the section on disincentives to developing an information culture in Chapter Five, the researcher acknowledged that barriers to a high performance information culture existed in two forms, namely disincentives and obstacles. These two sets of barriers were described as:

- Disincentives are those factors, visible or invisible, which discourage an organisation from considering the need to improve the information culture; and
- Obstacles are those factors, visible or invisible, which obstruct or challenge an organisation in trying to improve the information culture.

Those factors identified as obstacles to developing or influencing a positive information culture are also addressed in this chapter. The analysis of the data pertinent to possible obstacles revealed seven main themes, namely:

- Contextual influences;
    - Agency level;
    - Public sector level; and
    - General.
- Education and training;
- Influence of people and professions;
- Information and information management;
- Information as an asset;
- Information technology; and
- Leadership and senior management.

There were close correlations between those items and areas viewed as key to developing a high performance information culture and the obstacles to such an

achievement. During the data analysis process, the researcher observed and noted that there were occasions when comments about developing an information culture could have been categorised as obstacles to developing a high performance information culture. The reverse was also true.

The obstacles are presented within the relevant sections of discussion in the chapter and not as a separate section.

A complement to the seven key themes associated with obstacles, was the comment from Participant R4 on an overarching issue which posed a problem to developing a high performance information culture. She said that, “information culture is not an easily defined concept.” Gaining a greater understanding of information culture was addressed in the identification phase and reported in Chapter Five.

Appendix B contains examples of the data analysis.

6.2 Overview of Developing a Positive Information Culture

The questions about the *development* phase were based on the researcher’s assumption that an information culture, like an organisational culture, could be influenced. This assumption had been based on the readings undertaken as part of the literature review.

According to Alvesson and Sveningsson (2008) there is an enormous amount of information, studies and texts on issues related to cultural change. In his work on organisational culture and leadership, Schein (2004) suggested that a culture does change and evolve. He links this evolution to the changes undergone by the organisation as it grows. Furthermore, he presents the view that, in addition to these natural changes, it is possible to introduce a cultural change program.

Van de Ven and Poole (1995) identify and discuss four theories which can be used to facilitate organisational change, namely life cycle, teleology, dialectics, and evolution. They also explain that the different influences on and operations of these theories is dependent on the level to which they apply in an organisation. The theories can be interrelated and reflect the complexity of organisational culture**.**

Another interpretation of developing or influencing a positive information culture can be drawn from the work of Leidner (2003). She encourages an understanding of organisational and information cultures. Moreover, she suggests using an information culture framework to assess and respond to those aspects of an

organisation's culture that could impact on information systems use and implementation.

Allee (1997, pp. 211-214) proposes that culture is "self-perpetuating, multi-layered and resistant to change." Even so, she says that culture can be changed if organisations are prepared to take the time and act sensitively in doing so. Using Schein's model (1991, 2004), Allee explains the changes associated with "assumptions ... expressed through values, behaviours, and physical aspects, such as facilities, equipment, written materials, and products."

Of note in the literature on changing or developing a culture, particularly when associated with information or knowledge, is that the authors are not proposing to change the culture as such. They have identified aspects of the culture, such as attributes and elements, which need to be influenced so as to improve culture.

The importance of a positive culture and the value of developing such a culture is encouraged by Davenport and Prusak (1998, pp. 153-161). As they say, while it is "clearly one of the most important aspects of success ... It is perhaps the hardest factor to build from scratch." In addition, Davenport (1997, pp. 83-108) highlights the "importance of behavioural and cultural management." He explains why this must happen and details the ways and means of achieving this.

Following the examples and approaches in the literature, this study also proposes that in order to develop or influence a positive information culture, it is most beneficial to address the attributes and elements.

Data gathered from the participants offered a mix of responses to the idea of being able to develop or influence cultural change. Counterpoint arguments to the readings were evident in responses from the participants, in particular, the researchers. For example, Participant R1 offered the comment that "I think we are still in the stage of trying to develop a deeper understanding of information culture", and that he was "not sure that we are ready for detailed prescriptive advice." Following this theme, he said:

> Culture is not always something one can "build" with a "program." It is the result of a combination of many factors, including the history, leadership, structure, employees, and external environment of the organization. The first step is to have a clearer understanding of what information culture is.

This argument was supported by Participant A1 in saying:

> [T]he other thing I find interesting about cultures [is] that so many senior people think culture is something that they can create. Something they change. I actually think culture is something that is. So an organisation has a culture. And people coming in to try and change a culture head on, I just think that staff gets wind of it immediately and because it's so hard to do, unless people are persuaded to change to something far more interesting then they will just persist.

Taken at face value, these statements may appear to be stating a case against developing a positive information culture. However, elements of both statements suggest that there are, indeed, subsets or components such leadership and structure that can be influenced.

Participant A4 provided a more emphatic response to the issues surrounding the opportunities to develop or change the information culture. According to him, the best results would be gained from changing the CEO and or the Chief Information Officer (CIO). He said:

> [T]he easiest way to change an information culture is to change the CEO … and the second best is to change the CIO, and if you can't change either of those then the question is to ask yourself, in all the jobs in all the world, why am I going to take on this one.

In being specific about the type of change associated with information culture Participant A4 said, "Yes. There's no such thing as an information system change. It's a business change and a positive information culture would reflect that change. It's a business change and a positive information culture would reflect that."

Putting yet another point of view on the ability to change culture, Participant BP2 asserted that "you can influence the way people work if you can influence the way they think." This, he said, was related to "openness" and "leadership."

To achieve cultural change Participant P2 felt that there was a need for a robust change management infrastructure which ensured "top down support." He commented on the effectiveness of both evolutionary and revolutionary approaches. On the other hand, Participant P7 viewed people as fundamental to cultural change, and felt that change could only be achieved if there was "a large movement of people."

While some differences of opinion about being able to develop a culture were seen in the participants' comments, the clear preference was in favour of exerting some form of influence in order to improve an information culture. The existing studies into information culture have offered some guidance on the form of actions that can be taken to improve the cultural situation (Curry & Moore, 2003; Marchand et al., 2001a, 2001b). However, the greater focus has been on the identification and understanding of information culture. There is a significant amount of literature on organisational change in general, and this may provide insights into effecting change to information culture (Bolman & Deal, 2000; Conner, 1998; 1998; Kotter, 1996; Palmer, Dunford & Akin, 2006; Vasu, Stuart & Garson).

6.3 Influencing the Development of a Positive Information Culture

This section presents the discussion and findings related to developing or influencing a positive information culture. It includes references to possible obstacles to improving information culture. These are supplemented with relevant comments from the literature. The information is structured against a framework provided by the relationship between the attributes and elements of information culture as described in Figure 6-2 and Figure 6-3 and presented in Table 6-1.

As noted in Chapter Five the boundaries around the attributes are not fixed. They can be fluid. In some instances they were found to be interconnected and or sequential. To illustrate, people can have an attitude towards information and information technology and this can influence their behaviour. In analysing the data in this phase, the researcher found complementarities and overlaps between attributes and elements. The reflexive nature of these findings is recorded as such in this section.

This section begins with those contextual and organisational issues that were identified as being associated with the ability or potential to influence the development of a positive information culture. This is followed by a discussion which addresses influencing the attributes and elements.

6.3.1 Contextual Influences

The complex and dynamic system that is an information culture was demonstrated by the themes that emerged from the discussion on what and how an organisation could develop a positive information culture. On one level, the diverse nature of organisations and their interactions with information was evidenced in the opinions

about why an organisation needed to develop a positive information culture. The challenge of such development was overtly and covertly present in the comments on how you would tackle the development process. The relatively small number of such comments was also an indication of the complexity of the challenge. However, there were offerings on the tangible evidence that could indicate that an organisation was improving its information culture.

The integrated and systemic nature of a development process at an operational level was highlighted in advice from Participant P4. He exhorted a “two pronged approach” which was “driven by a sound fundamental foundation of a good technical system” and clear definitions and terminology. This would need to be complemented by support from “the top”, and an ethical and moral foundation. Participant A1’s comments linked these views together when she stated that it was a combination of “physical, technological and personal.” These comments support the interconnectivity and importance of the five aspects of the elements of information culture identified in Chapter Five.

Offering an example from a successful development program, Participant BP1 commented on his organisation’s reason for change as being four fold. They wanted to be able to market themselves in a more positive light, and thus achieve greater market share. They also saw that re-using information and knowledge could make them more efficient. Additionally, as an organisation that made good use of policies and procedures and documentation, they wanted to get some of the administrative procedures “under control.” Having achieved this, they then saw the value of addressing service delivery in a similar manner.

Two of the best practice interviews supported the positive influences of incentives and rewards. Participant BP1 shared the tangible approach to incentives used by his organisation. While he spoke in some detail of the activities undertaken to encourage change, he did offer the caveat that this incentives program was no longer used as much has it had been. At the commencement of their program to improve information and knowledge use, this best practice organisation had “a lot of fanfare” around the release of tools, and provided prizes for those who used particular systems and conducted competitions. Other promotional schemes were employed and technical tips and guidelines on ways of working and using technology were, and are still, produced. With regard to intangible incentives or reasons, the organisation also “pushed” that this approach to the intrinsic value of information would help them win work and assist individuals to work more effectively.

The rewards and incentives used by the organisation were not used in isolation or arbitrarily. They followed on from, and reinforced, the messages used by the executive management to demonstrate the need for better use of information. The use of reward and incentive schemes, often in the form of monetary incentives, is prevalent in the private sector. The public sector environment with its focus on accountability and responsibility is not ideally suited to such approaches. Public sector managers need to be innovative and resourceful in identifying and implementing reward programs. Vasu, Stewart and Garson (1998, p. 83) remind "public managers that they should not lose sight of the ability they possess to change the ways in which tasks are performed and to enhance the inherent motivational factor in the nature of work itself." In addition to tangible rewards such as promotions and pay rises, Vasu, Stewart and Garson (1998, pp. 74-83) cite symbolic rewards such as "praise and plaques", setting goals and linking satisfaction and performance.

Participant BP2 shared some of the lessons his organisation learned in trying to develop better approaches. A learning catalyst for them was based on management approaches. He said, "You needed to move from a command and control concept to an instance where people are empowered and encouraged to actually work in collaboration and co-operation with each other in order to achieve their goals rather than actually being told what to do."

Like any organisation, to be successful in its dynamic environment and to function effectively in the information economy, a public sector agency may need to alter its "structure, culture and management style." It may need to use project management and team-based ways of working instead of "traditional command and control structure" (Scarbrough, 1999, p. 475).

Three other participants commented on another management approach, namely performance management and or performance agreements. Participants A1, BP4 and P6 advocated the use of agreements to stimulate improved behaviours. Auditing of practices and performance was offered as an improvement tool by Participant P7. Performance management and performance reporting are key elements of public accountability and evidence of effective management. Underpinning this nexus between accountability and performance is "access to information." However, mere "access" is of limited value "unless it can lead ultimately to the rectification of any issues highlighted or improved performance (Cameron 2004, pp. 59, 61).

Participant A1 saw that issues could arise from too strong an influence of the private sector approaches to strategy development. Similarly Participant A8 said that problems occurred because “government departments are trying to operate like businesses.” Business driven by short term fads and fashions were of concern to Participant P7. These comments may present a paradox for influencing information culture. The existing studies into information culture and related entities have demonstrated the impact and beneficial role of a high performance information culture to an organisation (Davenport, 1997; Ginman, 1988; Marchand et al., 2001a, 2001b). So if government departments are operating like private sector organisations, then it may be easier to demonstrate the value of a positive information culture. However, there are other aspects of public sector agencies that pose challenges to the benefits of a positive information culture.

Saying that government departments operate like businesses may be a simplistic assessment of the situation. From the researcher’s observations in general, and particularly in regard to this study, this statement is usually made in relation to a singular focus on ‘the bottom line’ and financial matters. Undoubtedly the public sector has undergone monumental reform and change processes in the past twenty years. These changes “that are occurring today are as significant as the nineteenth century ‘revolution in government’” (Airo-Farulla, 2004, pp. 173-4). These changes include increased scrutiny and accountability through greater focus on efficiency and performance management and audit, more focus on outcomes and outputs and reporting on performance rather than compliance and process. These are not bad changes and have served to make the public sector more responsive (Shergold, 2004, pp. 3-13). The situations faced by government agencies tend to be much more complex with more complicated and broad issues and objectives to address. Unlike the private sector, the public sector is faced with addressing “wicked problems” (Rittel & Webber, 1973, pp. 160-161).

Financial issues to one side, there are and will always be differences in strategic focus and services between the private and public sectors. These changes outlined here, combined with the expansive and extensive role of the public sector and government, mean that a positive information culture has to address more than the ‘bottom line.’

The structure of organisations, particularly the way they tended to operate in silos was viewed as an issue by Participants A7, A13, P8 and BP4. Participant BP4 commented on the influence of silos extending beyond a single government agency

to include the collective of government agencies. This would impact on 'joined up Government.' Working in silos also impacts on information sharing and the delivery of outcomes and services.

The history and structure of government departments was an issue of concern for Mulgan (2002, pp. 25-29). He said "the great majority of government is still organised in essentially vertical silos not hugely different from fifty years ago, and most of the joining up that has occurred has essentially been about better coordination of existing agencies rather than radical structural reform." One of his solutions to improved service delivery and outcomes was "a much greater focus on shared knowledge management as the glue holding central government together."

There were a variety of comments on the impact of or barriers raised by the practices and approaches used by government agencies. For example, Participants A2, BP2 and BP3 saw that problems were caused by the process orientation or task focus of the sector. As summed up by Participant BP3, "I think government departments tend to be very process orientated. Yes, task driven, process orientated, compliance driven as well." In addition, Participant A2 thought that the sector was risk averse. He said:

> But ... on the whole you have incentives to be very risk averse....I think that's just the reality of public organisations. Risk aversion means that you operate within a very narrow set of lines, the kind of prose you use, the kind of topics you use, the kind of options. All sorts of things become very constrained. So trying to minimise the incentives to be risk averse would be a pretty important consideration.

Participants A12 and P1 saw problems with boundaries and restrictions provided by legislation. Similar sentiments were expressed by Participant BP3 who spoke of being "compliance driven." The trend towards outsourcing was an obstacle raised by Participant A12. In explaining this he said:

> [O]nce you outsource, then the outsourcer really has the best interests in solely providing solutions rather than taking a strategic view of the organisation ... they want to protect that patch and provide solutions within that framework so that works against I think an information culture....It's also a loss of corporate knowledge within the organisation.

Six participants made comments and observations on barriers that could be seen at the level of the public sector. In some cases these problems were also evident at

the agency level. Participant A7 talked about poor communication as did Participants P1 and P3, with the latter saying how valuable it would be for agencies to share more across government. He added, “as long as you have got departments that are trying to deliver their own agenda you are going to have a major problem ...”

The reforms to the public sector notwithstanding, there are aspects of managing and working in the sector that will remain unchanged. They may be modified but they will remain an influence on the sector. Legislation and regulation, accountability, complexity in policy and strategic development, and performance management are examples. In assessing ways of developing a positive information culture such examples of public sector boundaries need to be accommodated without compromising the efficacy of public sector management while striving for efficiency and effectiveness.

Not only does this situation reinforce the complexities and the relationships, it also highlights the challenges that need to be addressed in identifying and developing an appreciation of a high performing information culture in the public sector.

6.4 Attributes and Elements as Influences on the Development of a Positive Information Culture

This section is focussed on those aspects of the attributes and elements that may have the potential to have a positive influence on information culture; those that could be realigned, redesigned or enhanced in some way. Given the fluid and complex nature of the attributes and elements which emerged from the data as described in Chapter Five, the boundaries offered herein are not absolute.

Of significance to this discussion are the crossovers and connections which occur between the identification and development phases. There are issues and ideas which are pertinent to both phases. For example, in a discussion on the identification of a positive information culture, a best practice participant (BP1) made mention of structures, ways of working or rewards used by the organisation. Given the positive impact that these had on the culture, it can be extrapolated that developing these may be of benefit to other organisations. Figures 6-2 and 6-3 illustrate the relationships between the attributes and elements that are discussed in the next sections.

6.4.1 Strategic Thinking and Planning (Element) and Values, Attitudes and Beliefs (Attributes)

The research problem and goal, and thus the research question, had a strategic focus in that information culture was linked to achieving strategic outcomes and service delivery. The thrust of this study was strategic impact not operational activities. It was about helping the public sector make informed choices on information use in support of strategic endeavours.

Within the context of this study, strategic management, planning and thinking can be considered on two levels. In the first instance there is strategy in the public sector. Secondly there is the strategy associated with information use and information management. The two are complementary. Public sector strategy is informed by and makes use of information, and a strategic approach to information can assist with making better use of information. Both aspects of strategy are considered in this section.

This view and intention of the researcher was about confirming the strategic value of appropriate information use. To borrow from Mayo and Steinberg (2007, p. 3), the researcher wanted to create “a story of opportunities rather than problems.” According to Mayo and Steinberg (2007, pp. 1-4) the public sector “produces a vast amount of highly valuable information” and this “information underpins a growing part of the economy.” In order to ensure ongoing social and economic benefit from the creation and use and re-use of this information, they encouraged the development and implementation of targeted policies and strategies.

The importance of integrating information and information use into strategy and action is underscored by Senge (1999, p. 439) when he said that “information that teams and individuals have generated cannot be fully understood in isolation from the rest of the system.” Abell and Oxbrow (2001, p. 169) raise the importance of understanding and leveraging “the dynamisms between information and the corporate strategy.”

The value and importance of strategy to businesses and competitive advantage is accepted in the private sector (Argenti, 1980; Kaplan & Norton, 2001; Mintzberg, 2000; Schwartz, 1998). The benefits to the public sector are not as clear cut or as evident. Hughes (2003, p. 136) says that the public sector has “more problems and constraints compared to the private sector.” Nonetheless he asserts that public sector agencies could benefit from a strategic approach. Indeed, strategic or corporate planning is now common across the sector and “public agencies wear

their strategic badges proudly as a way of publicly authenticating their sense of purpose and direction" (Stewart, 2004, p. 17).

Organisations have a range of strategies and plans to protect and enhance their assets and to set direction. These include, human resources strategies, information technology strategies, asset development plans and capital works plans. However, as Participant A1, notes, very few have "a knowledge generation or information strategy." This, she contends, is of concern in a public sector agency, as information or knowledge "is the only real asset that the public sector has." In a final comment about strategy, Participant A1 links the need for a real commitment to a strategic vision being critical to future growth and development, "unless you have got a real passion to have a strategic vision, all the information in the world isn't going to do you any good because you are not looking for new ideas."

Participant A7 also commented on the need to create a relationship between information and the strategic objectives of the organisation. Participants R5 talked of the strategic value of information being recognised in the way information was linked to the goals and the mission of the organisation. Participant A12 also discussed the strategic value and explained this further by talking of "generating best quality information." He said:

> I don't think that organisations have come to grips with what the true information is. Information is not a model on a wall in an office somewhere. It's actually getting out there and being driven by the corporate plan ... adopting a strategic approach to information that would involve generating best quality information that is most suited to their goals.

Participants BP1 and BP6 spoke of the importance of strategic planning, strategy development and objectives. Participant BP6 said that the "more strategic view" was "the biggest point of difference." Participant BP4 said his organisation had an IT action plan and strategy and a strategic plan for online services. He was not sure if there was an overarching information strategy.

Participant BP4 had been referred to the researcher as a best practice site. However, these comments about strategy development further support the researcher's view that, when compared with other best practice sites, this was not a mature site. The reference provided for Participant BP4 was most likely offered as a personal reference related to his skills in a specific area.

Participant P6 commented that people talk about the need for strategic planning in the information area, planning at a business level, but “it never actually happens.” Participant R2 supported the need for the strategic perspective of linking information and business in saying there needs to be a “focus on the concerns related to the business model and strategy of companies.”

Eight participants commented on the importance of understanding an organisation and the ways in which it operated. Participant A1 asked if senior managers and CEOs actually “knew about [their] own organisation” and “current operations.” She linked this to their willingness or otherwise to gather information about the organisation via such methods as surveys, cultural mapping and organisational analysis. Participant A12 added to this sentiment in saying:

> I think there is a need to differentiate in terms of information ... make a differentiation between information which you use within the organisation to improve the service that that organisation delivers and information you might make available to the public as part of your role in society if you like. And I think that there is quite a clear distinction.

The comments and observations from the participants on the importance of understanding the organisation and its information, and the need for an information strategy are confirmed by Orna (2004). She establishes clear links between the organisation, its business strategy and its information strategy. Before embarking on the development of an information policy and strategy, Orna suggests that it is necessary to have a very clear understanding of the organisation, its approach to management, what it wants to achieve and its relationship with its environment. By gaining this in-depth understanding of the organisation, it is then possible to determine what information is needed, what should be done with it and what systems and applications are needed to support it.

Moreover, Orna (2004, pp. 16-18) stipulates that developing and implementing an information policy and strategy reduces risks and bring benefits. She tabled eleven risks that can be reduced or avoided and eight benefits that can accrue from such a policy and strategy. Milner (2000, p. 64) concurs by saying that “It is only through knowing what information public service organisations have, what they currently do with it and what they actually need” that issues of service delivery and cross agency activities can be addressed. Both Milner and Orna recommend an information audit as a precursor to policy and strategy formulation.

This strategic approach to information moves beyond the availability of information. It provides a mechanism through which information use can be improved. It can reveal what information is used or not used. The organisational and individual dynamics of information use, and what information is used or should not be used, is an important element in understanding the performance of agencies (Van de Wall & Bovaird, 2008).

Participant A1 offered some positive examples from the public sector in the United Kingdom where they were undertaking a significant reform program. This program included a focus on strategic planning, leadership and systems thinking. From the positive experiences in the United Kingdom, Participant A1 went on to talk about the changes that she felt were required in the Western Australian context in order to have a high performing information culture. For example she listed:

- Changing the hierarchical structures in popular use;
- Changing attitudes towards knowledge and making it more freely available;
- Being more open to learning, reflection and continuous improvement; and
- Recognising the complexity of the environment and the need to change the way we work to accommodate this; to be more flexible.

All of these could be well represented in an organisation's strategic plan with a supporting information strategy.

In summing up the value and importance of an information strategy Milner (2000) says:

> Adoption of information and knowledge management [IKM] strategies can undoubtedly lead to the development of more effective and efficient public sector organisations and, in a sense, if they contribute in this way then this should be viewed as a considerable achievement in itself. However, through the deployment of strategic foresight, it is possible to argue that the outcomes of IKM applications can be leveraged still further, through the recognition that they are capable of acting as major contributors to any political agenda." (p. 161)

In common with Participants A2 and A3, Participant A1 was keen to see the introduction and sustained use of think tanks. Participant A2 wanted to see more rigorous thinking, and for organisations to be "more adventurous in the tasks that are given to individuals." He thought that exposure to academic training and

education would have a positive impact on how organisations and individuals use information. Participant A3 spoke of the value of think tanks:

> One of the areas of valued information in the creation areas is to think of blue sky type units in organisations that are being described in the private sector ... but in the public sector [it] is not that often seen that a blue sky unit is created and sustained. But some create it, and fairly quickly it has disappeared the next time there's a resources squeeze or change of personalities.

From the researcher's observations as a public sector employee, think tanks and 'blue sky units' have been used from time to time. However, their impact and lifespan have not been extensive. They were viewed as non-essential functions. Andrew (2004, p. 219 cited in Bertelli & Wenger 2009, p. 225) states that think tanks "represent an organizational commitment to support the promotion of research and ideas." Think tanks are sources of strategic information including policy advice, research and evidence (Bertelli & Wenger, 2009). A recent Australian Government discussion paper on reforming public administration referred to strengthening the strategic policy capability through the "establishment of strategic policy hubs." Such hubs would be "specifically tasked with addressing long-term strategic issues and setting out policy directions (Advisory Group on Reform of Australian Government Administration, 2009, p. 25).

6.4.2 Leadership (Element) and Values, Attitudes and Beliefs (Attributes)

The critical role of leadership was identified as a theme in this phase of the study. It had also been predominant in the *identification* phase. It was a theme that was associated with all the attributes, namely values, attitudes, beliefs and behaviours. It was clear from the participants' comments that the values, attitudes and beliefs held by the leadership of an organisation needed to be understood and evident and translated into behaviours if change was going to occur.

Participants A1, A2, A11, BP5 and BP6 emphasised that it was critical for leaders to demonstrate their values. Participants A1 and A11 referred to the difference between "lived values" and "espoused values." Participant BP5 called it "modelling" and gave an account of a CEO who was a positive example of living and modelling the values. Participant BP6 referred to "walking the talk" not just "talking the talk." Implying that leadership can have a positive or a negative impact, Participant A2 said "a lot comes from the very top, the signals and opportunities that are provided at the very top of an organisation."

Change management, leadership and a clear understanding were linked when Participant P4 commented on the key importance of the example set by “top management”:

> But even more important, or equally important, will be the example and the leadership shown by top management in terms of living their philosophy or their codes of ethics or their value system and their principles ... if you have the best mechanical, technological system in the world you will not make up at all for a lack of integrity, honesty and principles and values that underline and drive an organisation.

Participant P5 expressed the importance of leadership and information culture saying, “When considering information culture I have just come now to thinking ... how do they [CEOs] consider information and what is their priority, how serious are they about information because I think that that will have a big impact on what happens.”

Corroborating the commitment and impact of leadership on values, Participant BP1 said that in his organisation it was “pretty much at the highest level.” Participant BP2 spoke of his organisation’s appreciation of the important role that leadership had to play. Participants BP4 and P7 talked of the role of champions.

The value of leadership and the role of champions is reinforced by Deal and Kennedy (1982, pp. 37-58). In order to optimise the possibility of cultural change they recommend “a hero” be given responsibility for the change process. This does not preclude or suggest that change is only the responsibility of one person. An organisation should aim to have managers and staff alike, contributing as “heroes.” The “hero” needs to be committed to the need for change. An important part of the role of the “hero” is to blend “humaneness” with the goals of cultural change.

Drawing on her experience in researching information culture, Participant R3 spoke of the difficulties inherent in engaging senior management in the development of a positive culture. This included getting the organisational perspective of the value of information. Her comments also support the systems view of information culture by demonstrating the interplay between developing an open culture, benefits, values and leadership. She said:

> [S]enior management need to be ‘encourageable’ in the first place. True leadership should be about visibly managing by example and being prepared to take risks rather than about ego protection and self worth. Over the years I

> have found senior management to be the greatest stumbling block to progress of any kind....Culture and leadership are inextricably linked. It is necessary to develop an open culture; a culture where experimentation and risk taking are encouraged, where people are trusted and feel valued.

As previously discussed, these comments from Participant R3 indicate that senior management are both central to success and a major impediment to appreciating the worth of information culture.

The participants in this survey were very clear about the role of leadership in both influencing culture and developing positive information culture. From their experience and their knowledge, they made strong connections between the role of leaders and the embedding and acceptance of the attributes of information culture. Their views on these issues are corroborated by Speculand and Chaudhary (2008, p. 325). Leaders must play the pivotal role in identifying an organisation's values. They must also translate these values into the expected attitudes and behaviours and assess the potential impact on the performance of the organisation. Citing behavioural psychology, Speculand and Chaudhary reinforce the relationships between values, attitudes and behaviours and outcomes. They propose that values influence behaviour which in turn influences or impacts organisational performance. They have developed a four step "Value Inculcation Model" to assist leaders and managers with this change process.

Participant A15 thought that senior managers could be encouraged to review and rebuild culture through a firsthand experience of being "their own customer." This complements the sentiments and examples offered by Participants BP5 and BP6. Participant BP6 reinforced the value of having leaders with a good understanding of their organisation when she spoke of CEOs having "a good grip on why [information] was important, not just the process" and the need to "live it." Davenport (2000, pp. 5-9) supports this view in saying that an organisation needs to move beyond merely investing in information technology, and address what information the organisation wants and needs and how it is used.

The need to establish and promote the systemic links between culture, management and business success was voiced by Participant BP3. It is a comment that suggests this is an approach that needs to be undertaken at senior levels in an organisation. He commented:

> I think if you can demonstrate good connections between good information culture and good information management and successful organisations, I

> think we'd be much better off ... I think you'd find that in a lot of cases the people in a position to get enthusiastic about this aren't in a position to influence decision-making too much. You know we can try.

This opinion also supports the experiences that Participant R3 had with working with senior management. It demonstrates that the people with the enthusiasm and commitment to developing a positive information culture are not necessarily the people with the power to influence the change. Similarly, the people with the power to make this happen are not usually the ones with the will to do so. The challenge here is to convince the people with the decision-making power of the importance and benefit of addressing information culture.

Reinforcing the need for leaders in the information age to be aware of the difference in the post-industrial workplace, Mackenzie (2007, pp. 2-3) detailed the importance of the impact of information, knowledge and technology. She encourages leaders to become very familiar with the new environment stating:

> Information literacy and knowledge management concerns are drastically different from those that existed in an industrial culture where the means of production were external to the worker. The knowledge information culture and the speed of technological advancement have changed the psychological contract between the employer and employee.

Seven participants made specific mention of the obstacles caused by or attributed to senior management including those in the position of CEO of an organisation. Participant R3 went as far as to say that, in the context of this study, senior management were "the greatest stumbling block to progress of any kind." Participant A1 specified the ways in which she thought that senior management were obstacles to the development of a high performing information culture. For example, she pondered on whether or not there had been a "dumbing down or politicising" of the positions and the people which resulted in a lack of vision, little if any long term thinking and a lack of passion and ideas.

Participant A12 also had another view of the influence of executives when he said, "Technology is rarely if ever the problem.....The people are the problem, the management, the lack of buy-in by executives. The single most common cause of project failure is lack of executive sponsorship and commitment."

Participant P7 saw problems with senior management not understanding the benefits of information management and information systems and not

understanding that information was a “fundamental part of doing the job.” He thought the education and training programs in business management undertaken by senior management had a negative impact and influenced their views of information and related matters. In support of these attitudes and beliefs as an obstacle, Participant R2 commented:

> The biggest issue is that many managers still consider the behaviors and values related to effective knowledge and information use intangible and not worth paying attention to. The ability to measure and clearly demonstrate value is the key to unlocking the relevance of these concerns in many companies.

Participant A4 offered a more negative, and perhaps pragmatic, view of dealing with senior management when he said, “I think that in my experience the closer you get to the top the less altruism you find, and you know, in any political context the golden rule is self interest.”

Voicing a similar concern A6 said:

> A major thing is dishonesty. Dishonesty about politics and management and outside pressures and all this kind of thing. It’s a dishonesty that suppresses all the contextual information that people really need to understand what’s going on. Honesty means telling people when some changes are actually to their personal advantage. It means telling people when a change is not to their own personal advantage, but is absolutely vital to the health of the organisation or its legal status or whatever.

People at other levels of public sector organisations were also seen as being obstacles to or presenting obstacles to a high performance information culture. Combining a view about senior managers and staff, Participant A1 said:

> I think that it comes down fundamentally to the message that the CEO gives about living values of an organisation. So if you are going to say I value each individual person and then you have a whole range of barriers that prevent that person from challenging, sharing, growing, building, learning, developing, then it’s the biggest barrier out. You could almost argue that the biggest barrier to installing an information culture is a poor people culture because human beings have free will. But if you want to tap into that person’s imagination that is when you have got to make a real strategic direction and you really need to begin with the people culture.

Reflecting these concerns of the participants is a warning given by Mackenzie (2007) the issues that could be encountered in exercising good leadership. Says Mackenzie, holding a senior position in an organisation does not always mean that a person in that position will be committed to bringing about cultural change. From their personal perspective it may not always be in their best interests to do so. They may feel threatened and vulnerable.

This resistance to change may also be linked to power in an organisation including the use of information for power. Organisations are complex, dynamic multidimensional environments. Senior managers wishing to maintain position, power and responsibilities can manipulate systems, structures and information to their personal advantage, all the while appearing to be rational (Pfeffer, 1994, pp. 247-278).

Previous studies into information culture affirmed and confirmed the impact and importance of leadership at the highest levels. (Curry & Moore, 2003; Ginman, 1988; Marchand et al., 2001a, 2001b). The data gathered in this study confirms these early findings and offers a public sector perspective. What is evident from a comparison of these comments about senior management, and those made in the section on developing a high performance information culture, is the key influence that can be exerted by this group of public servants. The influence can be positive or negative. Noteworthy too, are the links that are made between senior management and information technology as an influence and an obstacle.

This section confirmed the views of the participants on the importance of a strategic approach to information. This strategic approach to information was not confined to the management of information or ensuring its availability. The data, supported by the literature, indicates the importance of and the need to use information in the strategic planning and policy process. It also highlighted the need for a more strategic approach to information use. Leadership in this area was a key theme which emerged from the data and the literature.

6.4.3 Valuing and Understanding Information (Element) and Values, Attitudes and Beliefs (Attributes)

As with the discussions under the previous and subsequent elements, the findings which have been categorised under this section illustrate the close affiliation between the elements and the connections between the elements as well as the attributes. The connections under discussion in this area can be related to the

comments previously reported on the value and utility of information and the exercising of attributes which can flow from this. The areas which attracted the most comments were:

- Information as an asset;
- The Influence of people's 'mindsets';
- The Influence of the professions; and
- Education and training.

6.4.3.1 Information as an Asset

Over many years information as an asset or a resource has been a topic that has been well represented in the information science literature and related disciplines. While there might be differences of opinion on the best definition of information, or whether information should be viewed as an asset or a resource, or something else entirely, the writings do concur on the potential value presented by this entity in a variety of circumstances. Writers and researchers in information science also identify information as being distinct from information technology and information systems (Braman, 1989; Buckland, 1991; Cronin, 1996; Olaisen, 1991; Oppenheim et al., 2002; Oppenheim et al, 2003a, 2003b, 2004; Western Australian Information Policy Committee [WAIPC], 1992).

The participants' comments expressed in the previous sections reveal strong views on the need for strategic thinking and management where information is concerned, and that leaders need to be aware of the extent, type and use of information in their agencies. These views are analogous to those expressed, and presented here, on the importance of values, attitudes and beliefs towards information as a distinct entity. These intangible relationships with information contribute to complementary tangible behaviours. This is discussed later in the chapter.

Participant A1 spoke at length about the need for government to see information and knowledge as assets, to view them as they view "buildings or money." She commented that governments have strategies for these and other assets, but do not have strategies for information and knowledge. She further stated that "I actually think that the only real asset that the public sector has is knowledge." This comment was also relevant to the discussion on strategic thinking and planning. It demonstrates the possible application and impact of a chain of influences between valuing information and acting strategically.

Participant BP1 commented on the importance of getting staff to understand the "intrinsic value" of information. This is apposite to the comments and observations made on the value and use of information in the *identification* phase (Shergold 2004, pp. 9-10).

Throughout the policy formulation and implementation processes as well as the service delivery and beyond, the public sector is also mindful of the need to "preserve the corporate memory that is placed at the disposal of successive governments ... and to maintain public accountability" (Shergold 2004, p. 10). Such situations as described by Shergold are reflected in the comments of Participant BP2 who linked the asset that is information with strategic thinking. On this he said:

> I think that strategic thinking in the public service just gets diminished because of the extent of what you have to think about. Very few private organisations are trying to actually service a state or a country or even the world, so to speak, and ... also have to try and take into account all of the diversity within that.

The issues requiring solutions that face the public sector and government are of such an extent and intensity as to make public policy formulation and service delivery complex. Rarely are the issues clearly understood and they are not clear-cut or able to be delineated easily. They are "wicked problems" (Rittel & Webber 1973, pp. 155-169). The resources to address these are finite and the environment is politically fraught. The decision-making process is notable for the amount of discussion, consultation and negotiation required.

In a similar vein, Participant A1 advised of the need for "a real passion for a strategic vision", valuing "a diversity of opinion" and "looking for new ideas." Participant A2 called for more public servants "to think outside the box" and for "a critical perspective on information." Participant A12 offered another perspective. He felt that not only did government agencies not value their information, but they also failed to see the value of information to service delivery.

Participant BP1 questioned if organisations "really understand what information is" He saw that the debates around definitions and terms, which were usually instigated by the information professions, did not help an organisation to understand and appreciate information. Knowledge management was give as an example of a simple concept made convoluted and complex. He lay these issues at the feet of the information professions saying, "There are complex problems throughout all those

areas and I think unless specific skills are maintained in those areas, the people, the practitioners who are in there tend to only give you half the story."

Certainly much has been written and debated in the information sciences and related areas about the definitions of information as well as those for data and knowledge. Indeed, there is also a significant body of work on the relationships between data, information and knowledge. To date no definitive conclusions have been reached (Bates, 2005; Buckland, 1999; Keane & Mason, 2006; Madden, 2000; Oppenheim et al., 2003a; Wilson, 2002). As expressed by Participant BP1 this debate has carried over into the workplace impacting on the information users. Language could represent a way of excluding rather than including and encouraging staff to interact with information. It can be a barrier to attempts to use information. Language used by the information professionals could also be contributing to "turf wars" (Ferguson, 2004). The sentiments expressed by Participant BP1 could also have an influence on organising information for access and use.

The perception or the belief that information technology and information systems equate to information was an issue that raised a number of comments from Participant A1. The following quotes illustrate her concerns:

> I think that information systems has ... hijacked the information agenda so that people tend to think, well unless it's on a computer it doesn't exist....I think one of the greatest barriers is that far too many CEOs see the word information technology and flick it to the Chief Information Officer and too many technology decisions are made on the basis that this whizz bang thing [is what] the IT guys want ... but I think given that so many of the CEOs even now ... will not engage with IT, it just gets handed off to the Chief Information Officer. I think that this is why the word information has become a problem, because every time they see the word information now, they think Chief Information Officer.

Participant A12 thought that information technology was used to solve problems before the problem was even identified, and that there seemed to be a reluctance to engage with the information or to ask what information was needed, and to then decide if a technology solution was required. Participant A5 added to this view of the dominance of information technology. She commented that it was easier to get money for information technology projects than it was for information-based projects. Supporting the spirit of these sentiments Participant P3 said that "in the

end it was easier to talk about IT systems, and those sorts of things, than information."

These problems of misunderstanding information and technology and the importance of senior management understanding and taking responsibility for both or either, is covered in the literature by authors and researchers including Choo (1991), Earl (2000b), Leidner (2003) and Marchand (2005).

According to Participant P1, the lack of an overall strategy encouraged a tendency to overlook information management and concentrate or focus on systems. Compounding the issue, said Participant P1, was that people "don't see information" or understand it. He further said, "They see a record, a document, not necessarily what is contained in that document." He saw that there was a need to separate the two. Participant P6 thought that staff in agencies placed a higher value on information in systems and electronic information than they did on hard copy information. In regard to the focus on systems, Participant R2 was in agreement, saying, "The focus on IT deployment and management obscures for managers and academics the focus on usage of information and knowledge in a business. Hence, the behavioral and cultural element is often overlooked."

From the researcher's perspective, the comments about the lack of clarity around what is information, and the resultant view that information was confined to a format such as a record or a database, is an area worthy of further exploration. While the observation offered by Participant P1 was about the attitude of the general public sector officer, other comments from participants indicated a very strong focus on information as a format and thus the information management which was needed to be applied to it. The background of the information professional tended to influence the way in which they viewed information. For example, Participants P1 and P3 had experience in records management, and Participant P8, while having an information technology background, had just been given responsibility for a records management section. In each of these cases, their comments and perspectives were confined largely to the records management realm.

Two issues which were nominated as obstacles to the development of a positive information culture were power and ownership of information. In the literature ownership of information and knowledge is linked to power or the perception of power. It is also linked to organisational and personal success. Allee (1997, pp. 9-10) puts forward the argument that the gathering and hoarding of information and knowledge has its genesis in capitalism, where the concept of "ownership" and

“more is better” is a central tenet. More information and knowledge leads to more power and more success. A dilemma arises when the individual’s quest for ownership and power is not completely in harmony with the goals of the organisation (Mackenzie, 2007; Pfeffer, 1994, pp. 247-265).

The phrase ‘information is power’ is one that is in common use across the public and private sectors. The phrase and the concepts and ideas behind it have been studied and reported upon in management literature as well as in the information sciences. Foucault (1980) wrote of the dynamic and iterative nature of the relationship between knowledge and power, a relationship that would need to be carefully considered in any approach to developing a positive information culture. Foucault (1980) said:

> The exercise of power itself creates and causes to emerge new objects of knowledge and accumulates new bodies of information ... the exercise of power perpetually creates knowledge and, conversely, knowledge constantly induces effects of power....It is not possible for power to be exercised without knowledge, it is impossible for knowledge not to engender power. (p.52)

Information politics is closely associated with the power of information. The exercising of that power and political control can be covert or overt. Feldman and March (1981) ventured to say that by visibly hoarding or accumulating data, information and reports, people are staking out their place in the hierarchy and sending messages about their power. Pfeffer (1994, pp. 247-265) reports that managers understand the advantage that information brings them, and the amount of power it brings justifies any and all actions to acquire and use information.

Davenport et al. (1992) warned against expecting altruism or information sharing for the benefit of the organisation. They wrote:

> As people’s jobs and roles become defined by the unique information they hold, they may be less likely to share that information – viewing it as a source of power and indispensability – rather than more so. When information is the primary unit of organizational currency, we should not expect the owners to give it away. (p. 53)

From their study of more than 25 organisations, Davenport et al. (1992) determined that “the information-based organization is largely a fantasy.” This is due to organisations failing to recognise the role and power of information politics and the need to manage it as part of their organisational culture.

In this study, the issue of ownership was raised by Participant P3. Participants A5, A8, A9 and R3 all commented on aspects of power related to information. For example:

> I was actually told by my CEO that a lot of information wasn't private, wasn't confidential and should be made available because that's where the power is. (Participant A5)

> [S]o in order to remain competitive, to keep your job you have to have some sort of power base and part of that is keeping your information or parts of that information to yourself. (Participant A8)

> [M]anagement at different levels [have] perceptions of their power within the organisation and maintaining the silos particularly, is a way of boosting whatever little power base they may have, and if I am a junior ... somebody else has got the power to say yes or no. It makes the sharing of information rather more difficult when you have to counteract those kinds of perceptions. (Participant A9)

> I also believe that the 'information is power' culture still persists in a number of organizations. People are afraid of change, afraid of visibility and comparability. (Participant R3)

6.4.3.2 The Influence of People's 'Mindsets'

For the purposes of this study 'mindset' is defined as a fixed mental attitude or disposition that predetermines a person's responses to and interpretations of situations. Senge (1990, p. 8) uses the term "mental models" which he defines as "deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action." In terms of the attributes of information culture, the comments offered by participants were aligned in whole or in part to values, attitudes and or beliefs.

Participant A1 commented on the importance of understanding people's "mental models" and the impact and influence they could have on how people related to their organisation and ways of working. From a practitioner's perspective Participant P5 relayed the impact of "People's thinking, their beliefs" stating that the rigid 'mindsets' of the information professionals can create unnecessary boundaries and issues. She advocated the need to "set aside the hard boundaries" and focus on influencing thinking to bring about change. Participant A3 spoke of the power of "the state of mind" and linked this to skill sets extant in the public sector. He also referred

to the “separate ‘mindset’” often exhibited by particular professions. In making these references he was commenting on the potential negative influence of these specific ‘mindsets’ on developing a high performing culture. On the other hand, Participant A8 said that it was important to develop flexible and adaptable information graduates who went out into the workforce with “a ‘mindset’ that is part of being a professional, a learner.”

Participant A9 referred to people as “the joker in the pack.” Regardless of the state and availability of systems or the use of legislation, people were going to have their own ‘mindsets’ or attitudes.

From these comments on mental attitudes and dispositions, it can be seen that the participants were aware of situations which could have an impact on a high performing information culture. They were aware enough to think that changes might need to be made, but did not or could not offer suggestions on how to achieve this. It may be that they have experienced the circumstances and impacts of ‘mindsets’ in a range of organisation situations, and the difficulties of such change have been impressed upon them.

6.4.3.3 Influence of the Professions

Hofstede et al. (1990) identified three layers of culture which can exist in and or influence an organisation, one of which was an occupational culture. The influence of this cultural level was evident in the data gathered for this study. The impact of those public servants with a professional education, regardless of discipline, role or capacity was an area which attracted negative comment. The need to change their relationship with the organisation and information, and or minimise their negative impact, was highlighted across all the categories of participants.

Participant A12 made connections between the influence of the professions and approaches to technology and the valuing of information. He commented on the negative influences possible as the following example illustrates. He was describing the opposition from a group of professionals to using a system to share information.

> It was very easy to build an application that would create a sharing of information, but the professionals wouldn’t do it....The organisation valued the profession and their view higher than they did the customer, in terms of providing service to that customer ... that the organisation should be saying, no, the value of the information is greater than the value of the information of the individual ... worker because if we have that information shared then what

> outcome can we give to that [customer] or whatever....That application went nowhere because at the end of the day, if you could design one, you could build it without any trouble, [but] the professionals in the organisation wouldn't embrace it.

Participant P8 also gave an example of the different attitudes to information in one area of an organisation as compared to another or one role to the other. In some instances the work people undertook and their relationship with the customer influenced their attitudes towards information.

According to Participant A3, because of "the nature of the professions and the way they are structured ... in thought processes through to the information and support, it is very hard to get a view across the public sector." In part he attributed this to the influence of the professions on how information needs to be managed. He cited the example of the auditing and accounting professions. He emphasised the influence of the professional groups in general when he said:

> There's group think, if you like, in terms of professions. When I look at the public sector there are very powerful professional influences.....[E]ach of those brings its own value sets, and in a sense its own cultures, many of which don't inherently have any sort of information as a valued element....[T]hen even if they do, they create competition into which model will apply.

This comment resonates with earlier comments about 'mindsets' and "mental models." It underlines the interconnectedness of the issues and aspects of information culture.

Participant BP6 offered a positive example of some professions as well as researchers and policy developers and their attitudes towards information. Additionally, she commented on the complementary role of the information managers in breaking down silos and linking these groups of people. Participant P1 spoke of a different experience with researchers who viewed the information as "my research" and could not understand "their public officer role."

In relaying an observation on a cyclical aspect of information management, Participant BP1 linked valuing information as an asset with the role of information professionals and their attitudes and behaviours. In this case he was commenting on records management. Contributing factors were poor skills, poor systems and implementations that were sometimes linked to the lack of appropriate funding. This came about because records management was not seen as important. Then due to

the poor support and infrastructure, staff could not get value out of the system and function. This led to a poor attitude towards records management. “So it [doesn’t get] a lot of money and a lot of people get thrown into that area who are maybe people that don’t make it in other areas of the department.” Further complicating the issue is the demeanour that can be exhibited by records managers. Participant BP1 added, “Then because of that they get a particular attitude once they do get a bit of power around records management or information management. So that makes it even more difficult.”

This example also crosses over into a discussion on behaviours and the potential impact on organising information. The starting point of this cycle may be insufficient attention to the value and utility of information.

Participants A8, A9 and P1 looked, in part, to the information professionals to take a lead role in developing a better culture. They were particularly interested in a more strategic and holistic coordination of information roles, which they saw needed someone with a strategic perspective, not a technical viewpoint. This relates to the already identified need to have and overarching strategic view of information use and the organisation of information.

CIO positions are common in both the public and the private sector. Earl (2000a) warns that the role of the CIO must not be static. It needs to evolve and change with the fast-paced changes in technology itself. He sees that the role of the CIO needs to include strategic planning, keeping informed of new technologies and building relationships with suppliers and contractors. In an article on Chief Knowledge Officers (CKO), Earl and Scott (2000, p. 181) say that the role of the CIO is to “oversee the deployment of IT” and the role of the CKO is to “maximize the creation, discovery and dissemination of knowledge in the organisation.”

The creation of positions such CIO, CTO and CKO, raises questions of the significance of these when developing information culture. This is particularly so when viewed in conjunction with the issues of strategic thinking and valuing information as an asset. That is, which, if any of these positions is taking on the strategic responsibility for information and information use? Davenport (1994, p. 131) emphasises the need for organisations to attend to information use rather than focus entirely on information technology, for the latter approach will not “solve a company’s information problems.” Organisations and their leaders need to view information as “ever expanding and unpredictable” and realise “how little the latest computer applications has to do with effective information use.”

A recent practical example of the dilemmas faced in influencing the public sector to appreciate the need to address information use, was found in the recommendations of the Economic Audit Committee's [EAC] Final Report (2009, pp. 15, 53). The recommendations called for the creation of a CIO and a Chief Technology Officer (CTO). The former was to focus on "opportunities for harnessing information communication technology (ICT) ... and sponsor innovative and collaborative ICT initiatives through the provision of seed capital." The CTO was to "promote strategic and coordinated investment in ICT ... and implement procurement processes that enforce common standards, interoperability and system consolidation." Information as an asset and information use were not considered.

A contrasting experience from a best practice organisation came from Participant BP3. He spoke of dedicated information technology people who, unfortunately, did not have a good customer service ethic due mainly to the fact that "they've got their heads down and their tails up, working away and not really taking the opportunity to ask why we are here." He commented that they did not have a good attitude towards information in that there was not "much of a perception of information." This example indicates that behaviours can be influenced by values, and as in this case, have a negative impact on service delivery.

Operating in the information economy may add another dimension to the influence of the professional on information culture and also organisational culture, as flagged by Drucker (2001, p. 10). Drucker explained that in an environment that focuses on information, "knowledge workers" are more likely to identify with their expertise and knowledge base than they are with the organisation for which they work. They do not consider that they belong to the organisation and tend to have a greater affinity with people outside the organisation with the same specialist skills, rather than colleagues in their own organisations with different backgrounds.

Add this perspective to the issues and experiences raised by the participants, and the dimensions of encouragement and change needed to influence the professional groups becomes even more problematic. It throws into relief the importance of understanding internal and external factors experienced by an organisation, and the need for a well-considered change management strategy.

Participant A10 had concerns about the language and vocabulary used within organisations. The language used by the culture and subcultures of an organisation can become jargon. This can create a barrier across the organisation. Participant

A8 also made a reference to the information professions using jargon to be exclusive.

The study undertaken by Bloor and Dawson (1994) confirmed the existence and influence of subcultures based on professional groupings. Curry and Moore (2003) also referred to professional subcultures in their study of information culture. Deal and Kennedy (1982, pp. 138-139) confirm that subcultures can and do exist in organisations. Deal and Kennedy also say that problems will arise when a subculture promotes its cultural attributes as being superior to those of the organisation as a whole.

6.4.3.4 Education and Training

The value and importance of training and development, including in relation to the use of technology, was also mentioned by Participants, A1, A6 and A8. Training and development to assist people to be responsive and flexible to the complex environment of the public sector was also highlighted. Participant A11 told of an organisation which had behaviours and technology use firmly driven by policies. He recalled that there was an ongoing training program for the understanding of and adherence to these policies.

According to Participants A4, A5 and A12 educating students and influencing them as future practitioners, information professionals and public servants was a component of developing new and better cultures. Participant A2 referred to “more academic training” because “the more staff are exposed to something, it generates more thinking and more desire for information.” Participant P5 supported the value of education in the workplace. Participant P3 warned that the use of compliance training or education to influence change depended on the work environment. Training, development and education could also be related to how best to develop the way an agency organises and uses information.

The usefulness and benefit of a skilled staff to an organisation can be seen in the general management and operations as well as in the way it manages and makes optimum use of its information. Drucker (2001, p. 9) supported continuous education and learning as a consequence of the information economy and the need for employees to be “knowledge workers.” Drucker also says that more education would be required more often to ensure that knowledge and skills do not become redundant. New skill sets and new approaches and methods to deliver education were required.

The data on education, training and learning that are found in both the *identification and development* phases of this study emphasise the importance of currency in skills and knowledge. They also demonstrate that the development of these skills and knowledge cannot be left to educational institutions. It will require training and professional development in the workplace as well. This approach can be encapsulated in the importance of information literacy to an information culture.

The abundance of information and the proliferation of the means and mediums through which it is available are clearly in evidence in the workplace. The paradox of this workplace situation is that the excess of information and technology does not necessarily mean that more and better information is available to be used in support of service delivery or achieving outcomes. To make best use of the available information, the Australian and New Zealand Information Literacy Framework (Bundy 2004, pp. 3-4) suggests eleven hallmarks of information literate people, namely:

- Recognise a need for information;
- Determine the extent of information needed;
- Access information efficiently;
- Critically evaluate information and its sources;
- Classify, store, manipulate and redraft information collected or generated;
- Incorporate selected information into their knowledge base;
- Use information effectively to learn, create new knowledge, solve problems and make decisions;
- Understand economic, legal, social, political and cultural issues in the use of information;
- Access and use information ethically and legally;
- Use information and knowledge for participative citizenship and social responsibility; and
- Experience information literacy as part of independent learning and lifelong learning.

Lloyd (2003, p. 91) discusses information literacy in terms of a core competency that needs to be addressed seriously in “the complex information environments of the workplace.” According to Abell and Oxbrow (2001, p. 135) a key requirement, a starting point for information literacy in the organisation is “to be information aware, to understand the value of information within the context in which they are working.” Furthermore, Abell and Oxbrow (2001, p. 135) identify five skills which are based on

understanding the value of information which will allow people to use information effectively. These skills are finding, using, creating, organising and sharing.

Each of these skills is expanded step by step to reveal an approach to developing and using the skills (Abell & Oxbrow 2001, pp. 136-140). In the main, these skills are a distillation of, and a practical approach to, the list of competencies provided in the Australian and New Zealand Information Literacy Framework (Bundy, 2004, pp. 3-4).

The data gathered in this study suggests that information literacy and some of the underpinning skills-based competencies such as computer literacy need attention in the Western Australian Public Sector. Attention needs to be given, not only to the development of information literacy competencies, but also to the valuing of information which underpins that literacy (Abell & Oxbrow 2001, pp. 135).

Improving information literacy and the underlying technological literacy have the potential to have a positive impact on making better use of information and on the state of an information culture in an organisation. As demonstrated in the literature and through the findings of this study, values, attitudes and behaviours towards information underpin information literacy. The template for improving information literacy provided by Abell and Oxbrow (2001, pp. 127-143) focuses on information management behaviours and skills of the individual. This focus needs to be built on an understanding of the value of information. Horton (2006, p. 263-266) supports the need for a "close partnership" between information literacy and information management because it takes "knowledge and skills to find and use the information one needs for problem-solving and decision-making."

6.4.3.5 Summary

In this section on valuing and understanding information four main themes emerged as being important to opportunities to develop or influence an information culture. These themes were:

- Information as an asset;
- The Influence of people's 'mindsets';
- The Influence of the professions; and
- Education and training.

Demonstrating the interconnected and analogous nature of information culture were the comments in the previous section on strategic thinking and management, and those in this section on the importance of values, attitudes and beliefs towards

information as an entity. The challenges faced by the public sector in taking this strategic approach were raised herein. From the data and the literature it was evident that distinguishing between information as an entity or an asset and technology was important. Leadership was nominated as critical to success in this area.

Another emergent theme was the link between information power, politics and culture. The information science literature and the general management literature exposed how information and ownership of information can be used as a powerful tool in the workplace. It can be withheld or used to create power. Information politics is closely associated with the power of information. This influence of information and organisational culture were evident.

Another challenge to developing a culture was people's 'mindsets', their fixed mental predispositions. These were linked to aspects of organisational behaviour and the influence of professional groups. The data on professional groups focussed on the range of professional influences in the public sector and not just the information professions. These groups were seen as exhibiting particular values, attitudes and beliefs towards information that had been shaped by their professional backgrounds. Also of importance in this section was the increased focus on the information or knowledge worker.

Education and training were seen as influential in regard to information culture. This applied to public servants and information professionals. The need for more education and training was flagged as important. It needed to focus on the value and usefulness of information and information, and the strategic contexts in which it could be used. Also, highlighted was the importance of information literacy. High levels of competence in this area can have a beneficial effect on how people value and use information.

6.4.4 Organising to Find Information (Element) and Behaviours (Attributes)

The issues and concepts captured in this section indicate that addressing ways to achieve a positive information culture is not a linear exercise with always clear boundaries. While some of the experiences, observations and ideas presented are absolute in their relevance to the element, organising to find information, others indicate a connection between other elements and attributes. For example, valuing and understanding information has relationships with both organising and using information. The systems for organising information can be related to the values

demonstrated by strategic thinking and how organisations distinguish between the value of information and using technology as an enabler.

Issues and concepts raised in the *identification* phase were also relevant, albeit from another perspective, in addressing the *development* phase. An example of this is the view of technology as an enabler and not a driver. This crossover of concepts demonstrates the opportunities and ability to take aspects of the *identification* phase, such as benefits, incentives and disincentives, and directly address them as development issues.

The key categories under consideration in this section are similar to those found in the previous section. The categories being:

- Managing information as an asset;
- The role of technology;
- The influence of the information professionals; and
- Education and training.

6.4.4.1 Managing information as an Asset

Having addressed the intangible attributes of values, attitudes and beliefs associated with information as an asset, this section turns to the behaviourial aspects. This progression reflects Speculand and Chaudhary's (2008) "Value Inculcation Model" which proposes that values influence behaviour which in turn influences or impacts organisational performance.

Five participants commented at length on the need to influence the way in which information is viewed, and the misconceptions and misperceptions that can arise when information technology and information are viewed as synonymous. Participant A1 thought that this view could be altered, "if you use a word like knowledge or learning then ... they would realise that they need information to make decisions."

The comments on the prevalence of the synonymous view of information and information technology highlight that the view of information affects the view of technology and vice versa. They also raise the need for appropriate strategic thinking and planning to optimise the benefits to the agency. An improved appreciation would lead to improved behaviours.

Participant A12 offered another perspective on the correlation of strategic thinking, information and information technology. He commented on the perceptions

surrounding the use of applications for “the efficiency of the processes and supposedly [the] provision of better information.” This, he contended, was limited to the context of providing a solution to a problem. There was not enough attention paid to systemic and holistic solutions. He proposed starting with the information not the technology.

Participant A11 commented on issues of access and sharing that caused concerns for agencies. He felt that agencies wanted to get information out and available but knew that it was not in the best form to be made available. There was a cost involved in making the information available, and senior managers had issues other than information management to address. Participant P7 saw more problems looming as funding situations became tighter across the sector. While there might be some soft or intangible savings to be made from good information management and or sound use of information, these savings were not “recoverable” by the Treasury. However, according to Participant A6, there has been very little serious cost benefit analysis on information management.

Participant P8 saw some of the problems with information management as arising from it being unseen work, “they are not aware of it and they don’t care.” He was particularly attributing this attitude to senior management. He also commented, “I think they think the information is available in the organisation. I don’t think they think about where it is.”

Participants A6, P1, P3 and P4 all said that information overload, the sheer volume of information available today, was a key obstacle. The issue raised by this obstacle is the potential for information management, as a behavioural element of information culture, to address this situation.

Participant P6 was concerned about problems with accessing information in people’s heads, “I mean there is constant movement ... they know everything. It is in their head.”

On the issue of definitions and defining work environments, Participant BP2 offered a positive experience. While they had definitions and classifications, they did not try to define their environment in terms of knowledge, information or data. Rather they tended to talk more “broadly about our working environment and define that as a space in which we acknowledge information.” The words and sentiments expressed by Participant BP2 about his organisation and their relationship with information and assisting staff to appreciate information were very positive and active. He talked in

terms of aspirations, encouragement, innovation, enabling, achievement, influence and creation.

6.4.4.2 The Role Information Technology

References to information technology and information systems were identified throughout the data. In comparison with the responses to the questions on the identification of information culture, those provided on development were not as forthcoming. This comparative lack of comments and ideas does not diminish the role or importance of technology. The experiences, observations and comments provided throughout the data enabled the researcher to ascertain the development issues surrounding technology. The data was also supported by the literature. Following is a synopsis of the specific development issues together with the supporting literature.

Participant P7 thought that an underlying problem was the lack of parity between information management and information technology. He wanted to see them "on an equal footing" and called for "mutual respect." Adding to this he said "One of the worst problems I observe across the public sector is the devaluation of information management and knowledge management and a perception that information systems will supply all the solutions of an organisation."

Participants linked systems and technology with use of information as illustrated in the following passages. From his experience in the workforce and as a senior manager, Participant A3 commented that "people are struggling to do their work because of the weaknesses in record keeping ... and other information systems." He suggested that this was an area worthy of further and important attention as they underpin daily operations. It also impacts on information use in an agency.

Better systems were a focus of Participant P3, as was getting departments to learn and share across government. Participant P1 suggested that better information management and business analysis was needed as a complement to information technology. Information overload caused by the growth of technology was a concern for Participant P3. He suggested that an antidote to this was "a sound fundamental foundation of a good technical system", "the mechanics and the logistics" along with clear definitions and terminology, leadership and good management.

Offering more advice on organising information Participant BP2 said "give them the tool that helps them actually think about the way they work." He also emphasised the importance of the "business [deciding] the technology direction." Another

management approach involved technology and using technology as an enabler not a driver. The organisation established a Board to govern the information technology platform and the directions it needed to take. The technology management team were involved but they did not drive the Board and its decisions. The business drove the directions. The “strategic directions for technology were always” in “the context ... of the business drivers and business directions.” On a cautionary note, Participant BP2 said that organisations can underestimate the enabling effects of technology due to so many systems being poorly implemented. He said, “Clearly good experiences or positive experiences can have an effect too, and actually influence the way people think and work.”

This offering was a positive example of a behaviour towards technology as a means of developing an information culture. Technology was used as an enabler and not a driver. Information was the driver showing the value and understanding. As previously related, in the first instance, the leadership of his organisation had viewed technology as a driver for change and improvements. However, they very quickly realised that it was an enabler of change. Participant P1 also saw the need for technology to be the enabler and the business to be the driver.

Apart from using technology as an enabler rather than a driver, organisations also need to be aware of their staff using the technology and making the best use of that technology. Both Participants A8 and BP2, for example, spoke of the need to ensure technological competence. Human behaviour has a pivotal role to play in the success of any technological venture. Staff react differently to the rapid pace of technological change, and may not learn to use systems and applications for maximum efficiency and effectiveness. Organisations need to treat this as a priority and put programs in place to shore up technological literacy (Markus 2000, pp. 233-238). Feeny and Willcocks (1991, pp. 444-473) support the importance of the skills and capabilities for a “high-performance IS function.” They recommended a human resource focus and provided nine key capabilities. So improving the role of technology via use and skills development is not limited to the business users, but also applies to the information professionals responsible for its development and implementation.

The “pace of technology and how fast information travels, to the point where people miss information or sometimes use it to protect themselves” was raised by Participant A15. The power of technology combined with the growth of information and apparent reluctance to be discerning about the collection of information was

raised by Participant A8. She commenced her statement by saying “it’s an attitudinal thing.” Then she expanded on her thoughts by saying that often information was collected and generated because it could be. “So you end up with masses of information that makes finding what you need almost impossible.” Participant BP1 supported this view when recounting his organisation’s early experiences with using complex information and knowledge systems. From another best practice site, Participant BP4 said that his organisation wanted to develop and use good systems, but they were impeded by poor use of existing systems and people’s reluctance to populate the systems with good data.

From her own experiences in the workplace, Participant P5 conveyed the difficulties posed by an organisation using disparate systems which acted as a barrier to sharing. They seemed to reflect and reinforce that the agency worked as silos and in isolation.

Complementing these views and experiences, Participant P3 shared the experiences of his organisation in “automating ... what we used to do ... manually.” There was no real focus on why this was being done or how the information captured would be used. There was no overall strategy. Furthermore, he concluded on this issue:

> [B]ecause there is no overarching [plan] about understanding why we are getting a lot of this information, IT is going to create another problem for us. We capture lots of things but how are we going to retrieve them in an organised sense?....Our systems are just getting bigger and bigger and bigger from a storage point of view but actually to use them in a quality way ... we going to have some big issues.

This is another indication of the links to and interrelationship with strategic thinking and planning and valuing and understanding information.

On the other hand, Participant P4 saw the positive side of the “growth in technology and communication devices” as they “made it so much easier to create, copy and forward information.” However, he added a cautionary note saying, “I suppose some sort of rules and mechanisms are going to have to be put into place to enable people to cope in a productive manner so that the nuggets of information are not ... lost or drowned out.”

From a practitioner’s perspective Participant P3 thought that systems issues sometimes hindered the use and synthesising of information. That is, there was too

much focus on developing too many poor quality systems. He wanted to see an increased emphasis on lessons learned and better strategic use of information.

Information technology and systems can be powerful tools in developing a culture when used appropriately. If misused, they can hinder the development. Issues can also arise with using technology when there is a lack of clarity around what is and is not information. Comparing comments on technology as an obstacle with those in the section on developing an information culture, similarities and correlations are evident.

In speaking about the challenging role the public servant faced in ensuring accountability and sound public policy, Shergold (2004, p. 11) remarked that in situations of tension and urgency, it was difficult to ensure accurate information and action when faced with pressing timelines. Situations of this nature were not necessarily going to be solved by technology and nor would technology "by itself ... ensure effective communication across silos and ladders of organisational culture." He went on to add that "the value of record-keeping is as vital now as it was to the clerical assistants of 1901."

Shergold's (2004) comments throw into relief, not only the pressures and complexities of working in the public sector, but also the balance that is needed in addressing information technology. Technology is important but not at the expense of information use. As the public sector moves to deliver more services online, to use technology to facilitate information sharing, and to develop more efficient processes and communications, it needs to ensure that access and use are consistent. This means attention needs to be given to skills in using and interpreting information for all end users. Importantly, with the changes in online service delivery, the sector needs to consider "the social, regulatory and legal issues" (Cameron 2004, p .66).

6.4.4.3 Influence of the Information Professionals

The role of information management was a recurring theme in the data. It features prominently in previous studies into information culture (Choo et al. 2006, 2008; Curry & Moore, 2003; Hindle, 1997; Marchand et al, 2001a, 2001b; Widen-Wulff, 2000, 2001). There is also a plethora of writing on the various aspects of information management across the information science arena (Choo, 1995; Orna, 1990; Rowley, 1998; Stenmark, 2001; WAIPC, 1992). Together with the literature, the data confirms an important role for information management in organisations. It also

cements information management as an aspect of information culture. This section supports the role of information management and information management professionals in developing, implementing and managing processes and systems in order to organise to find information.

Both Participants BP4 and P7 said that much value was to be had from getting the various information professions to work together more closely and collaboratively. Participant BP4 added that more collaboration was also needed between the information professionals and the other public sector staff. He offered a recent example from his experience where the collaboration could have been done better, and then cited a positive external example of collaborative team of information professions working together for the good of the end user.

In support of the need for more collaboration, Participant P7 called for “cross frame dialogue between information management professionals and information systems professionals.” As he pointed out “neither of these bodies of knowledge is a solution in its own right and they require each other.” Participant P5 spoke of the communication barriers that exist in public sector organisations. Speaking about information professionals she recalled from her own experience that “very few ... talk amongst themselves” and “very few actually talk to the business people.” If and when they do talk to the business people, they do not facilitate relationships but complain that people do not listen. This latter sentiment was echoed by Participants R3 and R4.

Abell and Wingar (2005, p. 180) corroborate this schism between the business of the organisation and its information professionals, and they underline the importance of better understandings and closer collaboration. They say, “We believe that if information professionals develop the transferable and business skills to match their professional skills, and devote as much enthusiasm to their organizations as they do to their profession – they are well poised to take the opportunities.” The advice here is presented from the perspective of the information professionals. While their proactive stance is necessary, as Participants R3 and R4 have commented, the business managers must also take action.

Participant R3 mentioned her disappointment that the business areas and the information areas were not “more closely linked.” While she is currently writing a multi-disciplinary text to address this and related issues, she did not think that there was “a ready-made market.”

Linking an understanding of information and improving the processes around information, including storage, were issues seen as important by Participants A6 and A8. Participant P1 supported this in commenting that organisations needed to focus on managing what was “really important”, “what is really of significance ... and where we are at risk.” He claimed that the public sector was lacking in the skills and expertise to manage in an ongoing fashion, that which was significant to an agency. Further on the topic of information management, Participant P4 observed that, “the growth in technology and communication devices has made it so much easier to create, copy and forward information.”

Participant BP1 offered an example of organising information so as to improve the business benefits to the organisation. In addition to developing a sound approach to information across the organisation at an individual level, they created an area dedicated to information and knowledge which was used as a resource. It provided research services, assisted with systems implementations, and managed the information and knowledge for good access and re-use. This was all linked to the understanding of the intrinsic value of information and a focus on the importance of using information not just collecting and storing it.

Participant BP2 talked about incentives of a more intangible nature when he spoke of encouraging innovation and change, and influencing the way people think as a way of influencing the way they worked. He also emphasised the importance of quickly helping and training staff to use any new technology, to make sure they were comfortable with its power and potential. Coupled with this was the need to express and gain an understanding of the “driving principles”, including information principles, which were behind any changes.

Kirk (2004), Lloyd (2003) and O’Sullivan (2002) raise the issue of information professionals assisting organisations to equip their staff to use information efficiently and effectively. Lloyd (2003, p. 90) states that more research is needed on the best ways to achieve information literacy in the workplace and thus the need for information professionals to engage with educators and business to develop suitable frameworks. This links the role of the information professionals with the education and training aspects of information culture.

Undoubtedly librarians and records managers have, individually and collectively, the skills base and the education to develop and implement information literacy programs. Such programs could complement or augment computer literacy

programs from the information technology managers. As Winterman et al. (2003, pp. 39) say “skills transfer from the profession to the organisation is valued.”

This study revealed two potential barriers to the information professionals working on such programs. Firstly, there is the professional divide that separates them and the tendency to work in professional silos. As Participant P7 observed:

> Mutual respect between information managers and information systems people [is needed]. Maybe some degree of collegiality, meeting, talk to each other, not displaying the kinds of aggression and antagonism that I have often seen between the two groups.

Secondly, as demonstrated in the responses to the interview process, information professionals showed a tendency to be constrained by their particular discipline. As O’Sullivan (2002, p. 13) remarked, information professionals needed to “broaden [their] outlook” and look to “changing the way [they] envisage [their] role” in order to contribute to information literacy programs. Participant BP1 talked about the seeming reluctance of some records managers to modify their practices in order to better assist potential information users. If the information professionals are to play a greater productive role in enhancing information literacy and organising and using information, they need to be able to understand the strategic and operational contexts of the agencies in which they work. They may need to reconsider and redevelop their skills base to permit transfer across their agencies.

From Participant A8’s perspective, the ways in which the information professions operate as separate groups and their lack of cooperation across the groups was a situation for concern. Furthermore, using librarianship as an example, she thought that some of the professions “tend to be confined by history and an historical way of doing things.” On the issues of the separation of the information professions, Participant P1 said, “We’re fragmented, divided, separated in the approach to the way we look at information.” Taking a different perspective on “separation”, Participant P3 spoke of the fragmentation of information and information management across an organisation.

Ratifying this view, Todd and Southon (2001) have called for the information professionals to address educational and professional challenges which have emerged as a result of organisations responding to the changes in their environment. According to Todd and Southon (2001), information professionals need to change too. They may face challenge in doing so due to fragmentation of the professions and their lack of status in most organisations.

Milne (2001) encouraged information professionals to be alert to their changing environment and the subsequent change in demand for their skills. This would involve being alert to the need to improve and change their skills base. She also spoke of the need for more collaboration across the information professions and with the other workers in an organisation. This would ensure the best mix of expertise to address information exploitation and use. Milne thought that a key aim for information professionals should be to secure a central not peripheral role in the business.

6.4.4.4 Education and Training

Participant A7 added a dimension to the education of information professionals by highlighting the social-cultural aspects of technology. He saw that the value of graduates and post graduates in the information technology and information systems areas would be increased by exposure to the social aspects of technology, including the impact of technological decisions on people. In some instances this appreciation was not conveyed through education but rather through workplace experience. These comments are reminiscent of those made by Participants A4, A5 and A6 on the value of education for information professionals on the more strategic and organisational contexts of their role in organisations. The benefits and needs notwithstanding, they had little time to do so.

Commenting on another shortfall or obstacle, Participant A12 said:

> I think it's a real problem in the public service in the IT component, and without sort of being disparaging about people generally, I've found the quality of people there is not what it needs to be to have an information culture. I mean the process of outsourcing seemed to strip the public sector of [a large percentage] of the top IT managers....They've gone to the outsourcing organisations ... I think that the quality of people is a major impediment.

Similarly, Participant A3 saw issues associated with the "sorts of skills and competencies over time selected into the sector and then developed or not developed." The lack of skills in the areas of policy and strategic planning were of concern to Participant BP2.

Barua, Ravindran and Whinston (2007, p. 31) found that a failure on the part of organisations to think long-term and strategically coupled with inconsistent information management skills were barriers to information use. They stifled information sharing. The information management skills of which they spoke applied

beyond the role of any information professionals in the organisation to include all workers. This is a reflection of the move to using more enterprise systems and the pervasive role of information. These findings by Barua, Ravindran and Whinston (2007) complement the data from this study, and reinforce the benefits of having all staff educated and trained in a range of information related skills.

6.4.4.5 Summary

The key themes which emerged from this section complemented those raised in the previous section. They were:

- Managing information as an asset;
- The role of technology;
- The influence of the information professionals; and
- Education and training

Information management came to the fore in this discussion. There was emphasis on the need to manage information as an entity and not confuse the management of technology with the management of information. Technology played an important role and that was as an enabler to information use. Information management also needed to be about maximising the use of information. Information professionals had the potential to have a positive influence. However, there was a need for closer cooperation and understanding across the professions. Changes to their education and training may help facilitate this.

6.4.5 Using Information (Element) and Behaviours (Attributes)

Choo (2006, p. 63) defines information use as occurring "when the individual selects and processes information or messages, which leads to a change in the individual's capacity to make sense of the experience and to act or respond in the light of that new understanding." Previous studies into information culture and related concepts included aspects of information use (Choo et al., 2006, 2008; Ginman, 1988; Kirk, 1999; Macintosh-Murray & Choo, 2002; Widen-Wulff, 2000, 2001). Existing studies have also explored ways in which an organisation's capacity and capability can be improved to make better use of information (Kirk, 1999; Marchand et al., 2001a).

How an organisation makes use of its information and how it can be encouraged to make better use and application of it was a recurring theme. From the comments in this area it was evident that there are links between valuing and understanding information and the systems, processes and environments influencing use.

Similarly, associations have been made between strategic planning and thinking and use. These references combine to demonstrate how an organisation's translation of the elements of information culture culminates in the ways which an organisation uses information or synthesises information. Where information use was noted and referred to in previous sections on developing elements and attributes, they have not been repeated here.

The data on the *identification* phase revealed experiences, opinions and observations on information use, reuse and sharing, and specific accounts of use, such as performance management and reporting, risk management and policy development. Although these usages were offered as examples of the various roles of information and as hallmarks of information culture, it is reasonable to suggest that improvements could be made to how an organisation uses information.

Participant BP2 provided some key insights into how best to improve information use for more targeted and strategic use. In his discussion, he emphasised that all the staff were very aware of the value of information and were encouraged and were inspired to, "make the best absolute use of what we have in terms of information and data." Participant BP2 also spoke in terms of encouraging innovation and change, sharing and collaboration, discovery and lessons learned, and of allowing staff to critically evaluate information and make decisions.

To encourage use Participant A6 said that one needed to have easy processes and procedures in place to assist in the understanding and use of information. She also saw this as a way of ensuring that people had time to do their work and to use information. Comments from Participant BP2 supported the need to have these processes in place and to revisit and record lessons learned. He also acknowledged that this was difficult to achieve in a consistent manner given the time restraints and workloads experienced. This situation may provide an opportunity for information professionals to assist and to become more integrated into an organisation. Linking "the mass of information" with technologies as "powerful drivers for change" and increasing pressures to achieve and increase profit and productivity, Layzell Ward (2000, pp. 436-437) saw a role for information managers, particularly librarians, in facilitating access to the information that was of potential value to the wide and widening range of end users.

These comments about the importance of learning from past experiences and encouraging innovation are reminiscent of previous comments from Participants A1 and A3 about learning organisations and the role of a positive information culture.

Choo (2002, pp. 20-22) substantiates the link between information and the learning organisation saying that the learning organisation "is predicated upon a free flow of information throughout the organization." In further support for the comments from the participants of this study, Choo's (2002) work emphasised the need for an organisation to plan its approach to developing a learning culture and to be prepared to spend the time and effort to develop the necessary skills. As information creation, sharing and use are the responsibility of everyone in a learning organisation, it was important to build skills across the organisation.

An organisation can assist and encourage learning by designing and using processes and systems that facilitate information generation and use, develop and implement programs to increase learning opportunities and rotate or transfer staff (Choo, 2002, p. 21). "Organisational information structures and processes must be flexible, energetic and permeable....It is only proper that information management begins and ends with the information user" (Choo, 2002, p. 58).

When considering the learning organisation and information culture and ways in which to develop either or both, Senge's (1990) advice on approaches to development is pertinent. Senge recommends three key building blocks, namely:

- Guiding ideas: the vision, values and purpose shared by people in an organization;
- Theory, methods and tools: the practical items that help people to learn. Tools are derived from theory; and
- Innovations in infrastructure: the resources needed in order to learn. For example, time, information, money, management support and contacts.

The learning organisation, lifelong learning and lessons learned methods are concepts which have grown out of the information economy or the information society. Bawden (2001), Bruce (1997), Horton (2006) and Kirk (2004) have created relationships between all or some these concepts and the need to be information literate.

As Participant BP2 explained, his organisation knew that it had different levels of information and knowledge workers with different information needs and different ways of using information and knowledge. Thus various methods of explaining and encouraging information use may be required within a single agency, and it may be different from agency to agency dependent on such factors as purpose, organisational culture, history, structure and function (Taylor, 1991; Pemberton & Stonehouse, 2000).

Under the previous heading, Participant BP1's comments about his organisation's sophisticated resource centre were cited. Participant BP4 described such a centre as a valuable aid to optimal use and reuse of information. He recounted that one of his colleagues had experienced using such a centre. His colleague "was amazed at how they had all these databases. If they were working on an issue, they could do a search and they could find everything relevant to the one topic." As a result of his colleague's experience Participant BP4's organisation started down the path of creating such an environment.

Other practical and tangible means of encouraging behaviour were also employed by Participant BP1's organisation. They had open plan offices and a communal coffee bar and lunch room. These were designed to encourage staff to interact and share knowledge and information. These were also seen as mechanisms to encourage co-operation within teams and across teams. The success of these practical means notwithstanding, Participant BP1 did caution that there were still people "who don't want to communicate ... do stuff in isolation." In support of such an initiative, Participant A7 talked about the important role of "the water cooler" and sharing information in person and more broadly then just via a piece of technology.

Participant R4 also offered insights into the need for a collective approach to the workforce when she said, "Workforce is not just a collection of expert individuals. It is important to emphasize that intellectual capital must be built, as well as people's skills to adapt and distribute information, in official and unofficial networks."

Exposing people to good information sources and encouraging them to be more exploratory was viewed by Participant A2 as a positive and relatively simple way of developing better information cultures. He said:

> One thing that comes across is that the mere exposure of people to good information sources stimulates a heightened interest and enthusiasm and awareness of it. So people respond very positively simply to being put in a more information rich environment and given tasks that involve having a more open and exploratory task with that information ... I think that that generates in people's personal cultures a ... high level of information awareness and practice, and presumably, if that happens broadly enough in an organisation then it becomes an organisational culture as well.

Sharing information, or the reluctance to share information, was a barrier identified by Participant A11. His comments about sharing were centred on the apparent reluctance of agencies to share information with other agencies. Participant A10

thought this may stem from the perceptions of a loss of control and a compromising of the quality of information once it was shared. These comments on sharing have synergies and commonalities with the previous comments by Participant BP4 on silos in and across government agencies. Participant P4 wanted to see more encouragement to share information and understandings within agencies.

Linking jargon with the way information is made available to the public, Participant A8 said sometimes agencies spend “an awful lot of time” reworking documentation for public consumption so that it becomes “virtually meaningless.” Countering this argument, Participant A13 saw the dilemma facing agencies in making information available, the need to make information available and the need to make is clearer. Inherent in this was, he thought, a reason for not making information available and or more meaningful. He said, “Maybe that’s the reason again that information isn’t as available as it should be because it’s expensive to make sure that it is in a form that is not going to be misused or misinterpreted.”

Participant BP1 also spoke of the risks involved with misinterpretation of information. Carrying the issue of availability in another direction, Participant A8 saw the “tensions between internal information and what you actually externalise.” The need to be transparent and keep the customer as the “ultimate focal point” compounded the tension. Exhibiting another view of transparency and access, Participant A8 said, “All the secrecy, it’s not open and transparent and there are a lot of issues there with making information available within the organisation as well.”

Participant P5 had experienced difficulties with the perceptions that existed around the use of information and the work involved in using it well, and in preparing it for use. She was not speaking from the perspective of the more traditional view of the custodial roles assigned to information professionals. She was speaking in the context of the importance of getting to know the business, the roles of people and where information fits in. The importance of this synergy notwithstanding, Layzell Ward (2000, p. 436) highlighted the dilemmas for information professionals in the public sector in trying to know and anticipate the business needs. Even if they were diligent in identifying “trends, approaches and import techniques to get ahead of the game”, they have to work “to the policies set by government.” These “emerge with increasing frequency.” Participant P5 commented that work which involved understanding the role and use of information was viewed as “wasting time”, as “not work”, “not productive” as “there’s not an output.”

Information is “used unwisely in, unthinking ways by some people” according to Participant A6. As Participant A12 was quoted as saying previously, agencies do not understand the nature of true information. To back this up, Participant P3 claimed that, “most people don’t understand why they get the information in the first place, about the importance of it.”

Linking information management and staffing issues, Participant BP1 commented from his experience saying that improvements could be made on “harvesting information when people leave.” Comments from Participant P4 support this sentiment:

> There is a high turnover of staff and often what happens is then people leave with their expertise and we have to start from scratch again. So it’s important that we set up systems where we can capture that knowledge, but we also need to encourage people to share their knowledge, wisdom, their insights, their understanding and their experiences and I don’t think that’s done very well in some organisations.

While information can be useful in supporting decision-making, Participant BP1 observed a reluctance on the part of some to do so. He said:

> [S]ometimes people don’t want to know the full picture. They think that if they get half of it, well that will satisfy their initial requirements ... it’s hard to rule out bias in your decision-making because you are not necessarily going to go and gather evidence on a particular thing if you are already biased one way or another. If you’re biased against it, well then it’s already ruled out before you even come near your decision-making.

6.4.5.1 Summary

When considered in concert with previous comments on *developing* a positive information culture, the comments in this section suggest that using information appropriately is a behaviour which is influenced by the ways in which an organisation values and understands information. It is related to the systems in use and the levels of information literacy attained. Information use is the culmination of all the other facets discussed in this chapter. The aim or the end point of strategy development, valuing information and organising information is the best use of information.

6.5 Discussing the Development of a Positive Information Culture

The themes evident in participants' responses to the question about developing an information culture reflected the themes that emerged from the responses about the attributes and elements of an information culture. They also mirrored the themes identified in the section on defining an information culture. That is, they revolved around values, attitudes, beliefs and behaviours.

While there was a commonality of themes, in discussing the development of an information culture, the participants demonstrated a tendency to discuss what might need to be developed rather than how it might be developed, or why it needed to be developed. Some participants maintained that it was not possible to develop or build an information culture. Nonetheless a consistency of thought was evident.

Through the interplay of and relationships between the categories and themes in this chapter, the systemic nature of information culture was evident. From the analysis of the data it was also evident that it is possible to deduce a sequence of development, namely from influencing values → attitudes and beliefs → behaviours. The complex essence of information culture and the compound and additive nature of developing high performing information culture emerged from the analysis.

As demonstrated in this chapter, the literature offers suggestions and programs on how it might be possible to influence or change an organisational culture. According to Alvesson and Sveningsson (2008) there is an enormous amount of information, studies and texts on issues related to cultural change. However, the change management approach is not evident in the literature on information culture. Given the relatively small volume of literature, this is understandable.

The amount of research undertaken in the area of information culture is insufficient to suggest definitive ways in which an information culture can be influenced or developed. Before improvements can be suggested more work needs to be done on the nature of information culture (Choo et al., 2006, 2008). Hoglund (1998) stresses the intricacy of any such research due to the complexity of organisations, the interrelationships between organisational culture and information culture, and the relationships between the cultures, and with business performance and service delivery. Adding further complexity is the lack of clarity around the concepts of information and culture. The challenges faced by further research and in assessing

the best means by which to influence culture were echoed by Participant R1 when he said:

> I think we are still in the stage of trying to develop a deeper understanding of information culture – not sure we are ready for detailed prescriptive advice. There is a need for greater awareness of the role and importance of IC in affecting not just business performance, but the individual's sense of agency, creativity, and contribution to the organization.

The limited extent and depth of comments from participants on developing or influencing a positive information culture may be a twofold reflection of the understanding of information culture in the Western Australian Public Sector, and in other organisations. Firstly, an appreciation of the concept in theory and in practice or experience may be limited. Secondly, given that there may be a rudimentary appreciation of the concept, ideas for or experience with developing a positive culture will also be limited.

Information culture needs further investigation and exploration before it can be definitively influenced. The dynamism and complexity of organisations, together with the systemic nature of organisational culture and information culture, means that it is not feasible to expect a simple or singular solution to developing a positive information culture.

While there is a need for further research and understanding, there are sources from which possible influencing factors, actions and activities may be drawn. While these do not represent a comprehensive program, they may enable an organisation to address aspects of their information culture. It is also possible to infer and suggest actions from what is already known about information culture. In the context of this study such sources are:

- An analysis of the best practice interviews undertaken in this study;
- The development opportunities identified in this study;
- The previous studies into information culture and related concepts; and
- The literature on change management and organisational change.

Based on these four sources, Chapter Seven explores those key aspects of the *development* phase of an information culture that could be applied in the context of the Western Australian Public Sector. The suggested development issues for the *application* phase are offered in recognition of the systemic, holistic and multidimensional nature of information culture. Where appropriate, the difficulties

that may be encountered in applying these development opportunities areas are also addressed.

According to Choo (2002, p. 58) information use is “a social process of inquiry” and as such it is “fluid, reciprocal and iterative.” Any information processes, systems and structures used in an organisation to facilitate this use must also be open and flexible. Furthermore, such systems and processes must be user-centric. Choo’s (2002) comments highlight the complexity of information use as a human process. By extension, they suggest the difficulties and complexities that will be encountered, in not only establishing systems and process and applying information management, but also in influencing information culture. Add to this the open and dynamic nature of the organisation as a system (Choo, 2002; Martins & Terblanche, 2003; Scott, 2003) and the changing internal and external environments, and the continuous nature of influencing information culture becomes more evident.

An added dimension to this study in general and the development of a positive information culture in particular, is the environment presented by the public sector. That this environment in Western Australia is a paradox was highlighted by Participant A3. In speaking of the value, role and importance of information to achieving outcomes across the sector, he said:

> I can’t think of an organisation in the public sector who could say that the information culture in one way or another isn’t a very important element of a successful delivery of services.

He then raised the contradictory element of this paradox when he said:

> Before you get into change mode we need a lot more insight into what it is about the public sector that gives information the status that it currently has....I mean, the public service has a long tradition in a few narrow areas of respecting information....So there’s a tradition in there but somehow in the migration into sort of more complex organisations, they haven’t lifted the standard....So some theoretical frameworks will be good ... some case studies which actually illustrate a variety of empowerment, of where development of an information culture, not just the existence of it, but development of it is benefited in different ways and then ... first tips about how it can be done.

The dilemma outlined in this comment relates to the pivotal role that information use has to play in public sector’s achievement of outcomes and delivery of services and the conversely low status that it has across the sector. There may have been

individual agencies making appropriate use of information. That number may have been reduced as the sector became more complex. The comment also draws attention to the possibility of redressing the low status of information. In other comments, Participant A3 makes specific comparisons between the high status of finance and human resources and their management, and the low status of information and information management.

Even though this study offers some key insights into how a more positive information culture may be developed, the context of the public sector and its influences must be acknowledged. These influences and cultural entities may work against any efforts to develop a positive information culture. The data analysis and the literature have recognised the disincentives (Chapter Five) and the obstacles (Chapter Six) that may be encountered. The boundaries provided by legislation and the continuing focus on accountability, the nature and extent of the problems that government needs to address and the elections cycles, are not obstacles that can be removed by any program or activity to improve an information culture. However, they can be taken into account when creating a program or activity.

In some instances issues that present as obstacles may also be issues which can be used to leverage the development of a positive information culture. Examples of such obstacles may include leadership, strategic thinking and planning, professional groups and education and training. At the very least these and similar obstacles could be minimised. Addressing the obstacles and creating improvement opportunities requires an appreciation of the systemic and multidimensional nature of the attributes and elements of information culture. Such a nature infers that a systemic response is required.

6.6 Chapter Six Summary

This chapter presented the discussions and findings related to the *development* phase of the research. In addressing this phase, the chapter illustrated the links between the attributes and elements of a high performing information culture. It identified what was integral to the development of such a culture. Obstacles to this development as well as the influence of organisational culture were highlighted.

The systemic nature of information culture was thrown into relief by the findings and the literature. Relationships between the identification and development phases were evident.

From this chapter has emerged those elements and attributes that need to be addressed in order to develop a positive information culture. Table 6-2 presents the findings which emerged from the combination of the current literature and the data analysis. These deliverables address the research sequence from research problem to research outcomes.

Table 6-2 The Findings Which Emerged from Chapter Six and Which Address the Research Sequence

The Findings (Deliverables) Which Emerged
• The emergent reflexive and systemic nature of information culture.
• The alignment of attributes and elements (in further confirmation of the indication which started to emerge in Chapter Five.) This included graphical representations.

• The confirmation of those attributes and elements from the *identification phase* which could be addressed in the *development phase, namely:*
  • Strategic thinking & planning (element) and values, attitudes and beliefs (Attributes);
  • Leadership (element) and values, attitudes and beliefs (attributes);
  • Valuing and understanding information (element) and values, attitudes and beliefs (attributes)
  o Information as an asset;
  o The Influence of people's 'mindsets';
  o The Influence of the professions; and
  o Education and training;
  • Organising to find information (element) and behaviours (attributes**)**
  o Managing information as an asset;
  o The role of technology;
  o The influence of the information professionals; and
  o Education and training.

• The obstacles to developing a positive information culture.
• The importance of change management to the development of a positive information culture.
• The contexts which may exert influence on attempts to develop a positive information culture.

The following chapter addresses the *application* phase associated with the *identification* and *development* phases.

7 The Application of the Identification and Development Phases

7.1 Introduction

This chapter presents the discussion and findings related to the *application* of the *identification and development* phases of information culture. In doing so it builds on the discussion and findings in Chapters Five and Six.

The chapter is presented in two main sections. The first addresses the aspects of the *application* phase which emerged from and relate to the *identification* phase. The second section focuses on the issues associated with the *application* of the findings from the *development* phase

Figure 6-1 illustrated the relationship between the three phases and nominated that the application of the findings and learning would take two forms, namely the theoretical and the practical. The former related to the *identification* phase and the latter to the *development* phase. This representation and alignment is in support of the researcher's aim to achieve both a theoretical and a practical outcome as documented in the research outcomes for this study.

The presentation of the discussions and findings in this chapter reflects the theoretical and practical alignment of the *application* phase. In order to successfully address any practical opportunities to influence the development of a positive information culture, it is first necessary to consider and understand the theoretical framework in which this needs to be done. Therefore, the theoretical aspects of defining or identifying information culture are presented in the first instance. These are followed by the practical aspects.

The two key aspects of the *application* phase which emerged from the *identification* phase were a model of information culture in the context of the Western Australian Public Sector, and a definition of information culture. In the first instance, this chapter discusses the components of the model in detail. It addresses the relationships which exist between each of the components and the environments in which they operate. As previously referenced in this study, there has been earlier research on the subject of information culture. Four of these studies led to an explicit or implicit model. The model which emerged from this study is compared with an overview of each of these models. A definition of information culture based on the issues which emerged from the data and the literature is then considered.

The section on the practical aspects of the *application* phase investigates change management at the level of public sector and at a departmental level. Then it discusses the key application issues in the context of the five meta level elements, namely:

- Strategic thinking and planning;
- Leadership;
- Valuing and understanding information;
- Organising to find information; and
- Using information (synthesising).

It concludes by painting a picture of the systemic nature of the *application* and *development* phases of information culture.

7.2 Introduction to the Emerging Model of Information Culture

Throughout the data analysis for this study, it became evident that information culture was emergent, and that a model of information culture was emerging. A complex system of reflexive and interrelated components evolved or emerged as more was revealed about the concept and context of information culture.

The existing studies of information culture did not use a common definition or model of information culture. No common definition or model was identified. In part, this may have been due to the paucity of research in this area. Some researchers did not specifically seek to identify a model. Others are continuing to pursue studies into information culture. An overview of these studies was presented in Table 5-3.

The process used to arrive at the model was not linear. Therefore the issues, themes and findings emerged only after reflection on the data and the literature. While themes and issues which emerged from the data analysis indicated some commonality between the emerging issues of this study and those of previous studies, additional issues were also raised in this study. Some were related to the nature of the emergent model. Some related to the ways in which participants considered and commented on information culture. From the researcher's perspective, the latter was both an indication of the systemic nature of information culture, and evidence of the immature nature of the understanding of the concept.

These issues and observations will be expanded upon and explained as this chapter progresses through the identification of the model.

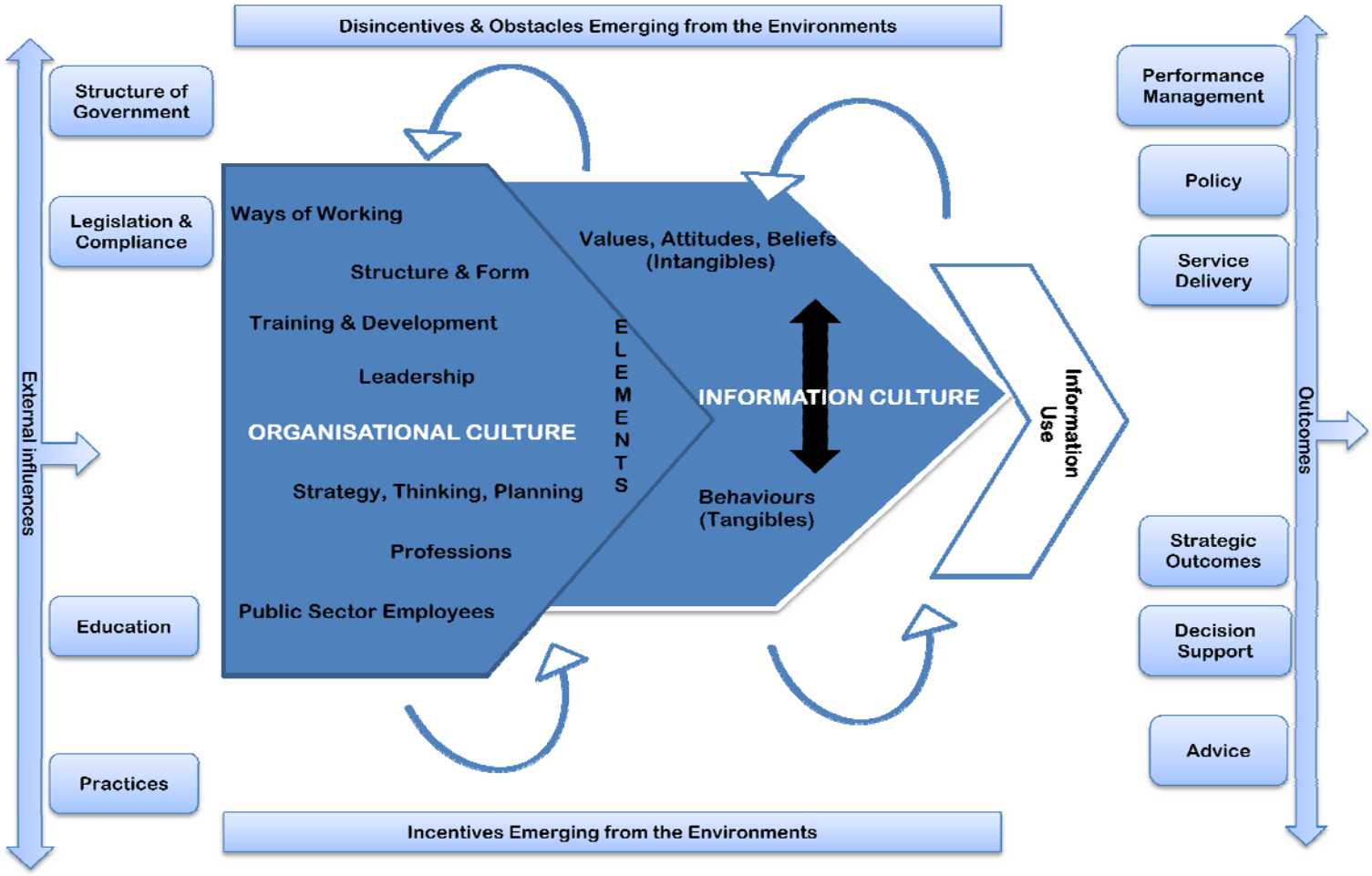


Figure 7-1 A Model of Information Culture for the Western Australian Public Sector

7.3 Components of the Model

Figures 5-1 and 6-2 illustrated the categories and themes which emerged from the literature review and the data analysis as well as the relationships between the categories and themes. They also provided diagrammatical representations of the various aspects of information culture addressed in Chapters Five and Six. While they do not provide a model of information culture as such, they do provide a foundation point for the development of a model of information culture.

Figure 7-1 represents the model which emerged from this study. It can be considered as a high level static representation or translation of Figures 5-1 and 6-2. The following section provides a commentary on the key components of the model.

7.3.1 The External Environment

The multidimensional nature of culture was described by Hofstede et al. (1990). They identified three layers of culture which can exist in and influence an organisation. Firstly, there is the national culture, then an occupational culture, and finally those characteristics unique to the organisation.

The work of Hofstede et al. (1990) provided a framework for this study in three ways. In the first instance, it emphasised the levels of cultural influence that were possible in a given situation. Secondly, it laid the foundation for the influence of organisational and occupational culture on information culture. Also, the levels identified by Hofstede et al. (1990) reminded the researcher that each cultural level was operating in a context or an environment. For example, the national culture provided a context and an influence on the organisation and its culture. Likewise, even though the occupational groups have their own culture, this operates in the context of an organisational culture.

The layers of influence and the contextual arrangement are relevant to a model of information culture in the Western Australian Public Sector. Information culture operates within a wider environment and is subject to external influences. Additionally, in the case of this study, the Western Australian Public Sector exhibits influences on government departments and their operations, which in turn impacts on the information culture in each department.

The contextual influence of the public sector and the wider environment was identified in the data analysis as being in the form of such elements as:

- The structure and function of government;
- Practices used and accepted in the public sector;
- The role and influence of the legislative framework and the role of compliance; and
- The role and influence of education on public servants and information professionals.

These external and contextual influences constitute the first element of the model for information culture.

7.3.2 Organisational Culture

The existence of organisational culture and its influence is the second level in the model. The need to acknowledge and recognise the impact of and relationship with organisational culture was evident in the data analysis as well as in the literature. The following statements from participants support this view:

> I agree totally and utterly ... that information culture in terms of culture follows on from general cultures within the culture [of an] organisation. (Participant A6)
>
> Information culture may be thought to be subsumed under organizational culture. (Participant R1)
>
> Information culture is inevitably tied to organizational culture and the latter naturally varies from institution to institution. (Participant R3)
>
> Information culture is part of the whole organizational culture and there are so many aspects included. (Participant R4)
>
> Information culture is ... a sub-set of the way the organisation is managed. (Participant A4)

A range of ideas on the relationships between information culture and organisational culture were found in the literature. According to Marchand (1996, p. 14) it is not relevant to view information culture merely as part of organisational culture. It is an entity in its own right. In comparison, Curry and Moore (2003) claim that a mature information culture is not separate from the organisational culture. Further, Curry and Moore (2003, p. 99) offer that information culture does not exist in its own right. It is only able to exist within, and is influenced by, the organisational culture.

Widen-Wulff (2001, p. 8) describes information culture as a form of the organisational culture. Its function is as a source of identity, so as to be able to

define and support organisational aims. As part of the organisational culture, information culture focuses on cooperation, communication and information behaviour. In contrast Ginman (1988, p. 104) found that information culture needed to correlate positively with the business culture in order to realise the achievement of outcomes.

Oliver (2004) undertook a study into organisational and information culture in three countries, namely Australia, Hong Kong and Germany. In setting the parameters for the study Oliver (2004, p. 288) took the stance that "the values accorded to information, and attitudes towards it are indicators of 'information culture' within organisational contexts." Further, Oliver (2004, p. 288) added "that these values and attitudes are likely to be shaped by interactions within and across the various layers of organisational culture – national, occupational and corporate."

Choo et al. (2008) undertook a series of studies into information culture across three different organisations. To set the scene for this study, and to explain the relationship between information and organisational cultures, Choo et al. (2008) stated:

> We regard information culture as those elements of an organization's culture that influence its management and use of information. Thus, information culture is manifested in the organization's values, norms, and practices that have an impact on how information is perceived, created and used. (p. 793)

As can be determined from these comments extracted from previous studies and from the data for this study, a common theme is the relationship between information and organisational cultures. While both cultures can, and do, exist in organisations, the type, variety and extent of interrelationships and correlations may vary.

Organisational culture was not the main focus of this study. However, the relationship between information culture and organisational culture was identified as a key element of the model of information culture. No specific questions about organisational culture were asked of the participants. The questioning process and the subsequent analysis of responses did reveal the complexity and systemic and interrelated nature of information culture. In this instance it is evident in the relationships between elements of an organisational culture and those of an information culture.

The data analysis associated with the elements of an information culture revealed complexity on two main levels. In order to explore this more fully, it is useful to recall that the definition of elements was given as that which comprised an information culture or what constitutes the culture; an inventory of what it is that comprises a culture. The attributes of an information culture were defined as its characteristics, distinctive features or qualities; the attendant circumstances.

Taking a holistic view of the data on elements and attributes, it was evident that the participants did not make clear distinctions between elements and attributes. These terms were used indiscriminately and interchangeably. With the definitions of elements and attributes in mind, it can be seen that elements and attributes can be used to describe an organisational culture and an information culture. Some of the elements referred to as being relevant to an information culture can be considered relevant, in the sense that they originate with the organisational culture, are undertaken in an organisation and have an influence on an information culture.

From the data analysis, key elements of an organisational culture were ways of working, organisational structure and form, the influence of the professions, leadership, strategic planning and thinking and the influence of the public servant. In all cases these elements can have a positive or a negative impact on both organisational and information culture. As an example, consider the elements of professional influence and leadership. The comments from the participants revealed instances where the subculture of a professional group had a practical impact on the organisation as well as, by extension, the information culture. These findings were corroborated by the literature.

With regard to the professions, a comment from Participant A12 is an example of the influence exerted. He said:

> We were invited in to do an information analysis preparation for a system in which you shared information. The big problem that we came up against was that the [professional group] dealing with [groups of citizens] kept that information to themselves. So the outcome was that a particular [citizen] might be being dealt with by multiple government agencies and ... in some cases, multiple professionals within the one organisation because nobody would share any information. That just led to crazy things happening to that [citizen]. They didn't get the full support because other people would contradict ... everybody had a little dabble but nobody shared information. It was very easy to build an application that would create a sharing of information, but the

> professionals wouldn't do it....The organisation valued the profession and their view higher than they did the customer in terms of providing service to that customer....The organisation should be saying, no, the value of the information is greater than the value of the information of the individual [professional] because if we have that information shared then what outcome can we give to that [citizen]....That application went nowhere because at the end of the day ... the professionals in the organisation wouldn't embrace it.

When discussing the positive reflections that an organisational culture and a professional culture might have on an information culture, Participant BP2 said:

> There are some characteristics of the people that we employ which actually probably support this. [Professional group] by nature tend to want to record things. They tend to want to place them into some sort of framework. They tend to be very logical in what they accumulate, and how they look at it and analyse it for evidence. They understand the extent to which the data either can be accurate or be affected by other elements....What they will do is make sure that other people utilise this [information], and they will try to understand the strengths and the weaknesses of it which means that there's a lot of explanation involved in that process. Having said all of that they then, I think, have the need to actually have discussions about it and continually try to improve it. So I think it's an actual outcome of the way that they're actually educated and trained.

The influence of the professions has been the direct or indirect subject of other discussions and investigations (Alvesson & Sveningsson, 2008; Bloor & Dawson, 1994; Boland & Tenkasi, 1995; Curry & Moore, 2003; Hofstede et al, 1990; Kirk, 2002; Morgan & Ogbonna, 2008).

In her 1988 research into information culture, Ginman found that the style of the Chief Executive Officer was one of the key influences on information culture. Likewise, Curry and Moore (2003), Kandidi (2006) and Kirk (2002) researched factors pertaining to information use and culture which included findings and discussions on leadership. Alvesson and Sveningsson (2008) and Vasu, Stewart and Garson (1998) have explored the role of leadership in organisational culture, the latter in the public sector.

As a complement to the previous research, comments of the value of leadership in the cultural context were offered by participants in this study. The following quotes exemplify the sentiments:

> You do have to have CEOs with unbelievable passion to make a difference. (Participant A1)
>
> I saw a big difference between two different heads that I worked for, one of whom did not cultivate an information culture, and one of whom did ... So the attitudes from the top towards it, played a big role in whether they shut it down or they invited, promoted, opened up for that kind of culture to flourish. It did not naturally flourish unless people were waiting for that opportunity but it certainly was not going to flourish when that opportunity was not provided and encouraged. (Participant A2)
>
> A culture normally starts at the top. So it is sort of top down if you like. (Participant A12)
>
> Over the years I found senior management to be the greatest stumbling block to progress of any kind. (Participant R3)

Some elements of information culture were also elements of organisational culture. When these elements appeared in an information culture, it was in regard to information and information use. In an information culture, these can be expressed as behaviours towards information and information use. For example, strategic thinking and planning is required at an organisational level. It is specifically needed in relation to information, and an organisation's ways of working can overflow into the way it uses and manages information.

An example of the reflexive and complex nature of the relationship between the external influences and the organisational culture level is the link between education and professionals, and education and public sector employees. The education of professional groups including information professionals, impacts on the way in which they function in an organisation and then on their values, attitudes, beliefs and behaviours towards information. Likewise, the ways in which public sector employees are educated influences their roles in the organisational and information cultures. The reactive task focussed approach of the public sector has an impact on the ways of working adopted by public sector employees.

Choo et al. (2006, p. 509) state that ,"This study suggests that organizations do well to remember that in the rush to implement strategies and systems, information values and information culture will always have a defining influence on how people share and use information." This reinforces the findings related to the connections

between information and organisation culture found in this study. It also corroborated the value of a high performing information culture.

This overlap and interrelationship of elements is further evidence of the systemic and emergent nature of information culture.

7.3.3 Information Culture

The third tier of the model is the information culture itself. The model shows that it is subject to the influences of the larger organisational culture and its subcultures, as well as the even larger external environment. The information culture may also influence these two tiers thereby establishing reflexive relationships.

The working definition of an information culture selected for this study was that proffered by Marchand (1996, p. 14) which defines information culture as "the values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information." The key concepts introduced in this definition, namely values, attitudes and behaviours are also contained in other definitions of information culture (Choo et al., 2006; Curry & Moore, 2003; Martin et al., 2003; Oliver 2004; Travica, 2005a).

With this definition providing the initial boundaries of an information culture, and taking into consideration the data gathered, this study identified values and behaviours as the key core attributes of an information culture. Values were the intangible attributes exhibited by individuals and groups and experienced by the organisations. Behaviours are the tangible expressions of the culture. Each of these, in turn, has a multiplicity of components. Attitudes and beliefs were also confirmed as attributes. They are also intangibles and are influenced by values.

The ways in which participants spoke of values in this study indicated that the use of the term in relation to information culture has two meanings. Firstly, there was the relative worth, merit or appreciation of information as an entity. The second view was in regard to values as indicators of the principles and qualities that were considered as desirable in creating and maintaining standards of behaviour. For example, participants said that managing information appropriately and leaders setting examples on using information and investing in it were evidence of the value placed on it.

Values (intangibles) exert an influence on behaviours (tangible). It was often easier for participants to speak more specifically of behaviours that indicated values than it was to articulate the values. For example, Participant A6 said, "everybody creates

information now. Everybody understands the importance of information without feeling this had been placed on them as a burden."

Schabracq (2007, pp. 75-109) explains the issues and potential problems that can arise if there is any dissonance or discrepancy between "espoused" values and behaviours and "lived" values and behaviours. These observations tally with the comments from participants on the role of senior management and the desirability for them to "walk the talk" as commented by Participant BP6.

According to Vasu, Stewart and Garson (1998, p. 226) values or norms "shape perception" (attitudes) and "affect behaviour." This view is in support of the work of Hofstede et al. (1990) and Trice and Beyer (1993). An expansion of this chain of interactions is explained by Trice and Beyer (1993, p. 2) in saying that "the first is the substance of a culture – shared, emotionally charged belief systems....The second is cultural forms – observable entities, including actions, through which members of a culture express, affirm and communicate the substance to one another."

This chain of events is translated into the information environment by Marchand et al. (2001b, p. 23-25). During their study of how managers relate to and manage information and knowledge, Marchand et al. interacted with over one thousand senior managers from more than one hundred private sector organisations. As part of this study Marchand et al. (2001b, p. 23) discovered that "not every company understands which specific behaviours and values will best promote effective information use." To assist with effective information use they identified six information behaviours and values, namely integrity, formality, control, sharing, transparency and proactiveness. Collectively these constituted a company's "Information Behaviours and Values (IBV) Capability." The elements of the IBV were demonstrated to be interactive, with values influencing behaviours. For example, if people have common values of honesty, candour and openness they tend to trust their organisation's information sources. Trust allows people the confidence to disclose and share information, which are evidence of behaviours (Marchand, et al., 2001b, pp. 24-25). These findings are further support for the view of an information culture as an emerging and developing system.

Participants readily identified behaviours which they considered contributed to or detracted from a high performance information culture. To reiterate, the following are examples of the key themes identified by participants:

- Technology use as an enabler or a driver;
- Information use which includes knowing why it is collected, what is collected and to what use it can be applied;
- Strategic and rigorous modes of thinking;
- Embedded learning;
- Reward systems;
- 'Battle lines' between the information professions; and
- Information management.

Of note in this area of behaviours, was the preference and inclination of those participants who were information professionals to equate information management with required behaviours. Their interpretation was that if an agency paid sufficient attention to and supported information management, it would have a positive information culture.

The wider data analysis and some of the literature supported a more comprehensive and inclusive view of behaviour. While sound information management had a role to play, it was but one element of the required behaviour. The studies by Choo et al (2008), Kirk (2002), Marchand et al., (2001b) and Taylor (1982, 1991) indicate that an organisation's use of information is a paramount indicator of the information culture. Information management is one aspect of behaviour towards information that supports and assists information use. It is the information use that is critical, not the information itself. Information as an untouched entity is of little value to an organisation. Its intrinsic value becomes evident when it is used. That is, values are in evidence and lead to observable behaviours. Notwithstanding, information management can enhance the opportunities to use information (behaviour) and capitalise on its worth (value). Information management (behaviour) can also be evidence of an organisation's willingness to trust and be open (values).

7.3.4 Information Use

The fourth element of this model is information use. Over the years there have been influential investigations of information use (Abell, 1994; Feldman & March, 1981; Kirk, 2002; Oppenheim, 1997; Wilson, 1981, 1994, 1997, 1999). Choo et al. (2008, p. 794) made the observation that although information use was a core concept, there was not a broadly accepted or used definition or methodology related to it. A series of recent articles on studies into information culture by a group of researchers at the University of Toronto included information use and information use

environments in their work (Bergeron et al., 2007; Choo et al., 2006, 2008; Detlor et al., 2006; MacIntosh & Choo, 2002).

As previously mentioned Taylor (1982, 1991) pioneered work in the area of information use and IUEs. According to Choo et al. (2008, p. 792), IUEs are explained as "the outcomes of applying and working with information as perceived and experienced by members of an organization."

In the context of this study on information culture, Taylor's work is of interest in relation to the values, attitudes, beliefs and behaviours exhibited by people towards information in an organisation. Taylor (1991) elaborates on the elements of IUE as the experience of the organisation in terms of its history, culture, style and structure and how this can affect or influence the employees' attitudes towards information and their behaviours in regard to it. The "sets of people" introduced by Taylor (1991) is similar to the influences of professional groups identified in this study.

Taylor's work (1991) is reflected in this study to the extent that the participants identified a complementary set of influences on information culture, namely:

- The evidence of the influences of various professional groups;
- Information culture as a subset of organisational culture;
- The influence and style of the leadership group;
- Whether or not an organisation had a long history;
- Whether or not an organisation could operate well in the online environment; and
- The structure of an organisation including the extent of the hierarchy and ways of working.

This study into information culture within the Western Australian Public Sector has indicated that the complex system of values, attitudes, beliefs and behaviours combine to present a model of information culture. Additionally, the power or influence of this complex system is demonstrated in the use of information. That is, a high performing information culture will enable an organisation to deliver high calibre outcomes based on information use.

During the interview process a number of participants made reference to information and knowledge as power or as being powerful. By merely possessing information, people in organisations were seen as or perceived themselves as powerful. This was offered as an example of an obstacle to a high performing information culture. It was one of the behaviours that needed to be tempered in order to influence a

change in culture. For example, Participant R3 said: “I also believe that the ‘information is power’ culture still persists in a number of organizations. People are afraid of change, afraid of visibility and comparability.” Participant A13 agreed with this when he said:

> I think there are other reasons for silos forming or people being careful with information. Information is powerful....Part of the reason people try to keep information secret is because they have got something to hide or they want to boost their own power.

Participant BP2 had seen the differences to be had from working in an open environment which shared information rather than a closed one in which “information hoarding is encouraged.” Remarking on the power of sharing Participant R4 said, “Earlier, knowledge was power ... today those who are able to share their knowledge and experience and together with other experts create new knowledge ... are the persons with real power.” Sharing information is a form of information use. Establishing a cultural dimension in which information can be shared and used, increases the opportunity to achieve outcomes.

As this study focussed on those agencies within the Western Australian Public Sector which delivered services directly to the public, information use was identified and exemplified within that boundary. That is, the examples of high level public sector activities, outputs and actions in the model in Figure 6-1 require an input of information or they use information to deliver outcomes. Depending on the agency in question and the outcomes required, further and more specific examples could be added to the model.

Those aspects of an organisation’s business or purpose that rely on information input in some form or other, such as policy development, service, delivery, performance management and outcomes, may originate with the organisation. The development and use of the final products and services are influenced or affected by the three layers of information related aspects shown in the model. That is, the external, organisational and information layers. These aspects may or may not be duplicated across the layers. These influences determine the veracity and usefulness of the information use. The outcomes delivered by agencies are, therefore, not dependent on the existence, accuracy or timeliness of the information. Rather, they are determined by the use of that information as influenced by the information culture. That culture will be shaped in part by the organisational culture and the wider environment.

7.4 Overview of the Model

To encapsulate the model which emerged from this study and its application the following overview is offered:

- Information culture is not a standalone entity. It is a complex, reflexive system;
- It exists in a context comprised of wider external influences and an organisational culture;
- The external environment and the organisational culture exhibit tangible and intangible characteristics that have the potential to influence information culture. This study identified such characteristics that were relevant to information culture in the Western Australian Public Sector;
- The information culture itself exhibits intangible and tangible characteristics that have the potential to influence the way in which information is used;
- In combination, these three levels (external environment, organisational culture and information culture) can influence whether or not an organisation has a high performance information culture;
- A key factor in this model is the focus on information use to achieve outcomes; and
- The elements and the influences of the model are reflexive.

7.5 Comparisons with Other Models

Table 7-1 represents an overview of eight key in-depth studies which have been undertaken in the area of information culture. Included in the table are references to other models used by or developed as part of these studies. Focussing on the main components, the following is a comparison between these models and that which emerged from this study. It should be noted that each of these studies was conducted in a specific environment, not necessarily similar to the environment of this study. This will have influenced the models.

Table 7-1 Overview of Selected Previous Major Studies into Information Culture

Researcher/s	Definition of Information Culture	Model/Representation (Yes/No)	Area of Study
Bergeron et al. (2007) **Choo et al. (2006)** **Choo et al. (2008)**	(i)The socially shared patterns of behaviours, norms and values that define the significance and use of information. (ii)Reflected in the organization's values, norms and practices with regard to the management and use of information.	No model is presented. However a conceptual framework is described. See Figure 7-2.	A series of studies across three Canadian organisations – a legal firm, a public health organisation and an engineering company.
Curry and Moore (2003)	A culture in which the value and utility of information in achieving operational and strategic success is recognized where information forms the basic organisational decision making and information technology is readily exploited as an enabler for effective information systems.	The Evolution of Information Culture. See Figure 7-3.	The Scottish National Health Service.
Davenport (1997)	Introduces the idea of an *Information Ecology* which is defined as an organisation's entire information environment. This includes an *Information Culture* which is defined as the patterns of behaviours and attitudes that express an organisation's orientation towards information.	An Ecological Model for Information Management. See Figure 7-4.	Information Ecology as a new way of looking at information and technology in private sector organisations.
Ginman (1988)	The culture in which the transformation of intellectual resources is maintained alongside the transformation of material resources.	No model of information culture as such. There are figures which compare the transformation of the material resource as well as the transformation of the intellectual resource.	Small and medium size metalworking companies in Finland.

Marchand et al. (2001a)	The values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information.	A model for Information Orientation. See Figure 7-5.	A three year study that linked business performance to the effective management and use of knowledge, information, people and technology. The study examined the perspectives of senior managers on the use of information, people, and IT in achieving business performance. It involved 103 international companies as well as selected case studies.
Oliver (2008)	Quotes definition from Curry and Moore (2003).	No model.	A comparison of information management in three universities in three different countries. Involves aspects of information culture at the national level.
Travica (2005a)	A definition of information culture is given within the bounds of the concept, the Information View of Organisations (IVO). Information in seen in terms of stable beliefs (assumptions, values, norms, attitudes) and behaviours (work practices, rituals, social dramas and communication) that refer to organisational information and IT. Infoculture is the part of the organisational culture that revolves around information and IT.	No model.	Private Sector organisations are investigated using organisational types. IVO suggests that the traditional views of organisations as having cultural, political and structural elements should also be applied to information and information technology.
Widen-Wulff (2000, 2001)	A context in which needed information is communicated so that the company has the largest possible us of the information inside (and also outside) the company. The company information culture consists of individuals, traditions, systems and values that belong to the company.	No model.	The Finnish Insurance Industry.

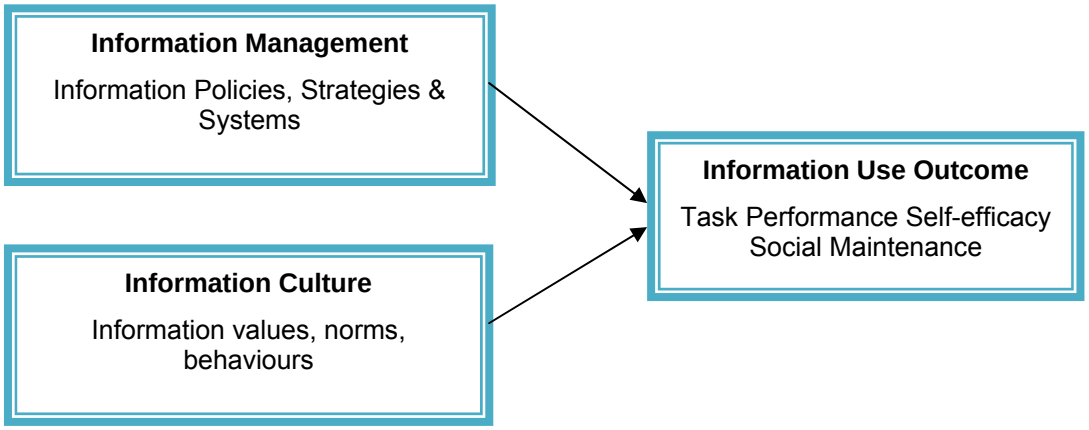


Figure 7-2 Conceptual Framework: Three Sets of Influences (Source: Choo et al., 2006, p. 496)

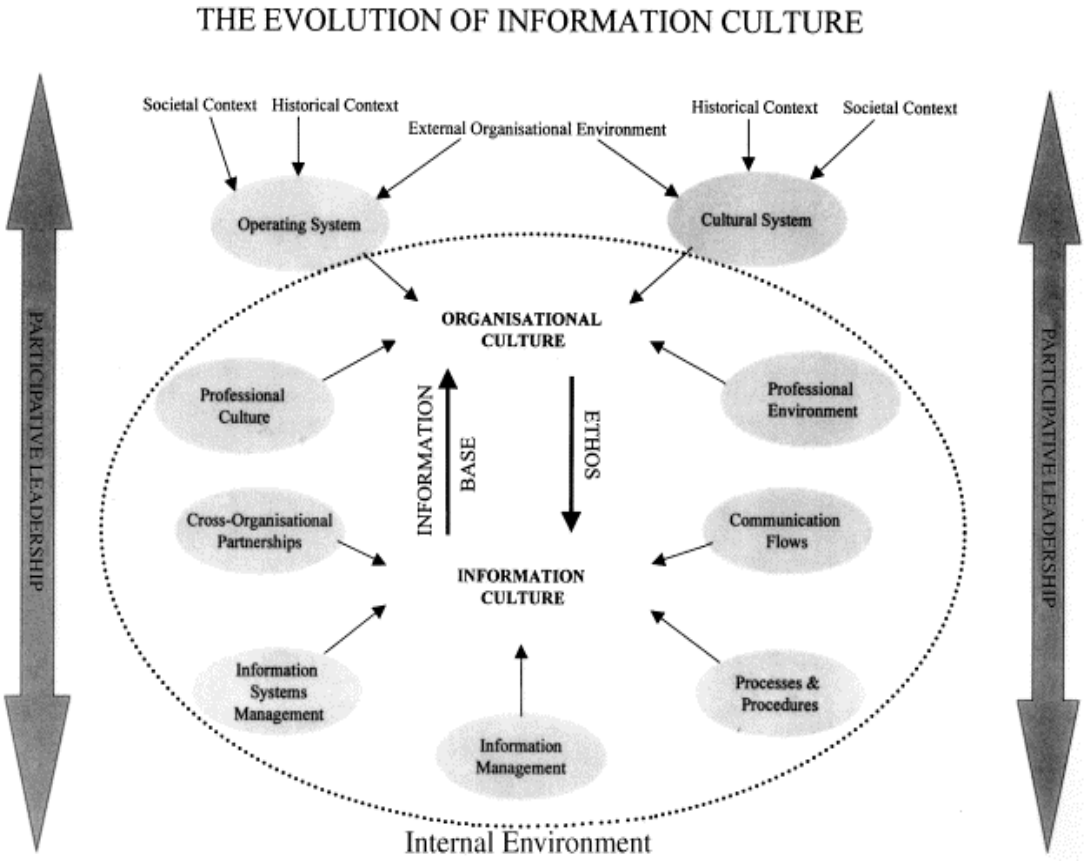


Figure 7-3 The Evolution of Information Culture (Source: Curry & Moore, 2003, p. 95)

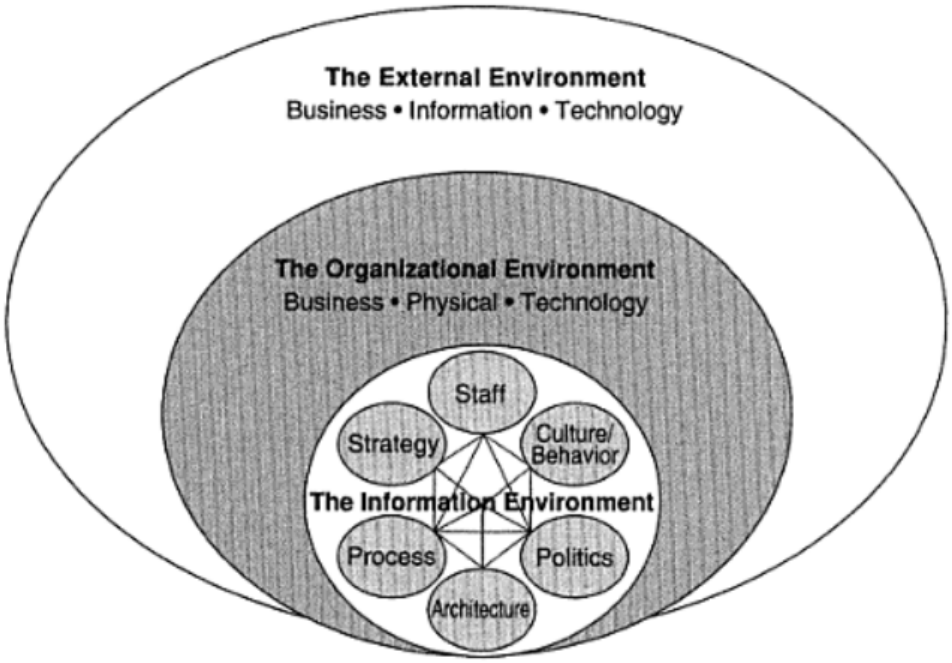


Figure 7-4 An Ecological Model for Information Management (Source: Davenport, 1997, p. 34)

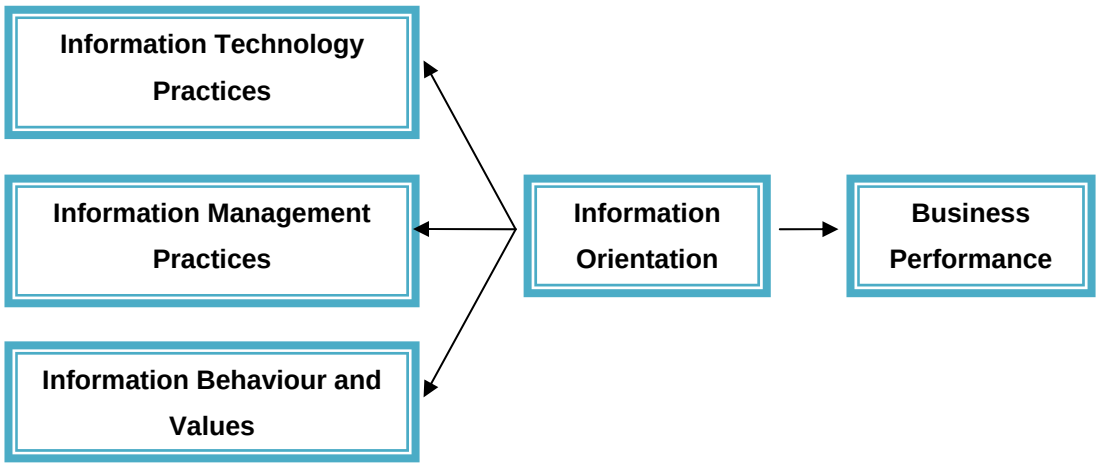


Figure 7-5 Information Orientation (Source: Marchand et al., 2001a)

7.5.1 Comparison 1: Bergeron et al. (2007) Choo et al. (2006, 2008)

Figure 7-2 presents the conceptual framework for the series of studies from the University of Toronto. It shows “the causal relationships that are implicit in the research literature of information management and information culture” (Choo et al., 2006, p. 496). The significant difference between this framework and the model which emerged from this study is the positioning of information management. In the emergent model, information management is a tangible element of information culture. It is a behaviour that exists in an information culture. The ways in which an organisation conducts its information management is influenced by its values, attitudes and beliefs in regard to information use. It is also subject to such organisational influences as leadership, the professions, strategic thinking and planning. External characteristics such as the education of information professionals and public servants and legislation are also influential.

In reporting on their study, Choo et al. (2006, p. 508) were able to establish that “information culture has a greater impact than information management on information use outcomes.” Also of interest in this article, was the apparent separation by the authors of the terms “information values” and “information culture” (Choo et al., 2006, p. 491, 509). In explaining the literature review and the results, the authors appear to have made a distinction between culture and values, and identified information culture as being “reflected” in values. However, they appeared to report them as separate entities in the conclusion (Choo et al., 2006, p. 509).

Another article in the series of studies also seems to separate information culture from values and beliefs (Bergeron et al., 2007, p. 12). A further distinction is made between information culture and information behaviour when they say, “We consider information behaviours as lying at the intersection of three sets of influences: information management, information culture and information use (Bergeron et al., 2007, p. 2).

7.5.2 Comparison 2: Curry and Moore (2003)

This model shown in Figure 7-3 was proposed as a conceptual model for assessing information culture in an organisation. The conceptual model proposed was viewed by the authors as “a tentative first step to integrate key elements of participants, processes and information. It measures organizational performance in terms of these elements with a view to improving organizational information culture” (Curry &

Moore, 2003, p. 94). The model and its components describe the way in which an organisation can develop an information culture.

Curry and Moore (2003, pp. 96-97) identified five elements of organisational culture with the potential to impact on information culture. These five elements which were based on the work of Bloor and Dawson (1994) are:

- Operating and cultural system;
- Historical context;
- Societal context;
- External organizational environment; and
- Professional culture and environment.

Further, Curry and Moore (2003, pp. 97-98) identified six components which were essential to a positive information culture, namely:

- Communication flows;
- Cross-organizational partnerships;
- Internal environment;
- Information systems management;
- Information management; and
- Processes and procedures.

Comparing the Curry and Moore model (2003) with the model which emerged from this study, it is evident that there are common aspects and themes. Both models take into account the multidimensional nature of information culture, together with the acknowledgement of the influence of the organisation and the wider environment. Professional subcultures are also evident in both models. The Curry and Moore model (2003) has separated out the six components which are considered in this model as parts of the behaviours evident in an information culture, and when not specifically related to information, may also be part of the organisational culture. Values and attitudes as such are not to the fore in the Curry and Moore (2003) model.

7.5.3 Comparison 3: Davenport (1997)

The Davenport model (see Figure 7-4) is a model of an information ecology, of which information culture is one component. It describes a wider phenomenon than that pursued in this study. It is multidimensional. It nominates, at a higher level,

some of the elements identified in the data analysis for this model such as technology, strategy, staff and behaviour.

7.5.4 Comparison 4: Marchand (2001a)

The focus of this approach (see Figure 7-5) is achieving an improved business performance which can be influenced by a sound information orientation. Information Technology Practices (ITP), Information Management Practices (IMP) and Information Behaviour and Values (IBV) are the core streams of an information orientation.

These three streams and their importance and impact were identified and verified in this study. In this study the two practice streams, ITP and IMP, were viewed as behaviours within an information culture, tangibles which can be evidence of the intangibles of values and attitudes. Marchand et al. (2001a) do not appear to make the same relationship between the practices (behaviours) and values as made in this study.

7.6 Defining Information Culture

Just as the model for information culture emerged from the data analysis and the literature, so did a definition of information culture. The definition reflects the nature of the model.

A working definition of information culture had been established at the outset of the study to guide the research and establish a boundary of understanding. The definition was, “the values, attitudes, and behaviours that influence the way people sense, collect, organise, process, communicate and use information” (Marchand, 1996, p. 14).

A number of factors led to the construction of a new definition of information culture. Firstly, given that this study has identified an information culture as having a multidimensional and complex nature, and that it emerges from the interplay of these dimensions, a non-linear, more systemic definition was needed. Also, as this study revealed the importance of information use and the outcomes supported by information use as part of information culture, it was appropriate to focus the definition on the use of information rather than the management of that information.

While information management, the use of information technology and systems and the way people apply them is important to an information culture, there are other elements of equal or greater importance to achieving outcomes, delivering services

and improving performance. These lead to or influence the way in which people manage information and apply the use of technology and systems. For example, thinking strategically about information use and its role in achieving outcomes will lead an organisation to developing an information strategy based on the overarching strategic plan and business needs. It then guides the organisation in its design and use of information management techniques and technology. That is, the activities applied to the management of information are guided by the application of strategic thinking which is guided by the outcomes required.

The definition which grew out of this study also recognised and built on other definitions from previous studies. There were commonalities in these definitions and there were complementarities with this research. A reiteration of these definitions presented in Chapter Two is provided to assist the reader in identifying the commonalities and complementarities.

The definition offered by Curry and Moore (2003) refers to the elements and attributes of a culture, to information use and to the use of technology. They state that information culture is:

> [A] culture in which the value and utility of information in achieving operational and strategic success is recognized where information forms the basic organisational decision making and information technology is readily exploited as an enabler for effective information systems. (p.94)

In a study of the gap between business and information technology, Martin et al. (2003, p. 270) included references to technology and systems in their definition of information culture. They state that information culture is, “a system of shared meaning, manifested in the formal and informal information systems that are enacted through people, processes and technology.”

Davenport (1997, p. 84) defines information culture as “the patterns of behaviours and attitudes that express an organisation’s orientation towards information.” Chepaitis (1997, p. 195) defines it as, “values, beliefs and behaviours related to information ownership and information management.”

The commonalities between previous definitions and the one developed from this study are associated with the attributes of information culture, namely values, attitudes, beliefs and behaviours. In contrast to previous definitions, information management and information technology and systems are subsets of the attributes and elements of information culture. They are not the key focus of the definition. This

definition highlights information use within the context of an organisation. The mere existence of information and the management applied to it, does not ensure either information use or organisational success (Van de Walle & Bovaird, 2008, p. 176).

Thus the definition of an Information culture which emerged from this study is:

> An information culture is an emerging complex system of values, attitudes, beliefs and behaviours that influence how information is used in an organisation. It exists in the context of, and is influenced by, an organisational culture and wider environments.

7.7 Confirming the Model and Definition of Information Culture

A final round of interviews was held with a representative collection of participants to test and question the model and definition of information culture which emerged from the study. The participants included two academics, a senior manager in the Western Australian Public Sector, who also held an academic post, and three information professionals.

The researcher spoke to and presented the diagrammatical representation of the model and the definition in order the give the participants a context to the findings and outcomes. All participants engaged in a lively discussion. They showed a keen interest in the model and definition and the other findings of the study. The discussion ranged beyond the initial intent of testing and verifying the model and the definition.

The participants agreed that the model was easy to understand. They thought it represented the commentary. As Participant A4 remarked, “You have a classic input/output model.” Participant A3 said it was a “deceptively simple model.” While these comments seem to belie the complex and systemic nature of information culture represented in the model, both participants were convinced of the nature of information culture identified in this study. Even though the participants understood that it was a high level model, there were still comments and questions on why some details were not represented. The researcher explained the meta level representation. She also explained that some of the points which the participants were now commenting on had not been evident in the research. For example, one of the participants was strongly convinced of the importance of cloud computing, and so questioned why it had not been mentioned. The researcher explained that from the perspective of this study, it was merely an example of the wider theme of technology.

During the discussion with the participants, issues arose which reinforced previous comments and findings, some of which were represented in the model and definition. Examples of those issues are:

- The value and importance of leadership;
- The difficulties with convincing senior managers of the value and importance of information; and
- The fragmentation of the information professions and the negative impacts of that fragmentation.

After examining the model and definition there was a general consensus that the definition reflected the model and vice versa. The discussions reinforced the systemic and reflexive nature of information culture. For example, Participant A3 observed that the obstacles in the model could also be opportunities. Also, he commented on the potential for further layers and overlaps that could exist, for example, the subcultures in different organisations. He questioned the possibility of expanding the role of education to include training and development.

Participants A3, A4 and P5 commented on the importance of information use and the links to outcomes. In the model presented to the participants the researcher had referred to information use outcomes. Participant A3 made comments on the role of information in government departments and the difficulty in identifying outcomes that did not have an information component or contribution. He suggested that the term was redundant. Using the term outcomes was sufficient. Participant A4 agreed with this suggestion.

Participant A4 stated that the most important aspect of the model was the way in which it highlighted the influence and role of contexts. Furthermore, he concluded that the model had explanatory value and, "that explanatory power and learning gives you the opportunity to now look into … how [you] can … intervene in different ways." However, he felt that the persuasive value was questionable as the concept of information culture was "too abstract."

On the other hand, Participant A3 spoke of the model and "instrumental uses and then persuasive uses through to vaguely influential uses." In support of the model and the study he said:

> You just set a context in which people start questioning conventional wisdom ... if you do that, you've had a very significant role even though it could be several years before an actual change in behaviour of a public sector

organisation occurs. So understanding, breaking out the nature of use is very important.

Participants A3 and A4 agreed that there was the potential for further useful research in this area.

7.8 Application of the Development Phase

The *application* of the *development* phase is investigated from the practical perspective of trying to achieve a positive change in the nature of information culture. It discusses the opportunities and options for applying the learning and understandings which emerged from the data and was represented in the findings.

In the first instance, the section presents the contextual issues associated with information culture and change management at the level of public sector and at a departmental level. It then discusses the key application issues and concludes by painting a picture of the systemic nature of the *application* and *development* phases of information culture.

7.9 The Public Sector, Information Culture and Change Management

The latter stages of the twentieth century saw the beginning of significant influences and demands that have changed the nature of the public sector and how it delivers services. The public sector operates in an environment of complexity, volatility and rapid ongoing change. This is compounded by pressure on diminishing or stagnant resources. Senior managers in the public sector have had to develop high level flexible ways of handling the environment and the changes that accompany it (Davis & Weller, 1996; EAC, 2009; McLaughlin, Osborne & Ferlie, 2002; Osborne & Brown, 2005).

These changes and pressures for change can be identified, categorised and addressed using a structured analytical tool such as PEST. This acronym stands for Political, Economic, Social and Technological factors (Osborne & Browne 2005, p. 13-19). Using PEST as a framework, the following are some of the factors which have brought the need for change to the public sector, and in particular, the Western Australian Public Sector:

- Political
  - The rising awareness of security needs and terrorism;
  - Globalisation and regionalisation;

    - Contracting out of public services and the introduction of market forces; and
    - Shifts in policy agendas including New Public Management.
- Economic
    - Impact of the global economic climate;
    - Charging for public services;
    - Private- public partnerships in service delivery; and
    - Economic sustainability.
- Social
    - Social sustainability;
    - Ageing population; and
    - Community expectations of government.
- Technological
    - Rapid advances in the e-government agenda;
    - Increased expectation of electronic service delivery; and
    - Knowledge management and using management information systems.

(EAC, 2009; Keast & Brown, 2006; OECD, 2003; Osborne & Brown, 2005; Shergold, 2004)

This changing environment requires responses from the public sector at a minimum of two levels, namely at the sector level and at an individual agency level. To assist with managing this environment and with managing responses to the change required, there are a variety of models and approaches available to the sector. Stewart & Kringas (2003, p. 676) note that there is a "bewildering variety" of literature and advice on models and approaches to managing change. The majority of these are written for application to the private sector.

The applicability and relevance of this private sector change management advice to the public sector has been analysed and debated by researchers and writers (Brown, Waterhouse & Flynn, 2003; Straw, 2004; Yeatman, 1994, 1998). According to Osborne and Brown (2005, pp. 74-88), even though the structure, function and culture of the public sector are different from that of the private sector, it is possible and appropriate to learn from the key principles of change management.

The volatile environment at the level of the sector and the individual agency, and the change management responses to that, are of relevance to the application of the *development* phase of information culture. The *application* phase of the

development phase is, in essence, a change management activity. It is a change program that needs to consider any and all other changes taking place in an individual department. To further ensure agency relevance, it would benefit from being undertaken using an analytical tool such as PEST. That is, what is the specific changing nature of the department and any relationships this might have with developing a positive information culture (Osborne & Brown, 2005, pp. 12–19).

7.9.1 The Development Phase within Departments

This research focussed on those government departments in the Western Australian Public Sector which delivered services directly to the citizens. Examples of such services are education services, environmental services and community services. While the basic structure and function of departments in the sector are similar, as are approaches to public sector management, departments may differ in their culture, management style and demands of the citizens.

These differences influence a department's way of working and how it undertakes the introduction of change. According to Stewart and Kringas (2003, p. 767) the more appropriate approaches to change are those that complement a department's objectives and its situation. In the context of this research, the way in which a department chooses to apply the development of an information culture may depend, in part, on the existing culture and the various ways it needs to use information.

Reporting on change management research in six public sector departments in Australia, Stewart and Kringas (2003, pp. 675-688) identified four key elements of successful change. These were:

- An appropriate change model;
- Effective leadership;
- Sufficient resources; and
- Attention to communication.

According to Stewart and Kringas (2003, p. 686), "the underlying structural and functional similarities of all public sector organizations ensure that change patterns resemble each other more than they differ." Nonetheless, "appropriateness to the agency's specific circumstances" needs to be taken into consideration.

Although the departments which were the focus of this research had a common element of service delivery, there are material differences. These may be in the form of the mission, vision and outcomes, customer groups and expectations,

organisational culture, management style, size and structure. Critical are the ways in which they currently use information and the "desired future state" (Osborne & Brown 2005, p. 26). Case studies and literature on change management in the public sector highlight the role and importance of understanding and considering the specific agency environment (Lutrin & Shani, 1998).

Although there may be commonalities of structure and function across the target group of this research, the material differences mean that it is inappropriate for this study to recommend a single or 'one size fits all' approach to introducing the *development* phase of a positive information culture. The prevailing public sector environment and specific agency circumstances need to be carefully considered when developing an information culture change program.

7.10 Discussing the Application of the Development Phase of a Positive Information Culture

7.10.1 Key Issues Associated with Applying the Development Phase

This study revealed five key elements of information culture and considered how they might be influenced or improved. The five elements were:

- Strategic thinking and planning;
- Leadership;
- Valuing and understanding information;
- Organising to find information; and
- Using information (synthesising).

Within these key elements ten individual but interrelated and reflexive aspects or issues were identified. This section will address five of these issues which emerged as significant to the development of a positive or high performance information culture. These issues are:

- Leadership;
- The power and politics of information;
- Education and training of information professionals and public sector practitioners;
- Information literacy;
- Information use;
- Strategic thinking and planning; and
- Role of information professionals.

The need for an appropriate change management program to complement any proposals to address a department's information culture is acknowledged. Due to the diversity and specificity of such programs, change management per se, is not addressed here. The focus is on the *application* of aspects of information culture.

In discussing these issues highlighted in the research, some recommendations have been made as appropriate. Depending on the issue, recommendations cover by whom these issues could be best progressed, what might be considered as next steps and the potential for future research. The issues are not presented as individual discussions. Rather, a systemic picture of the interrelationships and impacts is painted. This is in keeping with the complex and systemic nature of information culture. The issues are highlighted in bold type.

7.10.2 A Systemic Picture of the Key Issues

The theme of the importance and value of **leadership** is a recurring one in the historical and contemporary literature on organisational change and development (Doherty & Horne, 2002; Goffee & Jones, 2007; Mant, 1999, Moodian, 2009). The studies into information culture have also emphasised the role of leadership in bringing about change (Curry & Moore, 2003; Ginman, 1988; Marchand et al., 2001a, 2001b). Furthermore, a recurring theme of this study was the importance and value of leadership in developing a positive information culture in the Western Australian Public Sector. Participants also nominated leadership as an obstacle to such development. As previously mentioned, Participant R3 said:

> My belief is that senior management need to be 'encourageable' in the first place. True leadership should be about visible managing by example and being prepared to take risks rather than about ego protection and self worth. Over the years I have found senior management to be the greatest stumbling block to progress of any kind.

In her research Kirk (1999) found that senior managers are the people in an organisation best positioned to integrate information into the business strategy. They are the ones who can provide financial and other support, encourage a learning organisation, and ensure that information is embedded in innovations, services and products.

When writing of leadership in the information age Mackenzie (2007, Internal Forces, para. 1) put forward the view that there were many "competing forces" present when leaders were facing the introduction of change in their organisations. Not the least of

these was the leaders' own self interests, their resistance to change, and the desire to protect their place in the organisation.

The importance and value of leadership is not questioned in the literature be it on organisational or information culture. It was not disputed by the data from this study either. Yet as can be seen from the literature and from the data, an organisation may face a dilemma in getting support for developing and applying a positive information culture. The very group which could have the most positive influence may be the group which resists the change.

Leadership is not a standalone facet of a positive information culture. Leadership influences and conducts **strategic thinking and planning**. It impacts on how an organisation values, organises and uses information. Leadership may be influenced by exposure to **education and training** or by new approaches to strategic thinking and planning. On the other hand, the leadership of an organisation may respond to business cases, strategic frameworks and case studies which clearly and unambiguously identify the value of a positive information culture, of integrating business and information strategies.

Influencing senior managers is a major challenge and it is not a dilemma that will be resolved quickly or easily. Convincing leaders of the role and value of information may require action at different levels of government using different and coordinated approaches.

The **power of information** and **information politics** (Davenport el al., 1992; Pfeffer, 1994), and the interplay this has with the **leadership** of an organisation should not be underestimated. The power of information is not confined to the realms of the organisation. The greatest power resides in the ways in which individuals, including leaders, use or do not use information, and wield it as a political tool. Mackenzie (2007) warned that:

> There appears to be an assumption that leadership is rational, always focusing on what is in the best interest of the larger organization and its stakeholders and is selfless and perhaps willing to sacrifice itself for the company. But leadership is no more than the collective behaviors of individual people. (The Leader as Unconscious Resister and Guardian of the Status Quo, para.1)

Convincing the leadership of an organisation of the value of positive information culture may need to involve a mature understanding of the politics of information

and the need to recognise the individual and organisational aspects of those politics. They may be antithetic.

Another dilemma concerns who it is in an organisation that might be best placed to influence senior management in considering the need for a positive information culture. From the writings of those such as Choo (1995), Davenport and Prusak (1993), Ferguson (2004), Todd and Southon (2001) and Winterman et al. (2003), and from the comments of participants, it became evident that librarians and other **information professionals** are not in a position of influence in public sector organisations. This may be due to their **corporate status** and or the manner and focus of their role. They may also be distracted by poor inter professional relationships.

Influencing the leadership of a public sector organisation to appreciate the importance and value of a positive information culture is an area worthy of further investigation.

It may be possible to influence the leadership of the public sector through **education and training.** The influencing role of education may not be limited to leaders. As the data in this study revealed, academics are aware of the limitations of the education offered to the **information professionals**. This is particularly pertinent in the area of strategic thinking, business integration and preparing the students for the working environment. Furthermore, the comments of the participants also raised issues in regard to **educating public sector employees about information.** It was suggested that the public sector workplace in the information economy would benefit from highly skilled information and knowledge workers.

Addressing the education of leaders, information professionals and practitioners also impacts on the issue of **information literacy**. If specifically addressed, it could be used to break down the barriers between the information professionals and ease attitudes and behaviours of other discipline groups or subcultures.

It is legitimate and important for information professionals to receive an intense and specific technical expertise from their education. In the case of librarians and records managers this would include a focus on information management. The role and importance of information management notwithstanding, this study demonstrated a narrow focus on information management which was detrimental to the development of a positive information culture. The operational and processing message conveyed by the practice of information management, may also be a

factor inhibiting the leadership of an agency in understanding the strategic imperative of information use.

The data analysis and the researcher's observations indicated that information professionals focussed on the element of organising to find information identified in this study (see Chapter Six). This may be a reflection of the traditional roles and skills of information practitioners. It may also be related to an education that is about organising information and not about becoming part of the business of the organisation; influencing an appreciation of the value of information and information use. As comments from the academics who participated in this study have shown, they agree that they do not have the time to expand on the more strategic aspects of information use in an organisation. Abell and Winger (2005) acknowledge this situation and reinforce the need for information professionals to expand their horizons:

> We believe that if information professionals develop the transferable and business skills to match their professional skills, and devote as much enthusiasm to their organizations as they do to their profession– they are well poised to take ... opportunities....The professional and technical skills that their academic studies equip them with are vital and increasingly valued, and the departments that teach these do an excellent job. But these skills need to be applied with much more understanding about the context, about the way they contribute to the business of the organization. (pp. 180-181)

The need for information professionals to be alert to the changing environment is not a new situation. Ten years prior to the work of Abell and Winger (2005), Layzell Ward (1995, pp. 7) wrote of the changing workplace and what this would require of information professionals. She called for a skills base that "was enhanced with the addition of negotiation skills and financial, economic, political and legal knowledge." As these were "common to the preparation of all professionals" she advocated for the education of information professionals to continue to include theoretical and historical aspects of the professional knowledge of information management, information science and librarianship.

Information management professionals, in particular librarians, may argue that they do have proactive approaches to their roles and are working to convince departmental leaders of their relevance. However, in the context of the Western Australian Public Sector it would appear that there are issues of relevance and value associated with library services. The number of libraries in government

departments is diminishing and the remaining libraries have reduced resources and budgets. In discussions following formal presentations on these research findings, members of the audiences consistently raised questions about the demise of government libraries, and why it was that the importance of libraries had not been recognised. It is of interest to note that the audiences were, in the main, public service practitioners, and that no conclusions on this issue were reached. Although the role and importance of libraries in government was not directly associated with this research, it was identified as a point of interest and worthy of further investigation. Any investigation would be best served by a collaborative approach between academics, librarians and a range of public sector practitioners. The focus would be best placed at the sector level rather than the individual agency level.

The environment provided by the information economy stimulated, directly and indirectly, comments from the participants on **information use**, the rise of the information worker, the creation of information positions such as CIO, CTO and CKO, **information literacy** and the barriers presented by **language**. The literature also reports on and records these issues (Abell, 2000; Bruce, 1997; Drucker, 2001; Earl & Scott, 2000). At a whole-of-government level and an individual agency level, there would be opportunities to develop definitions for and the identification of roles at an organisational, group and individual level, that reflect behaviours and responsibilities in relation to information and information use. That is, job descriptions and competency profiles that include references to working with and using information, and which assist people to conceptualise the role of information.

This needs to be supported by programs that train, educate and coach people in taking on these roles and responsibilities. It needs to apply at all levels across agencies. Simply stating what needs to be done is not enough. Guidance and support on how to identify the roles and responsibilities needed, and how best to undertake them, is critical. In Western Australia, a precedent has been set by the Department of the Premier and Cabinet and various iterations of the Public Sector Commission. As commented on by Participant A3, they developed a program to improve human resource management across the Sector, and to ensure that managers in general take some responsibility for managing people well. Perhaps this precedent could be applied to information and information use.

When comparing **strategic planning** in the public sector to that in the private sector, Hughes (2003, p. 136) suggests that there are “more problems and constraints.” However he qualifies this with the viewpoint that the public sector could

still benefit from taking more strategic approaches. These sentiments are supported by Stewart (2004) and Wilkinson and Monkhouse (1994). Gregory (2007) argues in favour of government using a systems thinking approach to strategic planning in order to get the best results for the complexities of its environment and service delivery requirements.

Stewart (2004) suggests strategic planning and management can be of value to the public sector if it is used to "reflect the realities of developments in public management, while acknowledging the distinctive role and potential of public agencies." Furthermore, she suggests that this can be better achieved by considering strategy at three levels, namely:

- Policy Strategy - the Government's agenda;
- Organisational Strategy – similar to the private sector strategy development; what an agency needs to do to meet the needs and expectations of their stakeholder needs and expectations; to be competitive; and
- Managerial Strategy – this includes operational decision-making, the deploying resources to achieving agreed objectives, reporting on achievement and the technical activities of preparing budgets. (p. 19)

In support of Stewart's (2004) approach, the former Australian Public Service Commissioner, Lynelle Briggs (2005) said:

> What appeals to me about this concept of strategy is that it not only acknowledges the layers and complexity we are managing in the public-sector, but also recognises that our capacity for policy strategy is to a significant extent dependent on the professionalism with which we approach our organisational and managerial strategy. (para. 4)

These comments and views underscore the complexity of changes required and the approaches that might be needed. It also indicates the connection between valuing information, the best use of technology, education requirements and the use of information.

Even though **strategic thinking and planning** are desirable states in the public sector, researchers, academics and practitioners recognise that there are challenges in achieving that state. That is not to say that attempts at good and worthwhile strategic planning are not being done in the Western Australian Public Sector. In 2003 the then Government produced a strategic plan, *Better planning: Better futures. A strategic planning framework for the Western Australian Public*

Sector (DPC, 2003). It had five strategic goals for Government that contributed to the vision of improving the quality of life of Western Australians. Subsequently, the Department of the Premier and Cabinet (2007) produced *Guidelines for Agency Strategic Management*. Individual government agencies develop and implement strategic and corporate plans.

In an already complex and volatile environment, with agencies developing skills and approaches to strategic planning, it is not surprising that few if any attempts have been made at crafting information or **information use** strategies. Through personal experience and observation, the researcher has noted that some agencies have developed strategies for human resources, risk management and information technology. With information use being integral to the three types of strategies articulated by Stewart (2004), it would provide added benefit to agency outcomes to take a **strategic thinking and planning approach** to information as an asset and to the ways in which it could best **use information**. This is as distinct from the procurement and use of information technology.

The literature encourages and supports the development of a range of specific strategies or strategic plans which provide a hierarchy of strategies supporting and complementing the overall strategic plan (Argenti, 1989; Kaplan & Norton, 2001, Mintzberg & Waters, 1985). Figure 7-6 illustrates the commonly understood hierarchy as adapted from the above literature.

Figure 7-7 is the researcher's interpretation of the hierarchy showing the relationship between an information use strategy, the strategic plan and the other strategies. The placement of the information use strategy between the overall strategic plan and the specific strategies enables the creation of relationships and synergies across an organisation, which assists with achieving outcomes and delivering services. With the growing complexity and volume of information, an information use strategy can address the increasing number of intricate sources and forms of information and the issues surrounding the generation and use of information. This would be done in the context of the strategic directions and outcomes. It would recognise information as an asset and highlight its role, assign responsibilities for it, and identify improvements required. Such a strategy can be useful in not only building trust in information, but also in considering information politics and alerting to education and training needs.

An information use strategy can assist with guiding developments identified in the strategic plan and can be used to identify priorities to be addressed by specific

strategies. As an example, the information use strategy, in interpreting the business needs and information requirements of the strategic plan, can provide a platform from which the information technology strategy can address the technological needs of the organisation. Thus the organisation is guided to develop its technology and systems to meet business needs. Technology can become the enabler rather than the driver.

Also, in creating a relationship with the strategic plan, the information use strategy documents the information that is available, and that which needs to be made available to assist the specific strategies. As an example it would document the availability or other of information to assist the human resources strategy to respond to the strategic direction.

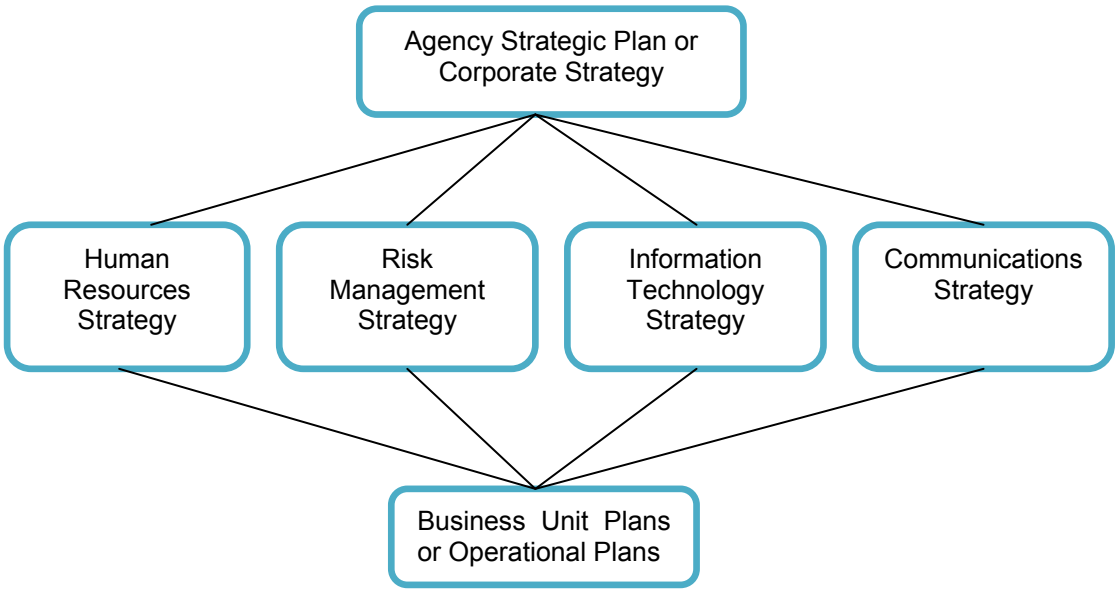


Figure 7-6 The Commonly Understood Strategic Planning Hierarchy (Adapted from: Argenti, 1989; Kaplan & Norton, 2001; Mintzberg & Waters, 1985)

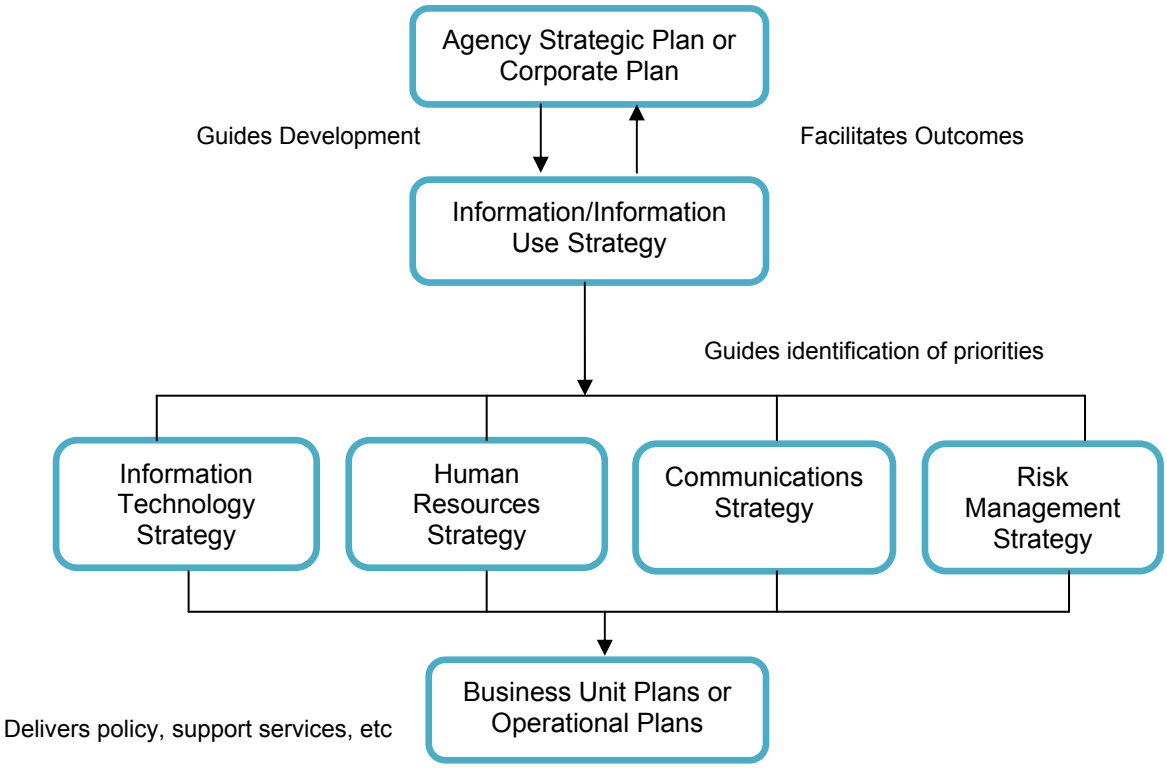


Figure 7-7 The Researcher's Interpretation of the Strategic Planning Hierarchy Showing the Role and Importance of an Information/Information Use Strategy

In 1992 the Western Australian Information Policy Committee (WAIPC) released the publication *Managing the Information Resource*. It took a strategic approach to managing and using information as resource across the public sector. The aim of the approach developed in the document was to "Improve the capacity for more effective delivery of all government services and for social and economic development by better management and use of formal information by government" (WAIPC, 1995, p. 2). The principles presented in this conceptual paper, particularly the strategic approach it encouraged, are still relevant today. The data analysed for this study supports and corroborates the principles.

The WAIPC paper, and the approaches which emerged from this study, are evidence of the practical benefits and possibilities for a more strategic approach to information and information use in the Western Australian Public Sector. The value and importance of information strategies, and advice on how to develop and implement them are readily available (Earl, 1999; Milner, 2000; Orna, 2004; Treloar, 2006).

7.11 Chapter Seven Summary

The findings and discussions related to the *application* of the *identification* and *development* phases of information culture were described in this chapter. They were presented in two main sections reflecting the theoretical and practical aspects of the *identification* and *development* phases of this study as illustrated in Figure 6-1. That is, the first section of the chapter addressed the *identification* phase and the theoretical findings. The second section investigated the practical aspects and the *development* phase.

This *application* of the *identification* phase was demonstrated through the development of a model of information culture and a definition of information culture.

The model was found to be a multidimensional and complex system. Each of the components in this model was discussed together with comments on the relationships between components. A section of this chapter was devoted to comparing this model with previous models which were used by or developed from previous significant and appropriate studies into information culture. The model recognised aspects of previous models and understandings of information culture. It built on these models using the information and concepts which emerged from the data.

The section concluded with a definition of information culture which emerged from the data analysis and reflected the model. The definition was built on the concepts utilised in existing definitions. It reflected the complex and systemic nature of information culture as expressed in the data and demonstrated in the model. Whereas earlier definitions included strong references to information management, the definition in this study is more reflective of the importance of information use to an organisation's outcomes and service delivery. The definition presented herein made use of the constructs of values, attitudes, beliefs and behaviours. As raised in Chapter Five, these constructs can be subjective and fluid. Further investigation of these constructs would strengthen the understanding and defining of information culture.

In combination with the discussion and findings presented in Chapter Five, the emergence of this model and the development of a definition of information culture to complement the model, represent the key contributions to the *identification* phase and the *application* of that phase as expressed in the research goal, questions and outcomes.

The second key section of the chapter was based on a selection of key issues associated with improving or influencing the *development* of a positive information culture which had emerged from the research. It was based on the five meta level elements of:

- Strategic thinking and planning;
- Leadership;
- Valuing and understanding information; and
- Using information (synthesising).

The *application* or implementation of programs and activities to achieve or improve a positive information culture were discussed in the context of the volatile and ever-changing environment of the public sector. The need for change management protocols was also raised.

The systemic nature of information culture was once again thrown into relief by the data and the literature. The complexity of applying the *development* phase was considered. Suggestions for how this development might be achieved in the Western Australian Public Sector were presented. Recommendations for further research were made.

Table 7-2 presents the findings which emerged from the combination of the current literature and the data analysis. These deliverables address the research sequence from research problem to research outcomes.

Table 7-2 The Findings Which Emerged from Chapter Seven and Which Address the Research Sequence

The Findings (Deliverables) Which Emerged
• The emergent reflexive and systemic nature of information culture.
• A model of information culture (for specific application to the public sector).
• A definition of information culture that reflects the complex and systemic nature of information management.
• The researcher's interpretation of the strategic planning hierarchy.
• The role of change management in enhancing information culture.
• Recommendations which emerged from the literature, the data analysis and the researcher's experience on ways to develop and enhance information culture.
• The systemic nature of the key issues influencing the development of information culture.

The following chapter concludes the thesis with reflections on the research journey and its lessons, outcomes and outputs.

8 Reflections on the Study of Information Culture

8.1 Introduction

This thesis began with a vignette which painted a picture of information use in a government department. It described values, attitudes, beliefs and behaviours towards information that combined to create a positive information culture. This culture was key to assisting that department to deliver its services and achieve its strategic outcomes. The vignette captured and recorded the spirit and intent of this study.

It could be argued that this introductory story was visionary, or even idealistic, and perhaps far removed from reality now and in the future. However, it was based on the considerations and conclusions of previous studies into information culture and related concepts (Bergeron et al., 2007; Choo et al., 2006, 2008; Curry & Moore, 2003; Davenport, 1997; Ginman, 1988; Marchand et al., 2001a, 2001b; Widen-Wulff, 2000, 2001). It was also based on assumptions which the researcher determined as emerging from the literature and the data gathered. Moreover, the story is a reflection of the researcher's passion for and commitment to promoting the value of a positive information culture to the public sector.

Now, at the conclusion of this study, that story may still be idealistic. It was most certainly a simplistic representation of the systemic and complex concept of information culture which emerged from the research. Nevertheless, it was a valid representation of a desired outcome. This study provided a clearer understanding of information culture, and has identified what could be done in the future to reach that desired outcome.

Throughout the research journey, the researcher remained passionate about the spirit and intent of the study. Hindsight and pragmatism have informed her views and tempered her appreciation of what can be achieved. However, they have not dampened her enthusiasm for promoting the value of a positive information culture. This final chapter is a summation of that research journey and the different types of learning experienced on that journey.

Learning experiences can be analysed and developed through the use of structures or frameworks. For example, Klein and Myers (1999) emphasised the importance of being able to evaluate and learn from research, particularly interpretive research. They developed seven key principles against which to evaluate the research and its

findings. Likewise, Checkland (1991) developed a dynamic three level structure to test and specify learning.

The research learnings from this study are multidimensional, and are as systemic and interconnected as information culture itself. While acknowledging this complexity and interrelatedness, the learnings are presented in a linear fashion as an aid to the reader. Adhering to the advice of Klein and Myers (1999) and Checkland (1991), this linear presentation follows a framework that, not only orders the learning, but also provides a means of addressing the theoretical and practical implications of the study, the limitations of the study, the verification process and opportunities for further research. The framework used in this chapter has three aspects, namely:

- Reflecting on the research experience;
- Reflecting on the research goal and outcomes; and
- Reflecting on the research findings and future research.

This framework is preceded immediately by an overview of the thesis.

8.2 Overview of Chapters

This section of Chapter Eight provides an overview of the seven previous chapters which reflect the reason for the study, the research process and the findings.

Chapter One set the scene for the study by introducing the reasons for the study together with an overview of the study's key contextual elements. A literature analysis was conducted and discussed in Chapter Two. This covered not only information culture as a concept, but also related issues including a definition of information culture and a discussion on information and information use in the Western Australian Public Sector. Chapter Three presented a comprehensive discussion of the research process together with the rationale behind the choice of the method and data gathering techniques. It concluded with a presentation of the boundaries and limitations, the verification process and the researcher's biases. The research design, with descriptions of the data collection and data analysis processes, and a detailed example of the analytical process were found in Chapter Four. The ethical considerations of and the timeline for the study and were also presented.

The discussion and the findings from the data analysis were reported in Chapters Five, Six and Seven. The analysis was presented against the sequence of the research problem, the research goal, the research questions and the research

outcomes. As the sequence pivots around the issues of *identification, development and application of* a positive information culture, the findings were related to and reported against these issues and subsets thereof. In Chapter Five the discussion focused on the *identification* phase. It included the attributes and elements of an information culture. Chapter Six addressed the issues associated with the *development* of a positive information culture. It was built on the attributes and elements identified in the previous chapter The Chapter Seven presented the aspects of *application* phase associated with the identification *and development* phases. It described the theoretical and practical aspects of the findings. A model of information culture and a definition of information culture were presented together with a systemic consideration of the key issues linked to the *development* phase.

8.3 Reflecting on the Research Experience

This section of the chapter addresses the first aspect of the learning framework. In particular, it addresses the lessons learned by the researcher. That is, the immediate lessons and those experienced at an operational level.

8.3.1 The Language Used in Information Culture

From the initial analysis of the literature about information culture through to the final data analysis, the use of words and language and the lack of definitions posed recurring challenges for the researcher. The dilemmas occurred at an operational level for this study. They also have wider implications for future studies into information culture.

Information culture was defined in previous studies but a common or consistent definition has not been identified (Curry & Moore, 2003; Ginman, 1988; Marchand, 1996; Martin et al., 2003). This could have presented problems in defining the boundary of the study, in grasping the extent and understanding of information culture. The different definitions introduced a variety of concepts that were oft times unique to that definition. For example, Marchand (1996) based his definition on information management activities and Martin et al. (2003) had a definition developed in the context of information systems. Each may have been valid for the context of their studies but proved too narrow for this research. Furthermore, the definitions did not reflect the outcomes of this study.

To assist in overcoming any limitations that might arise and did arise during the study, the researcher identified an existing definition to use during the study as a starting point or benchmark. The issues and ideas which emerged from the data

and the literature were tested against the definition and the definition was tested against the issues and ideas. Being guided by, and not confined by, an existing definition allowed the richness of the data to emerge and be analysed.

Given the complexity of information culture, it may not be possible or practical for researchers and practitioners to agree on one all-encompassing definition. A representative definition may emerge from further investigation of information culture and comparing the findings with the existing research. In addition, it may be helpful to augment a definition with explanatory notes, thus emphasising the multidimensional nature of information culture. Doing this would mirror the approaches and views proffered of organisational culture (Hofstede et al., 1990; Schein, 2004; Westrum, 2004).

Apart from the dilemma of defining information culture, a significant semantic issue was identified in relation to the meaning of the words closely associated with information culture. Terms such as values, attitudes, beliefs and behaviours are widely used in studies of and about information culture. However, there is little evidence of attempts to understand and define the terms. Definitions of the words have been provided in certain studies (Choo et al., 2008). In others they have been used to describe or bound information culture. (Curry & Moore, 2003; Davenport, 1997; Marchand, 1996; Travica, 2005a). Further similar issues of this nature emerged from the researcher's use of terms such as attributes, elements, obstacles and disincentives.

As demonstrated through the data gathering and analysis, it was possible for one word to take on more than one meaning. For example, the word value, in the context of this study, had two meanings, namely:

- Utility of information, as in the usefulness, power or productiveness; and
- Virtues, truth or worthiness associated with information and information use.

Both meanings are valid and were used in this study by the researcher and the participants. Similar issues were associated with the use of the words attitudes and beliefs and obstacles and disincentives.

In an area of limited research, and in the absence of discussions on semantic issues at the general level of research into this topic, and at the specific level of this study, misunderstandings and contamination were possible. The researcher had thought to minimise this possibility by using terms in common use in the literature. Definitions were used based on the literature and to guide the analysis. For example, the

researcher used the terms values, attitudes, beliefs and behaviours because they recurred in studies of information and organisational culture. Nonetheless, dilemmas of understanding occurred. As Hofstede (1998, pp. 477-488) stated, values, attitudes and beliefs are “constructs.” That is, something that only exists by definition. It cannot be directly observed. So there was the potential for different understandings.

Clearer interpretations might have been achieved if discussions had been had with the participants on the understanding and meaning of certain words prior to using the semi-structured interview process. The presentation of a glossary of terms prior to interview could also have been beneficial. Additionally or alternatively, the researcher could have used a stronger probing technique when conducting the semi-structured interviews to better understand the ways in which the participants used the words and ascribed meaning.

From some of the existing studies, it was possible to clearly identify the methodologies used in the research (Bergeron, 2007; Choo et al., 2006, 2008; Ginman, 1988). It is interesting to note the use of questionnaires, some of which were administered electronically. Given the experience of this researcher with determining a common understanding of constructs when engaging face-to-face with participants, it raises questions about a researcher being able to deal adequately with the uncertainties of constructs in a self-administered questionnaire or one administered remotely.

The dilemmas associated with using and discriminating multiple meanings is not peculiar to this study or to the study of information culture. The analysis and interpretation of works of art include the concepts of ‘about-ness’ and ‘of-ness.’ That is, a painting can be of something, as in a painting of the Australian outback. The same painting can be about isolation and desolation (Hjorland, 2001). Computer programming experiences a similar dilemma of multiple meanings. Object oriented analysis and design addresses programming problems by modelling it as an interaction of objects. Each of these objects is defined by its class, the data elements and relationships or behaviours. These provide different but legitimate understandings of the object (Booch, 2007; Coad & Yourdon, 1991). Just as other domains have confronted similar semantic issues for purposes of clarity, so can the information science domain, including the information culture research community.

The circumstances of language raised here may be related to the paucity of research of information culture. More research would lead to more discussion and debate, leading in turn, to more clarity and understanding. In the opinion of this

researcher, further study of information culture and its aspects, would benefit from discussions and consensus on the semantic issues associated with words and constructs used. The results of such discussions could provide future research with clearer boundaries and a firmer foundation for evaluation. It could be a step towards reinvigorating research in the area.

The researcher notes that no single discipline or domain appears to have claimed information culture. The literature shows that it has been investigated from an information science domain (Choo et al., 2006, 2008; Ginman, 1988), an information technology perspective (Travica, 2005a, 2005b) and from the management domain (Curry & Moore, 2003; Marchand et al., 2001a)

8.3.2 Data Gathering

Another issue related to the one of language, is the way in which the questionnaires were constructed and applied. A semi-structured interview process had been used with the intention that it would allow the participants to engage in a less confined discussion. That is, they would not feel constrained by the need to conform to a predefined solution. In part, this technique was used successfully, with participants interacting well and ranging across the substance of the questions as well as making wider offerings. The constraints to this data gathering may have come in the form of the words used in the questions. The researcher chose to use themes and terms which recurred in the literature on information culture and information use. For example, questions were asked about the attributes and elements of an information culture based on the assumptions gained from the literature that there were attributes such as values, attitudes, beliefs and behaviours, and that a culture could be deconstructed. That is, that there were elements or components. Moreover, the interview questions implied that the participants would be able to relate to the concept of an information culture. Reviewing the approach, the researcher has determined that it would be advisable to take a different approach to the interview process. The researcher would still use the semi-structured approach. Furthermore, the researcher would be more considered in the terms used, being mindful of the issues around the possible different meanings attributed to words. It would also be important to avoid even insinuating any preconceived concepts.

Following the first round of interviews with academics, and more particularly, with the practitioners, the researcher observed a very narrow focus on the practice of specific branches of information management, records management for example, and a very limited acknowledgement of the strategic contexts in which they

operated. Academics stated that they had little time in which to prepare students for addressing the environments in which they would need to practice. Even with supplementary questioning the practitioners did not easily grasp the idea of information culture, and were reluctant or unable to distance themselves from their specific disciplines. Because of her already articulated biases towards the strategic value of information, the researcher decided to test those biases and the concept of the value of a high performing information culture by introducing a series of best practice interviews. These were interviews with organisations which had a reputation for or evidence of beneficial use of information.

As the interviews progressed and new groups were introduced, new concepts and ideas emerged which were more fully explored through supplementary and probing questions in subsequent interviews. They were not explored to the same extent in preceding interviews. For example, evidence-based policy was an issue explored in the literature review as it was growing in popularity across the public sector. Also, it was closely linked with information and information use. However, it was only mentioned in one of the interviews with the academics and practitioners. When evidence for decision-making was then explored in the best practice interviews, only two participants demonstrated any understanding of the links between information and evidence-based decisions or policies. So it remains to be explored whether or not members of these groups saw a link between evidence-based policy and the value of an information culture, or if indeed they knew about the concept.

From her experiences with the interview process, the researcher has questioned the participant groups that were targeted. The researcher can see that there were unarticulated assumptions about the role of information professionals in government departments. These assumptions were linked to the expressions in the literature about information management being key to information culture. Therefore, it was assumed, the information practitioners would be well-placed to comment on how best to improve information culture. In fact, more interviews should have been conducted with the end users of information at various levels in government departments. Given the strategic links implied in the research sequence, it may also have been beneficial to engage with additional senior managers. As it has emerged from the findings that the senior management group are also obstacles to achieving success in developing a positive information culture, more input could have been productive. However, given the limited interest in information issues demonstrated by this group and corroborated by the findings and the literature, obtaining more involvement may have been problematic.

8.3.3 Using Software to Assist Data Analysis

The researcher used the software package, *NVivo,* to assist in managing and analysing the qualitative data associated with the study. With the volume and complexity of the data collected from various sources including interviews, questionnaires, researcher memos, and readings, the software was invaluable in organising and interrogating the accumulated data. Achieving the data analysis without the assistance of the package would have proved problematic.

Even though *NVivo* was a most helpful tool, the researcher did face and address some challenges with structuring the system to cater for the data analysis. The emergent nature of the findings and the complexity of the themes and categories meant that a very flexible system was required to track and enable sound analysis. Initially the system was set up to mirror the research sequence which had as its key elements the *identification, development and application* of information culture. The structure also reflected the key themes and categories described in Chapter Three and reflected the themes in the literature and the interview process, such as values, attitudes, beliefs and behaviours. The system certainly captured the data and assisted with the analysis. However, as more complexity and interrelationships emerged, it became evident that the initial structure was one or two levels above the detail of the data relevant to the study. For example, *the development* phase was set up using the themes and concepts of attitudes and beliefs, behaviours, obstacles and valuing information. The large range of information captured here needed to be further analysed and distilled revealing more themes and more intricate patterns in regard to developing an information culture. Ultimately, the researcher presented the findings in a manner that reflected the systemic and intricate nature of information culture. Without losing the essence of the data or the spirit and intent of the original structure, the final presentation of the development findings used the themes, strategic thinking and planning, leadership, valuing and understanding information, organising to find information, and using information (synthesising).

These themes emerged from a range of the levels stipulated in original set up of the system and were identified easily. They were found to be legitimate even though not truly reflected in the original structure. The source of the data and the concepts can be traced easily even though the final themes are not reflected in the nodes used in *NVivo.* The researcher recognises that an operator more skilled in using the

software may have been able to manipulate the nodes without losing the data and the already established links.

8.3.4 Attracting Participants

An overarching dilemma for this study was the opportunity to obtain a balanced representative group of participants of sufficient size to give valid findings. The researcher was thoughtful, and guided by the research problem, goal, questions and outcomes in deciding to use purposive sampling and semi-structured interviews within a case study approach. Outside the control of the researcher was the level of interest in this study, and the number of responses to participate that it would generate. Ultimately, a suitable number was achieved but some categories of participants were more difficult to secure. For example, the best practice interviews were filled quickly but getting a balance of information professionals was more difficult. The latter is of concern given the need for more robust research, and a firmer theoretical base for records management and librarianship, in particular, and perhaps, information systems and technology. The support of the professionals is central to achieving this. There may be opportunities to obtain the cooperation of academics and professional associations in improving this situation. In the Western Australian environment this could occur through the promotion of the importance of research, and the presentation of research findings and implications in forums outside the formal academic institution.

8.3.5 Best Practice Interviews

Securing the best practice interviews was not, on the whole, a difficult exercise. However, the process of selecting the potential best practice examples brought to light matters of understanding and assessment. Using the literature to identify best practice sites was helpful and easily completed. For the purpose of this study, a site was best practice if it was referenced verbally or in writings more than once as a positive example of using and managing information and knowledge. This minimised the possibility of bias on the part of authors, and assisted in indentifying different perspectives on good cultures. Seeking suggestions from individuals presented a different set of circumstances. The appropriateness of the recommendations depended on the individual's awareness of what constituted best practice, and their knowledge of their environment. Even after some extensive discussions with the researcher, there were individuals who made some inadequate recommendations. The people recommended were skilled and committed, but their

organisations were not necessarily mature in their approaches to information culture.

This scenario, to an extent, was reflected in the wider interviews with participants. Those who responded to the request to participate exhibited a strong personal commitment to making a positive contribution to their organisation's information environment. They experienced both passive and aggressive opposition from their organisations and from colleagues. Disguised in this labyrinth is a range of values, attitudes, beliefs and behaviours that contribute to defining an information culture. So, while commenting on their views of information culture, the participants were also presenting information about their experiences with information culture, both overtly and covertly.

8.4 Reflecting on the Research Goal and Outcomes

This section of the chapter presents the second aspect of reflections by the researcher. It considers the research sequence, and if and how the sequence was fulfilled. It includes the theoretical and practical implications of the study, the verification process and the limitations of the study.

8.4.1 Achievements against the Research Problem, Goal, Questions and Outcomes

Presented herein is a reiteration of the research sequence. The sequence is used here as a high level indicator of the achievements of the study.

Within the context of the service delivery agencies within the Western Australian Public Sector the research problem addressed by this study was:

> How to identify and develop a positive information culture to assist public sector agencies to achieve strategic outcomes and deliver services.

In support of this research problem, the research goal for this study was described as:

> To identify information culture in the Western Australian Public Sector and develop and implement practical solutions at a meta level to assist government agencies in achieving their strategic outcomes.

The research questions informed by the goal were:

> In the context of service delivery agencies within the Western Australian Public Sector, can a positive information culture be *identified (I)*, *developed (D)* and *applied (A)* to assist in achieving strategic outcomes?

The sub questions were;

- What typifies a positive information culture? *(I)*;
- What are the identifiable components or elements of information culture? *(I)*;
- What issues need to be addressed in order to influence and improve an information culture so that it assists in achieving outcomes and delivering services? *(D)*; and
- What practical solutions could be implemented to influence and improve an information culture in a government agency? *(A)*

Three outcomes for the study were derived from the sequence of the research problem leading to the research goal and thus the research questions. These three outcomes were:

- The body of knowledge was increased by the development of a theory related to information culture in the public sector;
- Practical assistance for public servants in developing information cultures to support strategic outcomes was produced; and
- The researcher and practitioners were assisted in meta level learning in regard to the two previous outcomes.

The research problem and goal were addressed, in particular, by the generation of a model of information culture, and the development of a definition of information culture that reflected the model and its emergence from the findings. Attributes and elements of information culture were disclosed or identified by an analysis of the findings and then used to create the model. Creating and sustaining an information culture was addressed by building on the elements and attributes of information culture. Just as the model of information culture was complex and systemic, not linear, so was the relationship between the *identification* and *development* of information culture. Possible actions and solutions gleaned from participants' responses and a review of the literature were presented in the framework of values, attitudes, beliefs and behaviours of information culture. Obstacles to growth were also documented.

The three outcomes of the study were also achieved. The description of these achievements follows.

Outcome 1:

The body of knowledge was increased by the development of a theory related to information culture in the public sector.

The development of a model of information culture and a definition of information culture which reflects the complexity and systemic nature of information culture, have contributed to the theory related to information culture. Embedded in the model and the definition are theoretical contributions, namely:

- The importance and role of information use as a focus of information culture;
- The relationship between information culture and its environment and contexts;
- The relationship with information management;
- Enhancements to the understanding of the values, attitudes and behaviours that constitute information culture; and
- The emergence of the components or elements of an information culture.

Additionally, in exploring the reflexive and interrelated components of information culture, this study highlighted the challenges of enhancing information culture in whole or in part.

Outcome 2:

A practical outcome to assist public servants in developing information cultures to support strategic outcomes was produced.

The theoretical and practical findings of this study are complementary in nature and application. The model of information culture and its components provide a practical guide to those aspects and elements which influence information culture. Therefore, it identifies those areas which can be developed in the workplace for positive application. It also identifies areas in other domains which can be influenced for the betterment of information culture. An example of this is the need for the education of information professionals and public servants to include an appreciation of information culture.

Outcome 3:

The researcher and practitioners were assisted in meta level learning in regard to the two previous outcomes.

The theoretical and practical outcomes of this study were achieved. They complemented and enhanced the wider body of work on this subject. The researcher has an enhanced understanding of the area of study, and is competent in explaining the complexity and value of information culture. Presentations on the study have been made to mixed groups of academics, public servants and information professionals with supportive and affirming results. In addition, researcher biases in the areas of the strategic importance of information use and the perceived narrowness of the view of information management held by the information professionals were challenged and addressed in the data analysis and discussion of the findings.

Following the development of a model and a definition of information culture, the researcher met with a representative collection of participants to discuss the findings and key themes of, and the learnings from the study. From these discussions, the researcher and the participants refined their appreciation of the concept of information culture and its applicability and value to government departments. The model which emerged from the findings has confirmed information culture as a concept. It has highlighted the existing and potential value to and impact on information use. It makes clear the differentiation between information culture, information management and information use. It provides a basis upon which to build further investigation of information culture.

8.4.2 Theoretical and Practical Implications of the Study

In undertaking this study, the researcher had aimed to contribute to the theory surrounding information culture and to produce a practical outcome of use to the public sector. The findings, including the model of information culture and a definition of information culture, suggest that both objectives were achieved in a systemic context. The theoretical and practical implications were not mutually exclusive and were complementary. The paucity of research in this area means that any serious study is likely to contribute to the theory base and any development of the theory has the potential to be translated into the practical realm.

Increasing the understanding and appreciation of the value of a high performing information culture has the prospect of encouraging the public sector to consider, acknowledge and develop information culture.

The following three key aspects are considered as theoretical and practical implications of this study.

8.4.3 Model of Information Culture

Eight individual major studies of information culture had been identified (Choo et al., 2006; Curry & Moore, 2003; Davenport, 1997; Ginman, 1988; Marchand et al., 2001a; Oliver, 2008; Travica, 2005a; Widen-Wulff, 2000, 2001). No one model of information culture resulted from these studies. Nevertheless, each study has or continues to contribute to the understanding of information culture. The findings from this study indicated some commonality with those previous studies. It also raised additional issues.

As flagged by Choo et al. (2006, 2008), the work of Taylor (1986, 1991) on information use environments was of relevance to information culture. The researcher considered the work of Feldman and March (1981), Kirk (2002), Oppenheim (1997) and Wilson (1981, 1997, 1999). Building on this work and the previous studies into information culture, and using the data from this research, a multidimensional model of information culture was developed. Given the recurring theme of information management in the literature, the researcher was initially persuaded of the centrality of information management to information culture. As the findings emerged and were complemented by more reading and observations, it became clear to the researcher that the focal point of information culture was information use (see Figure 7-1).

From this model it has been possible to explore and state an understanding of the relationship between values, attitudes, beliefs and behaviours and information culture. It has assisted in developing a perspective on the relationship between information use and information culture and information management and information culture.

8.4.4 Defining Information Culture

The working definition of an information culture selected for this study was that proffered by Marchand (1996, p. 14) which defines information culture as “the values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information.” The key concepts introduced in this definition, namely values, attitudes and behaviours are also contained in other definitions of information culture (Choo et al., 2006, 2008; Curry & Moore, 2003; Martin et al., 2003; Oliver 2004; Travica ,2005a; Widen-Wulff, 2000, 2001).

Throughout the study it became evident that information culture was a complex system of reflexive and interrelated components. Thus the following definition of an information culture emerged from this study:

> An information culture is an emerging complex system of values, attitudes, beliefs and behaviours that influence how information is used in an organisation. It exists in the context of and is influenced by organisational culture and wider environments.

8.4.5 Information Culture and the Public Sector

As this study progressed it confirmed the existence, and raised awareness of, information culture in the Western Australian Public Sector service delivery agencies. The model which emerged from the findings added depth to the concept of information culture. It provides a practical platform from which to further explore the *identification, development* and *application* of the concept at the level of the public sector as well as in individual agencies. The model has heightened the appreciation of the links between information culture and information use for achieving outcomes. It identified specific public sector attributes which may influence an information culture. Examples of this are, the election cycle, the task focussed reactive response to issues, and the effect of legislation.

8.4.6 Study Limitations

A possible limitation of this thesis relates to the context of the study. That is, the case study was undertaken at the meta level of the Western Australian Public Sector with a focus on those agencies which delivered services directly to the citizen. While commonalities exist across all levels government, it must be remembered that each jurisdiction has its own characteristics, legislative requirements and social responsibilities. The possibility exists for these to have an influence on the generalisation of the results. This situation notwithstanding, it is important to note that the best practice data in this study was gathered from government agencies at the Federal Government level together with one Territory Government example. One example from the private sector was also used. This organisation was and is regularly cited and referenced as an outstanding example of positive attitudes towards information and knowledge. The source of this data did not preclude the researcher from conclusions applicable at a State Government level. Indeed, the conclusions and the model of information culture which emerged from the combined sources of data were accepted and verified by participants.

Initially, the researcher had proposed that the study may not be applicable to agencies which did not deliver services directly to the citizen. However, given that the model of information culture was developed in the wider context of the public sector, and outcomes achieved with the assistance of information use can apply to all public sector agencies, those in such environments may choose to consider extrapolating the findings. Such application could be the focus of further study, and would constitute verification of this assertion.

A limitation was identified in regard to the participants from the category of information professionals. Invitations were issued across a range of forums and mechanisms. The aim was to get a representative sample of librarians, records managers, information technology, information systems managers and knowledge managers. There was a minor bias was towards records managers with a lesser representation from the information technology and systems areas. It should however, be noted that the balance was redressed in all areas by the participants from the academic arena and the best practice interviews.

The potential to bias could be addressed in future studies by setting firm quotas and the more explicit targeting of participant groups.

8.4.7 The Verification Process

To ensure reliability and accuracy of the materials collected and the resultant findings, several means of verification were employed. In the first instance triangulation was the measure used to validate the material collected. Four different sets of individual and group interviews were used, audio recordings and transcriptions made, a journal maintained by the researcher. The literature was consulted continuously.

The model which emerged from the data analysis was presented to mixed groups of academics, public sector employees and managers and information professionals. In this process the audiences were invited to test the assumptions which underpinned the model. They were also invited to comment on their own experiences with encountering and interacting with the elements of the model.

The systemic and emergent nature of the findings surrounding the identification and development of information culture informed aspects of the data gathering. Indeed, the issues ensuing from some of the interviews led the researcher to include additional categories of participants. The data gathering was extended to include researchers who had previously worked in the area of information culture. With the

responses from the best practice interviews this formed a sound framework for triangulation and verification. Responses from these two groups provided insights into current understandings, potential improvements, and possible barriers. They verified successful and unsuccessful approaches and attitudes and why it was so. They provided, in part, a proving ground for findings.

Moreover, elements of the model and the model itself which emerged from the analysis, served to provide rigour to the process, and encouraged recollection and checking of interpretations, assumptions and findings of previous studies. A final round of data gathering and analysis was undertaken to specifically test the model. It was also used to confirm and enhance the opportunities to identify and develop information culture in the Western Australian Public Sector.

The Framework, Methods and Area of Concern (FMA) approach (Checkland and Howell, 1998a) was used for recoverability of the process. That is, the process could be recovered by anyone wishing to replicate the study or critically analyse it. The presentation of FMA in Chapter Three explained the formal and explicit and informal and tacit elements of the approach. Examples of the formal and explicit elements relevant to this study were described. The following presentation of the FMA focuses on the informal and tacit elements that emerged from the study.

- Framework of Ideas

  The researcher brought a range of informal and tacit frameworks which contributed to the study and stimulated thinking. Of note is the systems thinking approach favoured by the researcher. This holistic approach which also considers how of parts of a system influence each other, assisted the researcher in understanding and explaining the systemic and complex nature of information culture as it emerged from the data analysis. It also assisted with clarifying the model and definition of information culture. For example, Participant A4 saw the model as a simple input – output model. This could be considered as a legitimate conclusion due to the one dimensional nature of graphical representations. However, the complexity and systemic nature of information culture is evident in the relationships of the multiple contexts, the attributes and the elements.

  Examples of other frameworks brought to bear by the researcher are:

  - The importance of change management;
  - The value of using analytical tools such as PEST in change management programs;

- The role of strategic planning and the potential nexus with information use;
- The introduction of the relevance of the concepts of ‘about-ness’ and ‘of-ness’; and
- A commitment to the strategic value of information and information use.

- Methodology

  The systemic and intricate nature of information culture and its relationship with organisational culture suggested that the case study approach may have been the appropriate method of enquiry. That the study was also in an area in which little theory is in evidence was a factor in support of the case study. From these perspectives, the case study did prove to be a useful approach.

  Grunbaum (2007, p. 67) warned of the challenges in selecting the unit of analysis for any case study. Yin (1994) spoke of practical difficulties with scoping the study and managing the data. Rowley (2004, p. 212) expressed concerns with the ability to generalise the findings beyond the extent of the case study. These cautions prompted the researcher to conduct the case study at the meta level of the public sector, so that the findings could be assured of applicability at the sector level. By conducting the study at this level it was also hoped to overcome the potential problem of insufficient participants.

  A further issue with using the case study approach relates to rigour. Scholars have commented that it is important to ensure the reporting of the results is done in such a way as to demonstrate the rigour of the processes, and the validity of the findings and conclusions (Darke et al., 1998, pp. 284-285; Rowley, 2004, p. 212; Yin, 1994, p. 10). As the case study approach was considered appropriate for investigating an area which had little theory, this advice posed a potential problem for the researcher.

  This dilemma with choosing a way of reporting may not be exclusive to the case study approach. It may be an issue symptomatic of the study of information culture.

  As this study has contributed to the body of knowledge on information culture, and in doing so raised new issues, confirmed understandings and addressed the theory base, it may now be appropriate to pursue the study of

information culture using another approach. For example, pluralism of method could be considered. Action research could be helpful in investigating ways to address the development and application of information culture.

The researcher enjoyed the experience of using the case study method. It provided a satisfying level of engagement with the subject matter and the participants. The opportunity to investigate in-depth and to have wide-ranging discussions was particularly fulfilling. The researcher was comfortable using the method. It was not dissimilar to approaches the researcher had used in the workplace to investigate and report on policy issues.

Informal feedback from the participants and observations made by the researcher suggested that the participants also enjoyed and benefited from the research experience.

- Area of Concern

  The area under consideration was information culture in service delivery agencies in the Western Australian Public Sector. As it was not focussed on an individual agency but a collective of representative agencies, it was considered a sector level or meta level area of concern. These agencies had a degree of homogeneity in their purpose, customer focus, infrastructure and resources. In addition, they were bounded by the same public sector requirements of accountability, responsibility and transparency.

  If the study had focussed on a single agency, the findings would have been confirmed for and relevant to that agency. However, there may have been difficulties in expanding the application and relevance.

  The participants who worked or had worked in the public sector each came from a different service delivery agency. They had all worked in more than one agency. So while they were relatively small in number, they brought a breadth and depth of experience sufficient to be representative of the area of concern.

8.5 Reflecting on the Research Findings and Future Research

This is the third and final aspect of the reflections exercise. It considers the implications of the findings, and in doing so identifies areas for future research.

8.5.1 Researching Information Culture

As part of the data gathering process, those who had undertaken research into information culture were asked two questions on the relatively small amount of research in the area. The questions were:

> Q2: Why do you think there is so little published research in this area since those early studies?
>
> Q4: You were active in information culture research in the 1990s and early 2000s. Are you still involved in the area? If you have moved on, is there any particular reason why you left this area of research?

The responses gave an indication of the complexity and systemic nature of this field of study. The sentiments expressed complemented the findings of the study, and the researcher's experiences in traversing the multiplicity of concepts and constructs which contribute to information culture. All of the researchers indicated that they were still involved in investigating information culture to a lesser or greater degree. They all commented on the challenges of researching in the area.

The insights offered by these experienced researchers were invaluable in assessing the value and likelihood of further research. They also contributed to an appreciation of the manner in which future study could be undertaken. Furthermore, the comments went some way to uncovering why study in this area is scant. They suggest why organisations appear to have limited interest in an area that could prove beneficial to them.

The researchers' views of the impediments to the study of information culture complemented that of the findings of this study, and the observations of this researcher. For example, R5 said that information culture was, "a difficult concept to compartmentalize." R4 thought that problems arose because, "It has never been exactly defined and it is perhaps too broad to really be a good platform for empirical studies. Information culture is part of the whole organizational culture and there are so many aspects included."

Researchers R3 and R4 thought that a problem lay with the business or management side of organisations. Senior managers failed to appreciate the importance of information culture. As R3 remarked, "This is perhaps to some extent because business and management subjects tend to be taught in strict compartments by business schools. I hope this is set to change." Participants R1 and R4 commented that the close relationships between organisational culture and

information culture and the many aspects of both cultures have made research challenging. Furthermore, a key observation was made by Participant R2 when he said, “The focus on IT deployment and management obscures for managers and academics the focus on usage of information and knowledge in a business, hence the behavioral and cultural element is often overlooked.”

It may be that the complexity and potential breadth of information culture has inhibited or prevented further research into the entire concept. As Participant R4 noted, researchers may have preferred to focus on “narrower aspects connected to organizational information behaviour.”

While this may be the case, it raises issues of relevance and reliability. Given that this study has demonstrated that information culture is a complex and multidimensional entity, it raises questions as to whether or not it can be accurately portrayed without further holistic research which builds on the existing research. The alternative argument may be that it would be beneficial and practical to pursue in more detail some of the clearly identified aspects of information culture. For example, the values, attitudes, beliefs and behaviours, or the importance of information use as opposed to the use of technology.

8.5.2 Reflecting on Information Culture

While there has been considerable research in the area of organisational culture, there is limited evidence of the study of information culture, particularly in the public sector. This study identified and built on those bodies of research which related specifically to information culture (Curry & Moore, 2003; Davenport, 1997; Ginman, 1988; Widen-Wulff, 2000, 2001) as well as those which addressed related concepts such as information orientation (Marchand et al. 2001a, 2001b). The research undertaken has both complemented and augmented the previous findings. It has confirmed previous findings and added to the body of knowledge related to information culture. The next section pursues the key complementarities and differences which emerged from this study. It is presented to highlight how this research has or can make a contribution to the study of information culture. The presentation here is based on the findings which emerged from the data, the literature and the observations and practical experience of the researcher.

8.5.3 Overview of Complementarities and Points of Difference

There are complementarities as well as points of difference between the findings of this study and those of the earlier pieces of research. The earlier pieces of research

disclosed a relationship between information culture and the improved performance of an organisation. They investigated the values, attitudes, beliefs and behaviours towards information, often with a focus on how that information was managed. The previous investigations also had findings on the relationships between people and technology. These were largely related to or as aspects of information management. Curry and Moore (2003), Ginman (1988), Marchand et al. (2001a) and Widen-Wulff (2000, 2001), in particular, revealed the importance of strategy development and leadership as key influencers of information culture.

As most of the organisations at the centre of these studies were in the private sector, the benefits were shown in the form of competitive advantage and business improvements. The only major research undertaken in the public sector was that undertaken by Curry and Moore (2003). It was a study of aspects of the Scottish National Health System. At the conclusion of the study, Curry and Moore (2003, p. 106) found that "effective information culture aligned to the culture of the organization is going to be an essential vehicle for future improvement efforts." Even though this was but one study of information culture in the public sector, Curry and Moore (2003) found in favour of an organisation having "an effective information culture."

This study has built on and expanded Curry and Moore's study (2003). In doing so it corroborated some of their findings and revealed new insights. For example, both this study and that of Curry and Moore (2003) identified leadership as a critical success factor, highlighted the impact of professional subcultures on the total culture, experienced the structural inefficiency of aspects of the public sector and drew attention to the politics of an organisation. This study identified these aspects and developed them to a more enhanced position. Furthermore, it had significant findings in relation to information use and information management, the roles and interactions of information professionals, the need for improved and different education and training and the impact of information politics in the public sector.

8.5.4 Information Management

Information management was a recurring theme in this study as it was in the earlier research. The singular relationship between information culture and information management in these previous studies is exemplified in the definition of information culture proffered by Marchand (1996, p.,14), namely "the values, attitudes and behaviours that influence the way people sense, collect, organise, process, communicate and use information." However, this study revealed a more complex

and less linear relationship between information culture and information management. It takes an emergent systemic and reflexive view of information culture. Information management was revealed as a narrower more confining concept in regard to the values, attitudes, beliefs and behaviours towards information. In contrast to the majority of earlier research, this study found that the most important link was that between information culture and information use, not information management and information culture.

Best (1996, p. 4) defines information management as, “the effective production, storage, retrieval and dissemination of information in any format and on any medium to support business objectives.” Orna (2004, p. 9) links information management with the implementation of an information strategy. She states that it is “concerned with acquiring, storing and making accessible information”, and “co-ordinating the information resources”, and “using IS/IT appropriately and innovatively.” Both of these definitions and explanations highlight what is done to information as opposed to what is done with information. In the context of the study and hence the public sector, this reflects the traditional model of information being the domain of information professionals only. While these definitions convey a sense of a custodial role, a reactive effort and a focus on information after the fact, they also imply the potential for the strategic importance of information management. So the definitions suggest a strategic focus that may not be being translated into practice.

Of itself, information management is a legitimate activity and serves a purpose in an organisation. However, making strong or singular links between information culture and information management raises strategic risks for a government department or, indeed, for any organisation. Firstly, it cements the operational view of the work and relegates it to a less than important status in the organisation. Senior managers are not convinced of its importance to strategic outcomes and service delivery. The corollary of this is that senior management is then less convinced of the need for a positive information culture. Information professionals, in general, focus their efforts on doing something to information rather than doing something with information. This has the potential to isolate them from the business and strategic environment of the organisation. Irrelevance can be the ultimate outcome (Abell & Winger, 2005; Milne, 2001; Todd & Southern, 2001). The end result is that an organisation does not have the opportunities it could have to benefit from, or see the worth of, information use and a positive information culture.

Consciously or not, the public sector, in whole and in part, uses information. Individuals from the top to the bottom of the corporate structure apply information to a range of activities. This information use may have benefits, and it may be obstructive. Examples of obstructive use include, hoarding information, not sharing information and responding to information as power. Thus an organisation may need assistance with making better use of its information. It may need to develop a positive information culture so as to create better value from its information use.

Marchand (2000, pp. 24-27) identified the links between information use and business value. In doing so he developed the "Strategic Information Alignment Framework." It highlighted four ways in which using information can create business value, namely:

- Risk minimisation;
- Cost reduction;
- Value add; and
- Creation of New Reality (social, political and technological intelligence).

By highlighting this approach and presenting this framework, Marchand (2000, pp. 3-30) was reinforcing that what one does with information, is more important than what one does to it when you are considering business value. It also represents the need for everyone in the organisation to take responsibility for using information (Drucker, 2001).

The viewpoint presented in this study does not mean that an organisation does not need good information management. It provides a catalyst for enhancing information management. In order to use information to its best advantage, a degree of sound information management is required. Organisations need to be encouraged to see the value of information management in the context of their strategic outcomes as do information professionals. Information use and information management, and information itself, are multilayered and multidimensional in an information culture. It is difficult to compartmentalise them, and it could be detrimental to do so because of the myriad of interrelationships.

8.5.5 Reflecting on a Model of Information Culture

The model of information culture which emerged from the findings demonstrated the interdependence between organisational culture and information culture. It also provided evidence of the reflexive nature of information culture. This reflexivity was seen in the relationships between the elements of public sector culture,

departmental or organisational culture and the information culture within the department. Furthermore, the study uncovered the existence and potential impact of the professions within departments on information culture. While not addressed in this study, other subcultures are likely to exist in the public sector and the departments which comprise it. These too have the potential to impact on information culture. That is, the model of information culture and information culture was shown to be multidimensional and multilayered.

Specific elements of the model can also be viewed as interdependent and multilayered. For example, leadership was identified as a critical organisational trait that was needed to assist with the development of a high performing information culture. This leadership needs to be demonstrated by senior management at a departmental level. Moreover, information professionals need to demonstrate leadership in assisting departments to appreciate the value of information, and in developing attitudes that lead to improved information behaviours. However, as this study revealed, information professionals were reluctant or unable to differentiate between information culture and information management. This led to a narrower focus on the processes associated with managing information rather than the values and attitudes towards using information.

The model of information culture which emerged from this study demonstrated the layers found in an information culture (see Figure 6-1). Each layer represents a rich field of research endeavour. Key to understanding information culture and its relationship to organisational culture is the interplay between the layers and within the layers. For example, further exploration of the relationships between and the roles of values, attitudes, beliefs and behaviours, the influence of various levels of organisational culture on information culture and vice versa could be undertaken.

8.5.6 Reflecting on Information Use

As the research sequence related to the influence or impact of information culture, a key finding of this study centred around information and information use. It built on and considered previous writings and research into information use (Abell, 1994; Choo, 1991; Choo et al., 2006, 2008; Kirk, 2002; Marchand, 2000; Taylor, 1982, 1986, 1991; Wilson, 1981, 1997, 1999).

Taylor (1982, 1986, 1991) pioneered the concept of information use and information use environments. His work describes the contexts in which people make use of information in an organisation and the factors that may influence their choice and

use of information. In her thesis Kirk (2002) comments on the dearth of research into information use. Following on from the early work of Choo (1991), the series of recent articles on studies into information culture by the University of Toronto, included the concepts of information use and information use outcomes (IUOs) in their work (Bergeron et al., 2007; Choo et al., 2006, 2008; MacIntosh & Choo, 2002).

These latter studies appear to make a liner relationship between information management and information culture contributing to IUOs (see Figure 6-2). That is, good information management and a good information culture enable IUOs. The results of this study into information culture within the Western Australian Public Sector indicated that the answers may not lie in direct one-to-one linear relationships. There is a complex system of values, attitudes, beliefs and behaviours which give rise to the evidence or outcomes of a particular information culture. Additionally, the power or influence of this complex system is demonstrated in the information use. That is, a high performing information culture will enable an organisation to demonstrate high calibre information use and deliver outcomes. To illustrate, information management is but one aspect of information culture. It is a component of the element identified in this study as *Organising to Find Information*. It has information management as a component. An organisation's values, attitudes and beliefs towards information and information use translate into their behaviours towards information and information use. This can be reflected in the support and commitment to information management in the formal and informal sense. An information professional's understanding of their environment and the value of information and information use, in the strategic context, can influence the way in which they practice and promote information management. If this practice and promotion is too operational, the link between information management and information use is flawed and less than optimal.

Rather than the narrow context of information management as the central tenet of information culture, this study identified information use as the key driver for a high performing information culture.

8.5.7 Reflecting on Information Culture and the Public Sector

This study had as its focus, the Western Australian Public Sector, in particular, those departments which delivered services directly to the public. The service recipients were stakeholders in the form of the citizens of Western Australia. This made for a diverse and complex group across a large geographic spread. Instead of

a single focus on 'the bottom line', governments in general, and the Western Australian Government in particular, have responsibilities in the areas of economic social and environmental development. This triumvirate of responsibilities means that an information culture has the potential to be expressed across a wide range of outcomes and achievements. In addition, and specifically, performance information is required by the Western Australian Department of Treasury and Finance as evidence of outcome based management and the focussed expenditure of government funds.

The data gathered for this study revealed elements peculiar to the public sector that had the potential to influence an information culture. In addition to the stakeholder base and diverse delivery focus described above, there are other factors, namely:

- The limited terms of government;
- The reactive and task focus of the public sector;
- The boundaries imposed by legislation;
- Political agendas; and
- Risk aversion.

Any further study of information culture in the public sector would need to be mindful of these factors. It would need to evaluate the influence of these, and whether or not that influence could be tempered or needed to be tempered. As these factors are integral to the culture and practice of the public sector, they may have long lasting and indelible influence on information culture.

8.5.8 Overview of Key Findings

To summarise, this research has contributed to the study of information culture in nine key ways, namely:

- A model and definition of information culture;
- The importance and role of information use as a focus of information culture;
- The relationship between information culture and its environment and contexts;
- The relationship with information management;
- Enhancements to the understanding of the values, attitudes, beliefs and behaviours that constitute information culture;
- The emergence of the components or elements of an information culture;
- Aspects of the particular impact of the public sector on information culture;

- The existing and potential impact of professional subcultures, including that of information professionals; and
- The role and impact of senior management.

Additional findings emerged from the three phases of information culture as represented in this study. They were presented in tabular form at the conclusion of Chapters Five, Six and Seven. Table 8-1 presents the composite form of those three tables in order to display the findings from the *identification, development and application* phases discussed in the abovementioned three chapters. These deliverables address the research sequence from research problem to research outcomes.

Table 8-1 The Findings Which Emerged from Chapters Five, Six and Seven and Which Address the Research Sequence

The Findings (Deliverables) Which Emerged
• The emergent reflexive and systemic nature of information culture.
• The attributes of information culture, namely values, attitudes, beliefs and behaviours.
• The sequence of the attributes.
• The elements of information culture, namely strategic thinking and planning, leadership, valuing and understanding information, organising to find information and using information (synthesising).
• The sequence of the elements.
• The alignment of the attributes and elements.
• The identification of semantic issues associated with the language used to describe and understand information culture.
• The relationship between information culture and organisational culture.
• The benefits associated with a positive information culture.
• The incentives and disincentives to developing a positive information culture.
• The alignment of attributes and elements (in further confirmation of the indication which started to emerge in Chapter Five.) This included graphical representations.

• The confirmation of those attributes and elements from the identification phase which could be addressed in the development phase, namely:
  • Strategic thinking & planning (element) and values, attitudes and beliefs (attributes);
  • Leadership (element) and values, attitudes and beliefs (attributes);

• Valuing and understanding information (element) and values, attitudes and beliefs (attributes) o Information as an asset; o The influence of people's 'mindsets'; o The influence of the professions; and o Education and training; • Organising to find information (element) and behaviours (attributes) o Managing information as an asset; o The role of technology; o The influence of the information professionals; and o Education and training.
• The obstacles to developing a positive information culture.
• The importance of change management to the development of a positive information culture.
• The contexts which may exert influence on attempts to develop a positive information culture.
• A model of information culture (for specific application to the public sector).
• A definition of information culture that reflects the complex and systemic nature of information management.
• The researcher's interpretation of the strategic planning hierarchy
• The role of change management in enhancing information culture.
• Recommendations which emerged from the literature, the data analysis and the researcher's experience on ways to develop and enhance information culture.
• The systemic nature of the key issues influencing the development of information culture.

8.5.9 Researching Information Culture in the Future

This study suggested that there is both the need and the opportunity for further research. The additional research falls into two categories, namely that related generally to information culture, and that focussed on aspects of information culture identified in this study. Within these categories are opportunities to apply and enhance the findings of this study. As raised previously, the complexity of information culture may inhibit research into the concept in its entirety. It might be considered more useful to segment information culture and relate it back to the whole concept.

Throughout this research the systemic and complex nature of information culture was evident. Within this complexity a number of opportunities for further research

presented. This could include the language of information culture in the form of the agreed underlying principles of a definition of information culture, and the understanding of the constructs of information culture, such as values, attitudes, beliefs and behaviours. Of interest and importance is a greater understanding of the impact of education on how information professionals, other professional groups and public servants relate to and influence information culture. Further study on information use in the public sector would contribute to the study of information culture, as well as improve an understanding of decision-making and achieving outcomes in the public sector.

Taking a pragmatic look at the prospects of further study, and its potential to have a positive impact on the identification and development of positive information cultures in the Western Australian Public Sector, the researcher is presented with a conundrum. To have the best chance of success, this cannot be done in isolation or as a purely theoretical exercise. Those who make the high level decisions about resource allocations and strategic programs in agencies need to be convinced of the value of a positive information culture. They are unlikely to be swayed by theory. However, unless they can be persuaded, they will not engage. They are unlikely to be engaged if they are not convinced of the value of a positive information culture. Encouraging interest at this level is crucial, and may well need to be based on practical demonstrations and experiences. Further study using action research may be helpful. It may also be possible to influence through the formal and information education of public sector employees, including senior management and information professionals.

The limited number of studies undertaken into information culture, in particular within the public sector, together with the positive findings of these studies, suggests that further and more in-depth analysis would be beneficial.

This study has contributed to a better comprehension of the composition and impact of information culture. Further research would build on these findings and those of previous studies. Yet greater understanding of what constitutes information culture, how the values, attitudes, beliefs and behaviours which characterise such a culture, can be enhanced, as well as the potential to develop a program for enhancing and applying information culture, are areas ripe for further investigation.

A next step with this research, in particular with the definition and model of information culture, would be to apply further tests to its logic and usefulness. The presentation of the model by the researcher and data analysis conducted, in part to

test the model, both extracted comments and observations on the model and its applicability. These provide a foundation for further testing. The researcher intends to pursue further development and applications within the Western Australian context.

8.5.10 Consolidation of Opportunities for Further Research

Throughout this chapter references have been made to further research into areas related to the study of information culture. Both the paucity of research in the area and the findings which emerged from this study provide a rich field for further research. This could take the form of research into aspects of information culture or more all-encompassing research. This section co-ordinates and reiterates areas of potential research identified by the researcher.

To summarise, those major areas identified for future research relate to:

- Semantic issues associated with the terms used in the study of information culture, such as values, attitudes, beliefs and behaviours;
- The value and possibility of a generally accepted definition of information culture;
- The existence and impact of subcultures, particularly those associated with professional groups within the public sector;
- To apply further tests to the logic and usefulness of the definition and model of information culture which emerged from this study;
- The potential to influence managers and practitioners through informal and formal education on information use;
- The potential to develop an approach to the application of means to develop a positive information culture;
- The impact of specific public sector traits on information culture; and
- The links, if any, between evidence-based policy and information culture.

8.6 Chapter Eight Summary

This final chapter of the thesis encapsulated how the sequence of the research problem, the research goal, the research questions and the research outcomes were addressed and achieved. Of significance in this chapter was the consideration given to the lessons learned through the research journey. It incorporated opportunities for further research as part of the learning. Additionally, it provided a

discussion on the limitations of the study, its contribution to theory and practice and the verification processes used to support the findings.

8.7 Conclusion to the Study

The first chapter of this thesis began with a vignette portraying information use in a government department. It endeavoured to relay the attributes that would be found in a government department with a sound culture, namely its values, attitudes, beliefs and behaviours towards information. It described the elements that would be found. That is, strategic thinking and planning, leadership, valuing and understanding information, organising to find information and using information (synthesising). It demonstrated how people could work together in using information to achieve outcomes.

While the vignette may still represent the utopian view of a positive information culture, the research journey to test that view and explore the possibilities of identifying and developing a positive information culture, has been a successful and fulfilling one. This research journey has been a positive experience on three fronts. Firstly, the researcher has been challenged in defining and executing a sound study due to the complexity of the issue and the paucity of existing research. Nonetheless, positive lessons were learned, including important next steps around the issues of semantics associated with the study of information culture. Secondly, the research problem, goal, questions and outcomes were achieved. A new model and an enhanced definition of information culture emerged. Finally, in reflecting on the findings, it was confirmed that a clearer picture of the complexity and systemic nature of information culture was painted. Importantly, this study demonstrated the key role of information use in organisations and how aspects of leadership, subcultures, information politics and education contribute to information culture. The multidimensional and multilayered composition of this culture became evident. These layers and dimensions are worthy of further research either in totality or as a study of particular aspects. If the latter course is chosen, recognition of the intricacy and complexity of information culture would be paramount.

Previous studies in this area demonstrated to varying degrees the essence, composition and impact of information culture on an organisation and its outcomes. Even though, or because, it has not been the subject of a large amount of research, it is an area ripe for further investigation. This study, together with the previous studies confirms the potential for positive outcomes from a high performing information culture. Enthusing researchers is only one of the challenges. Enthusing

practitioners and managers is another. One group could well influence another. Even if information culture is proved to be a beneficial concept for the public sector, pragmatism and realism warn that the competing priorities experienced by senior management may mean that it does not get the attention it deserves.

The journey of a thousand miles begins with a single step.

Confucius

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Appendix A

Glossary of Terms Used in the Thesis

In some instances more than one definition exists for the terms used in this study, and in some areas there are debates and misunderstandings surrounding definitions. Therefore, this glossary has been developed to guide the reader in understanding and appreciating the terms used. The definitions which appear in this glossary are those that were deemed the most relevant and workable by the researcher in the context of this study.

Accountability

The imperative to make public officials answerable for their behaviour and responsive to the entity from which they derive their authority. It also means establishing criteria to measure the performance of public officials, as well as oversight mechanisms to ensure that standards are met (Australasian Council of Auditors-General, 2009).

Application

How a positive information culture can be implemented in a Western Australian government department. This includes options for implementation.

Attitude

A conscious and selective judgement about a person, object, concept or vent. An attitude provides a mental predisposition to behave with consistency toward its subject (Hunsaker, 1987, p.130).

Attributes

The characteristics, distinctive features or qualities of an information culture.

Beliefs

A person's subjective probability judgement concerning the relation between the object of the belief and some other object, value, concept or attribute" (Fishbein & Ajzen, 1997, p. 131).

Benefits

Those advantages that an agency could expect to accrue as a result of a positive information culture. A benefit could be a gain, a positive outcome or action, an advantage or an improvement.

Best Practice Organisations

Those organisations which had an acknowledged reputation for positive information cultures.

Data Gathering Methods (Techniques)

The ways in which the data to be used within the research method can be gathered (McNiff & Whitehead, 2006).

Defining

To understand, interpret, clarify, demonstrate; an explanation.

Development

The actions that need to be undertaken to create and sustain a positive information culture. This includes strategies, systems and processes.

Disincentives

Those factors, visible or invisible, that discourage an organisation and its leadership from considering the need to improve the information culture.

Elements

The components of or what constitutes the information culture; an inventory of what it is that comprises the culture.

Government Agency

An organisation responsible for the oversight and public administration of specific functions. For example, The Department of Health is responsible for public health system. In this thesis the term is used interchangeably with government department.

Government Department

An organisation responsible for the oversight and public administration of specific functions. For example, The Department of Health is responsible for public health system. In this thesis the term is used interchangeably with government agency.

Incentives

Something that would motivate or encourage an agency to action or effort. An incentive could be positive in the sense of offering a reward or negative in the sense of avoiding failure or deficiencies.

Identification

This includes the description of a positive information culture and the naming of the elements that comprise a positive information culture; a definition of information culture; those aspects that indicate the rationale behind the need for or discourage the need for a positive information culture are addressed.

Information

Misunderstandings, debates and ambiguities can and do arise from not only the definitions of information and knowledge and their management, but also from their use in theory and practice. Therefore, to minimise the potential for debates and misunderstandings to deflect this study, information and information management are the preferred terms used in this study.

Information Practitioner

A person who manages information. They may work in specific discipline areas such as librarianship, records management, knowledge management, information technology and information systems. In this thesis the term is used interchangeably with information professional.

Information Professional

A person who works with information. They may work in specific discipline areas such as librarianship, records management, knowledge management, information technology and information systems. In this thesis the term is used interchangeably with information practitioner.

Knowledge

Misunderstandings, debates and ambiguities can and do arise from not only the definitions of information and knowledge and their management, but also from their use in theory and practice. Therefore, to minimise the potential for debates and misunderstandings to deflect this study, information and information management are the preferred terms used in this study.

Obstacles

Those factors, visible or invisible, which prevent, obstruct or challenge the organisation and its leadership in trying to improve the information culture.

Organisational Culture

A pattern of shared basic assumptions that was learned…as it solved problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems (Schein, 2004, p. 17).

Organising to find information

How an organisation makes it easy to find, share and use information.

Research Methodology

The "description, explanation and justification" of the process used to identify the most relevant approach to the research; how the best approach and methods were determined and why they were determined to be the most appropriate to the research (Kaplan, 1964, p.18).

Research Method

The "traditions of inquiry" or the specific approach used to undertake the research (Creswell, 1998).

Service Delivery Agencies

Those government agencies which have direct contact with the citizen either as individuals or as the citizenry. That is, they are departments that deliver a service of one type or another to the citizen. While these agencies have direct contact with the citizenry through the delivery of their services and products, they do not necessarily just provide services to the citizenry.

Synthesising to find (Sense-making)

How to make best use of information for service delivery and achieving outcomes; demonstrating the value of information; information exploitation.

Valuing Information

What is involved in demonstrating that information as an entity is valued, the implication of that value; how you know it is valued.

Appendix B

Interview Questions and Examples of the Data Analysis

1. Interview Questions

Presented below are the first three sets of interview questions used to gather the data for this study. The questions have been coded to indicate the relationship with the themes of the *identification, development* and *application* of information culture.

Following these questionnaires is the outline the researcher used to assist the discussions on the model and definition of information culture which formed the final round of interviews with selected participants.

1.1 Interview Questions: Academics and Practitioners

	Questions	Coding
1.	Please describe your role in the information community.	
2.	How would you define information culture in the context of an organisation?	*I*
3.	What do you think would be the elements or components of an information culture in the context of an organisation?	*I*
4.	What attributes would you expect of a positive information culture?	*I*
5.	How would you go about developing a positive information culture?	*D*
6.	What obstacles might an organisation face in trying to improve its information culture? For example, issues related to technology, structure, organisational culture, resourcing etc.	*D* and *A*
7.	What do you think would be some organisational outcomes from having a positive information culture?	*I* and *A*
8.	What incentives are there for (or what would encourage) a government agency to improve its information culture?	*I, D* and *A*

9.	I am looking at ways to assist government agencies improve their information cultures to support strategic outcomes. What advice do you have for me?	*I, D* and *A*

1.2. Interview Questions: Best Practice Organisations

Questions	Coding
1. How would you describe your organisation's attitude towards information?	*I*
2. Has this always been its attitude? If not what was the catalyst for change?	*D*
3. Who drove the change and why?	*D* and *A*
4. How were staff encouraged to change their attitudes?	*D* and *A*
5. What incentives or disincentives are there for organisations such as yours to change their attitude towards information?	*I* and *D*
6. How would you (the individual) define *information culture?*	*I*
7. How do you (the individual) interpret *evidence for decision making?* Could you please give me some examples of this in your organisation?	*I*
8. From your experiences, what important lessons from the past, good or bad, should be remembered when trying to improve an organisation's attitude towards information?	*I, D* and *A*

1.3 Interview Questions: Researchers

Questions	Coding
1. During the late 1990s and early 2000s there were a number of studies on information culture and business performance. As one of the researchers involved in these studies could you please comment on the extent to which you think the outcomes of your research have been adopted and the reasons for this level of adoption.	*D* and *A*
2. Why do you think there is so little published research in this area since those early studies?	*I, D* and *A*

3. The various studies into information culture were able to demonstrate the value of a high performing culture to business objectives and competitive advantage. What incentives and disincentives or obstacles do you think there are to organisations developing and implementing programs to build high performance information cultures?	*I*, *D* and *A*
4. You were active in information culture research in the 1990s and early 2000. Are you still involved in the area? If you have moved on, is there any particular reason why you left this area of research?	*I*, *D* and *A*
5. What advice do you have for me on how best to encourage senior management to consider building high performance information cultures?	*I*, *D* and *A*

1.4 Introduction to the Final Round of Discussions on Information Culture

My research to date has led to the development of a model for information culture in the Western Australian Public Sector. It is a multidimensional tiered model which emerged from the data analysis and a review of the existing literature on the subject.

The model (see attached) contains a representation of the key issues which were raised by participants during the data gathering process. Show them the model and describe it, focussing on the following key areas relative to their area:

- The multi-layered nature of information culture;
- Information culture as a subset of organisational culture;
- Information culture and its relationship to the public sector as an environment;
- The reflexive nature of information culture;
- Information use as the focus of information culture and thus information use outcomes; not a focus on information per se;
- Information management as part of an information culture not as information culture; and
- The roles of leadership and strategic planning.

With regard to the issues that have emerged from my research and your experiences would you please comment on the model? In your response you might like to consider:

- The veracity of the model in relation to the findings;
- How the model might assist in raising aware of the value of a positive information culture;
- The reflexive nature of the model; and
- How the model reflects the nature of information culture.

A new definition of information culture was developed from the data analysis:

> An information culture is an emerging complex system of values, attitudes and behaviours that influence how information is used in an organisation. It exists in the context of and is influenced by an organisational culture and wider environments.

Would you please comment of the relationship of this definition with the model of information culture?

2. Examples of the Data Analysis

The following pages contain examples of the categories, themes and coding used in the data analysis process. In each case the material is provided according to a theme which merged from the data analysis. The information is presented in alphabetical order of the interview questions according to the participant groups and then numerical order within that group. They are further ordered by the alpha-numeric coding assigned to each participant. For example, under the heading *Leadership:*

- The first question relating to *Leadership* is Question A2 and the response is from Participant A5; and
- The second question relating to *Leadership* Question A2 and the response is from Participant A12.

These are followed by the best practice questions and the questions put to the information practitioners. The final questions are those to which the researchers responded.

The three themes provided as examples of the data analysis are:

- Disincentives to a positive information culture;
- Evidence of a positive information culture; and
- Leadership (as an element of information culture).

Disincentives (29 References)

Disincentives
Question A3 Participant A6
... discovered this among the research staff and the XXX is a question of autonomy.…that…to get the best out of certain members of staff in certain tasks you have to provided them with a certain amount of autonomy and they can often feel that the way that they are dealt with, communicated with, asked for information or acquire information is too bureaucratic, is too oppressive for, for them. That understanding these differences between different people and their roles are really important.
Question A3 Participant A8
No. Quite often you will have a change in government and you will have change of Minister. You will have an automatic change of your CEOs which filters down through the organisation. Every time there is an election you have got too many public servants so people's jobs are on the line. So every time there is a change of government, in XXX everyone goes into "on hold" mode. It's almost like a contraction. Everybody pulls back. No information is shared. People are watching their backs. That sort of culture, when that sort of culture is all pervasive and it happens every couple of years, it's very disruptive to the organisation and the last person you are thinking about is the customer.
Question A3 Participant A15
I agree with what [ ]said about trying to protect the power base and so on, but we have to bear in mind as well, the pace of Technology and how fast information travels to the point where people can miss information or sometimes use it to protect themselves. Because at the end of the day what you say, what you give up, may come back and bite you. It can be used against you. A lot of the time, sometimes because of that sort of caution, people tend to think "the less I say, the less I give up and the safer I am" and it is true.
Question A8 Participant A1
I mean the State Records Act might have put the bomb under a few of them but I think beyond retention disposal schedules I am not sure that they really understand a lot of the very wonderful principles we put in that act. It is interesting isn't it? Because you know, as the CEO you could argue that there is no real incentive.
Where I think there is no incentive that I can see, is the idea of information that is disruptive,

that is challenging, that is new.
Question A8 Participant A3
I'm struggling to think of a range of positive incentives that you might think could be, it may explain why it hasn't got the prominence
The disincentives a) it is difficult and b) I suppose it is the returns are often quite slow and the public service these days is ,at least is generally, on a fairly quick turnaround in terms of life of organisation, life of individuals in senior positions. So some of the work that one does for information potentially has quite a lag before all the benefits will be visible. So in terms of getting quick runs on the board and earlier recognition of success, the behind the scenes work which creates an information culture, and probably isn't always getting the recognition it deserves.
Hopefully you will find some good case studies because you think similar issues arise about the capacity of the work force and how the resources have moved some ways sort of back into centre stage compared to finance.
You think, oh well there's a model and I wonder if some of the organisations have lifted their approach to human resources. But that's interesting that we face a skills shortage of the state in the public sector, so people are much more sensitised now for the need to think very carefully plan and deliver approaches which attract and retain good staff. So we're in an environment but I'm not sure about the same environment around information, what would it take. I mean we had the year 2000 which made people momentarily fear for the loss of the information supports and IT terms.
Question A8 Participant A12
So a lot of information does get shared but perhaps there should be more of it and one of the impediments is this legislation.
Question A8 Participant A15
In today's world, you're finding even in Government a lot of even Senior Management are going down to the mindset of corporates. Of like the next quarter and how we're performing, the next election are we going to be still in office kind of mentality rather than the long term benefit of society, of the population. For example, the vaccine issue that is in the news is you know if you think of long term how much life you save and the cost of medical treatment down the track. You think, well, look this is crazy not to do it but the mentality even at

Government level is look how much money are you going to save?
Question A9 Participant A3
Because before you get into change mode we need a lot more insight into what it is about the public sector that gives information the status that it currently has. And when you think about it, it's fascinating that unlike the private sector, I mean the public service has a long tradition in a few narrow areas of respecting information that the archival information on our public services overwhelms the sort of remnants that exist in private sector activity that are carefully shredded the moment the tax laws allow us to.
Question A9 Participant A9
I suspect, I don't know because I don't know the legislation, but there are all the legislative boundaries that are imposed on organisations and services which probably mitigate against information sharing. The Privacy Act is what came to mind with XXX and I don't know the Act well enough. Does an Act like that act against the kind of information sharing that we're all seeing as desirable?
Question BP5 Participant BP1
I think that there is this issue around being found out or it's my stuff and you can't have it until I've finished with it type thing. I don't think it's really a power issue. It's more a if I don't give it to you then I can't be blamed for doing something wrong. I think it's a real negative thing in that regard. Like, if I give you a copy of this document you are going to tear it to shreds on me.
Yes. Yes or it's got stuck in there that, I don't know, it's sort of it's like its my IP so I am not going to give it away, not because I don't want to share it but because I am afraid that it's going to be criticised.
I think there are disincentives. The things that have happened in records management in organisations are disincentives. It's like the typing pool years ago where the organisations would have a typing pool or an admin assistant or something, and at the end of your project or at the end of the task, whatever you are doing, you'd throw everything at your typing assistant or admin assistant and everything would be filed away and everything would be wonderful and everything would be sweet in the world and you would have a file and a complete history of what was going on. Those admin assistants and typing pool type areas gradually died and there was more emphasis on multi skilling within organisations so people were doing their own typing, filing their own documents on the file server that sort of thing or

they were filing them in the registry files. The discipline has been lost. People who are multi skilling don't appreciate the fact that record keeping or information management is an important part of it. For me it's no longer part of the process. You know. Why do you keep a tax invoice when you are paying a bill? Because it's part of the process. You get an invoice or you get a purchase order that you have matched up with an invoice. You then match it up with the delivery docket. That all gets paid and as part of the process everything gets filed or squirreled away in some electronic system somewhere. To me that information that's retained is part of the process and is part of what you do. Whereas a lot of the other, especially developing policies and that sort of thing, record keeping is not necessarily part of the process.

I think a lot of people see records management and registry systems as black holes. No matter what we put into them you never get anything out of them and I think that this is again, poor skills and poor implementations of these systems, whether they're paper based or electronic based. I think it is just really lack of skills in what's appropriate as a record and there is also a bit of "sexiness" about it as well. Like records management is not seen as particularly important and so it hasn't been given a lot of money and a lot of people get thrown into that area who maybe are people that don't make it in other areas of the department. Then because of that they get a particular attitude once they do get a bit of power around records management or information management. So that makes it even more difficult.

Question P5 Participant P1

Certainly from my perspective of the State Records Commission, we are creating groups that will actually oversee a lot of this. They are putting a lot of compliance levels, are doing what's necessary at the agency level but also off-stream idea. What they do have in all those sites is available to everyone with appropriate mechanism in place to secure it, privacy issues. FOI was mentioned earlier. The information commissioner has her hands tied in many respects, she reports directly to Parliament but Parliament will not bring in the legislation to ensure that agencies are more accountable. So, I think they are trying but there doesn't seem to be any real drive to bring in the legislation.

Question P5 Participant P3

The change strategies about compliance as opposed to education, and changing because we are a group of people that have got so many levels of laws and different things like that that we actually do and often you don't get the results by just compliance

Question P2 Participant P2
Department of XXX where I work, the bottom line is that XXX get XXX and XXX get paid. So I guess XXX records and payroll records are things that are very important. You know, everything else just stems from that, whether you are managing administrative records involving the XXX, or all sorts of records, you come into head office with a silo mentality. There are some records that are more well organised or more accessible or captured than other record
Question P2 Participant P6
Because it is so fundamental to what they do, it really is. I mean information, if I look at it in terms of some of the spatial and all that stuff, they would be lost without it but a lot of that is that GIS type stuff that I am thinking about. They view it and they do manage it really, really well. But it is outside the context of say, what say a records branch or those sorts of things and people who do that are also in the planning space. Where we have the planning area, they do that but there is a disconnect between records or the corporate support areas that they see as, I mean we call ourselves Corporate Information, as sort of the records branch and above that corporate information. There is a bit of a disconnect in terms of what the business do in the context of well, how can the Corporate Support area assist in terms of developing the overall information framework
Question P3 Participant P4
I often find that you know rules or systems or codes of conduct or whatever are set up for how you're supposed to behave and what is expected but the reality is very different. And that's largely due in my opinion not only personal differences which can play a big part or personal characteristics and world views, but also what could be called the unwritten ground rules of an organisation. I'm sure you've come across that term.
I really think that I've been fortunate in a way that I've actually worked for twelve different organisations since 1984 in three states in Australia and two countries and two continents, namely Australia and XXX. And I've interrelated with a lot of different cultural groups, and religious groups and conflicting world views and value systems and people generally don't often take into consideration their underlying unwritten ground rules if you like. They just assume that that is the way it is. They don't actually question or really analyse or even understand how they came to know or approach a problem or anything for that matter with a given set of pre conditions or pre conceptions that they've just sort of absorbed from their family group, their cultural group, their social group and their national group. So yeah it's, I just find it fascinating that people don't actually, they sort of just take it for granted. I can

understand why but by sort of ignoring it, it leads to a lot of misunderstanding and it leads in my opinion to a lot of problems that people, if they were honest and really addressed that underlying these unwritten ground rules, these unacknowledged almost prejudices or pre conceptions or whatever would clarify a lot of issues.
Question P8 Participant P6
It's because it has to be a long term commitment and because the runs don't suddenly appear on the board, I think. It is long term. It is hard to do. I mean with IT I think it is quite easy to quantify but certainly in information management it is really hard to get tangible returns right away.
I don't think they understand the cost to the organisation at times to get that information because it is not available to them. They'll just need to ask for something and everyone will go through hell and high water to get it and it might have cost $2,000 to get that bit of information. So whereas if it had been managed appropriately and all that it would be at your fingertips.
Question P9 Participant P1
We are also learning strategically that government needs to open up lines of communication between agencies.
Strategically, government agencies need to network more, open up those lines of communication and talk about what they are doing, share the business analysis and not re-invent the wheel. When we go and put some issues up for funding, we are doing business cases and needs analysis but we are not working from past experience because we are not sharing information with others. There are a lot of valuable resources out there but we are not going out and exploring because we don't have time.
Question R2 Participant R3
I'm also dismayed by the lack of appreciation that these two areas are not more closely linked. This is perhaps to some extent because business and management subjects tend to be taught in strict compartments by business schools. I hope this is set to change – we are currently in the process of writing a multi-disciplinary text but something like this does not seem to have a ready-made market!

Question R2 Participant R4
Also the connection to business success is difficult because business success is depending on so many factors (both internal and external). Therefore I think the researchers have preferred to focus on narrower aspects connected to organizational information behaviour – for example looking at social aspects, motivation, trust, attitudes, traditions, group behaviour. All of these could of course also be defined as parts of information culture.

Evidence of a Positive Information Culture (30 References)

Evidence
Question A3 Participant A4
The first place I would start is breaking it down in to two is, information has certain qualities so we talk about accuracy, reliability, time limits and its like an 8 or 9 criteria and I think if you wanted to look at an organisation you, you'd start asking people who you get accurate timely, reliable etcetera, etcetera information and they'll tell you like today we say you know we don't get our information and it's not timely so you can ask about, about that. Because if you're looking at an information culture that's working well then that should produce that, you know people would give you your answers, yep that's working really well , so then you can say why, why do you think, and they'll say you know the boss is really keen on getting these reports out or if they say nah we don't get any of that like we have today we can say give me reasons why you don't get that one element of that I think that reflects an information culture is the number of spontaneous requests for information because if you got a poor information culture you get a lot of requests...
And if you have a, a working information culture because it's already been captured and you won't get a lot of those requests and dealt with properly. Where you don't want to go, based on my experience, is you don't want to ask people what is your value, you know what do you think, you know you can easily go to an CIO or someone like that in an organisation, you know what do you think cause they'll tell you everything that you're supposed to hear, so how would you go on about determining what it is you know you have to go to the people who work with information ...
Question A3 Participant A12
It really would only build on the previous answer of looking at the list you gave, particularly on the creation, the sharing and use elements. So you would want to unpick and look at the values and in that type of framework you also raise questions about what are the values that underpin in all of those elements? What are the behaviours? How do they link to values?

Is that the sort of level? Are you seeking a deeper level?
Question A4 Participant A1
I think what you would want to see at every level, but particularly at the senior level, would be people who are prepared to say I don't know; I don't have the answers. And also the answers aren't out there. We can bring more data in but the way we massage it and the way we end up making our own decisions has to be ours and therefore we have grown as a result of that process and so it's a spiral. A positive information culture would be a vibrant one.
It would be shared so that you would have minimal failures.
Question A4 Participant A11
One that's willing to seek new information and also disperse it, theoretically
Question A4 Participant A12
I see one of the key components of information culture is an organisation that treats its information as a resource rather than a by product of the process. And I think organisations then use that resource to drive the applications and the processes that they build rather than the other way around. It's the information, coming back to what I said earlier, as a resource gains the value and how you value that value you know is very important
Question A4 Participant A3
Firstly, they place an appropriate value on the information because they see where it fits into the purposes of the organisation. And that's been thought through and is owned generally. Then it comes down to this active use of information. I have always started from that end of the chain and the systems behind the use correctly align with the needs of users now and anticipated into the future. So that they are not systemised for their own sake because they align with the purposes of the organisation now and into the future. The value and I guess the behaviours therefore shown in terms of the way information is created is not fragmented in each individual but there is relevance that the systems that enable sharing of information in co development of information and I guess joint use of information.

Question A4 Participant A4
You know you've got a positive information culture where you're not getting numerous spontaneous requests for information…where people are content or content with the quality of information they are receiving, where their able to say clearly we have a proactive approach to information, information systems and information technology, that we're that we operate in those domains strategically not reactively, yeh that we get clear consistent messages from our management as to the importance of collecting accurate, relevant information and being able to, I was going to say this first…not the right word but to distribute that in a timely way…
Question A5 Participant A10
I reckon that there is a corporate knowledge because that's sometimes one of the things that's realised after the fact. Whereas in an organisation that understands and appreciates and therefore gives it the due respect, thank you, that it needs then that tends to be a positive organisation
Question A6 Participant A7
I would say critically there's not so much people looking over their shoulders, so there's often a feeling of you know their able to make decisions to make it look like they're doing something. We're getting a lot of this and thinking back to some of the other comments, things have been made not for long term purposes. So people are looking for the records management. They are looking at what's good for the organisation in 10 years time and political things.
I was talking about that, I think that in terms of people being included in information, and very important for people to be people being informed on why the information is needed not just a matter of filling in another form and..
Question A9 Participant A10
Realising that information does have an economy and that packaging it for the intended audience, even though it may be the same piece of information, if it's packaged well by informed people doing the packaging for the audience that that information needs to go to then that helps address the needs of the organisation in more than one place.

Question BP1 Participant BP1
It's also recognised as a marketing tool because if we can prove that we are good information managers and good information analysts, we can encourage new clients. So it's looked at from that perspective. So it's seen that if we can demonstrate that, it's a bit of a feather in our bow.
Question BP2 Participant BP5
Yes. There's only the board above him but he actually brought me in and then this program was brought into place. The second part of the program where I had to recruit people and we came to the conclusion that we wanted a blend of science and information knowledge management so the team's quite eclectic probably. We sometimes speak incredibly different languages about the same thing but the skills base of the team is very, very mixed and therefore we're probably getting some interesting delivery on the ground.
Question BP3 Participant BP5
But it had other things. Like in XXX one of the things that really impressed me was XXX when she was CEO and she actually just said I'm not going to sign any money for you unless it's on an official file. I need to know you've kept your record. So you bring it to me on the file with all the information that I need and yes I'll sign it. You get the money, otherwise I'm not going to. The culture changed over night because all the IT guys really wanted their money.
Question BP4 Participant BP6
Do as I do. It was definitely that and that was the biggest difference between the two organisations because XXX had the more strategic view. They wanted to know what was coming over the horizon. They wanted to know what might bite them. They wanted to tap all the information resources.
Question BP5 Participant BP2
I know that the organisation is very conscious that the information or the output we provide can actually help Australians make better decisions about how this country will be organised in the future or should be organised.

Question BP6 Participant BP1
But I think informally that, you know, it is like what I said before. You go to someone who is an expert in this or who do I go to for that. That is in a way classifying people's expertise to say "I understand what this person is good at or what they can help you with" or "they might not be able to help me with that but they can at least give me some background on it" or that sort of thing. So you provide that, again it comes back to that context it comes back to pointing in the right direction. Whether it is a systemic issue or a people issue, it's something that you'd probably look for as a characteristic in an information culture.
Question BP7 Participant BP1
In the same way you would expect a qualitative based decision to have similar sorts of things. What are the inputs, especially the key inputs? What are the key things that lead you to this conclusion? Often we talk about tests when you are doing an audit and I think that the better term to use is verification but how do you verify what you have got. That's where I see a lot of decision evidence for decision making is lacking that "OK we have got this piece of information but it doesn't seem to be based on ….. and we have got another piece of information that it is based on but this other piece of information doesn't seem to have any provenance. Doesn't seem to have any standing and often there are things like that where a corridor conversation turns into a business decision. You would want to see some evidence there. Now how do you do that if there are no records or information kept that can then get very difficult How does someone justify a decision if they can't show you their thinking?
I do a lot of IT work and I have got staff who will know how to run a particular operating system or a security thing or whatever. They will know it backwards. But there is another little program on their system that sits beside it that they wouldn't have a clue about and I think that works with a lot of business type issues as well that someone might be absolute gun on governance structures but know nothing about performance monitoring. Something like that because those things are related, performance monitoring is related to governance, then this person should be expert in that so maybe there is implied or assumptions. Maybe one of the evidence based things you do need to work out what your assumptions are. You do need to work out what your context is so. If you don't clearly say "OK these are my assumptions and this is the context I am working in" how can you understand the decision? That's part of the evidence as well
Question BP7 Participant BP2
Our interest in evidence for decision making is more about actually giving people the

information on which to then base the decision. We certainly would make decisions based on. It's the preparations that actually is our greatest strength rather than actually then the next level, the research.

Question BP7 Participant BP4

Yes. It's having accurate data which you can find easily and you know is correct and current for decision making, for either within the department or something you're advising the minister or somebody on the ground, you know. Can they do this or that? Purely exactly what it sounds like.

Question BP8 Participant BP2

I think probably because we can see the benefit of the information that comes out above there to actually improving the condition of the individual we can see the benefit of as long its depersonalised why not make that information available for the benefit of people? And it comes back to that concept of informed decision making. If you didn't give the person a piece of information they could make the wrong decision and in a sense context is important to that again too and that probably has something to do with the information culture that you're talking about and that support for service delivery.

Question P3 Participant P4

I would like to bring it down to a more practically orientated approach and say that in essence an information culture if it's going to be beneficial, positive, practical and constructive must ensure that information is disseminated vertically, horizontally within the organisation or the group or the section or the department to ensure that those goals, aims and objectives of that department, group, organisation, section are reached or at least moving towards reaching them or attaining them.

Question P3 Participant P6

In terms of just relating that to where I work because we are such a diverse organisation, we have areas that are very process orientated. So the physical file is such an important component of what they do. They're transactional and so there is really strict and tight record keeping and files are such a critical part and so they do really good record keeping on a file based system. What you do find is that new people come on board and they adopt that culture. It's really quite interesting to watch and so they do that. Yet if we go to another area which is more of a policy orientated area they have a totally different focus. I mean, they just

don't care about the hard copy file. They'll do what they have to do and the outcome. They get the outcome they want. If they don't have that formal, strict, I guess what they'll probably do at the end, they'll create the policy or whatever and say, I have got all these documents. Here it's your problem. So, there's a totally different culture and people come into it and they adopt that culture and in a sense that's the way they work and for some reason, but that there is that. It is amazing to watch how people just come from outside into those pockets and how they adopt that culture, that information culture I guess.
Question P4 Participant P5
To me it's about information sharing communication, people, systems, knowing business, it's all those realms, dimensions that are coming together. So fundamentally for me it's about communication, collaboration, systems supporting it, that's how I think about it.
Question P5 Participant P5
This conversation sort of also leads into governance which is this sort of issue, so it is appropriate governance which is really hard to set up… and really hard to get at the right level. Although the valuing is there it's operational and you can have the strategic bit and it still might not be effective, depending on the governance.
Question P5 Participant P6
I guess it's about, everyone talks about it. It never actually happens. I think, it's really part, should be part, of the strategic plan or whatever at that top level. I guess it's identified and seen as a major resource and all those sorts of things. I guess it's at a business planning level. I don't think you ever see information management or anything like that as something as fundamental to getting a good business outcome.
Question P5 Participant P7
Maybe this is an attribute of a well established information culture that performance indicators are recognising this area.

Leadership (26 References)

Leadership
Question A2 Participant A5
I think a big thing that is actually missing is the impact of people and politics. Because I think

that has an enormous impact on information culture because you could have just one person up the chain who can have such a tremendous impact. Whereas I think a single person can have an enormous impact for good or bad unless you have someone who is keeping it open or making things, allowing things to happen you can have a real problem.

Question A2 Participant A12

I thought as we are going through is that a culture normally starts at the top. So it is sort of top down if you like. Otherwise the culture is what the proletariat want. OK run with the organisation or culture that the government want to impose, and I see that there is a huge problem there in the government in the roles of some of the senior people that have changed dramatically over the last 10 – 15 years. I think that a lot of CEO's that I have spoken to say their main role is to protect the Minister's xxx, not to develop the business but to protect the Minister. And now you see a lot of CEO's who have failed to protect the Minister are now being shuffled off. So maybe the top has lost the vision of what their role in the organisation is in terms of improving service and information, gathering information. Without being too specific you just need to go back to some of the CEO's that have suddenly gone because they didn't have information.

Question A5 Participant A2

I saw a big difference between two different heads that I work for. One of whom did not cultivate an information culture and one of whom did and so the attitudes from the top towards it played a big role in whether they shut it down or they invited, promoted, opened up for that kind of culture to flourish. It didn't naturally flourish unless people were waiting for that opportunity but it certainly wasn't going to flourish when that opportunity wasn't provided and encouraged.

Question A5 Participant A14

Culture comes from the top in an organisation and it's the same with the information culture, with the other cultural aspects if that's driven from the top. As XXX says information is a resource in this organisation available to be shared and utilised and across applications and by all parts of the organisations that need it, then that's likely to happen if it's been driven from the top.

Question A6 Participant A9

I don't know if I've formed this, but if things are to work well does there have to be somebody

who has a very global view, even if it's global within the organisation.

Question A8 Participant A2

As I said, a lot comes from the very top, the signals and opportunities that are provided at the very top of an organisation.

Question A8 Participant A6

I think that I agree totally and utterly in a way that the idea that information culture in terms of culture follows on from general cultures within the culture organisation. And it may very well need a change of leadership to do that. I do think however that there are little things, like I mean there's a big picture but there are also little things, little things that you could make a positive effort to change. A positive training programme which says look, when you send out an email, do it like this rather then like this.

Question A9 Participant A1

So you meet these people and it just kind of like, so it's like unless you have got a real passion to have a strategic vision, all the information in the world isn't going to do you any good because you are not looking for new ideas. But what about an information culture in Ministers?

Question BP2 Participant BP1

I think we were a little bit ahead of the pack there. I think we pre-empted that a bit so I thought that was, I think we had some champions around the world, I was going to say in Sydney but I think they were around the world, that they had actually picked up on the fact that we should be doing something in this area. It probably was around the same time that knowledge management took off as a topic sort of thing. But I think it was also trying to bring together a whole lot of stuff.

Question BP3 Participant BP1

Yes. I think just to summarise, I suppose it was driven pretty much internationally. Pretty much at the highest level it was endorsed by senior executives so they at least, they were quoted as saying that they endorsed it so that was good.

Question BP3 Participant BP2
The Deputy XXX was the person who recognised the importance of the concept of office automation and that there were two sides to the business and another XXX was the person who recognised that in the same way that you could spend so much time organising a general production line, you could actually, not to the same extent, organise the other side of the business. But you could at least start thinking about it.
Yes. It was interesting, I talk about our office automation environment but what happened was our senior management actually became sort of the people that were working in this space. Very quickly that extended to the middle manager areas. And the middle managers then could actually see the benefit actually to their work as a whole. So the extension down in the end our office automation project which was supposed to take a number of years was through in about 18 months because of the extent to which people could see that it actually made their lives easier. It was quite intriguing, it took us a while to actually get to the stage where we knew that we actually had a different way of working or we could in fact help people work differently.
We looked as much at the way they worked as actually the systems and technologies they used and that was why we clearly knew about what we thought was the understanding of the leadership role and how important it was.
Question BP3 Participant BP5
Yes and she just said and she would do a sweep of the XXX offices and if their offices didn't have things on official files she would go ballistic at them. But she was also learning from what had happened in XXX and she said this is not going to happen to us. This is what we are going to do.
Question BP4 Participant BP6
If you had someone who was in, I say a branch head position, who believed in the value of information and keeping good records and sourcing the best information, then you got people who were attracted to work in that area and so you had an area that was working quite productively that way. You might have an area on the same floor that just didn't have the same focus.
Question BP5 Participant BP4
I got the ear of someone high enough who was willing to spend the money and the time for it

Question BP5 Participant BP5
I don't know if you can reward people either. I think it has to be about leadership. If the behaviours you want aren't being modelled at the top end then it's not going to happen, you know, because if it's good enough for me then why can't you is the sort of message you want to be getting. You know it's I get quite frustrated with the Senior Execs and that was the thing about XXX modelling the behaviour she wanted to see. And I think that's what made a critical difference. I don't think you can punish or reward. I don't think it will make any difference. People will do what's easiest. It's human nature.
Question BP8 Participant BP2
One in which power sharing or information hoarding is encouraged, that has to be overcome by leadership and by the leaders actually practising what they preach
Question P2 Participant P5
When considering information culture I have just come now to thinking what does the CEO, how do they consider information and what is their priority, how serious are they about information because I think that that will have a big impact on what happens.
Question P3 Participant P1
It's a very much an over-arching issue that needs to be looked at and that's the very single element for me. It's very important. We need that support. We need that assistance and someone that gets out there and champions the cause.
Question P3 Participant P7
I think also leadership impacts on a culture. How office holders in organisations perceive various issues in the information management, information systems landscape is quite important and becomes a communicated value which impacts on local culture and perception in information systems and information management.
Question P5 Participant P4
But even more important or equally important will be the example and the leadership shown by top management in terms of living their philosophy or their codes of ethics or their value

system and their principles. If people see that they will forgive or at least be a lot more lenient for any short comings in other areas
I keep coming back to that same point because to me that is the most important and that is the leadership from the top as well as the principles, values and beliefs that they actually espouse and live by example.
Question P8 Participant P8
Auditing is very important and the hip pocket, be it from incentives to make people do it, or be it senior management realising, I'm going to save money by embracing it. I think it is getting that vision across to senior management that an information culture is actually going to be good for the organisation because you are not going to change those things without senior management support. It needs funds and it needs significant funds in some areas and it needs significant changes in an organisation, that's got to be supported by senior management.
Question R5 Participant R1
Leadership; senior management support for information norms and behaviors such as sharing, openness, integrity.
Question R5 Participant R3
My belief is that senior management need to be 'encourageable' in the first place. True leadership should be about visible managing by example and being prepared to take risks rather than about ego protection and self worth. Over the years I have found senior management to be the greatest stumbling block to progress of any kind. If you have reasonably enlightened senior managers, the best approach is to emphasise the benefits of developing a high performing information culture. Information needs to be of organizational rather than just individual value to move organizations forward. Culture and leadership are inextricably linked. It is necessary to develop and open culture, a culture where experimentation and risk taking are encouraged, where people are trusted and feel valued. Perhaps there need to be incentives of some sort to share information and create a well honed organizational intranet.

Appendix C

Chart of the Western Australian Government and Examples of Service Delivery Agencies

Chart of the Western Australian Government

The Chart of the Western Australian Government was produced by the Public Sector Commission (2009). This version of the Chart is indicative of the names and number of government agencies during the time period of this study.

Examples of Service Delivery Agencies

The following are examples of agencies which were defined as service delivery agencies for the purpose of this study. They are indicative of the government agencies in place and operating during the time period of this study.

- Department for Child Protection;
- Department for Communities;
- Department of Agriculture and Food;
- Department of Commerce;
- Department of Corrective Services;
- Department of Culture and the Arts;
- Department of Education and Training;
- Department of Environment and Conservation;
- Department of Fisheries;
- Department of Health;
- Department of Housing;
- Department of Mines and Petroleum;
- Department of Planning and Infrastructure;
- Department of Sport and Recreation;
- Department of Water;
- Disability Services Commission; and
- Police Service (Western Australia Police).

Government of Western Australia
Public Sector Commission

Chart of the Western Australian Government

Produced on 2 April 2009 www.publicsector.wa.gov.au admin@psc.wa.gov.au

Premier; Minister for State Development

- Department of the Premier and Cabinet 1
- Office of the Public Sector Standards Commissioner ↗ 1
- Public Sector Commission 1
- Lotteries Commission (Lotterywest) ↗ 1
- Corruption and Crime Commission ↗ 1
- Director of Equal Opportunity in Public Employment ↗
- Parliamentary Commissioner for Administrative Investigations (State Ombudsman) ↗ 1,3
- Parliamentary Inspector of the Corruption and Crime Commission ↗ 1
- Salaries and Allowances Tribunal 3
- Electorate Offices
- Gold Corporation 1
- Governor's Establishment
- Department of State Development 1

Deputy Premier; Minister for Health; Indigenous Affairs

- Department of Health ★ 1
- Animal Resources Authority 1
- Health Professional Registration Boards (8) 3
- Office of Health Review 1
- Pharmaceutical Council of Western Australia 3
- The Queen Elizabeth II Medical Centre Trust 1
- Western Australian Health Promotion Foundation (Healthway) 1
- Department of Indigenous Affairs 1

Minister for Mines and Petroleum; Fisheries; Electoral Affairs

- Department of Mines and Petroleum 1
- Chemistry Centre (WA) 1
- Department of Fisheries 1
- Western Australian Electoral Commission 1

Minister for Regional Development; Lands; Minister Assisting the Minister for State Development; Minister Assisting the Minister for Transport

- Gascoyne Development Commission 1
- Goldfields-Esperance Development Commission 1
- Great Southern Development Commission 1
- Kimberley Development Commission 1
- Mid West Development Commission 1,2
- Peel Development Commission 1
- Pilbara Development Commission 1
- South West Development Commission 1,2
- Wheatbelt Development Commission 1
- Western Australian Land Information Authority (Landgate) 1
- Western Australian Land Authority (LandCorp) 2

Minister for Education; Tourism

- Department of Education and Training ★ 1
- Department of Education Services 1
- Country High School Hostels Authority 1
- Curriculum Council 1
- Trustees of Public Education Endowment 1
- Western Australian College of Teaching 3
- Universities (5) ♦ 1
- Rottnest Island Authority 1,2
- Western Australian Tourism Commission 1

Minister for Transport; Disability Services

- Commissioner of Main Roads 1
- Public Transport Authority of Western Australia 1
- Port Authorities (8) 2,3
- Disability Services Commission ✦ 1

Treasurer; Minister for Commerce; Science and Innovation; Housing and Works

- Department of Treasury and Finance 1
- Office of the Auditor General ↗ 1
- Economic Regulation Authority ↗ 1
- Government Employees Superannuation Board (GESB) 1,2
- Insurance Commission of Western Australia 1,2
- State Supply Commission 1
- Parliamentary Superannuation Board
- Western Australian Treasury Corporation 1,2
- Department of Commerce 1
- Department of the Registrar Western Australian Industrial Relations Commission 1
- Minerals and Energy Research Institute of Western Australia 1
- Small Business Development Corporation 1
- WorkCover Western Australia Authority 1
- Commission for Occupational Safety and Health (WorkSafe) 3
- Construction Industry Long Service Leave Payments Board 1
- Professional Licensing / Registration Boards (5) 3
- Real Estate and Business Agents Supervisory Board 1
- Settlement Agents Supervisory Board 1
- Department of Housing 1
- Housing Authority 1
- Architects Board of Western Australia 3
- Country Housing Authority 1
- Western Australian Building Management Authority 1

Minister for Police; Emergency Services; Road Safety

- Police Service (Western Australia Police) 1
- Police Force
- Fire and Emergency Services Authority of Western Australia 1

Minister for Sport and Recreation; Racing and Gaming; Minister Assisting the Minister for Health

- Department of Sport and Recreation 1
- Professional Combat Sports Commission 4
- Western Australian Institute of Sport 1
- Western Australian Sports Centre Trust 1
- Department of Racing, Gaming and Liquor 1
- Racing Penalties Appeal Tribunal of Western Australia 1
- The Burswood Park Board 1
- Racing and Wagering Western Australia 1,2
- Western Australian Greyhound Racing Association 1

Minister for Planning; Culture and the Arts

- Department for Planning and Infrastructure 1
- Redevelopment Authorities (4) • 1,2
- Western Australian Planning Commission 1
- Department of Culture and the Arts 1
- Perth Theatre Trust 1,2
- The Board of the Art Gallery of Western Australia 1
- The Library Board of Western Australia 1
- The Western Australian Museum 1
- State Records Commission ↗ 4

Minister for Energy; Training

- Office of Energy 1
- Electricity Corporations (4) 3
- Independent Market Operator 3
- Western Australian Gas Disputes Arbitrator 1
- TAFE Colleges (10) 1
- Building and Construction Industry Training Board 3

Attorney General; Minister for Corrective Services

- Department of the Attorney General 1
- Office of the Director of Public Prosecutions ↗ 1
- Professional Standards Council 1
- Commissioner for Children and Young People ↗ 1
- Commissioner for Equal Opportunity 1,3
- Law Reform Commission of Western Australia 1
- Legal Aid Commission of Western Australia 1
- Legal Practice Board 3
- Liquor Commission
- Office of the Information Commissioner ↗ 1,3
- Office of the Public Advocate 3
- Prisoners Review Board 3
- Public Trust Office 1
- Solicitor-General
- Courts and Tribunals
- State Administrative Tribunal
- Department of Corrective Services 1
- Office of the Inspector of Custodial Services ↗ 1

Minister for Child Protection; Community Services; Seniors and Volunteering; Women's Interests

- Department for Child Protection 1
- Department for Communities ★ 1

Minister for Water; Mental Health

- Department of Water 1
- Bunbury Water Board (Aqwest) 1,2
- Busselton Water Board 1,2
- Water Corporation 3
- Western Australian Alcohol and Drug Authority 1

Minister for Local Government; Heritage; Citizenship and Multicultural Interests

- Department of Local Government and Regional Development ★ 1
- Metropolitan Cemeteries Board 1,2
- Heritage Council of Western Australia 1
- The National Trust of Australia (W.A.) 1

Minister for Agriculture and Food; Forestry; Minister Assisting the Minister for Education

- Department of Agriculture and Food 1
- Rural Business Development Corporation 1
- The Agriculture Protection Board of Western Australia 1
- Agricultural Produce Commission 1
- Grain Licensing Authority 3
- Perth Market Authority 1,2
- Potato Marketing Corporation of Western Australia 1,2
- Veterinary Surgeons' Board 3
- Western Australian Meat Industry Authority 1,2
- Forest Products Commission 1,2

Minister for Environment; Youth

- Department of Environment and Conservation 1
- Botanic Gardens and Parks Authority 1
- Zoological Parks Authority 1
- Conservation Commission of Western Australia 3
- Environmental Protection Authority 3
- Keep Australia Beautiful Council (W.A.) 1
- Swan River Trust 1

KEY TO COLOURS
(PUBLIC SECTOR MANAGEMENT ACT 1994 STATUS)

- Department
- SES Agency
- Non-SES Organisation (sample only)
- Schedule 1 Entity (not an organisation)

KEY TO NUMBERS
(STATUS IN OTHER KEY LEGISLATION)

1. Must report under the *Financial Management Act 2006*
2. Listed in Schedule 1 of the *Statutory Corporations (Liability of Directors) Act 1996*
3. Must produce a financial report and report on operations under their own legislation (sample only)
4. The entity's enabling legislation requires reporting in accordance with the *Financial Management Act 2006*

KEY TO SYMBOLS
(NOTES ON SPECIFIC AGENCIES)

- ↗ Reports directly to Parliament
- ★ Reports to multiple Ministers
- ♦ The University of Notre Dame is required to report on expenditure to the Minister.
- ✦ The Disability Services Commission is both a Department and a Senior Executive Service Agency
- • The Armadale Redevelopment Authority is a Non Senior Executive Service Organisation