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Is a knowledge based value network an effective model for implementing e-government?

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IS A KNOWLEDGE BASED VALUE NETWORK AN EFFECTIVE MODEL FOR IMPLEMENTING E-GOVERNMENT?

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A Dissertation Submitted in Partial Fulfilment of Requirements for the Degree of Doctor of Business Administration (IS) in the School of Management Information Systems Edith Cowan University

**School of Management Information Systems
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Perth, Western Australia**

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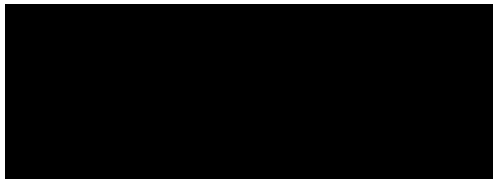
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ABSTRACT

IS A KNOWLEDGE BASED VALUE NETWORK AN EFFECTIVE MODEL FOR IMPLEMENTING E-GOVERNMENT?

E-Government is a vision of how public sector organisations will govern, serve citizens, and interact with business partners, their employees, and other Government organisations. The "e" in e-Government represents a move to fully integrated, secure, on-demand accessible electronic Government that will:

- improve integrated service delivery
- provide universal citizen access
- begin to enhance traditional Government structures and processes
- support new Government products and services by relying on the emergence and convergence of new technologies
- improve effectiveness

Electronic commerce (e-commerce) has fundamentally changed the way business is being conducted and Government is rushing to catch up.

This research looks at the implementation of e-Government specifically within three Western Australian Government organisations. Firstly it reviews the issues of e-Government and the drive towards customer-centric organisations in the context of multiple Government agencies. A model of e-Government is introduced and examined. Three case studies are used to demonstrate how this concept of a virtual organisation as a customer value-alliance model can effect a successful transition to e-Government from a traditional Government model. An analysis of the change management process for each case is conducted against a comprehensive model of business process change. It examines how the three Government organizations are implementing e-Government for improved customer service and the implications of this model for the management of change in a developing e-community.

A pilot case study helped refine the research and define the theory of the study. This pilot case study looked at a Western Australian Government agency that was undergoing the development of an e-business strategy whilst at the same time

undergoing a business process change that was designed to develop a customer-centric model that included the bringing together of other Government agencies to form a virtual organisation.

This was followed by a three-phase study of the original pilot agency and two other Government agencies. Phase one included data collection based on an e-business change management model. This data collection approach was utilised in both phase two which researched e-Government virtual organising strategies in relation to an e-Government strategy framework and phase three using a framework for knowledge strategy.

The research highlighted a number of factors that must be carefully considered:
- internal
  - cultural readiness – The strategy must be supported by the senior executive, all parts of the organisation must be involved and there must be information flows between sections of the organisation
  - strategic initiatives – The senior executive need to fully sponsor the project
  - learning capacity – The organisation must be prepared to reflect on its experiences, refocus if necessary and be able to utilise the experience of business partners and customers
- external
  - relationship building – the organisation must build working relationships with both external partners and customers and share information and experiences
  - knowledge acquisition/sources – there is a need for pervasive knowledge sharing, feedback and communication; integration of environmental considerations; Effective partnerships with partners and customers; and commitment to using business partners and customer to drive changes in operations, goals and vision
  - value alliance - brings core competencies together from partners and customers and ensures access to other competencies and customer life cycles

CHAPTER 1. THE RESEARCH

1.1. Introduction

It is now well accepted that with the emergence of the World Wide Web, a totally new business environment, e-business, has evolved where companies must work together to create online networks of customers, suppliers and value-added processes (Ticoll et al., 1998; El Sawy et al., 1999). Such radical transformations are not solely restricted to the business world but are now impacting on the public sector where the latest "e"volution is e-Government (Stratford and Stratford, 2000). The lifeblood of Government is information, and the digital revolution has allowed Government organizations to more effectively and efficiently store, analyse, and retrieve information. This process has also been strongly affected by changes in telecommunications technology and the convergence of computer and communication technologies. The most recent manifestation of this process of technological change is the advent of the Internet or World Wide Web (Stuart, 2003). Telecommunication networks form a major part of the new core technology of public administration. Technologies increasing relevance is related to the potential of the Internet to integrate harmoniously, the wide range of previous technologies and the promise of the World Wide Web to implement the concept of interlinked networks of computers between Governments and other actors such as citizens (G2C), businesses (G2B) and other Governments (G2G) (Criado and Ramilo, 2003). Within the next five years the Internet will transform not only the way in which most public services are delivered but also the fundamental relationship between Government and citizen (Von Hoffman, 1999; Sprecher, 2000).

With few exceptions Governments have arrived late on the scene. As monopoly suppliers, Government organisations were not worried about being "Amazoned" by a new web-based competitor. Transactions with Government are rarely a matter of choice and Government employees are unlikely to be rewarded for devising innovative web based strategies to streamline processes. Nevertheless the drive is now on for radical Government change (Morin et al. 2000; Sprecher, 2000). A major driver has been the desire to reduce costs and make revenues go further. Savings of 20% are not unusual in the e-business community as they network their supply chains (Burn and Hackney, 2000), and such concepts transfer easily into Government services. U.S. federal, state

and local procurement spending on materials and services in 2000 was estimated at around $550 billion, and in the European Union member states' combined procurement spending was around $778 billion (Symonds, 2000). Businesses sank $2.7 billion into new systems in 2002, according to the IDC, which estimates that number to rise to $4.8 billion in 2007. The U.S. federal Government will boost knowledge management spending from $820 million in 2003 to $1.3 billion by 2008 (Babcock, 2004). With a 20% cut in costs we are looking at savings of around $250 billion.

An additional driver comes from customer expectations. Customers now have far greater access to information and demand personalised experiences as opposed to simply acquiring goods and services. A customer driven organisation is one that maintains a focus on the needs and expectations of customers both spoken and unspoken in the creation and/or improvement of the product or service provided. Successful organisations, state or municipal Governments federal Government departments and agencies have recognised that developing customer focus is an absolute necessity (Cavanagh and Livingston, 1997; Schoeniger, 2000).

One of the proposed solutions has been the creation of Government portals such as the Singapore or UK portals. These have been designed around "life events" including changes in marital status, allowing users to locate the information they are looking for by using "How do I - -?" type questions rather than by forcing the client to search through complex organisational structures, possibly linking up to 50 different departments in one search. In reality the Government portal acts as a virtual organisation front interacting with customer driven demand. This type of solution requires major changes within and without the Government organisation and as yet, there is no clear evidence of success (Jellinek, 2000). The failure of a massive Government IT outsourcing project in Australia has highlighted the enormous difficulties of implementing cross-agency collaboration. The proposed solution is to return autonomy to the individual Government agencies but to focus on the development of inter-agency systems based on customer services and added customer value.

1.2. Research Problem and Objectives

1.2.1. Research Focus

Within Government and Governmental organisations that have been established to deliver Government policy, administrate Government legislation and provide Government services there are increasing requirements to be more effective and accountable to their constituents. This effectiveness can be defined as putting in place what is deemed to be politically advantageous to the Government of the day; the ability to cut costs without a reduction in actual service to the constituents; transfer of Government services to the commercial sector; increased cross organisational collaboration and broadening the reach of Government services to every part of the community.

Research is required to determine if e-Government is extending the social contract to provide improved services to all citizens and businesses and if Government organisations are taking the opportunity to rethink how they provide services and how it links them in a way that is tailored to users' needs as well as devolving real power to regions and localities as an integral part of its approach to e-Government. In relation to this there is a requirement to determine the extent to which Government organisations have collaborated with other organisations inclusive of public and private as well as their constituent clients when developing an e-Government strategy, what sections of effective Government are addressed through the implementation of e-Government and whether the introduction of elements of marketplace solutions into a Governmental service organisation can assist with the development of e-Government.

The aims of this study were to:
- research the development and augmentation of a theoretical framework for e-Government implementation
- identify what is the most effective structural network for e-Government?
- identify if there is there a staged growth model for e-Government and can knowledge management be incorporated into the model?

- Identify what are the most effective roles and relationships to manage this change?

1.2.2. Contributions To Knowledge

This research will extend the current knowledge of strategic approaches to Government and provide valuable insights into the approaches being taken to implement e-Government:

- A review of the approaches to implementing an online strategy. The review will look at the extent to which the agencies have utilised an enhanced value network and identify best practices
- A review of change management practices and the evolution of knowledge management practices.
- A framework for effective e-Government implementation
- Publication of papers that add to and compliment current research on e-Government.

The main contribution is through development and augmentation of a theoretical framework for e-Government implementation.

1.3. Phases of the Research Method

The Government of Western Australia has increasingly looked to electronic mechanisms, in particular the World Wide Web to improve effectiveness and cut costs.

A pilot case study helped refine the research and define the theory of the study. This pilot case study looked at a Western Australian Government agency that was undergoing the development of an e-business strategy whilst at the same time undergoing a business process change that was designed to develop a customer-centric model that included the bringing together of other Government agencies to form a virtual organisation.

This was followed by a three-phase study of the original pilot agency and two other Government agencies. Phase one included data collection based on an e-business change management model. This data collection approach was utilised in both phase two which researched e-Government virtual organising strategies in relation to an e-Government strategy framework and phase three using a framework for knowledge strategy.

Phases of The Research Method

Preliminary Phase – Exploration
Pilot case study of 1 Western Australian
Government Agency
(Stages of Growth)

Phase 1 – Data Collection
3 Case Studies
(eGovernment Change Management)

Phase 2 – Descriptive Phase
Case Studies for Q 1, 2
(eGovernment Strategy Framework)

Phase 3 – Descriptive Phase
Case Studies for Q 3
(Framework For Knowledge Strategy)

Phase 4 – Explanatory Phase

Figure 1.1 Research Method

1.4. Structure of The Thesis

The thesis is structured in four parts:

- Part 1 locates the work in its research tradition, formulates the research problem and objectives, discusses the research approaches available in the field and

justifies the research design. It concludes with an overview of the research project and case studies.

- Part 2 starts with a pilot case study based on the e-Government model. The pilot case is utilised to refine the research and the research questions. The section then investigates the case studies through an e-business change management model and looks at the effectiveness of each case study online strategy.

- Part 3 is a reflection on the case studies in terms of an e-Government model and e-Government strategy framework. It looks at the findings from part two and maps this against the e-Government model and e-Government strategy framework.

- Part 4 is a conclusion drawn from parts two and three with a summary of the research work, reflection upon it and suggestions for further research.

The structure of the thesis is given in Figure 1.2.
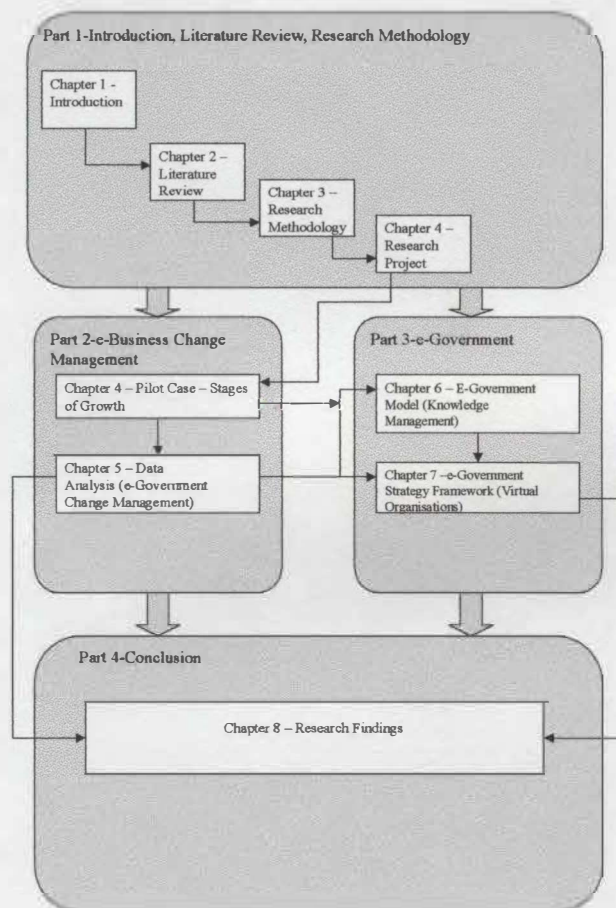
Figure 1.2 Structure of the Thesis

1.4.1. Summary of Thesis

CHAPTER	DESCRIPTION
1. Introduction	Orients readers to the purpose, content, and organisation of the document and provides some background to place the study in a context.
2. Literature Review	Provides a summary of the theoretical constructs that inform the study. Connects specific aspects of the inquiry to broader bodies of knowledge
3. Research Methodology	Discusses guidelines for evaluating the conduct and the written account of the fieldwork
4. Research Project Pilot Case – Stages of Growth	Provides an overview of the inquiry and communicates the purpose of the study followed by an examination of the idea of extending the Government services network and changing the nature of its usage to improve core competencies through a case study
5. Data Analysis (e-Government Change Management)	Utilises an e-Government Change Management Model to gather information in relation to how the 3 cases have looked at extending the Government services network
6. e-Government Strategy Framework (Virtual Organisations)	Analyses the data against the stages of growth strategy framework to determine the effectiveness of each case in extending the Government services network and changing the nature of its usage to improve core competencies
7. E-Government Model (Knowledge Management)	Analyses the data against the knowledge management model to determine the extent to which each case has acquired and exploited knowledge to extend its services network and changed the nature of its usage to improve core competencies
8. Research Findings Conclusion - Contributions to Knowledge	Conveys the results of the research and explains how each guiding question was addressed. Discusses the contributions of this study to e-Government, technology acceptance and diffusion and implications for management. Discusses the limitations of this study and suggests future publications and research based on the dissertation

CHAPTER 2. LITERATURE REVIEW

2.1. Introduction

This chapter looks at current literature specific to e-Government inclusive of areas that contribute to implementation of an effective e-Government strategy. It looks at e-Government including current e-Government definitions, constraints to implementation and popular e-Government models. Areas that contribute to implementation of e-Government strategies are then reviewed.

The areas reviewed are:

- developing a customer focus
- achieving a service driven environment
- managing a virtual agency model
- knowledge management
- business process change and e-business change management

The Internet or World Wide Web has made substantial penetration into mainstream business and consumer use within the last 10 years. Williamson (2002) cites four factors responsible for this growth and impact:

1. time period – the development of a low cost microcomputer that has enabled business to place computing power on individuals' desktops as well as individuals being able to purchase a computer
2. information - economies have changed from manufacturing-based economies to information-based economies. The Internet facilitates the availability of information to employees and individuals alike. It allows remote access to information quickly and easily by employees working in different parts of the organisation or even away from the office
3. applications - the Internet is an effective medium for any transaction processing that is carried out, whether by a business or an individual. There is a large range of personal applications, including electronic mail, purchasing and selling goods, banking facilities, sourcing travel information and booking tickets. Similarly, the Internet can be used by all types and sizes of businesses in a

number of different ways, such as allowing employees to access information by a corporate intranet or portal, processing payments and invoices, sourcing and purchasing supplies, marketing goods and services and providing customer information and support

4. empowerment - involves sharing information, task autonomy and self management. It is a method of working which puts the emphasis, authority and responsibility onto the individual. Customers are also empowered as they can access relevant information regardless of location or time

The increasing importance of the four factors will enforce the necessity of Internet access by businesses and individuals alike. Whilst these four factors will ensure more individuals have the capability to access Internet facilities it is imperative that individuals and business are:

1. presented with information that has value
2. provided with services regarded as necessary
3. given simple, fast and direct access

The Internet has become an important medium for organisations required to interact with a wide range of stakeholders. It has the potential to market products and services, communicate information to a global community, provide an electronic forum for communications, and process business transactions (Fink and Laupase, 2000). It can immediately reach clients anywhere and provide in-depth and highly effective information. It allows officials to communicate directly with citizens and to deliver large quantities of information to the public (Tat-Kei Ho, 2002). Whilst massive amounts of data can be delivered to the public it is of little value if it cannot be filtered or does not offer a service that is required by the public. A totally new environment is emerging where companies must work together to create online networks of customers, suppliers and value-added processes (Ticoll et al. 1998). This is an extremely important aspect with Government organisations that have a mandate to provide services to citizens that often cross many Government organisational boundaries.

The flexibility of the Internet in providing access to goods, services, and information raises citizens' expectations of customer service in a range of contexts, including interactions with Government (Tat-Kei Ho, 2002). Citizen visits to Governmental Web

sites are increasingly common, and as such appear to have become a major new form of the traditional citizen-initiated contact (Thomas, 2003). This has led to the re-invention of Government and accelerated the move towards online services. (Sprecher, 2000).

Traditionally citizens have been required to seek out the appropriate organisation and the appropriate sections of that organisation for the services they require and in some instances visit several organisations to complete their business. Internet facilities provide the opportunity for Government organisation to:

- provide direct access to information and services
- bring the citizen and business partners into the organisation to produce a 'best' customer solution
- offer superior quality of service

Given the many varieties of Government service which can fall under the classification of e-Government it is important to arrive at a consensus definition.

2.2.   E-Government Definitions

2.2.1.   E-Government

The two most powerful forces affecting the world economy are the increasing rate of globalisation and advances in Information and Communication Technologies (Purcell and Toland, 2004). Much has been written about the information revolution and its effects on modern society, economics, and Government. Reschenthaler and Thompson (1996) wrote about the increasing use of Information Technology (IT) in Government as the latest in a series of great transformations that have refashioned Government. To date for the most part Government organisations have been internally focussed particularly in their use of IT. The focus has been on providing employees with access to technology tools and information to complete their work. IT is different from other types of technology because it affects both production of goods and services (or capacity) together with coordination and control. IT provides Government organisations with the ability to deliver more effective information to their workers,

provide them with the tools to produce information for their customers and with the introduction of the Internet, to circulate this information quickly and efficiently to customers regardless of their location. Like all businesses, the e-world gives Government new opportunities to respond to enhanced expectations from its customers (Perkins, 2004). People have increasing expectations of public services, as technologies are being used in the private sector to deliver services in more convenient and cost-effective ways. Explosive growth in Internet usage and the rapid development of e-commerce in the private sector have put growing pressure on the public sector to serve citizens electronically, commonly referred to as the "e-Government" initiative. The initiative is to provide public services and to empower citizens and communities through IT, especially through the Internet (Tat-Kei Ho, 2002). The Internet allows services to be integrated around customer needs; enables more efficient transactions; improves access to services; and provides more and better information (UK Audit Commission, 2002). Not surprisingly the Audit Commission in England found that people want good quality public services maintained and poor ones improved. People want convenient access to more responsive public services. They want better access to services in the evening and at weekends, and a faster response to and better ownership of their enquiries. People do not want their enquiry to be passed from one person to another without effective action being taken or being dealt with properly. Using new technologies could help public authorities meet these changing expectations. The Internet has brought more than a technological breakthrough in service delivery. It has stimulated a transformation in the philosophy and organisation of Government (Tat-Kei Ho, 2002.)

People usually think of Government as a hierarchical bureaucracy. This model, commonly known as the Weberian model of organisation, focuses on internal and managerial concerns and emphasizes departmentalization, specialization, standardization, and routinisation of the production process (Weber, 1947; Schachter, 1994). Officials who perform similar functions are grouped and organised into the same administrative unit or department. Each unit is responsible for understanding its clients, assessing the demand for its services, delivering those services, and setting administrative goals for planning and evaluation purposes. In the traditional bureaucratic paradigm, public managers focus on internal productive efficiency, functional rationality and departmentalisation, hierarchical control, and rule-based

management (Kaufman, 1977). The reinventing Government movement that started in the late 1980s, is an effort to reorient the focus of Government operations from an inward-looking approach to an outward-looking one by emphasizing the concerns and needs of end users. Under the model proposed by Osborne and Gaebler (1992), citizens are regarded as customers who become the central focus in designing Government service delivery. This model also emphasizes the principles of catalytic Government and community-ownership. Public officials are challenged to think about how to empower citizens to take ownership of community problems. The new e-Government paradigm, which emphasizes coordinated network building, external collaboration, and one-stop customer services, contradicts the traditional bureaucratic paradigm, which emphasizes standardisation, departmentalisation, and division of labour (Tat-Kei Ho, 2002). The approach urges officials to partner with citizen groups and non-profit organisations to identify solutions and deliver public services effectively. Increasingly, the Government is looking at the World Wide Web as a means to disseminate information and provide citizens with services. Growing use of the Web has contributed to the phenomenon of electronic Government or e-Government (Hernon et al., 2002).

Setting a Framework for E-Government/ E-Governance

One of the remarkable consequences of the Internet revolution to Government is the shift in approach to the citizen. Public administration has a general reputation for functional insularity, what is now often called "silos" or "stove-piping." This refers to the tendency not to integrate service provisioning across Government departments when responding to citizens' needs. In part, this has been driven by deeply entrenched practices and cultures, supported by the tradition of ministerial accountability and by the fact that it was administratively very difficult to integrate systems and practices between departments. However, citizens see large bureaucracies including utility companies, telecommunication companies, and banks cooperating in ways that permit cross-organisational services such as Internet bill presentment and payment, in ways chosen by the customer. They have now begun to make similar demands of Government. (Marche, 2003)

There has been a move to differentiate between e-Government and e-democracy. E-Government initiatives seek to enable access to public services, improve delivery of information and services, and respond to enquiries about rights and responsibilities. E-democracy, by contrast, seeks to support citizen communication with politicians, Government and its agencies, including direct involvement with the institutions of state, with policy-making and its implementation (Collins and Butler, 2002). E-governance is a technology-mediated relationship between citizens and their Governments from the perspective of potential electronic deliberation over civic communication, over policy evolution, and in democratic expressions of citizen will (Marche, 2003).

E-Government is the production and delivery of Government services through IT applications (Sprecher, 2000). Luling (2001) defines e-Government as online Government services, that is, any interaction one might have with any Government body or agency, using the Internet or the World Wide Web. E-Government is not e-business. Both definitions are far too narrow and need to be broadened to include any way IT is used to simplify and improve transactions between Governments and other actors, such as constituents, businesses, and other Governmental agencies. A broader definition of e-Government is the different ways in which Governments and public managers contact and interact with their citizens through their Web sites, but also other Internet uses (e-mail or IRC), and different tools, like video conferencing, touch-tone data entry, CD-ROM, private intranets, or satellites and antennas (Criado and Ramilo, 2003). Ultimately, e-Government is about the relationships with civic institutions and the foundation of the next-generation communities. It is about extending the social contract to provide more effective services to all citizens and businesses. E-Government is not only about putting existing forms and services online but provides the opportunity to rethink how the Government provides services and how it links them in a way that is tailored to users' needs. The Government must abandon the 'build it and they will use it' approach that permeates much of its online thinking. The Government must develop a far more sophisticated view of the people it is there to serve and devolve real power to regions and localities as an integral part of its approach to e-Government and provide more freedom of information (Kearns, 2001). E-Government must not be seen as discrete but as an activity that underpins existing core objectives. The public views e-Government as a mechanism to communicate with elected officials, hold the Government accountable, and stay informed about issues and

fast-breaking developments. The citizen becomes a more integral part of the system when access to Government is simpler and easier (Pons, 2004). Businesses see electronic Government as a means to find resources and comply with regulations (Hernon et al. 2002).

Many definitions restrict e-Government to Internet-enabled applications only. There are three main domains of e-Government:
1. improving Government processes (e-Administration)
2. connecting citizens (e-Citizens and e-Services)
3. building external interactions (e-Society)

The focus of e-Government, within this study, is on connecting citizens (e-Citizens and e-Services). Such e-Services deal with the relationships between Government and citizens. They involve talking to citizens, listening to citizens and improving public service (Prattipati, 2003).

2.2.2. Guiding Principles

E-Government in itself is not meaningful to many people. However, when benefits are cited they revolve around the convenience of being dealt with more quickly at more convenient times in more convenient places, making it easier to obtain information, and saving the customer time. So, while e-Government is not meaningful to people, the service improvements it can help to deliver are (UK Audit Commission, 2002). E-Government is about integrating services around customer needs, increasing customer participation, providing increased and better information to customers, conducting more efficient transactions and improving access to services.

E-Government has four guiding principles:
1. build services around increasing choice for the citizen.
2. make Government and its services more accessible
3. ensure social inclusion
4. improved use of information (McCartney, 2000)

It is important that customers are able to decide to which level they want to use electronic media to perform a specific public service. The choice as to whether they want to gain information concerning a certain service, make contact with the respective authority, or even apply for and utilise the service via electronic media is a decision made by the prospective client (Wimmer, 2002). The web has the potential to dramatically increase the Government's level of quality service by making the current paper-driven or counter-based services more convenient and accessible to citizens and businesses. Online or e-Government allows citizens and businesses to have 24-hour access to public services from almost any location. Because directives largely drive Government with priorities set by its leaders, e-Government presents an outstanding opportunity to react to citizen and business demands by offering new methods of service delivery to meet these new expectations. For Governments, the Internet is a cost-effective medium for the provision of information and increasingly, services (Luling, 2001). A key challenge for Government agencies developing on-line services is to incentivise citizens and businesses to use them (Margetts and Yared, 2003). To incentivise customers to use an on-line service, a Government agency needs to consider all resources at its disposal (Margetts and Yared, 2003). That is it must attempt to fully utilise its business partners, customers and other Government agencies expertise and knowledge.

2.2.3. E-Government Infrastructure

E-Government infrastructure includes four major internal and external aspects:
1. the establishment of a secure Government intranet and central database for more efficient and cooperative interaction among Governmental agencies
2. web-based service delivery
3. the application of e-commerce for more efficient Government transaction activities, such as procurement and contract
4. digital democracy for more transparent accountability of Government (Moon, 2002)

The functionality and utility of Web technologies in public management can be divided into two categories: internal and external (Moon, 2002). Internally, the Web and other

technologies have potential as effective and efficient managerial tools that collect, store, organise, and manage an enormous volume of data and information. By using the function of upload and download, the most up-to-date information and data can be displayed on the Internet on a real-time basis. Externally, Web technologies facilitate Government's linkages with citizens (for both services and political activities), other Governmental units, and businesses. Government Web sites can serve as both communication and public relations tools for the general public. Information and data can easily be shared with and transferred to external stakeholders (businesses, non-profit organisations, interest groups, or the public). In addition, some Web technologies (such as interactive bulletin boards) enable the Government to promote public participation in policy-making processes by posting public notices and exchanging messages and ideas with the public.

2.2.4. E-Government Services

Almost everyone wants "one-stop shopping" to get the information they need. One-stop Government refers to the integration of public service to a single point of access from a customer point of view, whereby a customer is a citizen, business or other public administration unit (Wimmer, 2002). Like most e-businesses, Government agencies are concerned with developing, maintaining and promoting user-friendly, cost-efficient goods and services. Unlike traditional structures, which are hierarchical, linear, and one-way, Internet delivery systems are nonhierarchical, nonlinear, two-way, and available 24 hours a day, seven days a week. The nonhierarchical character of Internet delivery frees citizens to seek information at their own convenience, not just when a Government office is open. The interactive aspects of e-Government allow both citizens and bureaucrats to send and receive information. By facilitating two-way interaction, electronic governance has been hailed as a way to improve service delivery and responsiveness to citizens, in the long run generating greater public confidence in Government (West, 2004). The customer must be able to access services in a well-structured and understandable manner that meets the customer's needs and perspective. There is a need for a citizen/customer-orientated approach rather than a procedural approach (Wimmer, 2002). The consumer's personal information must be protected across all levels. A balance of accessibility and confidentiality must be maintained.

E-Government is an enabler for Government organisations to increase services provided to citizens and enables Government organisations to:

- provide a 24-hour interface to clients to obtain information (e-service)
- conduct electronic financial transactions (e-commerce)
- create ongoing dialogue with citizens and the community (e-democracy)
- conduct electronic business transactions such as applying online for a permit (e-business)
- better inform the public of the decision making process (e-decision making)
- improve the management of people (e-management)
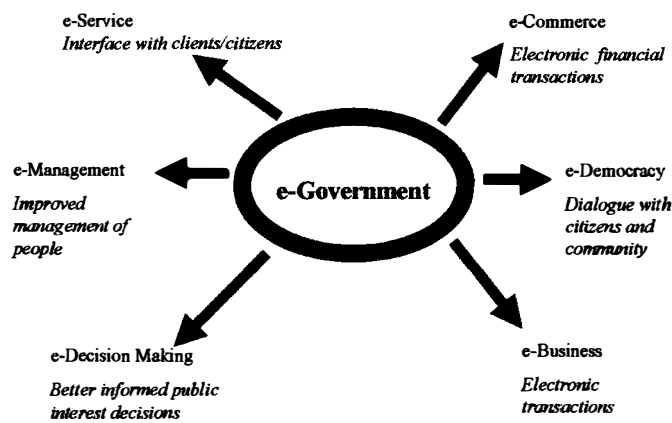
Figure 2.1 e-Government

(Adapted from Quirk 2000)

2.2.5. An e-Government Definition

For the purposes of this study e-Government is defined as not only utilising information and communication technologies but also creating alliances between citizens, Government organisations and private enterprise to connect the citizens to both the Government and Government services and therefore breaking down the barriers between services, enabling extended access to information and providing citizens with an opportunity to influence policy whilst removing the tyranny of distance.

For the research e-Government is defined as:

creating alliances between citizens, Government organisations and private enterprise to connect the citizens to the both the Government and Government services and therefore breaking down the barriers between services, enabling extended access to information and providing citizens with an opportunity to influence policy whilst removing the tyranny of distance.

2.3. E-Government Maturity Models

There is a plethora of models that outline stages of maturity as businesses embrace more of the capabilities of the Internet. Most e-commerce or e-business models outline 3 or 4 stages starting with net presence and often moving through to a stage incorporating elements including a rich array of information, the full provision and payment of services and interaction with customers.

2.3.1. Stages of e-Government Maturity Models

Moon (2002) identifies 5 stages of e-Government, which reflect the degree of technical sophistication and interaction with users:

1. simple information dissemination (one-way communication)
2. two-way communication (request and response)
3. service and financial transactions
4. integration (horizontal and vertical integration)
5. political participation

Stage 1 is the most basic form of e-Government and uses IT for disseminating information simply by posting information or data on the Web sites for constituents to view. Stage 2 is a two way communication characterized as an interactive mode between Government and constituents. In this stage, the Government incorporates email systems as well as information and data-transfer technologies into its Web sites.

In stage 3, the Government allows online service and financial transactions. In Stage 4, the Government attempts to integrate various Government services vertically (interGovernmental integration) and horizontally (intraGovernmental integration) for the enhancement of efficiency, user friendliness and effectiveness. Stage 5 involves the promotion of Web-based political participation, in which Government Web sites include online voting, online public forums and online opinion surveys for more direct and wider interaction with the public.

Deloitte and Touche (2002) identify the six stages Government organisations must go through to evolve into integrated e-Government organisations:

- **Stage 1: Information Publishing/Dissemination**

  Individual Governmental departments set up their own Web sites to provide the public with information about them, the range of services available and contacts for further assistance. At this stage, Governments establish an electronic encyclopaedia to reduce the number of phone calls customers need to make to reach the appropriate employee who can fulfil their service requests.

- **Stage 2: 'Official' Two-Way Transactions**

  Customers are able to submit personal information to and conduct monetary transactions with individual departments. At this stage, customers must be convinced of the department's ability to keep their information private and free from piracy.

- **Stage 3: Multi-Purpose Portals**

  This is the point at which customer-centric Governments make a major breakthrough in service delivery. Based on the fact that customer needs can cut across department boundaries, a portal allows customers to use a single point of entry to send and receive information and to process monetary transactions across multiple departments. In essence, Governments expand the concept of one stop delivery to meet the broader array of customer needs both within and outside Government services.

- **Stage 4: Portal Personalisation**

  Through stage 3, customers can access a variety of services from a single Web site. In stage 4, Government puts even more power into customers' hands by allowing them to customise portals with their desired features. To accomplish this, Governments will need much more sophisticated Web programming that allows interfaces to be user manipulated. The added benefit of portal personalisation is that Governments will get a more accurate read on customer preference for electronic versus non-electronic service options.

- **Stage 5: Clustering of Common Services**

  Stage 5 is where real transformation of Government structure takes shape. As customers now view once disparate services as a unified package through the portal, their perception of departments as distinct entities will begin to blur. They will recognise groups of transactions rather than groups of agencies.

- **Stage 6: Full Integration and Enterprise Transformation**

  What began as a digital encyclopaedia is now a full service centre, personalised to each customer's needs and preferences. At this stage, old walls defining silos of services have been torn down, and technology is integrated across the new enterprise to bridge the shortened gap between the front and back office.

Riley (2001) outlines a model containing 3 progressive stages: e-Government, e-Governance and e-Democracy. In this model, Governments move from net presence (e-Government), through to service provision and representative democracy (e-Governance), to a final stage of e-Democracy. E-Democracy is a stage where a citizen interacts with Government or influences the legislative process in a full participatory democracy.

2.3.2. Summary

These models suggest a linear progression to final maturity. An alternative suggestion is that Governments and their agencies mature in various *spaces* rather than in distinct

stages (Stamoulis et al. 2001). Building on work by Angehrn (1997) they outline four spaces for a Government revenue agency:

- Virtual Information Space – for example the publication of documents.
- Virtual Communication Space – for example email communication with customers.
- Virtual Distribution Space – for example the direct collection and distribution of materials.
- Virtual Transaction Space
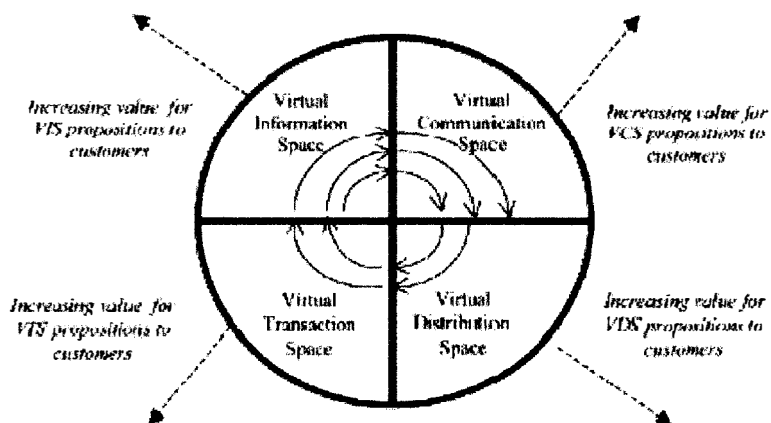
Figure 2.2 A Spiral Model of Adding Value in the Virtual Space (Angehrn, A. 1997)

This moves away from the notion that organisations must progress through 3 or 4 stages from net presence to a stage incorporating elements including a rich array of information, the full provision and payment of services and the interaction with customers. This research study utilises these value driven concepts from virtual organizational structures. In particular it focuses on developing an e-Government strategy by considering:

- e-Government business models
  - o developing a customer focus
  - o achieving a service driven environment
  - o managing a virtual agency model
- knowledge management
- e-business change management processes

This focus allows organisations to consider all stages when implementing an online strategy and to utilise other Government organisations, business partners and customers to create the strategy. This extends the e-Government input model to include knowledge management and e-business change management.

Developing a Customer Focus

Achieving a Service Driven Environment

Business Process Change

e-Government

E-Business Change Management

Managing a Virtual Agency Model

Knowledge Management
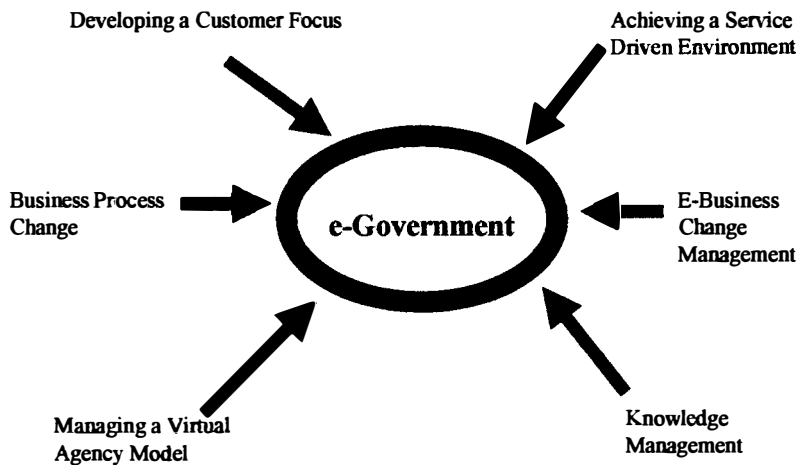
Figure 2.3 e-Government Extended Input

Each of these inputs is discussed in detail below.

2.4. E-Government Business Models

2.4.1. A Service Driven Environment

Many companies already focus on core value adding processes, working with external partners to jointly bring forward a service. These companies believe that a more flexible organisation built around a series of alliances and business relationships is the most effective way to respond quickly and creatively to constantly changing market conditions (Miles and Snow, 1995). The conventional, vertically integrated corporation

may be too slow, or have too much retained infrastructure to allow it to compete with companies who can quickly put together a customised response to its clients' requirements (Campbell and DiNicola, 1997). Firms need to share and use information to be more responsive to customers and ultimately, this can lead to partnering and alliance formation to solidify the relationship and sustain differential advantage (Zhao et al., 2001).

If Government agencies are to provide a public service then they must embrace wholeheartedly the notion of the value alliance. The value alliance emphasises the decentralisation of control, the creation of more flexible patterns of working, a greater empowerment of the workforce and the customer, the displacement of hierarchy by teamwork, the development of a greater sense of collective responsibility and the creation of more collaborative relationships among co-workers and customers (Burn, and Barnett, 2000; Robins and Burn, 2001).

To initiate such developments an agency needs to perform a full customer value chain analysis in order to set up a number of different agency alliances through an electronic network. This may form the basis for a one-stop portal where the alliance combines a range of services and facilities in one package forming one single customer supply chain. Participants may come together on a project-by-project basis but usually the general contracting agency provides coordination. Where longer term relationships have developed the value alliance often adopts the form of value constellations where agencies and funding services have multiple interactions and a complex and enduring communications structure is embedded within the alliance (Burn and Barnett, 2000). Substitutability has traditionally been a function of efficiency and transaction costs: searching for, evaluating, and commencing operations with potential partners has been a costly and slow Governmental procedure, relying as it does on information transfer, the establishment of trust and policy rules across states, time zones, culture, and legal frameworks. These have determined the relative positioning of partners on the chain and the reciprocity of the relationship.

This value-alliance will be built around customer value chains and enable the sharing of resources, skills and knowledge to produce a 'best' customer solution and offer a superior quality of service. As indicated earlier e-Government is a process that

improves the relationship between the private citizen and the public sector through enhanced, cost-effective and efficient delivery of services, information and knowledge. This is where the value alliance model can add value to e-Government in that it strives to set up different agency alliances which assist in bringing together like services, combining information to create enhanced information and potentially reducing costs to deliver a more effective service. These value alliances usually utilise modern information and communication technology which in turn leads to the delivery of the combined information or services utilising the same technologies and therefore breaking down the barriers of distance or access to citizens.

Information sharing among Government agencies provides two main advantages

- reduced costs
- better quality service to users of Government services - inter-agency information sharing results in offering fewer contact points for end-users of public services, thereby leading to more efficiencies in the delivery of these services to the end-users (Bajaj, 2003)

Osborne and Gaebler (1992) are generally taken as the starting point for the reinventing Government movement. Their book, Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector, developed the idea that the traditional bureaucratic model of Government was no longer functional. The primary goal is to make Government work better. They propose a citizen-as-customer approach to reform, which advocates a departure from the traditional, bureaucrat-centered model and works to establish a closer interaction between Government employees and the citizens they serve. The principle of "user pay" is now much more widely accepted and practised by Australian Governments as they assume a more "business-like" mantle. Public servants now speak about stakeholders, customers and clients of Government agencies, and about performance indicators, business plans and vision statements (Tupper, 2001).

Within a Government context the products and services a customer applies for or needs to perform with public authorities are public services. Public services reflect the external point of view whereas a process refers to the internal viewpoint and reflects the organisation's organisational responsibility and domain of expertise. Wimmer (2002)

indicates that the internal versus the external viewpoints have to be mapped and integrated in a coherent way without:

1. disrupting organisational matters, responsibilities and the expertise of public administrators
2. requiring that external citizens or business clients have knowledge of the public authorities' internal organisation

2.4.2. Managing a Virtual Agency Model

Any business planning must be built on services, delivery goals and objectives that focus on its customers through direct customer input. To achieve this there must be a fundamental shift in management and workforce thinking and practices that include:

- pervasive knowledge sharing, feedback and communication
- integration of environmental considerations at the earliest stages of design
- effective partnerships with customers
- commitment to using customer feedback to drive changes in operations, goals and vision

A key to the success of an organisation is a network of open communication, a combination of sharing and listening flowing both horizontally and vertically through the value alliance. Management must share details with employees. A workforce that is involved is much more likely to 'buy in' to management's vision and work together for results. Management must be able to combine the differences in diversity and organisational structure, in order to make the virtual organisation reach its target. As members work within separate agencies and perform their tasks individually, management must ensure that this work is combined with the work of other participants so that the stated goal can be reached. Managerial processes can, by utilising IT, be designed to deliver appropriate operational, customer, and competitive information (Rockart et al., 1996).

Prahalad and Ramaswamy (2000) suggest that organisations need to create their future by harnessing competence in an enhanced network that includes customers. As a

minimum they propose four fundamental realities that managers must come to grips with:

- to engage their customers in an active, explicit, and ongoing dialogue
- to mobilise communities of customers
- to manage customer diversity
- to engage customers in co-creating personalised experiences

They developed a three-stage model that has been adapted to a Government context and summarised below in Table 2.1.

	G2G	Network of Organisations G2B	Enhanced Value Network G2C
Unit of analysis	The Government agency	The extended enterprise:- the agency, other service providers and customers	The value alliance:- the agency, its partners, other service providers and its customers
Resources	What is available within the agency	Access to other service providers' competencies.	Access to other agencies' competencies, as well as customers' competencies and investments of time and effort
Basis for access to competence	Internal agency-specific processes	Privileged access to organisations within the network	Infrastructure for active ongoing dialogue with diverse customers
Added Value of managers	Nurture and build competencies	Manage collaborative partnerships	Harness customer competence, manage personalised experiences, and shape customer expectations
Value creation	Autonomous	Collaborate with partner organisations	Collaborate with partner organisations and with active customers
Sources of managerial tension	Service-unit autonomy versus leveraging core competencies	Partner is both collaborator and competitor for value	Customer is both collaborator and competitor for value

Table 2.1 Model of e-Government (adapted from Prahalad and Ramaswamy, 2000)

(Robins and Burn, 2000)

Table 2.1 shows that the idea of extending the Government services network and changing the nature of its usage is to improve core competencies. In the past, most Government agencies had a traditional focus where they embraced the concept of the extended enterprise but have been primarily concerned with alliances, networks, and collaborations among other agencies and services. The old idea of the "extended enterprise" should give way to the idea of an enhanced network of traditional agencies, other services, funding bodies and most importantly, customers. Government managers need to recognise that consumers are a source of competencies. They must focus on developing relationships with the customer as the agent (Stamoulis et al., 2001).

Coupled with the enhanced network, agencies must look at ways in which they can capture the collective information within the network, value add to this information and

utilise the extended set of information to enhance their service delivery. In other words they need to look at the concept of knowledge management. However knowledge management should not be looked at as a way of capturing and codifying implicit knowledge, but as utilising the combined information or explicit knowledge within the enhanced network. This information must be value added to by utilising the organisation's staff to interpret and analyse the information to create enhanced information that can be translated into enhanced or more appropriate services.

2.5. Knowledge Management

Knowledge is information made actionable in a way that adds value to the enterprise (Vail, 1999).

There are many definitions of Knowledge Management and strong debate on defining and capturing implicit knowledge. Many would argue that once implicit knowledge has been captured it becomes explicit knowledge or information. Knowledge management is about turning raw data into information and from there into knowledge (Kanter, 1999). It is about understanding how to transfer knowledge to users, how to add value to the information, how to transfer data into information and how that information can be transferred into knowledge.

Knowledge management is a discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. These may include databases, documents, policies and procedures as well as previously unarticulated expertise and experience resident in individual workers. Knowledge management issues include developing, implementing and maintaining the appropriate technical and organisational infrastructures to enable knowledge sharing (Butler, 2000).

Knowledge management is an effort to bring Google-like clarity to the swamp of data on each person's machine or network (Fallows, 2004). Whilst this focuses on providing data directly to the people who require it, it does not take into account the human side. There is a need to further refine the notion of knowledge management to take into

account the human side and explore concepts such as knowledge and information sharing as well as human analysis and interpretation.

Knowledge management is not about debating the differences between implicit and explicit knowledge but the linkages between individuals and information to both extend and add value to the information and to enable an individual to act on the information thus creating valuable knowledge. Knowledge is produced as the result of human interpretation and analysis (Moody and Shanks, 1999).

The major objective of knowledge management is to make effective use of information and to combine this with effective use of 'know-how' and expertise in an organisation.

Sveiby (1997) defines a knowledge organisation as one which:
- provides services rather than products
- sells its knowledge and expertise to solve complex problems for its customers
- consists of employees who are highly qualified and educated professionals (knowledge workers)
- intangible assets are much more important than tangible assets

In *Rethinking Knowledge Management*, the author outlines four foundations:
- gathering - by reading through obscure books and articles and interacting with private and public databases, institutions and people involved in international trade.
- organizing - by filtering and linking new information to the principal's global potential.
- refining - by putting it into a context that the principal could eventually understand, accept, acknowledge and act on.
- distributing - by alerting and sharing this new and evolving knowledge with the principal and the people and institutions that have complimentary and export enhancing synergies and missions. (Henderson, 2004)

A number of studies have placed knowledge centre stage in the analysis of complex IT diffusion (e.g. Hislop et al., 1997; Newell et al., 2000) and implementation (e.g.

Scarbrough, 1996; Swan and Newell, 2000). Such studies conceptualise the implementation as an IT-based organisational innovation during which external ideas and knowledge about complex IT are integrated with localised, context-specific organisational knowledge in order to develop firm-specific solutions (Clark and Staunton, 1989; Swan and Newell, 2000). Complex IT is assumed to be socially constructed in the sense that interpretations and meaning around complex IT arise and affect the development and interaction with it (Weick, 1990). These studies view knowledge not as an objective resource that can be extracted from its context, codified, moved and applied in order to achieve a desired outcome but as socially constructed, widely distributed and embedded in social communities (Tsoukas, 1996; Scarbrough et al., 1999).

Acquiring knowledge refers to the process by which external knowledge is brought into and shared within the organisation so that organisational members become aware of new ideas and knowledge about new IT and their beneficial organisational applications. Besides the role of social networks and boundary spanning in the acquisition of knowledge, studies have found mechanisms for explaining why and how organisations seek to acquire knowledge (Swan and Newell, 2000). In terms of reasons for knowledge acquisition, existing research draws attention to the dynamic interaction between knowledge demand triggered by the quest for organisational performance improvements and knowledge supply through technology suppliers (Abrahamson, 1996). Other studies have identified specific strategies by which organisations acquire knowledge for IT-based innovations ranging from purchasing off the shelf solutions to the complete in-house development of systems (Scarbrough, 1995).

Traditionally IS has focused on the capture, codification and storage of passive, explicit and tangible data and information. The underpinning idea is that volume, speed of access and breadth of dissemination of the data and information are the achievable goals to which efforts should be directed in order to meet the needs of most modern work. Databases and data warehouses are seen as the technical means for achieving this volume and its selective retrieval, with networked computers supporting its rapid movement (Kidd, 1994).

The result is that businesses are seeing a widespread substitution of capital and labour-intensive firms with knowledge-intensive firms. Innovation of products and processes is now the critical factor of success, and it is this change that has caused an increased emphasis on knowledge work (Boland and Tenkasi, 1995; Blackler, 1995).

The key to innovation is believed to be tied to the generation and application of knowledge. Of the several factors contributing to innovation, Drucker (1994) cites knowledge-based innovation as the 'superstar' of entrepreneurship. Through its propensity to generate innovations leading to new products and processes, knowledge is now seen as vital to survival in modern commerce. Knowledge is thus considered to be the most important asset an organisation can possess and utilise.

Whilst knowledge management is not a new theme, with its roots traced back to the ancient Greeks, the contemporary opportunities afforded through information technology developments would seem to open many previously incomprehensible opportunities (Dunn and Vorisek, 2001). Growth in interest in knowledge management theory and practice is illustrated through the increasing prominence of the theme in the information systems literature. The growth in conferences, products and services being offered in support of the knowledge management endeavour is exponential (Dunn, 2000) and illustrates the probability of this theme being substantial and gaining much more significance than its current highly visible status. Within all these reported activities two things are particularly clear; information technology provides much of the essential infrastructure upon which knowledge management systems are based, and the system of preference is increasingly intranet profiled.

Knowledge management can be said to be the policies and processes through which organisations seek to create, store, disseminate and leverage their organisational knowledge, and Information Technology is fundamental to this endeavour. Knowledge management could be viewed as a critical success factor, as organisations must continually learn if they are to survive (De Geus, 1997) and many are likely to develop strategies in support of this objective. Within these strategies it is clear that Information Technology has a leading role for it pervades all areas of business activity (Miller and Dunn, 1999). In short, IT is increasingly expected to provide the knowledge dissemination infrastructure inter and intra organisationally, so as to support learning

activities. However technology is complex, costly and time consuming to implement and organisations tend not to give enough consideration to the barriers human nature poses to information sharing (Babcock, 2004). The more complex and sophisticated the technology, the more important are the human behavioural issues of attitude, cooperation, motivation, as well as the training, education and learning of all members of the organization.. Where one side is focused upon trying to do the right thing with technology, Human Resource Practitioners can say 'What can we do to motivate people? What are their needs and comfort factors? And how can we assess quality of intellectual capital?' (Babcock, 2004). Human nature is a key reason that knowledge doesn't get shared, Goman found in a recent survey of 200 mid-level managers. Team leaders often withhold information and dole it out on a need-to-know basis. Executives ask for collaborative input when they really want a rubber stamp and Managers fear hearing bad news. There is also a reluctance to trust senior management (Babcock, 2004). In addition, some people don't know or trust their fellow employees, and some want power over others. Some fear their ideas will be ridiculed. And some simply forget, are too busy or do not want more work and responsibility (Babcock, 2004). Collaboration is the missing link and the vital element in making KM a success (Anonymous, 2004).

In order to be successful, an organization must strive to become a collaborative one. There must be trust, shared knowledge, aligned goals, decentralized decision making and minimal hierarchical structures. The authors offer suggestions as to how an organization can foster a spirit of collaboration and cooperation, not just among its managers and employees but also with its suppliers, customers, business partners and even its competitors (Anonymous, 2004). Staff buy-in is critical and must be continuously sought through education about knowledge management and examples of how it can benefit individual staff as well as the entire organization (Stoll, 2004).

With the organization, its business partners and clients working together and pooling information and knowledge eventually enable the organisation to:
- anticipate and better prepare for service provision
- increase its comprehension in dealing with new sets of challenges
- build deployable and reusable information

- promote forward-thinking capabilities and advance the chances of being able to attract and professionally respond to additional inquiries (adapted from Henderson, 2004).

Dyerson and Mueller (1999) identify three building blocks of knowledge management: appropriation – retention and effective utilisation of internal knowledge, team working – integration of diverse knowledge bases, and learning – acquisition and exploitation of external knowledge. These can be related to Zack's strategic framework for knowledge management (Zack, 1998) to create a three dimensional framework for e-Government. As a first step the organisation needs to determine the value of knowledge to its business. It must align its knowledge resources and capabilities to the intellectual resources of its strategy. This should be measured against three dimensions and related to knowledge aggressiveness. The first dimension addresses the extent to which an organisation is primarily a creator or user of knowledge, the second addresses whether the primary sources of knowledge are internal or external and the third addresses the extent to which the knowledge is acquired and exploited. These together will provide the strategic framework in which knowledge management strategy needs to be developed. Combining the knowledge exploitation vs. exploration orientation of the organisation with its internally vs. externally acquired orientation towards knowledge strategy gives a framework for the KM based virtual organisation as shown in Figure 2.4.
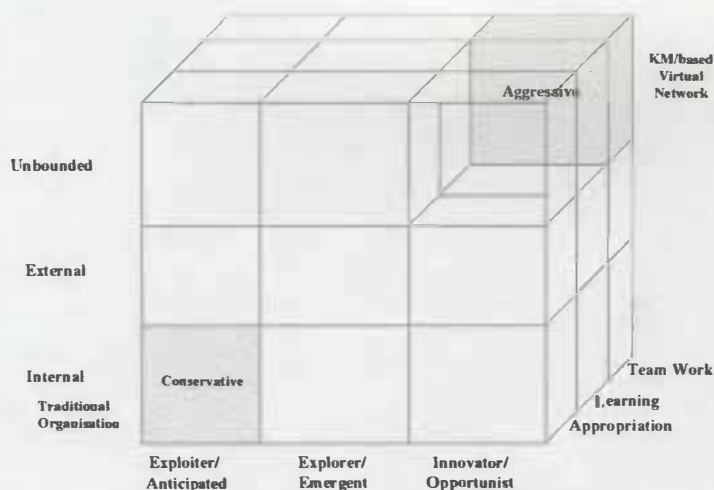

Figure 2.4 Framework for e-Government Knowledge Management Strategy
(adapted from Zack, 1998 and Dyerson and Mueller 1999)

Table 2.2 shows how the knowledge management strategy relates to the model of e-Government.

	G2G	Network of Organisations G2B	Enhanced Value Network G2C
Unit of analysis	The Government agency	The extended enterprise:- the agency, other service providers and customers	The value alliance:- the agency, its partners, other service providers and its customers
Resources	What is available within the agency	Access to other service providers' competencies.	Access to other agencies' competencies, as well as customers' competencies and investments of time and effort
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Value creation	Autonomous	Collaborate with partner organisations	Collaborate with partner organisations and with active customers
Sources of managerial tension	Service-unit autonomy versus leveraging core competencies	Partner is both collaborator and competitor for value	Customer is both collaborator and competitor for value
Knowledge Appropriation	Uses knowledge	Works with partner organisations to create and utilise knowledge	Works with partners and customer to both create and utilise knowledge
Primary Knowledge Sources	Internal	External	Unbounded
Extent knowledge is Acquired and Exploited	Appropriation of knowledge	Learning from partner organisations leading to teamwork	Teamwork between partners and customer

Table 2.2 Extended Model of e-Government
(Robins and Burn, 2000)

The shaded area in Table 2.2 looks at e-Government from the perspective of acquiring and utilising knowledge. The model examines how an organisation acquires and utilises knowledge both from within the organisation, partner organisations and it partners as well as determining the organisations primary knowledge sources.

2.6. E-Business Change Management Processes

Kalakota et al., (1999) state "the creation and implementation of an e-business project is inextricably linked to the management of change." This requires systematic attention to strategic initiative, learning processes, organisational culture, technology infrastructure, people and systems thinking.

E-business change is defined here as an organisational initiative to design an e-business project "to achieve significant (breakthrough) improvements in performance (eg quality, responsiveness, cost, flexibility, satisfaction, shareholder value, and other critical e-business measures) through changes in relationships between management, information, technology, organisational structure, and people" (Guha et al. 1997; Kettinger et al. 1995). Planning and managing such systems requires an integrated multi-dimensional approach across the e-business and the development of new business process models (Kumar and Crook, 1999).

Therefore, in any examination of outcomes, consideration should be given to
   a) the environmental conditions for change
   b) the ability of the organisation to manage change in those conditions

The model in Figure 2.5 (Guha et al., 1997) guides this study in identifying facilitators and inhibitors of successful e-business change. The relationships presented in the framework are based on relevant work in organisational change, strategic management innovation and information systems.

The general thesis of the framework is that any significant business process change requires a strategic initiative where top managers act as leaders in defining and communicating a vision of change. The organisational environment, with a ready culture, a willingness to share knowledge, balanced network relationships, and a capacity to learn, should facilitate the implementation of prescribed process management and change management practices. Process and change management practices, along with the change environment, contribute to better business processes and assist in securing improved quality of work life, both of which are requisite for customer success and ultimately, in achieving measurable and sustainable competitive performance gains.

e-Business Change Environment:
Strategic Initiatives
Cultural Readiness
Learning Capacity
IT Leveraging
Knowledge Capability
Relationship Building

e-Business Change Management:
e-Business Management
Change Management

e-Business Change Outcomes and Performance Gains:
Quality of Work Life
Efficient Resourcing
Customer Success
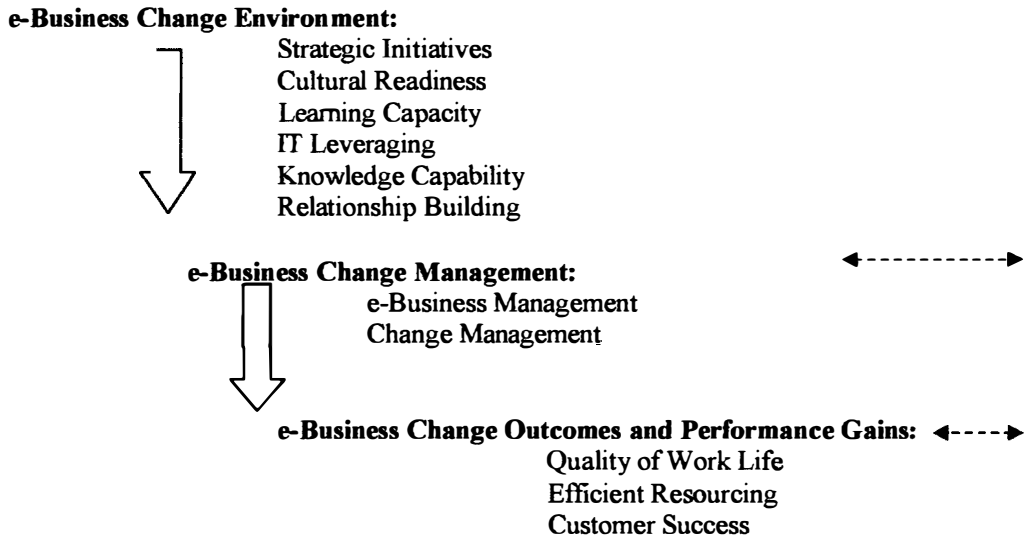
Figure 2.5 A Theoretical Framework of e-Business Change Management

(Adapted from Guha et al., 1997)

The relationships presented in this framework are based on relevant work in organisational change, strategic management, innovation, and information systems (IS). Based on this work each component of the framework is described below.

2.6.1. Strategic Initiatives

Process change typically begins with strategic initiatives such as envisioning, commitment, and enabling from the senior management team (Kotter, 1995) Initiatives can be forced on the organisation through mandate (autocratic) or pushed through consensus within the structure of the organisation (bureaucratic) (Shrivastava, 1994). Champions may emerge to keep the project momentum going and to enthuse other members of the organisation to come on board. Any project that involves change should develop a specific plan of action and include a strategy to motivate the organisation toward achievement of the goals.

The key constructs that can be probed are: stimuli (proactive versus reactive), formulation scope (incremental versus revolutionary), decision making (autocratic, bureaucratic, champion emergence), and whether the change process is strategy led (onset, eventually, none).

2.6.2. Learning Capacity

A major goal of learning is to provide positive outcomes through effective adaptation to environmental changes and improved efficiency in the process of learning (Guha et al. 1997). Increased efficiency in learning has been a primary focus of industrial economists who posit the notion of "learning by doing" (Arrow, 1962) and accumulation of knowledge through cross-functional interfaces (Adler, 1990). Declarative knowledge (i.e., bodies of organised information) facilitates learning in a collective fashion (Corsini, 1987). External information scanning can enhance the knowledge required to ensure success of the project. Learning organisations are characterized by the ability to adapt and improve, to build internal and external knowledge, and to achieve higher levels of learning that may be critical to successful BPC.

The key constructs are: adaptation (response to technology change, learning from others), improved efficiency (learning by doing), declarative knowledge (R&D resources and technology development, knowledge base, focus on core competencies) and external information use.

2.6.3. Cultural Readiness

Organisation culture is best understood in terms of cultural beliefs, values, and norms (Schein, 1990). Beliefs shape interpretations of information, while value systems relate behaviours across units and levels of the organisation (Guha et al., 1997). Values often exhibit a propensity to resist change because of their shared nature (Fitzgerald, 1988). Norms that promote change include risk taking, openness, shared vision, respect and trust, high expectation for action, and a focus on quality whilst norms that discourage

change include risk avoidance, ambivalence, group think, and excessive competition (Saffold, 1988). Cultural readiness can be enabled by leadership or change agents, characterised by open communication, and can define the risk-taking propensity in the firm (Guha et al., 1997).

The key constructs are: change agents and leadership, risk aversion (cautious, aggressive), and extent of open communications.

2.6.4. IT Leveragability and Knowledge-Sharing Capability

Davenport (1993) explains IT's process impacts in terms of organisation streamlining/simplification, capturing and distributing information, coordination, monitoring, analysis and decision making. The role of IT can be described in terms of the technological, organisational, and emergent imperatives depending on the extent to which IT is the dominant factor (Markus and Robey, 1988). IT can play a varied role, its communications infrastructure and the extent of knowledge sharing can create an environment that assists with ensuring the success of the project.

The key constructs are: IT role (enabling, sociotechnical, dominant factor) and use of communications technology.

2.6.5. Network Relationships Balancing

Many companies already focus on core value adding processes, working with external partners to jointly bring forward a service. These companies believe that a more flexible organisation built around a series of alliances and business relationships, is the most effective way to respond quickly and creatively to constantly changing market conditions (Miles, and Snow, 1995).

Burn and Barnett (2000) discuss the creation of more flexible patterns of working, a greater empowerment of the workforce and the customer, the displacement of hierarchy

by teamwork, the development of a greater sense of collective responsibility and the creation of more collaborative relationships among co-workers and customers. Organisations must recognise the need to manage both internal and external forces to effect change.

The key constructs are: interorganisational linkages and cross-functional cooperation (cooperative, competitive).

2.6.6. Change Management Practice

Change management involves effectively balancing forces in favour of a change over forces of resistance (Teng et al., 1996). It is often done in a phased manner, but the tactics used could vary depending on the scope of change required.

The key constructs are: pattern of change, management's readiness to change (committed, participative, resistant), scope of change (improvement, radical change), managed change (alleviation of dissatisfaction; a vision for change; and a well-managed process of change, evolutionary or revolutionary change tactics use).

2.6.7. Process Management Practice

Process management has been defined as a set of concepts and practices aimed at better stewardship of business processes (Davenport, 1995). PM combines methodological approaches with human resource management (Anderson, et al., 1994). Critical in PM is the notion of process measurement and going beyond typical financial indicators to effectively collecting process information and metrics (Davenport, 1995). Further, improved feedback and auditing of the process by tying it back to corporate objectives, is critical to achieving organisational effectiveness (Teng et al., 1994).

Process management can supplement traditional sociotechnical perspectives by including quantitative process goals such as output, productivity, costs, and profit measures (Guha et al., 1997).

The key constructs are: process measurement (use of process metrics, process information capture, improvement feedback loop, audit), use of tools and techniques, and use of team-based structures.

2.6.8. Outcomes and Performance Gains

Davenport (1993) suggests that performance should be measured in terms of quality, cycle time, costs, and ultimately customer satisfaction. These can be benchmarked against expectations and actual performance.

2.7. Summary

E-Government is about extending the Government services network and changing the nature of its usage to improve core competencies. In the past, most Government agencies had a traditional focus where they embraced the concept of the extended enterprise but had been primarily concerned with alliances, networks and collaborations among other agencies and services. The idea of an enhanced network of traditional agencies, other services, funding bodies and most importantly, customers needs to be developed. Government organisations need to recognise that consumers are a source of competencies and focus on developing relationships with the customer.

To successfully implement e-Government, Government organisations must:

- develop a strategy that includes combining the knowledge exploitation vs exploration orientation of the organisation with its internally vs externally acquired orientation towards knowledge strategy. This will ensure the concept of the extended enterprise is embraced and develop an enhanced network of traditional agencies, other services, funding bodies and customers is developed

This moves away from the notion that organisations must move through 3 or 4 stages starting with net presence and then moving through to a stage incorporating elements such as a rich array of information, the full provision and payment of services, or

interaction with customers. It focuses on developing an e-Government strategy by considering:

- e-Government business models
    - o developing a customer focus
    - o achieving a service driven environment
    - o managing a virtual agency model
- knowledge management
- e-business change management processes

This focus allows organisations to consider all stages when implementing an online strategy and to utilise other Government organisations, business partners and customers to create the strategy. (Refer Figure 2.3)

The e-Business Change Management Framework will be utilised to review three Government organisations' online strategies against these three areas.

This review will then be utilised to:

- determine the extent to which a value alliance between a Government organisation, its partners, other service providers and its customers change as a Government organisation implementation of an e-Government strategy matures
- examine the extent e-Government incorporates a knowledge management strategy and how the emphasis changes as e-Government matures
- determine the most effective structural network for e-Government

For the research Table 2.2 will form the basis of the research model and each organisation's online strategies and e-Government initiatives will be tested against the model. Figure 2.5 will be utilised as the research instrument and will be applied to each organisation to research the component parts of Table 2.2.

The research instrument looks closely at each input into e-Government (refer Figure 2.3). This data will then be used to analyse each organisation against the research model to determine if they have created a strategy to produce e-Government outputs as shown in Figure 2.1. The instrument initially looks at the organisations environment.

This takes into account:

- strategic initiatives including the level of commitment from the senior management team
- cultural readiness which examines all sections of the organisation to determine the extent of involvement and willingness to participate
- learning capacity including the organisation's ability to build internal and external knowledge and the ability to adapt and improve as its initiatives progress
- IT leveraging to determine the role the IT group take and the extent of use of communication technologies
- knowledge capability which examines how information internally, externally and from the client is utilised, value added to and new information created
- relationship building which examines the organisation's willingness to seek out collaborative partners both internal and external, involve the client and form value alliances

It then reviews the change management process to
- examine the team based structures that were utilised
- examine the feedback loops employed and how the feedback was utilised
- examine what measurement tools were utilised to determine success

Finally the outcomes and performance gains are reviewed by
- examining what the organisation, the project team and senior management believe the success to be.

The aim of this study is to identify:
- the most effective structural network for e-Government
- to what extent does this change as a Government organisation implementation of an e-Government strategy matures.
- the most effective roles and relationships to manage this change

From an examination of e-Government definitions it could be assumed that a value alliance network will be the most effective form. The key to the success of an

organisation is a network of open communication, a combination of sharing and listening flowing both horizontally and vertically through a value alliance. Therefore in relation to the first aim the research looks at the question:

Is a value alliance the most effective structural network for e-Government?

Likewise from these definitions it could be assumed that a staged growth model will be applicable and so Table 2.1 is proposed as a model.

As indicated any business planning must be built on services, delivery goals and objectives that focus on its customers through direct customer input. To achieve this there must be a fundamental shift in management and workforce thinking and practices that include:

- pervasive knowledge sharing, feedback and communication
- integration of environmental considerations at the earliest stages of design
- effective partnerships with customers
- commitment to using customer feedback to drive changes in operations, goals and vision

Based on this it appears that knowledge management should play a vital part of any online strategy and therefore I have extended the staged growth model to include knowledge management (Table 2.2). The research tests the extended model. In relation to the second aim the research looks at the question:

Is there a staged growth model for e-Government and can knowledge management be incorporated into the model?

Consideration should be given to

- the environmental conditions for change
- the ability of the organisation to manage change in those conditions

To determine what are the most effective roles and relationships to manage change the question that relates to the third aim is:

Can an e-business change management model be applied?

The research uses the Guha et al. (1997) change management model as a guide to examine whether different roles and processes occur at different stages.

In summary based on the literature review the aims of this study were further refined and three research questions developed:

- Is a value alliance the most effective structural network for e-Government?
- Is there a staged growth model for e-Government and can knowledge management be incorporated into the model?
- Can an e-business change management model be applied?

CHAPTER 3. RESEARCH METHODOLOGY

This chapter briefly reviews different research approaches and describes in detail the methodology used in the study. Specifically, it presents a rationale for the adoption of a particular research approach, namely case study. Criteria are presented for the selection of the cases under examination and the method for data collection outlined. In conclusion a description of the procedures employed for organising and analysing these data is provided.

3.1. Research Approaches

The growing importance of IS research in the 1980s and 1990s has led to the development of a number of different research approaches and methods, usually adapted from other disciplines such as anthropology, linguistics, psychology, natural sciences, and business studies (Avison and Myers, 1995; Doolin, 1995; Myers, 1995; Jonsonn, 1991; Hirschheim, 1985). As a result of this, a number of different IS research taxonomies have been proposed in an attempt to provide classification schemes capable of integrating these different approaches and methods (Galliers, 1984)

Burrell and Morgan (1979) introduced their typology of paradigms for the analysis of social and organisational theory. By identifying fundamentally different assumptions concerning the nature of social science and the nature of society they arrived at a matrix composed of four different research paradigms: functionalism, interpretivism, radical structuralism, and radical humanism (Figure 3.1).

Radical Change

Radical Humanist	Radical Structuralist
Interpretivist	Functionalist

Subjective   *Objective*

Regulation
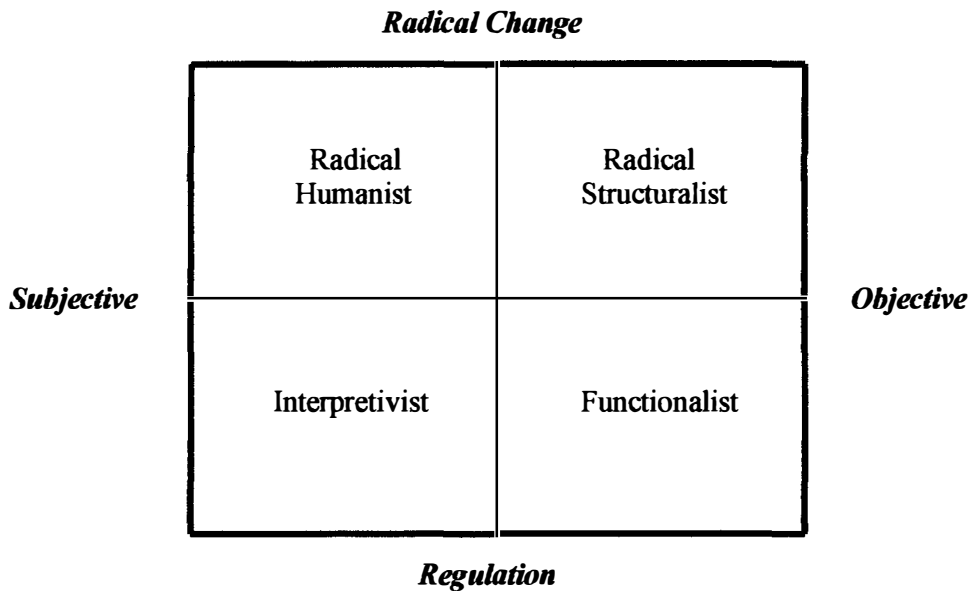
Figure 3.1 Burrell and Morgan's Four Paradigms

The functionalist paradigm is concerned with providing explanations of the status quo, social order, social integration, consensus, need satisfaction and rational choice. It seeks to explain how the individual elements of a social system interact together to form an integrated whole. Functionalists adopt a realist ontology that assumes that facts exist and are awaiting discovery.

The interpretivist paradigm seeks explanation within the realm of individual consciousness and subjectivity, and within the frame of reference of the perspective. The interpretive paradigm is about interpreting the meanings of social actions. Interpretivists set out with the purpose of understanding social systems better by investigating what meanings people attribute to both their own and others' actions (Schultz and Hatch, 1996).

The radical structuralist paradigm has a view of society and organisations that emphasizes the need to overthrow or transcend the limitations placed on existing social and organisational arrangements. It focuses primarily on the structure and analysis of economic power relationships.

The radical humanist paradigm seeks radical change, emancipation and potentiality, and stresses the role that different social and organisational forces play in understanding change. It focuses on all forms of barriers to emancipation; in particular ideology (distorted communication), power and psychological compulsions and social constraints; and seeks ways to overcome them.

3.1.1. Qualitative Research

An interpretivist approach that employs qualitative research methods will be used in this methodology, namely a *case study*. Patton (1990) points out that qualitative research, including ethnomethodology, symbolic interactionism, hermeneutic inquiry, grounded theory, naturalistic inquiry, and ethnography allows the researcher to study phenomena to a greater depth than is possible with quantitative methods.

Interpretivist research can often offer better insights for practice than its counterpart. Practitioners can usually better relate to interpretive research as the research is closer to practice, involves actual case studies, involves real people in real situations, and is undertaken in real world settings. They talk about the results offering new insights, and being more translatable into the ways people actually work in organisations (Hirschheim, 1995). The objective of interpretive research is to piece together people's words, observations and documents into a coherent picture expressed through the voices of the participants (Trauth and Jessup 1999). The interpretivist approach does not seek to identify or test variables but to draw meaning from social contexts (Fisher and Arnott, 1998). The background to the interpretive research approach comes from the two traditions:

1. hermeneutics: process of interpretation, especially the process of coming to understand a text. Hermeneutics emerged as a concern with interpreting ancient religious texts and has evolved to address the general problem of how people give meaning to what is unfamiliar and alien (Boland, 1991)
2. phenomonology: the tradition of Phenomenology as a philosophy is found in the writings of Husserl, a German philosopher, whose intention was to understand the meanings of people and situations through their subjective experience. What

is the structure and essence of experience of this phenomenon for these people? (Patton, 1990)

Use of the interpretivist approach enables the researcher to make sense of the people and organisations involved in the research project. It enables development of theory via an inductive process whereby immersion in the details and specifics of the data enables discovery of important categories, dimensions, and interrelationships by exploring genuinely open questions rather than testing theoretically derived (deductive) hypotheses (Patton, 1990).

The interpretivist approach differs from the positivist perspective whereby research is conducted in order to test theory using a deductive process and applying a natural science methodology to social phenomena (Bryman, 1984; Fisher and Arnott 1998).

Klein and Myers (1999) define positivist research as dependent on formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from a representative sample to a stated population. Positivism dictates that one settles questions about the nature of human thought and action by accepting only assertions and claims that can be probed by direct observation whereas the interpretivist is more receptive to theory and principles not necessarily insisting that what cannot be measured should be ignored in this context.

Positivism places emphasis on facts as distinct from values or meanings, and the use of scientific method in which theory is deduced as a result of formulating and testing hypothesis. A positivist approach is not considered suitable for this research project as positivism assumes the existence of objective or value-free data, whereas interpretivism implies that knowledge is a social construction. Thus, in interpretivist research, value-free data cannot be obtained, since the enquirer uses his or her preconceptions in order to guide the process of enquiry (Walsham, 1995).

The qualitative approach is particularly suitable for studying phenomena in which little previous research has been conducted and is therefore not supported by a strong theoretical base (Benbasat et al., 1987; Walsham, 1995).

While research within the qualitative paradigm may range over different topics and utilise various methods, some common characteristics have been identified for qualitative studies and these are evident in this study.

In particular, the study demonstrates the following features usually associated with qualitative research (Gall et al., 1996). The study is concerned with gaining an insight into particular phenomena from the participants' perspective and the researcher is the primary instrument for data collection and analysis. The study is descriptive and focuses on process, meaning and understanding and requires the researcher to get close to the natural setting of the study.

The unit of analysis is the implementation process of an e-Government system within Western Australian Government Departments. The aim of the data collection is to track the process and access multiple interpretations that participants have regarding the organising and ordering of events (Klein and Myers, 1999).

There are several types of research methods that are useful in interpretivist studies, including Action Research, Grounded Theory, Ethnography and Case Studies.

3.1.2. Action Research

Action research is used to solve specific problems in organisational settings. The main premise of this type of research is for the participants to be actively involved in the research process and for the researcher to produce results that may be implemented in the organisation studied ((Eden and Huxham, 1996)). The advantages of this method are the potential to resolve problems and the intent of the researcher to change the organisation as a result of the research.

It is not the intention of this study to change or intervene in the projects and therefore an Action Research method is considered inappropriate.

3.1.3. Grounded Theory

Grounded theory refers to an inductive process of generating theory from the data (Strauss and Corbin, 1990) and implies a lack of pre-existing concepts and knowledge of the phenomena to be studied. Grounded theory is an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data (Glasser and Strauss, 1967) Some researchers consider grounded theory to be undisciplined and lacking structure (Carroll et al., 1998). Grounded theory has been eliminated as a method for this study as there are pre-existing concepts and knowledge that will be utilised.

3.1.4. Ethnography

Ethnographic research is characterized by extended periods of fieldwork (Barley, 1989). Traditionally, ethnographic research is associated with anthropology, sociology and the study of culture. In recent years it has become more popular among the business disciplines, including Information Systems (Beynon-Davies et al., 1997). Ethnographic research was eliminated as a method for this study as it is not practical to apply extended periods of fieldwork to the research.

3.1.5. Case Study

A case project examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities. The boundaries of the phenomenon are not clearly evident at the outset of the research and no experimental control or manipulation is used. The case project researcher may have less a priori knowledge of what the variables of interest will be and how they will be measured ((Benbasat et al., 1987)).

The case study is the preferred method in investigating the use of IT in a social context and can yield rich insight, particularly in relation to the evolution and the progress of

information systems (Walsham, 1995). A case study methodology lends itself to concentrated focus on the topic, and accommodates several data-gathering techniques. The strengths of the case study approach are in the degree of breadth and depth that can be obtained to develop an understanding of complex real-world situations against their own terms and their own context (Gall et al., 1996; Galliers, 1992;Yin, 1994). According to Avison (1993) the strength of the case study lies in its use for examining natural situations and in the opportunity it provides for deep and comprehensive analysis. A case study approach enables the researcher to ask penetrating questions and capture the richness of organisational behaviour (Gable, 1994). A case study approach is recommended in instances where there is a desire to gain insight into emerging topics (the 'how' and 'why' questions), but there is no need to control behavioural events or variables (Benbasat et al., 1987; Yin, 1989). Guba (1981) suggests the validity of this type of research is increased when different research methods are pitted against each other in order to cross-check data and interpretations. He suggests that different methodologies like "questionnaires, interviews and documentary analyses" should be used when or where possible.

Case studies as such do not lay claim to any particular method of data collection or data analysis (Merriam, 1992). Yin (1994) starts with theory development as the initial step in case study design. This study has modified Yin's design and incorporated the literature review as the first step (Figure 3.2). It is believed that identifying a theoretical framework as a second step is given strength through an initial review of the literature and the identification of gaps in the research.

3.2.   The Research

This research involves three case studies based on face-to-face interviews and documentary analyses. The data collection was through casual conversations, in-depth, informal, and unstructured interviews; and semi structured interviews. Semi-structured interviewing permits the interviewer to ask optional questions, pass on others, and depart briefly to follow unexpected paths (Lindlof, 1995).

Case studies generally display four characteristics (Gall et al., 1996), all of which are evident in this research. Case studies:

1. mostly focus on a specific instance or instances (the case or cases)
2. provide in-depth research of the case
3. are set in natural context
4. show the perspective of the participants
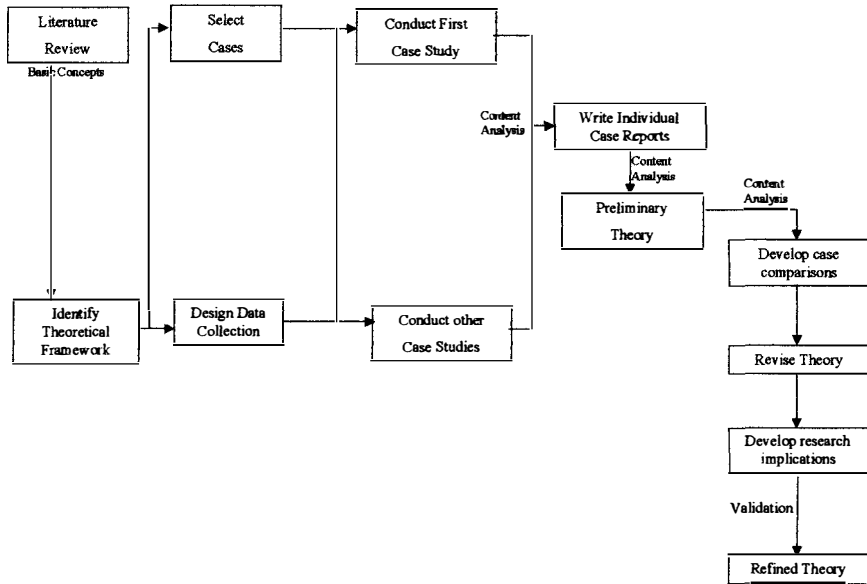
Figure 3.2 Case Research Method (Adapted from Yin 1994)

Case studies have eleven key characteristics (Benbasat et al., 1987). Table 3.1 shows the characteristics and how the research relates to these.

1	Phenomenon is examined in a natural setting	The data collected for this study was obtained at the business premises (their natural setting). All interviews were conducted at the interviewees' office location
2	Data is collected by multiple means	The data was collected using a variety of means including • Content analysis of documents • Content analysis of archival records • Interviews
3	One or a few entities are examined	Senior Executives and project team members within each organisation were interviewed
4	The complexity of the unit is studied intensively	The cases were studied intensively and analysed in an iterative and overlapping fashion
5	Case studies are more suitable for the exploration, classification and hypothesis development stages of the knowledge building process; the investigator should have a receptive attitude towards explorations	Research questions were refined through a pilot study. The data was applied to multiple models to enable the knowledge building process to develop
6	No experimental controls or manipulation are involved	No experimental controls or manipulation were involved in this study
7	The investigator may not specify the set of independent and dependent variables in advance	The researcher did not specify a set of independent and dependent variables
8	The results derived depend heavily on the integrative powers of the investigator	The results were derived based on the integrative powers of the researcher by analysing multiple data sources within and across the cases
9	Changes in data collection methods could take place as the investigator develops new hypotheses	Semi-structured interviews permitted optional questions, some questions not to be asked, and the ability to follow unexpected paths. After the pilot study the research was refined and the cases revisited
10	Case research is addressing "why" and "how" questions ... rather than frequency or incidence	This study addressed the "why" and "how" questions, rather than frequency or incidence counts
11	The focus is on contemporary events	This study is focussed on contemporary projects relating to Western Australian Government organisations on online strategy

Table 3.1 Key Characteristics of Case Studies (adapted from Benbasat et al., 1987)

3.2.1. Definition of the Cases

Defining the case or unit of analysis for the study is important because it helps to limit the data collection and the data analysis (Yin, 1994). In this study the cases are defined and limited by factors related to both the organisational settings and the projects forming the cases.

For the research project a case study was performed within three Western Australian Government agencies, namely the Aboriginal Affairs, Department of Sport and Recreation and Legal Aid Commission Western Australia.

The organisations were not selected using any statistical sampling method and therefore are a biased sample. The decision to select the three organisations was based around the researchers extensive knowledge of the organisations and the researcher being known to the participants. Having extensive knowledge of the organisations and the projects that were examined assists with the reliability of the research. Miles and Huberman (1994) identified a number of characteristics of research to improve reliability, one being familiarity of the phenomenon being studied and the research setting. Being familiar with the participants assisted in obtaining honest and frank responses as well as eliciting responses that went beyond the answers to the questions.

All three departments have undertaken projects to develop an online strategy, are similar in size and makeup yet represent different services provided by Government with vastly different client bases. All have had an online presence for some time and saw the need to develop a comprehensive online strategy that matches with the Western Australian Government online strategy and seeks to progress to the fourth level of the online application development model (Figure 3.3).
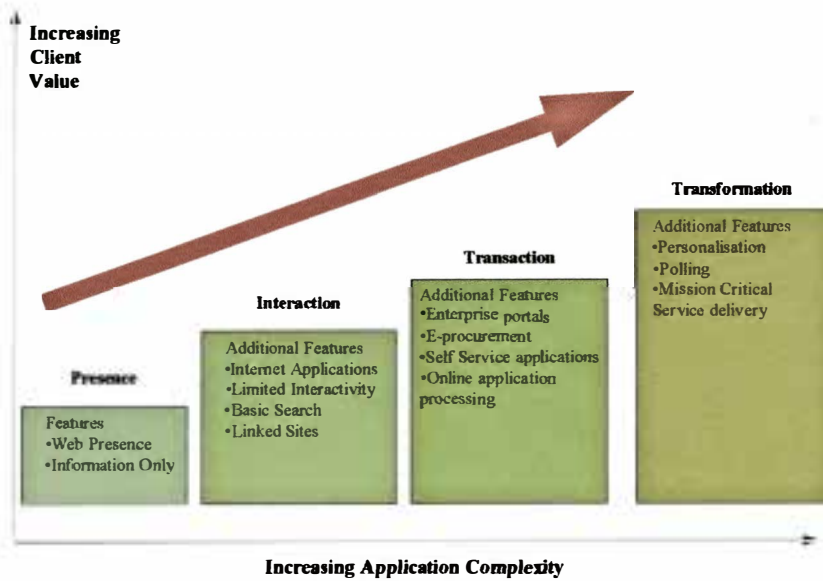
Figure 3.3 Online Development Model

(Adapted from Gartner Dataquest August 2000)

This online development model is similar to Moon's 5 stages of e-Government (2002). Moon's stages reflect the degree of technical sophistication and interaction with users. Moon starts with one-way communication (Presence) and moves through to political participation (Transformation).

5 stages of e-Government (Moon, 2002)	Online Development Model
Information dissemination (one way communication)	Presence
Two way communication (request/response)	Interaction
Service and financial transactions	Transaction
Integration (horizontal/vertical integration	Transaction/Transformation
Political participation	Transformation

Table 3.2 Five Stages of e-Government
(Moon 2002)

In particular, the study is concerned only with the experiences of innovation and change through the organisations' initial online strategy projects. Each organisation has

developed an online strategy project that initially defined an online strategy and then proceeded with what could be termed as phase one implementation of the strategy.

3.2.2. Reliability and Validity

As with all research efforts it was critical that this study displayed both reliable and valid measures of its procedures. Both Lincoln and Guba (1985) and Miles and Huberman (1994) discuss methods to ensure reliability and validity in qualitative analysis. Although it was not feasible to employ all suggested methods, multiple forms of reliability and validity checks were utilised.

To ensure rigour and reliability whilst utilising an interpretivist perspective for this study, Klein and Myers (1999) seven principles for interpretive field research were followed to allow transparency in the research process.

Seven Principles of Interpretive Research	This Research Project
1. The Fundamental Principal of the Hermeneutic Circle - This principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form.	Data collection and data analysis were conducted in an iterative fashion. As data analysis was conducted new patterns emerged & increased the researcher's understanding of the research topic. The focus of the data became evident as individual parts evolved to create meaning as a whole.
2. The Principle of Contextualization - Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.	The research subjects are placed in context and examined within the parameters of Guha et al. (1997) Theoretical Framework of e-Business Change Management, a Framework for Knowledge Strategy (adapted from Zack, 1998) and Dyerson and Mueller, 1999 and a Model of e-Government (Robins and Burn, 2000).
3. The Principle of Interaction Between the Researchers and the Subjects - Requires critical reflection on how the research materials (or "data") were socially constructed through the interaction between the researchers and participants.	The researcher is well known to all the respondents and as such was able to interact with them as a colleague.

Seven Principles of Interpretive Research	This Research Project
4. The Principle of Abstraction and Generalization Requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical and general concepts that describe the nature of human understanding and social action.	This research focuses on drawing specific implications, developing concepts and contributing rich insight. Walsham (1995) indicates that these are three of the four types of generalisations derived from interpretive case studies.
5. The Principle of Dialogical Reasoning Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings with subsequent cycles of revision.	An e-Business change management framework adapted from Guha was utilised as the research instrument.
6. The Principle of Multiple Interpretations - Requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.	Comparison of narratives were compared to analyse the multiple documents and archival records to assist in determining possible reasons for differences in interpretations.
7. The Principle of Suspicion - Requires sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the participants.	Triangulation of sources for this research project included analysis of multiple documents and archival records, and individual personal interviews. Individual interviews allowed for additional questioning o delve deeper as required. Also a cross section of the organisation was interviewed therefore ensuring that people involved and not directly involved in the project were able to provide information

Table 3.3 Seven Principles of Interpretive Research
(Klein and Myers 1999)

As indicated earlier there are four characteristics to look for to improve reliability:
- some familiarity with the phenomenon and the project setting
- strong conceptual interests

- a multidisciplinary approach, as opposed to a narrow grounding or focus in a single discipline
- good investigative skills, including doggedness, the ability to draw people out, and the ability to ward off premature closure (Miles and Huberman, 1994)

The researcher made an effort to ensure all four qualities were present. In terms of familiarity with the phenomenon, the researcher used prior knowledge and experience of Government, in particular experience gained within the three organisations used for the case studies, to guide the topic. The researcher also gained a broader perspective by reading a wide range of literature about e-business, Internet strategy, knowledge management and change management.

In order to develop strong conceptual interests the researcher again read a wide range of literature on the phenomena being studied and collected and analysed secondary data sources and case studies on Information Systems success, Internet strategy, and electronic business.

A multidisciplinary approach was considered essential from the conception of the study. The primary disciplines this research is based on are: Information Systems (in particular information systems success) and Business Management.

Reliability is further increased by the researcher maintaining an audit trail of the research as suggested by (Northey, 1997). Individual case reports and summaries of the interviews were recorded throughout the research project and direct quotations from participants were used to enhance and support the research findings.

This study also employed triangulation of sources to enhance both the validity and the reliability of the findings. Triangulation is a method of increasing validity and reliability by using a combination of sources and/or methods for collecting data. Relying on one source of data may incur bias and triangulation of data seeks to ameliorate this problem (Burgess, 1984).

Triangulation of sources for this research project included analysis of multiple documents and archival records, and individual personal interviews.

3.2.3. Data Collection and Processing

DATA COLLECTION TECHNIQUES

The collection of data for a case study could potentially come from a number of sources inclusive of:

- documents
- archival records
- interviews
- direct observation
- participant-observation; and physical artefacts (Yin, 1993)

Data-collection methods included a semi structured case protocol, multiple documents and archival records, and individual personal interviews. Such triangulation reduces bias and is recommended in case research (Yin, 1994). Gall et al. (1996) define documents as written communications that are prepared for personal rather than official purposes and archival records as written communications that have an official purpose. In the context of this study documents both documents and archival records as defined by Gall et al. (1996) were utilised. Literature regarding the Online Strategy project was studied prior to and after the interviews. This included an overview of the project, documents compiled by the team, systems plans, and notes compiled by the team. This approach provided richness and depth and enhanced the construct validity of the study. Interviews provided the major source for primary data. Other sources included organisation public information such as the web site, annual reports, the organisation's business plan and the Information plan.

Interviews

The interviewees were either sponsors of the project or major team members who had a knowledgeable view of the project.

- informed consent was obtained from all participants. All Participants were given a Statement of Disclosure and Informed Consent (refer Appendix 2)
- all participants were required to sign a consent form (refer Appendix 2).
- the participants were all volunteers. There was no coercion to participate and no reward for participation
- anonymity was assured for all participants
- permission to tape and record interview data was requested prior to interviews
- the nature and objective of the study were first explained to the respondent(s), who were also initially informed about expectations of involvement and the duration of the interview, as well as being reassured about issues of confidentiality

Each interview was conducted by using a standard case study protocol to ensure reliability (Yin, 1994). The resultant protocol was based upon the business process change management model as developed by Guha et al. (1997) and contained major constructs and probes. "How" and "why" questions were raised in an open-ended fashion. Responses were solicited in a semi structured manner to allow the participants the opportunity to fully explore the issues under question. Given the exploratory nature of the research, explanation building and pattern matching were used to provide evidence of links between constructs.

An interview schedule was developed with questions based on the major themes of the research. This method assisted the researcher in refining the interview process and allowed for theory development. Information extracted from secondary data sources was incorporated into all interviews. This helped focus the interviews more clearly and elicited additional trust from the participants by exhibiting knowledge of the project undertaken by the organisation.

All interviews were conducted in person and each interview was conducted after first setting up an appointed time. All participants agreed to be taped and participant permission was gained prior to the recording Taping of the interviews did not appear to inhibit the participants.

Data Analysis

Following completion of the data collection at each stage of the study, an in-depth analysis of the data was undertaken. Data collection and data analysis were conducted in an iterative and overlapping fashion as outlined in (Klein and Myers, 1999) Seven Principles for conducting Interpretive Field Research. As data analysis was conducted new thoughts and ideas increased the researcher's understanding of the research topic and thus the focus of the data collection efforts evolved throughout the data collection process.

The information collected from the one on one interviews was raw data. Each interview was transcribed. This provided a complete record of the interviews and facilitated in the analysis of the data.

Next, the content of the interviews was analysed. The aim of this analysis was to identify themes and patterns that reappear within or between interviews.

All interviews were coded in a table based on Guha et al. (1997) Theoretical Framework of e-business (refer appendix 5).

3.2.4. Research Framework

The methodology used within this research is a case study research method and the eight basic steps of case research as outlined by Eisenhardt (1989) (Table 3.4).

Step	Activity	Reason
Getting Started	Definition of research question	Focuses efforts
	Possibly a priori constructs	Provides better grounding of construct measures
	Neither theory nor hypotheses	Retains theoretical flexibility
Selecting Cases	Specified population	Constrains extraneous variation and sharpens external validity
	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases—i.e., those that replicate or extend theory by filling conceptual categories
Crafting Instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined	Synergistic view of evidence
	Multiple investigators	Fosters divergent perspectives and strengthens grounding
Entering the Field	Overlap data collection and analysis, including field notes	Speeds analyses and reveals helpful adjustments to data collection
	Flexible and opportunistic data collection methods	Allows investigators to take advantage of emergent themes and unique case features
Analyzing Data	Within-case analysis	Gains familiarity with data and preliminary theory generation
	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
	Replication, not sampling, logic across cases	Confirms, extends, and sharpens theory
	Search evidence for "why" behind relationships	Builds internal validity
Enfolding Literature	Comparison with conflicting literature	Builds internal validity, raises theoretical level, and sharpens construct definitions
	Comparison with similar literature	Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching Closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

Table 3.4 Eight Steps of Case Study Research

(Eisenhardt, 1989)

The case based framework caters for the overlap of theory creation and validation and testing. The research attempts to provide knowledge and extend our understanding of e-Government by the target Government agencies within the Western Australian Public Service by exploring, describing, and justifying theory associated with the research questions derived from the literature. A pilot study helped ground the initial research model and associated questions. From this pilot study the research developed three models, which were utilised to gain insight into and extend the understanding of the e-Government strategies the target agencies utilised. Each model can be thought of as a single view that represents a subset of the aspects of interest and assists to simplify the complexities of e-Government to bring about an in-depth understanding of the view or subset in question. When brought together the models provide multiple views that describe and assist to understand the complex nature of e-Government. The models

have been validated through a case study. Each model was applied in turn to three different cases, then further validated through the cases and also extended to show how they can be utilised in other e-Government contexts.

The research may be presented as the fusion of three models. Figure 3.4 illustrates the research as a composite view of the three models: Change Management Framework, e-Government Model and Knowledge Management Framework where:

- the change management framework adapted from Guha et al. (1997) breaks the environment, change management process, and outcomes and performance gains into sub areas that are utilised in turn to examine all aspects of an e-Government initiative against the model. It is also used to determine what parts of the e-Government Knowledge Management Strategy were utilised and where the initiative fits on the framework

- the e-Government Model is illustrated by a flat model in which e-Government strategy is reviewed against six interrelated components within three broad dimensions of Government to Government (G2G), Network of Organisations (G2B) and an Enhanced Value Network (G2C)

- the Knowledge Management Framework is illustrated by a three dimensional model that looks at knowledge acquisition and exploitation, primary knowledge sources and organisation knowledge. The framework examines the level of integration between the organisation, its business partners and customers and determines the extent to which knowledge is shared and utilised across the three boundaries
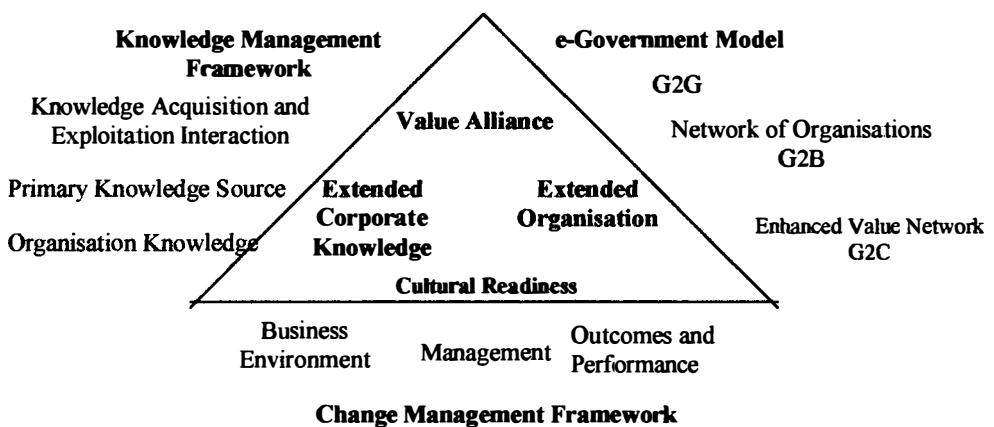
Figure 3.4 Three Research Models of e-Government

The research questions, in association with the three models identified from the literature on the topic were used to develop a composite case-based method. These questions set the main research objectives to review e-Government implementations to determine the extent value alliances, knowledge management and change management influence the success of the implementation.

A pilot case study of an Australian Government organisation helped ground the theory of the study. This was followed by a three-stage study of three Australian Government organisations that had embarked on developing an e-Government strategy. A final conceptual framework was developed in terms of e-Government transformation. Figure 3.5 shows the three types of case-based research methods: exploratory, descriptive, and explanatory. Importantly, it shows the interrelationships between them
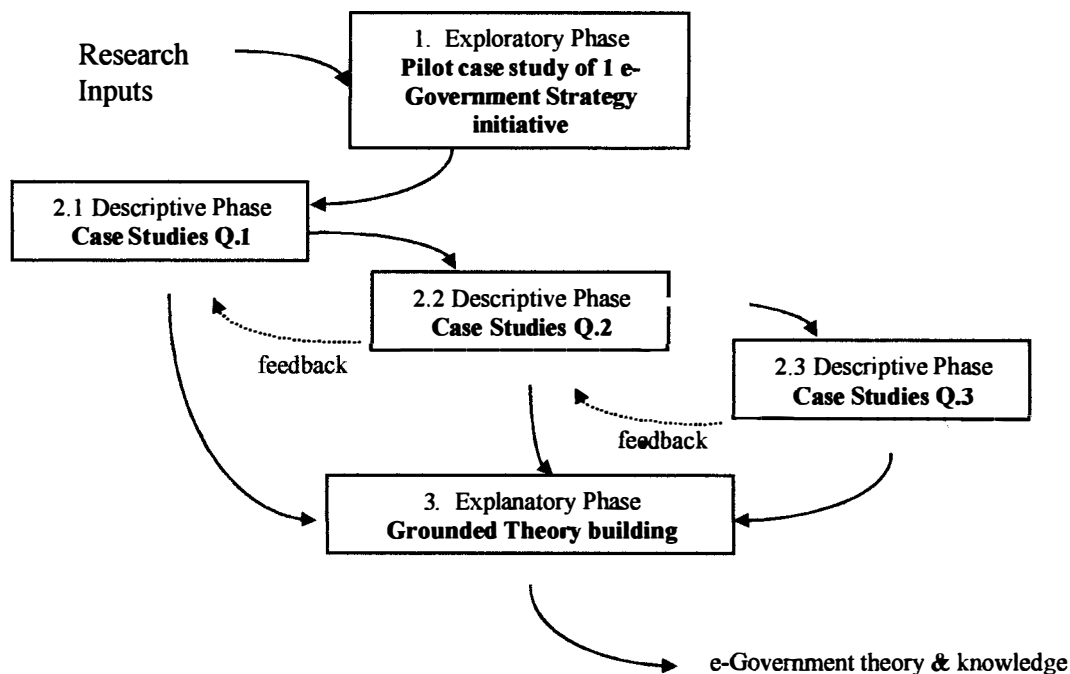
Figure 3.5 Composite Case-based Research Method

(Adapted from Ash and Burn, 2003)

CHAPTER 4. BACKGROUND TO RESEARCH PROJECT AND PILOT CASE

4.1.   Background

Western Australia is an extremely large and isolated state covering 2.5million square kilometres and spanning 2400km from north to south. Many country towns are highly remote from centralised public services, with limited access to current communications technology. Given these circumstances it is essential that information systems are developed to enable effective access to both information and electronic communications. Internet/Intranet technology lends itself perfectly to the establishment of electronic communications between these locations with relatively inexpensive communication links. Hence they are powerful enablers of knowledge sharing across functions, departments and geographical locations rendering knowledge management as a core organisational competence (Kanter 1999; Newell et al, 1999).

To better deliver public services particularly to regional centres, the WA Government has developed an Online Strategy. The major aim of this strategy is to develop a 'Technology Enriched Community'.

The technology enriched community is one where:
- technology is used to its full advantage to enrich the lives of its citizens
- the 'digital divide' is replaced with 'digital inclusion'
- children are skilled to take charge of the future and reap its benefits
- daily life is made easier by the way that citizens interact with their environment
- the benefits of technology flow to all members of the community and are available for all to utilise if they so desire
- communities embrace technology to improve their ability to interact and to communicate

Western Australia becomes a centre for e-commerce expertise and locally developed innovations lead the next wave of technological and scientific advances;

Government is integrated and coordinated across all agencies and only interacts with the citizen as a single entity in the manner and in the form that the citizen wants; and Technology is fully utilised to aid Government to business interaction and to build, operate and integrate the transaction points. (Western Australian Government 2001)

Western Australian Issues

- Western Australia has a narrow economic base dependent on commodities. Its resources sector performs very strongly
- the value of resource commodities has been falling over time and continues to fall
- Western Australia is a significant exporter of highly skilled talent
- Western Australia has a good track record of innovation
- the State Government accounts for 40 per cent of Western Australia's information and communications technology consumption
- the Western Australian Information Industry is 0.1 per cent of the global industry

Western Australia's Strengths are:

- the State's resource sector operates at world's best practice and is globally oriented
- the Western Australian information and communications technology companies have a (relatively) strong export performance earning more than twice the national average from overseas
- distance and isolation create domestic imperative to seize opportunities enabled by information and communications technologies
- a strong technical base, with a well educated English-speaking workforce
- a strong growing State economy, although exports are dominated by resources

This chapter looks at the pilot case study that was conducted at the Department of Aboriginal Affairs. It reviews a specific e-Government solution in the context of the Western Australian Government. Initially it reviews the issues of customer focus and utilising external organisations in the context of Government agencies. Ostensibly Government agencies are service driven organisations with a major goal of providing a

service to the public. It looks at the concept of how a value alliance network can improve customer service.

4.2. Pilot Case – Stages of Growth

4.2.1. Department of Aboriginal Affairs

AAD is a Western Australian State Government Agency responsible for the implementation of the Aboriginal Heritage Management Act that states all Aboriginal Sites within Western Australia must be recorded and that prior to any development within Western Australia a search of sites must be conducted to determine the impact of development on sites in the area. If sites are to be impacted then the developer must consult with the site custodians and apply to the Minister for Aboriginal Affairs to either destroy or move the site depending on the nature of the site and the type of development.

In 1994 a taskforce on Aboriginal Social Justice was formed. The terms of reference for this taskforce were to review the activities of the Government of Western Australia in relation to the social conditions and development of Aboriginal people and to recommend a strategy for implementation of Government programmes. Recommendations of the taskforce included:

- the need for high calibre regional coordinators with a role to include breaking down barriers between Government agencies and reducing waste and duplication
- a regional structure be implemented to undertake regional liaison and co-ordination across Government agencies in co-operation with local Aboriginal communities
- the establishment of an Aboriginal Affairs Department structured as a planning, advisory, co-ordinating and monitoring agency and not being responsible for administration of specific programmes

In order to implement these recommendations the Government established AAD. AAD has utilised the virtual organisation-planning model (Figure 4.1) and established the Aboriginal Affairs Co-ordinating Committee (AACC).
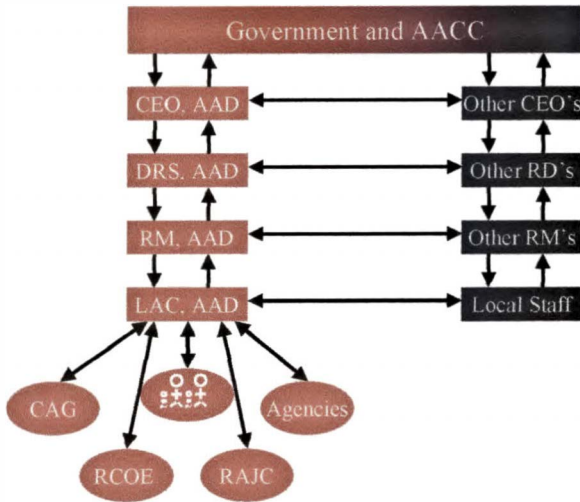
Figure 4.1 Aboriginal Affairs Virtual Organisation

The AACC consists of Chief Executive Officers from all State Government agencies that have a role in Aboriginal affairs including education, justice, police and housing. The major role of the AACC is to establish a set of strategic goals for Aboriginal affairs and to ensure that each of their agencies implement processes aimed at achieving the goals.

Within AAD a structure known as a Local Area Co-Ordination approach (LAC) has been established to ensure:

- pervasive knowledge sharing, feedback and communication
- integration of environmental considerations at the earliest stages of design
- effective partnerships with customers
- commitment to using customer feedback to drive changes in operations, goals and vision
- frontline employees are given the authority to deal with customer issues

This structure includes a Director of Regional Services (DRS) who operates at the state level, Regional Managers (RM) operating at the regional level and working closely with the regional offices of the other organisations within the virtual organisation and Local Area Co-ordinators working locally with the clients.

A major component of the model is the strategic transfer of information. From the management perspective information regarding broad organisation goals, policy initiatives, inter-agency agreements and central/regional office issues is passed down (Figure 4.2). It is critical to ensure information has been made available to LAC and properly understood.

From the service perspective LAC holds crucial information on local needs and priorities, local service initiatives, inter-agency co-ordination, community development and heritage issues. This information must be collated from each LAC to develop an accurate and current profile of local issues, priorities and initiatives.

RAJC - Regional Aboriginal Justice Committee
RCOE - Regional Commission of Elders

RAJC - Regional Aboriginal Justice Committee
RCOE - Regional Commission of Elders
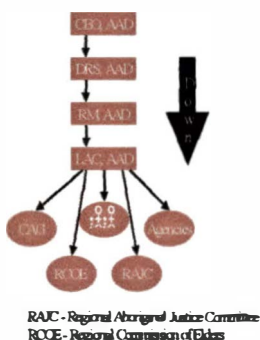
Figure 4.2 Management Perspective   **Figure 4.3 Service Perspective**
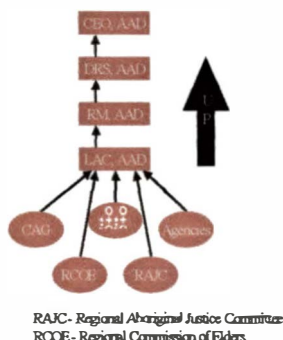
The key responsibilities of the LAC are to:
- monitor and facilitate co-ordination of services across agencies (Figure 4.4)
- promote greater involvement of Aboriginal people in policy development, programme design and project management
- develop strategies to promote and conserve Aboriginal sites, culture, land access and land ownership; and administer the Department's services in the local area

The key differences in the LAC approach are:

- people focused, not service focused
- area focused, not project focused
- generalist, not specialist
- flat not hierarchical
- localised, not centralised
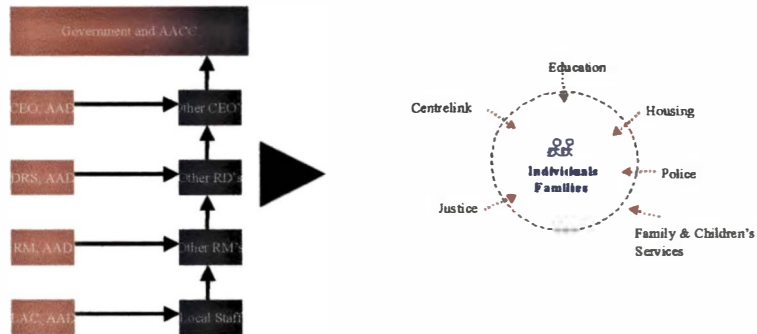
Figure 4.4 Co-ordination of Services

The approach taken by AAD ensures close collaboration between participating organisations. By implementing an overarching planning committee, appropriate goals can be developed to achieve the agreed role of the virtual organisation (VO). This committee should monitor the progress of each partner in the VO, adjust the goals as dictated by the continual flow of information they receive and be prepared to bring in other members of the VO if required.

An important aspect of the approach is that of establishing solid information flows. It is imperative that information flows down from the AACC through all parts of each organisation. Along the way this information gains added value by collaboration at the various levels across the member agencies of the VO. This also holds true for the upward movement of information. Without this collaboration between like entities

across the member agencies it is unlikely that client needs will be met nor will there be a consolidated approach to achieving the AACC goals.

At the grassroots or local level this collaboration is even more important in the development of a one-stop service for the clients. This one stop service is crucial to developing the trust of the client group, providing them with a quality service experience and most importantly, gathering information in regard to their current and future requirements. The major focus of the model is to develop a one-stop service that meets current and future demands in a proactive manner. Of prime importance is the ability of the Local Area Coordinators to link up with other members of the VO at the local level to satisfy requests from local customers for services that cross the functional boundaries.

This overall structure was implemented in the AAD and evaluated through interviews and on-site assessments by the researcher over a period of one year. The researcher then had the opportunity to participate as manager of a specific customer-centric project and this is discussed below.

ORGANISATIONAL CULTURE

Originally the Heritage and Culture Division had full responsibility for all aspects of Aboriginal sites. The Division was strongly opposed to providing information on Aboriginal sites to mining companies and land developers, as they believed that this was the most appropriate way of protecting sites. The manager responsible for heritage management openly labelled mining companies and some Government agencies 'red necks' and was strongly opposed to forming alliances with these organisations and sharing information. This is akin to an IT-Harem where the Islamic word "harem" comes from haram meaning forbidden (Korac-Kakabadse et al. 2000). There was an invisible barrier set up against developers and mining companies that severely hampered their attempts to research Aboriginal sites and progress development.

During a restructure of the organisation the management of the information component of Aboriginal sites was moved to the Information Management Branch. This meant that the Heritage and Culture Division was responsible for providing secretariat services to

the Aboriginal Cultural Materials Committee (ACMC) whilst the Information Management Branch was responsible for capturing and disseminating sites information.

4.2.2. The Aboriginal Heritage Land Management System

As indicated above the AAD is responsible for the implementation of the Aboriginal Heritage Management Act and prior to any development a search of sites must be conducted to determine the impact of development on sites in the area. It should be noted that these sites may not be inhabited but traditionally have strong spiritual significance for the Aboriginal community and non-Aboriginals and indeed Aboriginals from different tribes outside this community would not normally be permitted access to these sites. For this reason much secrecy often surrounds the location of these sites. If sites are to be impacted then the developer must consult with the site custodians (typically through the Regional Commission of Elders (RCE)).

Following the restructure of the AAD the management of the information component of Aboriginal sites was moved to the Information Management Division (IMD). This prompted the evaluation of the current status of the sites register and the development of a project to completely revamp all aspects of the system. This necessitated not only close cooperation between the two divisions but the development of a network of agencies and an extension of these to an enhanced value network (EVN).

Organisations that formed part of the network include:
- AAD – IMD (ICT, GIS, Data Management), HCD (Archaeology, Anthropology)
- State Agencies – Main Roads W.A., Department of Conservation and Land Management, Waters and Rivers Commission, Department of Resources Development, Department of Minerals and Energy
- Commonwealth Agencies – National Native Land Tribunal, Indigenous Land Corporation, Department of Defence, CSIRO
- Other Agencies – Aboriginal Legal Services, Goldfields Land Council, Wesfarmers, AWI Administration Services. Shire of Busselton, ACMC

These Agencies all had different standards and procedures and often competed for budgets and authority.

Two main Customer Groups were identified (other groups include consultants and researchers):

- Aboriginal Communities
- Mining and Resource Development Companies – Robe River Mining, Alcoa, Western Mining, BHP Iron Ore, Acacia Resources, Packman Mining, Normandy Mining

Both groups required accuracy of information about location of sites, cultural heritage and use of sites. However, Aboriginal people required protection of information about closed sites while developers needed to know where these were in order to avoid them. Many longstanding issues of political, cultural and economic tensions served to make collaboration a difficult task. Nevertheless, compromises were reached, one example being where boxes which masked the exact location of closed sites were reduced from 100 square kilometres to four and sites would be designated closed only at the request of Aboriginal people. Full paper based files on these would be designated "Red Files" to prevent unauthorised access.

THE SYSTEM

The GIS was designed as a web-based application using Internet technology. The database is linked to maps of the site locations and boundaries and access comes via the database. Clients often assign their own site references and these are cross-indexed with the AAD references to allow searching by client reference number. Access is only available to organisations that have signed a licensing agreement in accordance with the endorsed policies, and access automatically ceases on expiry of the agreement. Customers will be provided with site maps within the constraints implemented for preservation of closed sites.

The new system streamlines site registration and site searches resulting in significant reductions in a turnaround time of six to ten weeks to two to three minutes and provides

much greater accuracy. Companies can also download mapping and site index data into their own systems with monthly updates.

The library catalogue allows for a variety of different reports accessible to the public. For example, a consultant can specify a mining tenement of interest and all heritage survey reports within this area can be identified

By streamlining site registration and searches, improving the relevance and accuracy of stored data, and making the information more accessible the new system has had a positive impact on the whole enhanced value network as shown in Table 4.1.

	The Agency	Network of Agencies B2B	Enhanced Value Network e-Government
Unit of analysis	AAD: IMD HCD	+ State, Commonwealth and Other Agencies	+ Aboriginal Communities Mining and Resource Development
Resources	ITC Heritage knowledge	Legal Land Use Statutory Research	Development plans Mineral Sources Closed and Open sites Tradition and Customs
Basis for access to competence	AAD specific processes	Privileged access to system for all agencies within the network	Secure Authorised access for Searching and Updating Accurate site info Preservation of culture
Added Value of managers	Nurture and build cross Divisional (virtual) teams	Manage multiple, complex and conflicting Agency relationships	Harness Aboriginal knowledge and culture Manage land exploitation and development more effectively
Value creation	Autonomous	For all partner agencies	For both Aboriginals and developers
Sources of managerial tension	Divisional autonomies and different core competencies	Agencies' different regulations and conflicting purposes	Aboriginal customs (Preservation) Corporate development plans (Exploitation)

Table 4.1 e-Government Model of Heritage Management System

For this investigation the e-Government alliance model was utilised to plot different stages of growth. As a result of this investigation the Guha model was introduced to provide more specific comparative analysis of the three cases. In particular the pilot showed that many of the stages incorporated change management processes. Therefore the Guha model was introduced as it provided an instrument that looked closely at change management and provided a richness of data that enabled a more in-depth analysis of the stages of growth and provided a more complete insight into the organisation and the processes it undertook during each project.

4.2.3. Summary

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CUSTOMER-CENTRIC MODEL OF AAD.
</div>

The primary aim of the restructured AAD is to ensure that all Government services revolve around its customers as opposed to establishing bureaucracies that customers need to break into to obtain the services they require. That is to establish a mechanism that will:

- assist AAD's customers to receive equitable services from Government agencies
- inform Government of unmet needs and priority issues
- facilitate co-ordination of services across agencies

To achieve this the Department has looked at ways to best share resources, skills and knowledge to provide improved access to a wide range of Government services for their clients. This fits with the developing model of e-Government (Table 4.1) as follows:

That is each partner in the value alliance:

- brings its core competence - Aboriginal Affairs Department is not required to have expertise in areas such as Education, Health, Housing or Justice
- has access to other competencies and customer life cycles
- develops flexible collaborative partnerships – the amount of involvement each agency has in each of the goals varies depending on the agency's specific skills and over time the amount of involvement will change as progress is made towards achieving the goals
- trusts and is trusted – for this co-alliance to be successful mutual cooperation will need to develop. This has started to develop through the coordinating committee. All Chief Executive Officers have participated in the meetings and not sent a representative, and agreement has been reached on the primary goals. It remains to be seen if this mutual cooperation does flow down through each Agency. The Local Area Coordinators are working with their local counterparts on common goals, however sections of each Agency's central office are yet to develop mutual cooperation
- establishes appropriate communication links where all stakeholders have evidence of information flowing up and down the model

- must see immediate benefits and be able to impact on the goal setting process – this is particularly important for clients and the LACs are pivotal to this process and must be recruited with care

VALUE ALLIANCE MODEL OF HERITAGE SYSTEM

For this alliance to work, trust was the most important factor. AAD took the first step towards this by reversing the policy that "protection means exclusion to information" and allowed their information to be vulnerable. This vulnerability of one party to another was a crucial concept that had to be viewed as being shared by all players to ensure collaboration. (Mayer et al. 1995). Protection was defined as disclosure of information and developers were portrayed as organisations that inherently wanted to do the "right thing", adhere to legislative requirements and assist with protection of sites. Trust was engendered in the Aboriginal communities by ensuring they had input to all policies and procedures and that they were regarded as the senior decision makers to any changes in these.

The second success factor came from the decision made at the outset to centralise the approach and establish a steering committee representative of all stakeholders to oversee the knowledge gathering and management. This committee was charged with the coordination of internal and external networks as well as the effective use of resources to ensure a positive outcome for the project. The processes that were followed matched closely the guidelines proposed by Berry and Parasuraman (1997) for developing an effective service-quality information system:

1. measure service expectations
2. emphasise information quality
3. capture customer words
4. link service performance to business results
5. reach every employee

Throughout the project and beyond implementation customer satisfaction surveys were conducted, stakeholder groups were interviewed, the Steering Committee formed a customer advisory panel and all processes were constantly evaluated and altered as necessary.

The perceived success of the system was based on technical achievement (the old system was paper-based and had remained unchanged for 15 years) but more importantly on the successful collaboration with a number of diverse players. The building block approach assisted this greatly since the AAD had previously restructured its Agency and established inter-agency collaboration around customer services. This meant that in the development of this particular system priority could be given to building the enhanced value network through the customers with appropriate inter-agency communication channels already established. The LACs assumed the most important role of customer interface and support, with full authority and support from the agency network.

4.2.4. Lessons Learned

What the pilot study provides is an insight into an organisation that has a focus on working closely with its clients and has developed a model for achieving this focus that takes into account the need to work closely with other organisations that have common clients, in order to deliver the services being demanded by clients.

The Heritage management project provides a revealing insight into the challenges that an organisation can expect to face when implementing an e-Government initiative.

These challenges can be seen in Table 4.1. The major challenge was bringing together clients, other Government organisations and private enterprise. What the case study showed was that this was an essential element for success. The study also demonstrated the need for each group to share information, to enable each to add value to this information in order to create new information and to ensure the organisation used the information to create knowledge.

A second challenge was that of enabling the sharing of resources and information through the use of modern communication technology. This was essential to remove the tyranny of distance and the reliance on availability of human resources to obtain a service or information. Coupled with this is the need to ensure that senior management are supportive of the initiatives, take an active role and work on reducing the traditional

stovepipes that can be found in most large organisations. One of senior management's roles is to encourage middle management to work together for a common goal and for this concept to permeate the entire organisation.

Whilst the Model of e-Government takes into account the above areas the study highlights the need to extend the model to include the management of knowledge and take into account:

- the appropriation of knowledge
- the primary knowledge sources
- the extent to which knowledge is acquired and exploited

An important aspect of all areas of the e-Government model is the requirement for change management procedures.

What the case highlights is that the implementation of any e-Government initiative involves significant business process change. The case involved process change in a wide range of areas inclusive of:

- bringing clients, other Government organisations and private enterprise, inside the organisation to have an active role in the initiative
- drawing different sections of the organisation together
- sharing information with traditional rivals
- utilising advanced information and communication technologies

As with any major business process change e-Government can therefore utilise change management measure to evaluate the effectiveness of e-Government. By examining the environment, change management process, and outcomes and performance gains it is possible to examine each aspect of the e-Government model.

This research utilises a change management framework adapted from Guha that breaks the environment, change management process, and outcomes and performance gains into sub areas that can be utilised in turn to examine all aspects of an e-Government initiative against the model. It is also used to determine what parts of the e-Government

Knowledge Management Strategy were utilised and where the initiative fits on the framework.

The next chapters look at three different Government agencies that have implemented an e-Government strategy and utilises the change management framework to examine the strategy against the e-Government model and Knowledge Management Framework to determine what makes for a successful e-Government strategy and determine what factors influence the success.

CHAPTER 5. DATA ANALYSIS

This chapter provides an analysis of the data collected for each of the three case studies and maps it against each of the components of the Framework of e-Business Change Management. Each case is analysed individually and then a summary of the findings for each is provided and a comparison between the three given at the end of the chapter.

5.1. Legal Aid Western Australia

The project was complete at the time of the study's data gathering, although the project is seen as ongoing and has been divided into a number of phases with the actual project being identified as phase one, which allowed the gap between initial expectations and actual results to be gauged. The organisation had the main objective of bringing online access to legal knowledge resources. Upon completion, the organisation considered that the objective had been met and that project had brought the online access to legal knowledge resources to the forefront of its service planning.

Legal Aid is a State Government organisation with the responsibility to ensure that citizens without the financial means are provided with legal advice and legal representation when required. Due to the funding for Legal Aid being capped it cannot finance all requests for legal representation and is currently reviewing how it can better provide advice to enable some clients to represent themselves in court or to assist clients with filing the appropriate documents with the courts. It sees its online strategy as a major part of reducing its costs and extending its reach for providing legal assistance. It is a centralized organisation with numerous geographically separated branches. The organisation deals with criminal, family and civil law and runs a legal practice division as a separate legal firm that must apply for legal aid for its clients in the same way as private practitioners.

5.1.1. Organisational Culture

Legal Aid Commission predominately classifies itself as a legal practice and in the past has not seen the development of technology or information management as a requirement to the business. In 1997 a conscious effort was made to develop an information infrastructure to provide staff with better access to information and to deliver relevant legal information directly to the desktop. At the same time the organisation embarked on a business plan that would enable clients to seek information and advice services and progress particular legal services such as lodgement of court documents without the necessity of employing legal council. This has seen the reduction of lawyers employed for casework, more lawyers employed for research and information development and an increase in information management resources.

5.1.2. Strategic Initiative (Table 5.1)

STIMULI

Legal Aid was strategically proactive and wanted to change the way the organisation approached its business. During a process of looking at why Legal Aid existed the organisation discovered that it was not meeting client demand for legal assistance and started to look at alternative ways to provide legal assistance to the clients. As one respondent put it "the organisation wanted to look for new ways to connect people with information assistance to progress legal action." The organisation saw the initiation of an online strategy as a mechanism to progress this and to better meet demand.

Construct	Evidence

Stimuli
    Proactive
    Reactive
	Proactive

Formulation Scope
    Incremental
    Revolutionary
	Revolutionary

Decision Making
    Autocratic
    Bureaucratic
    Champion
    Emergence
	Bureaucratic ⟶
	Champion Emergence

Strategy Led
    Onset
    Eventually
    No
	Onset

Table 5.1 Legal Aid Strategic Initiative Results

An interesting finding is that the project was initiated by a local functional team that gained the support of one of the senior executive, who would be considered second in charge within the organisation, from the beginning. This led to the executive looking at why they existed and during this process they identified the two project objectives:

1. to enable the agency to make a concerted effort to bring online access to legal knowledge resources to the forefront of service planning;

2. to address legal liability issues associated with the agency's first web site.

The senior executive became the major sponsor and undertook a hands-on role within the project from its inception. This resulted in a high level of corporate-wide buy-in and greatly impacted on the success of the project. This is inline with Guha's (1997) observation that to be successful, a project aimed at changing the performance of the firm cannot be led by IT alone and that IT innovations must be backed by a sense of urgency in other business functions in the organisation.

FORMULATION SCOPE

Legal Aid formulated and maintained a strategy of revolutionary change from the start and remained with this strategy throughout. The idea was to completely develop the online strategy and to launch it as a whole rather than take the incremental approach. This decision was based on the objective of providing rich content on the web whilst guarding against legal liability by failing to provide total content from the start. As a respondent put it "richer veins of content were required that targeted support providers and to provide total legal content to assist community based legal organisations."

DECISION MAKING

A local functional team started the effort with assistance from a senior executive who elevated it to the corporate level, and eventually received a bureaucratic consensus for the project to proceed as a corporate-level initiative. The senior executive spearheaded the project. Having a senior executive as a champion was seen as an extremely positive influence and helped to ensure the success of the project. Guha et al. (1997) indicates the emergence of a champion is considered critical to the success of a business process change project.

STRATEGY LED

The project was led by strategy from the top down and began by reviewing why the organisation exists. The fact that Legal Aid made the effort part of its strategic goals at the onset, was cited by interviewees as a major facilitator of success.

5.1.3. Learning Capacity (Table 5.2)

Construct	Evidence

Adaptation
    Response to technology change
    Learning from others
	Response to technology change

Improved Efficiency Learning by doing	Insufficient Learning by doing

Declarative Knowledge
    R&D resources and technology developed
    Knowledge base
    Focus on core competencies
	Knowledge base
	Focus on core competencies

External Information Base
    Boundary spanners
    Technology gatekeepers
    Customers
	Contractor – used for development
	
	None

Table 5.2 Legal Aid Learning Capacity Results

ADAPTATION

The "response to technology change" played a role in the initial IT-focused effort. Respondents indicated that benchmarking (learning from others) did not play a role in the project. Respondents did indicate that they mainly reviewed other legal organisations' web sites to assist with the design of their website but they did not research best of class vendors or look for how other organisations had implemented an online strategy.

IMPROVED EFFICIENCY

There was a tendency to improve learning efficiency through "learning by doing." The respondents indicated that the project would have been enhanced had more reflective techniques been applied during the project. It was felt that had a reflective approach been taken the project may have progressed more quickly and some of the problems encountered later in the project may not have occurred.

DECLARATIVE KNOWLEDGE

From the onset Legal Aid understood the value of developing a cumulative knowledge base. Respondents indicated that a critical success factor was involving all sections of the organisation and building up a knowledge base around the core competencies within the organisation. There was a clear pattern of efforts to enrich the knowledge base for the purpose of better understanding the business and the client requirements. As a result, the project was able to tap into this knowledge base to develop a product that crosses all boundaries of the organisation.

EXTERNAL INFORMATION USE

An interesting point revealed was that the respondents saw little value in the use of external information to enhance learning capacity. Minimal effort was put into scanning the environment for new developments and opportunities. There was no process put in place to survey clients or enable clients to have input into the project.

5.1.4. Cultural Readiness (Table 5.3)

CHANGE AGENTS AND LEADERSHIP

Whilst a team approach was taken to the project and the involvement of representatives from all sections of the organisation was seen as a critical success factor, the respondents indicated that the senior executive who took ownership of the project had a major influence on the project and without this sponsorship the project may not have been as successful as it was. As Mintzberg and Westley (1992) suggest a "visionary leader" is a single leader who influences change. The concept of a single visionary who was a member of the senior executive assisted in ensuring participation and leadership from middle management, which helped develop the momentum for change.

RISK AVERSION

As a legal organisation Legal Aid is extremely risk averse. The organisation was very reluctant to implement on an incremental basis for fear of legal liability. The preference was to fully cover all bases within the organisation, scrutinise every component and then to go for the 'big bang' approach. The team achieved consensus by involving all sections of the organisation and by identifying an information officer for each section

Construct	Evidence
Change agents and Leadership	Senior Executive Champion

Risk Aversion
    Cautious
    Aggressor
	Cautious+

Open Communications	Medium

Table 5.3 Legal Aid Cultural Readiness Results

OPEN COMMUNICATIONS

Throughout the project open meetings were held with all staff encouraged to attend and all documents associated with the project were made available through the computer network. However it was indicated that the sessions were more of an information giving nature than enabling staff to provide input into the project. The senior executive 'champion' indicated that if the project was to be repeated then he would prefer to run more workshop oriented sessions where staff could actively identify issues and participate in the project. He indicated that he would reduce the number of traditional meetings and replace these with workshops. The project team consisted of cross-functional members who openly discussed the process tasks and identified areas for improvement.

There was very little attempt to communicate to the clients. Community Legal Councils were used late in the project to test the web site that was developed from the online strategy. Whilst the organisation clearly encouraged open communications and kept all staff informed throughout the project, an inhibiting factor was one of time and conflicting priorities. Some of the middle managers did not see the project as a priority, a view that was transferred to the staff within these sections and at times this impeded the progress of the project.

5.1.5. IT Leveragability and Knowledge-Sharing Capacity (Table 5.4)

IT ROLE AND EXTENT OF KNOWLEDGE SHARING

Construct	Evidence

IT Role
    Enabling
    Sociotechnical
    Dominant Factor
	Enabling

Use of Communications technology	Medium

Table 5.4 Legal Aid IT Leveragability and Knowledge Sharing Capability Results

Respondents all indicated a need to adopt a sociotechnical design approach. They indicated that if it had been seen as a purely IT project then it would have failed. The IT section was seen very much as providing a support role to the project and heavy reliance was placed on the IT section to provide expert advice on the underlying technology requirements, however the major focus of the project team was on the non technical information area. This can be seen through the makeup of the main team members who consisted of a senior executive, librarian and staff with legal content knowledge.

The respondents saw the value of IT in providing expert advice in terms of identifying the correct technology infrastructure

USE OF COMMUNICATIONS TECHNOLOGY

Communications technology was seen as a major IT enabler. The use of e-mail provided better cross-divisional communications. Also the very nature of the project demands a high use of communication technology.

5.1.6. Network Relationships (Table 5.5)

Construct	Evidence
Interorganisational linkages	none

Cross-functional cooperation
    Cooperative
    competitive
	Cooperative

Table 5.5 Legal Aid Network Relationship Results

INTERORGANISATIONAL LINKAGES

There was no evidence of interorganisational process linkages. However the organisation did indicate that the next phase of the project was to look closely at e-business initiatives. In particular Legal Aid wanted to implement a system to provide private practitioners with the ability to electronically lodge applications for aid. Associated with electronic lodgement is providing private practitioners with the ability to self assess applications and for the form to be validated as it is completed. All respondents indicated that there was a requirement to look more closely at interorganisational linkages and to place more emphasis on involving external stakeholders. The indication was that this would have assisted in meeting the project objectives and may have improved the final outcome.

CROSS-FUNCTIONAL COOPERATION

Respondents indicated high levels of cooperation among the cross-functional members of the team. There was also an indication that cooperation between functions also existed. However, during the project there were several pockets of resistance from functional managers. This appeared to be based on competing priorities and the sections not viewing the project as their core business or primary priority.

5.1.7. Change Management (Table 5.6)

Construct	Evidence

Pattern of change
    No formal process
    Semiformal process
    Formal phased process
	No formal process

Management's readiness to change
    Committed
    Participative
    Resistant
	Committed
	Participative

Scope of Change
    Improvement
    Radical
	Improvement

Managed Change
    Alleviate employee dissatisfaction
    Vision for change
    Well-managed process of change
    Evolutionary/ revolutionary change
	Yes
	Yes
	Semiformal
	Evolutionary

Table 5.6 Legal Aid Change Management Results

PATTERN OF CHANGE

There was no formality in their process of change. There was evidence that the project team had thought about change management from the outset and loosely applied change management techniques. In particular they put in place a communication plan to ensure that all staff were kept informed throughout and provided with some opportunities to participate.

MANAGEMENT'S READINESS TO CHANGE

Senior management was very supportive of the project, which included participative support from senior management. The senior manager, who was part of the team, indicated that senior management totally endorsed the project from an early stage, gave credibility to the project and actively provided resources. As indicated, at the middle management level there was initial reluctance to be involved in the project. This resistance was overcome through the senior executive processes.

SCOPE OF CHANGE

The organisation did not envisage radical change to business process, but more saw the project as a mechanism to compliment their current ways of doing business and a way of extending its service to clients, as well as providing legal information to citizens it does not consider clients.

MANAGED CHANGE

The organisation did not see the project as requiring extensive change management processes. The feeling was that the change was more about providing additional information rather than changing business processes and therefore little needed to be done in the area of change management, in particular in the area of alleviating staff anxieties. There was little indication that steps were taken to remove employee dissatisfaction. Senior management did provide a vision for change, but employees were generally excluded from participating in the process design.

5.1.8. Process Management (Table 5.7)

Construct	Evidence
Process Measurement	
Use of Process metrics	None
Process	-
Information capture	-
Improvement	-
Feedback loop	-
Audit	-
Tools and technique	low
Team based	Yes

Table 5.7 Legal Aid Process Management Results

PROCESS MEASUREMENT AND TOOLS AND TECHNIQUES

Legal Aid has little experience in process management. The project paid very little attention to this area. There was a lack of process metrics and process information capture for the business process.

TEAM BASIS

Cross-functional Teams were used extensively. Respondents indicated that this was considered vital to the project. In particular the indication was that this was essential to ensure that all areas of the business were covered or catered for, as well as ensuring that a business unit asserting a negative influence did not derail the project.

5.1.9. Outcomes of BPC and Performance Gains (Table 5.8)

To date no formal or informal assessment procedures have been implemented to evaluate the project and the success of the online strategy. The organisation has appointed a team responsible for establishing performance indicators and an evaluation strategy for the project.

Legal Aid expected to see gains in customer satisfaction and service quality increases particularly in providing more extensive legal information through its online strategy. Legal Aid wanted to provide self-access information to community legal centres and individual citizens.

Construct	Evidence
Process Performance improvements	Extended information base for individual clients to access. Legal Liability issues addressed
Quality of work life improvements	Extended range of information. Information available all hours regardless of location. Reduced requirement for printed output.
Overall results	Met objectives

Table 5.8 Legal Aid Outcomes and Performance Results

All respondents indicated that the project had achieved the two objectives that it set out to achieve. These being:

1. to organise the agency for a concerted effort to bring online access to legal knowledge resources to the forefront of service planning

2. to address legal liability issues associated with the agency's first web site

The respondents indicated that further work or more concentrated effort in the areas of interorganisational linkages, communication and change management would have potentially improved the final outcomes.

5.2. Department of Sport and Recreation

The Department of Sport and Recreation is an organisation that has a number of offices strategically located in country areas of Western Australia and a central office located in Perth. Its main functions are to:

- act as a consultancy to assist sporting organisations develop their sport and operational functions

- assist local Government authorities develop sporting infrastructure

- provide research information on current initiatives in the sporting and recreation industry particularly in relation to preventative health and social issues such as child protection or drugs in sport

- increase participation rates in sporting and recreational pursuits

As indicated by the Director, Business Management

'Until late 1999 the Department of Sport and Recreation operated in an information technology environment that was largely ineffective and, in the context of the 'Statewide' nature of the Department, to some extent dysfunctional.'

In particular:

- the information technology environment was focused on single user functionality and completely devoid of corporate tools
- corporate databases were being developed using software that precluded easy and meaningful access by Statewide offices (database update was still being achieved through 'floppy disk' transfer)
- there was no customisation of office tools to assist with document creation and ensure maintenance of corporate standards
- there were no tools to assist with document management including document storage, tracking and location (requiring staff to spend many hours each week searching the network locating documents stored in one of many thousand directories)
- there was no mechanism for readily accessing corporate management information such as operational plans, financial reports, documentation on achievements and issues, corporate policies and procedures, human resource management information, resource bookings, internal telephone lists and functional responsibilities, client information, ministerial correspondence and strategic dates (corporate calendar)
- there was not one web based application nor any plans to progress down this path

In terms of communications, the Department interacted with its regional offices in much the same way as it did in the early 1990's. The mechanism for communications was inconsistent with contemporary business requirements; sound management practice; and every other comparable State Government Agency (e.g. Aboriginal Affairs, Legal Aid etc. who have implemented state of the art communications frameworks).

The idea was to develop a communication infrastructure that enabled the linking of all offices, develop systems that captured organisational knowledge and deliver this

directly to each desktop. This was seen as the Department's Knowledge Management vision.

5.2.1. Organisational Culture

The Department of Sport and Recreation had a history of decentralized development. All regional offices were isolated from the central office and as such had developed their own policies and procedures. Many had developed their own web presence, lacked internal information systems and had no access to corporate information. Within the central office the various divisions worked independently of each other, thus there were no corporate information systems or effective management of electronic or paper based documents. Staff were provided with computers for email and developing documents but stored these in personal areas making the information inaccessible to the organisation. The IT section consisted of two staff members with responsibility for providing technical advice and setting up computers on desks. There was limited strategic information planning revolving around a hardware replacement strategy.

> Data transferred by traditional mail
> Disparate use of templates and image
> No corporate information systems
> Inability to provide centralised support
> Policies buried on the network
> Documents in hundreds of directories
> No document searching tools

Perry Lakes

THEN
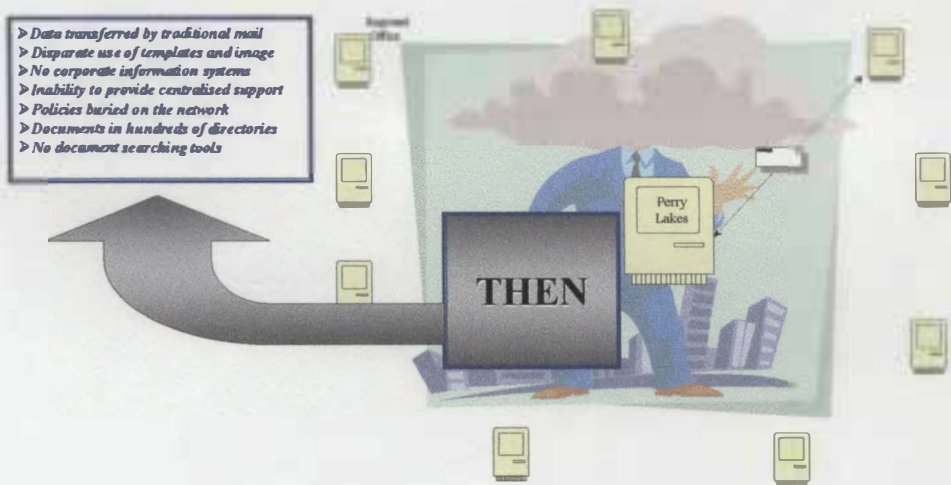
Figure 5.1 Department Information Infrastructure pre Arena

In 1999 a new Chief Executive Officer was appointed and there was a complete change of the corporate executive team. This lead to a refocus on Information Management and an Information Branch was initiated with the responsibility to develop a statewide

network and information infrastructure to support the development of corporate information systems and the implementation of Knowledge Management principles.

5.2.2. Strategic Initiative (Table 5.9)

STIMULI

Sport and Recreation was proactive in its approach. Between 1999 and 2001 the organisation had focussed extensively on its internal business, in particular setting up an information infrastructure throughout the organisation and establishing productivity tools to assist staff in their day-to-day tasks and to capture information being produced throughout the organisation. The Executive saw the development of an online strategy as the next logical step in this initiative and in mid 2001 sponsored a project to develop and implement a strategy. There were significant stimuli from all functions and the project was sponsored by two of the senior executive. Whilst the CEO saw the project as essential and supported the concept he did not play any major role in the project.

Construct	Evidence
Stimuli Proactive Reactive	Proactive
Formulation Scope Incremental Revolutionary	Incremental
Decision Making Autocratic Bureaucratic Champion Emergence	Bureaucratic
Strategy Led Onset Eventually No	Onset — Online Strategy

Table 5.9 Sport and Recreation Strategic Initiative Results

The senior executive became the major sponsor and one of its members undertook a hands-on-role within the project from the beginning whilst other members sponsored the project within their divisions, allocating both resources and funding. This resulted in a high level of corporate-wide buy-in. This is in line with Guha's (1997) observation that to be successful, a project aimed at changing the performance of the firm cannot be led by IT alone and that IT innovations must be backed by a sense of urgency in other business functions in the organisation.

FORMULATION SCOPE

Sport and Recreation chose an incremental phased approach to the project. The organisation indicated that taking 'small steps' was less risky and assisted them with determining how to progress to the next stage. In particular Sport and Recreation indicated that this assisted them with obtaining 'buy-in' from the other sections of the organisation. As the project coordinator stated:

'As certain groups within the organisation saw what was being done and realised that their areas were not represented, they began to ask why their information was not catered for and quickly started to assign staff to the project. At the outset the managers responsible for the regional camp facilities did not want to be involved but once they saw the initial developments they began to realise the benefits and quickly formed a steering group to provide input to the project.'

DECISION MAKING

At Sport and Recreation one of the senior executive saw the need for the development of an online strategy and established a project through raising the issue at the executive level to gain senior executive consensus to proceed. The particular executive did not emerge as the champion of the project, preferring to allow the project team to lead the project. One of the other executive members however did take on the role of chairman of the project steering committee. Sport and Recreation did not see a champion emerge throughout the project. The organisation saw the project as having executive backing and as such reliance was placed on the project team to take the lead and to work with all sections of the organisation to progress the stages.

STRATEGY LED

As the project at Sport and Recreation began as executive endorsed it was seen as an integral part of the business and one requirement was the development of a comprehensive online strategy document. This document was seen as an integral part of the organisation's strategic planning and considered as a key link between the strategy and the organisation's corporate plan.

5.2.3. Learning Capacity (Table 5.10)

Construct	Evidence

Adaptation
    Response to technology change
    Learning from others
	Response to technology change

Improved Efficiency Learning by doing	Learning by doing

Declarative Knowledge
    R&D resources and technology developed
    Knowledge base
    Focus on core competencies
	
	Knowledge base
	Focus on core competencies

External Information Base
    Boundary spanners
    Technology gatekeepers
    Customers
	Contractor – used for development
	
	Customers - medium

Table 5.10 Sport and Recreation Learning Capacity Results

ADAPTATION

As with Legal Aid, "response to technology change" played a role in the initial IT-focused effort at Sport and Recreation. This was soon replaced with a focus on the business of the organisation. The fundamental driver of the project was the organisation's desire to change the way it conducted business and to reach a wider client base. The project was kept internal with little influence from external sources. External stakeholders were consulted with regard to what they required from the organisation in an online strategy context and feedback throughout the project was provided to these stakeholders. The respondents did indicate that taking an incremental approach did encourage a continuous learning philosophy. They also indicated that the methodology did change on this learning approach.

IMPROVED EFFICIENCY

Sport and Recreation used reflective techniques at each stage to modify its process at the next stage and improve its processes as the project progressed.

Various functional groups, initially resistant, become involved once they saw successes in earlier phases.

DECLARATIVE KNOWLEDGE

From the onset Sport and Recreation understood the value of developing a cumulative knowledge base. Respondents indicated that a critical success factor was involving all sections of the organisation and building up a knowledge base around the core competencies within the organisation. There was a clear pattern of efforts to enrich the knowledge base for the purpose of better understanding the business and the client requirements. As a result, the project was able to tap into this knowledge base to develop a product that crosses all boundaries of the organisation. One senior executive at Sport and Recreation indicated that he saw the project as a means whereby staff could become more generalist rather than functional experts, thereby increasing their ability to consult with the client and offer a more extensive service at the time of contact.

EXTERNAL INFORMATION USE

Sport and Recreation were very focussed on external clients and put in place initiatives to consult with them. At the initial phase of the project the organisation's annual conference was being held. This conference attracts delegates from all the external stakeholder organisations. Arrangements were put in place to enable the project team to attend the conference and throughout were introduced to key delegates to enable discussions about the project to take place. During the conference a breakfast meeting was arranged with a range of stakeholders, at which the project leader was invited to speak about the project and obtain feedback. The documentation clearly indicated that external information was a major component of the project and seen as essential to the online strategy, although at the time of interviews respondents indicated that little work had been done in this area to date.

5.2.4. Cultural Readiness (Table 5.11)

CHANGE AGENTS AND LEADERSHIP

In Sport and Recreation the impetus originally came from two of the senior executive team who then convinced the senior executive to sponsor the project. One of the directors was appointed the project champion and a team formed who were responsible for progressing the project. Respondents indicated that the Information Manager took a lead role and was largely responsible for managing the project phases and working with each section of the organisation to obtain buy- in for the project.

RISK AVERSION

Sport and Recreation was risk averse and indicated the need to be cautious and be seen to act as expected of a Government department. Respondents indicated of prime concern was being able to limit the project expenditure and demonstrate public monies had been well spent.

Construct	Evidence
Change agents and Leadership	Mixed – started by Senior Executive

Risk Aversion
    Cautious
    Aggressor
	Cautious

Open Communications	High

Table 5.11 Sport and Recreation Cultural Readiness Results

OPEN COMMUNICATIONS

Sport and Recreation established small working parties within each section of the organisation. These working parties had the responsibility to work with the main project team to define their business requirements and the working parties were also responsible for developing the information required for the project. Throughout the project external stakeholders were invited to comment on the developments. The main project team did indicate that some of the working parties did not make the project a priority and needed to be continually prompted for information to be developed.

5.2.5. IT Leveragability and Knowledge-Sharing Capacity (Table 5.12)

IT ROLE AND EXTENT OF KNOWLEDGE SHARING

Construct	Evidence

IT Role
    Enabling
    Sociotechnical
    Dominant Factor
	Sociotechnical

Use of Communications technology	Medium

Table 5.12 Sport and Recreation IT Leveragability and Knowledge Sharing Capability Results

Sport and Recreation approached the project from a sociotechnical perspective in that they saw the functional areas as the information owners responsible for providing the business focus and provision of the information whilst the information group were identified as the experts in the technical and project management fields. From the

beginning a team of cross-functional members were given the task and the information group were given responsibility for leading the project and providing technical advice.

USE OF COMMUNICATIONS TECHNOLOGY

Communications technology was a major IT enabler. The use of e-mail provided enhanced cross-divisional communications particularly in relation to communicating with regional based offices. Also the very nature of the project demanded a high use of communication technology but limited for e-Government.

5.2.6. Network Relationships (Table 5.13)

Construct	Evidence
Interorganisational linkages	none

Cross-functional cooperation
    Cooperative
    Competitive
	Cooperative – some areas opted not to participate

Table 5.13 Sport and Recreation Network Relationship Results

INTERORGANISATIONAL LINKAGES

There was no evidence of interorganisational process linkages. However the organisation did indicate that the next phase of the project would seriously consider e-business initiatives.

CROSS-FUNCTIONAL COOPERATION

Respondents indicated high levels of cooperation among the cross-functional members of the team. There was also an indication that cooperation between functions existed. There were several pockets of resistance by functional managers during the project due to competing priorities and the sections not seeing the project as their core business or primary priority.

5.2.7. Change Management (Table 5.14)

Construct	Evidence

Pattern of change
      No formal process
      Semiformal process
      Formal phased process
	No formal process

Management's readiness to change
      Committed
      Participative
      Resistant
	Committed

Scope of Change
      Improvement
      Radical
	Improvement

Managed Change
      Alleviate employee dissatisfaction
      Vision for change
      Well-managed process of change
      Evolutionary/ revolutionary change
	Yes
	Yes
	Semiformal
	Evolutionary

Table 5.14 Sport and Recreation Change Management Results

PATTERN OF CHANGE

There was no formality in the process of change. There was evidence that the project team had thought about change management from the outset and loosely applied change management techniques. In particular they put in place a communication plan to ensure that all staff were kept informed throughout and provided with some opportunities to participate.

MANAGEMENT'S READINESS TO CHANGE

Senior management was very supportive of the project, including participative involvement. The senior manager who was part of the team indicated that the senior management totally endorsed the project from an early stage, provided credibility to the project and actively provided resources. The middle management level was initial reluctant to be involved in the project. This resistance was overcome through the senior executive processes.

SCOPE OF CHANGE

The organisation did not envisage radical change to business process, but more saw it as a mechanism to compliment its current mechanisms of doing business and a way of extending its service to clients.

MANAGED CHANGE

The organisation did not see the project as requiring extensive change management processes. The feeling was that the change was more about providing additional information than changing business processes and therefore little needed to be done in the area of change management in particular in the area of alleviating staff anxieties. There was little indication that steps were taken to remove employee dissatisfaction. Senior management did provide a vision for change.

5.2.8. Process Management (Table 5.15)

Construct	Evidence
Process Measurement	
Use of Process metrics	None
Process	-
Information capture	-
Improvement	-
Feedback loop	-
Audit	-
Tools and technique	Low
Team based	Yes

Table 5.15 Sport and Recreation Process Management Results

PROCESS MEASUREMENT AND TOOLS AND TECHNIQUES

There was little experience in process management. The project paid very little attention to this area. There was a lack of process metrics and process information capture for the business process.

TEAM BASIS

Cross-functional Teams were used extensively. Respondents indicated that this was considered vital to the project. In particular the indication was that this was essential to ensure that all areas of the business were covered or catered for, as well as ensuring that the project was not derailed by a business unit asserting a negative influence.

5.2.9. Outcomes of BPC and Performance Gains (Table 5.16)

To date no formal or informal assessment procedures have been implemented to evaluate the project and the success of the online strategy.

Sport and Recreation were keen to reach a wider community without the need to increase their internal resources. The aim was to provide information to the many sporting organisations, in particular those located outside major centres so that these organisations were better informed to ensure that they could promote the State's major objective of increasing participation whilst providing a safe environment.

Construct	Evidence
Process Performance improvements	Extension of client base down to individual citizens
Quality of work life improvements	Extended range of information. Information available all hours regardless of location. Reduced requirement for printed output.
Overall results	Met objectives

Table 5.16 Sport and Recreation Outcomes and Performance Results

5.3.   Aboriginal Affairs Department

As indicated in chapter 4 the Aboriginal Affairs Department (AAD) is a W.A. State Government Agency. In 1994 a taskforce on Aboriginal Social Justice was formed. Strategic Initiative (Table 5.17)

STIMULI

At Aboriginal Affairs the Information Management (IM) Group initiated the project. There was not significant buy-in from the entire organisation, and as a result the project focussed on areas over which the IM group had direct control. The organisation did not see the project as significant and as a result there was no real buy in from the organisational functional areas. It was seen as purely an IT project.

As Aboriginal Affairs predominately worked on areas for which the IM group were responsible with minimal input from other areas, the final product did not take into account fully all business areas within the organisation. This might suggest that to be successful and to cover fully all aspects of an organisation's business, a project of this nature cannot be led by IT alone and that IT innovations must be backed by other business functions in the organisation. The project predominately began as a response to concerns for a particular area of business involving the protection of Aboriginal sacred sites. Aboriginal Affairs has the responsibility to provide Aboriginal Site

information to any organisation contemplating development within W.A. From this information the organisation must submit a request for approval from the ACMC indicating possible impacts the development may have on sites within the vicinity. External clients, who represented mining and development interests in W.A., had indicated to the Minister that information they required was not provided accurately or in a timely fashion. In particular large mining companies were indicating that the Department was stalling/obstructing certain projects. The project began as a focus on this particular area however it quickly took a proactive approach by looking at other areas of the business that could benefit from the project.

Construct	Evidence
Stimuli 　　　　Proactive 　　　　Reactive	Reactive/Proactive – began with need to react to criticism in relation to sites extended to other business processes.
Formulation Scope 　　　　Incremental 　　　　Revolutionary	Incremental
Decision Making 　　　　Autocratic 　　　　Bureaucratic 　　　　Champion 　　　　Emergence	Bureaucratic (IT section)
Strategy Led 　　　　Onset 　　　　Eventually 　　　　No	Onset – IT Strategy

Table 5.17 Aboriginal Affairs Strategic Initiative Results

FORMULATION SCOPE

Aboriginal Affairs chose an incremental phased approach to the project. The organisation indicated that taking 'small steps' was less risky and assisted them with determining how to progress the next stage.

DECISION MAKING

A local functional team within the information group started the effort and the project remained within the information group throughout. The project team did indicate that without the Manager of the IM group initiating the project and taking on the role as project champion the project would have never commenced nor progressed beyond concept phase. They indicated that having the Manager as a champion was necessary particularly as the project had to be funded within the existing IM budget.

STRATEGY LED

The effort was more IT strategy led and had more to do with IT planning than with corporate-wide business planning.

5.3.1. Learning Capacity (Table 5.18)

Construct	Evidence

Adaptation
    Response to technology change
    Learning from others
	Response to technology change

Improved Efficiency Learning by doing	Learning by doing – limited to IT group

Declarative Knowledge
    R&D resources and technology developed
    Knowledge base
    Focus on core competencies
	R&D resources and technology developed
	Limited Focus - IT Knowledge base

External Information Base
    Boundary spanners
    Technology gatekeepers
    Customers
	Technology gatekeepers
	Customers +

Table 5.18 Aboriginal Affairs Learning Capacity Results

ADAPTATION

The project was mainly confined to the IM section and thus it continued to have a strong IT influence throughout although respondents did indicate that the primary focus was on changing the way the organisation conducted business, particularly in the areas that required information access to be provided to clients both outside the Perth metropolitan area and overseas. As with Sport and Recreation an incremental approach was taken and respondents did indicate that a continuous learning environment was established throughout which assisted in learning from previous phases when tackling each new phase.

IMPROVED EFFICIENCY

Aboriginal Affairs used reflective techniques at each stage to modify their process at the next stage and improve processes as the project progressed. The Manager, Information Management at Aboriginal Affairs indicated that he had continually spoken to the senior executive to convince them that a whole organisation approach was required but continually met with resistance and indicated the organisation saw it as an IT project indicating that organisational learning did not take place with regard to this project.

DECLARATIVE KNOWLEDGE

Whilst Aboriginal Affairs indicated that the effort was focussed around the client and providing an increased service, the lack of involvement of functional areas meant that the knowledge developed was not being passed onto staff within these areas. As such the project was not regarded as improving or enhancing core competencies but more seen as a mechanism for providing information outside the normal work. The project focussed more on research and the development of technological solutions.

EXTERNAL INFORMATION USE

Aboriginal Affairs worked extensively with the major external stakeholders to determine requirements and indicated that this collaboration assisted greatly to enhance their learning capacity. As one respondent indicated, this collaboration not only provided invaluable feedback in relation to stakeholder requirements but also developed close alliances that enabled two-way knowledge transfer that had never taken place prior to the project. To quote one of the respondents:

'Prior to the project key stakeholders would hide information from us. However as the project developed we were given access to more information than we could handle. This and the fact that a delegation of key stakeholders met with the Minister to indicate their satisfaction with what was being provided gives a good measure of the success of the project.'

As a technology driven project all members of the team scanned the environment throughout for new technology developments and opportunities.

5.3.2. Cultural Readiness (Table 5.19)

CHANGE AGENTS AND LEADERSHIP

At Aboriginal Affairs the vision for the project came from the Information Manager who in turn coordinated the Information Management group to progress the project. Respondents indicated that it was largely a self-directed team with very little involvement of the senior management group.

RISK AVERSION

Aboriginal Affairs was risk averse and indicated the need to be cautious and be seen to act as expected of a Government department. Respondents indicated of prime concern

was being able to limit the project expenditure and show public monies had been well spent.

Construct	Evidence
Change agents and Leadership	Information Team
Risk Aversion Cautious Aggressor	Cautious
Open Communications	Medium - external

Table 5.19 Aboriginal Affairs Cultural Readiness Results

OPEN COMMUNICATIONS

Within Aboriginal Affairs the project was more confined to the IM group and very little internal communication took place. The group focussed on communication with key external stakeholders. Respondents indicated that this focus proved extremely useful in ensuring that the project was heading in the right direction and proved to be invaluable in that the key stakeholders provided positive feedback about the project to the Minister.

5.3.3. IT Leveragability and Knowledge-Sharing Capacity (Table 5.20)

IT ROLE AND EXTENT OF KNOWLEDGE SHARING

Construct	Evidence
IT Role Enabling Sociotechnical Dominant Factor	Dominant
Use of Communications technology	Medium

Table 5.20 Aboriginal Affairs IT Leveragability and Knowledge Sharing Capability Results

As stated previously the IM group at Aboriginal Affairs was the dominant player within the project. The effect of this was that the business of IM was well catered for however some of the areas that could have benefited from e-business initiatives did not become involved.

USE OF COMMUNICATIONS TECHNOLOGY

Communications technology was a major IT enabler. The use of e-mail provided better cross-divisional communications particularly in relation to communicating with regional based offices. Also the very nature of the project demands a high use of communication technology but limited for e-Government.

5.3.4. Network Relationships (Table 5.21)

Construct	Evidence
Interorganisational linkages	Key external stakeholders

Cross-functional cooperation
       Cooperative
       Competitive
	None

Table 5.21 Aboriginal Affairs Network Relationship Results

INTERORGANISATIONAL LINKAGES

Aboriginal Affairs saw the benefit of 'partnering' from the onset and sought collaboration from their large key stakeholders, namely the large mining companies working within Western Australia and large developers, to assist with determining requirements and providing feedback throughout the project. As the Information Manager indicated:

'This was extremely beneficial in that these stakeholders provided positive feedback in relation to the project directly to the Minister for Aboriginal Affairs and the mining industry representative body.'

Aboriginal Affairs also worked closely with the Aboriginal Cultural Materials Council (ACMC) which is a body consisting of Aboriginal Elders representative of all parts of the state. This group was kept informed throughout the project to ensure that the organisation's direct clients, Aboriginal people, were aware of what was being done with their information and that certain culturally sensitive information was being adequately protected.

CROSS-FUNCTIONAL COOPERATION

At Aboriginals Affairs there was an indication that there was very little Cross Functional Cooperation as the project was perceived as an IT project. Respondents did indicate that there was a high degree of cooperation from the Heritage section of the organisation particularly in relation to the areas that were directly related to their area. The indication was that in the early stages the Heritage section was reluctant to cooperate, although once they could see the positive outcomes that were developing and how much cooperation the key external stakeholders were providing they became very

much involved in the project. In particular the heritage section assisted with coordinating the links to the ACMC.

5.3.5. Change Management (Table 5.22)

Construct	Evidence
Pattern of change 　　No formal process 　　Semiformal process 　　Formal phased process	No formal process
Management's readiness to change 　　Committed 　　Participative 　　Resistant	Neither committed nor resistant
Scope of Change 　　Improvement 　　Radical	Improvement
Managed Change 　　Alleviate employee dissatisfaction 　　Vision for change 　　Well-managed process of change 　　Evolutionary/ revolutionary change	Yes Yes Semiformal Evolutionary

Table 5.22 Aboriginal Affairs Change Management Results

PATTERN OF CHANGE

There was no formality in the process of change. There was evidence that the project team had thought about change management from the outset and loosely applied change management techniques. In particular they put in place a communication plan to ensure that all staff were kept informed throughout and provided with some opportunities to participate.

MANAGEMENT'S READINESS TO CHANGE

The Aboriginal Affairs project did not involve the senior management. The project as indicated was seen as an IT project. Within the organisation the IT area was not considered core business even though a number of its functions dealt directly with core business. As such the Senior Management did not concern itself with projects within the section beyond endorsing the overall budget on an annual basis.

SCOPE OF CHANGE

The organisation did not envisage radical change to business process, but more saw it as a mechanism to compliment the current mechanisms of doing business and a way of extending its service to clients.

MANAGED CHANGE

The organisation did not see the project as requiring extensive change management processes. The feeling was that the change was more about providing additional information than changing business processes and therefore little needed to be done in the area of change management in particular in the area of alleviating staff anxieties. There was little indication that steps were taken to remove employee dissatisfaction. Senior management did provide a vision for change.

5.3.6. Process Management (Table 5.23)

Construct	Evidence
Process Measurement	
Use of Process metrics	None
Process	-
Information capture	-
Improvement	-
Feedback loop	-
Audit	-
Tools and technique	Low
Team based	Yes

Table 5.23 Aboriginal Affairs Process Management Results

PROCESS MEASUREMENT AND TOOLS AND TECHNIQUES

There was little experience in process management. The project paid very little attention to this area. There was a lack of process metrics and process information capture for the business process.

At Aboriginal Affairs CASE tools were used in the design. These did serve the purpose well and assisted with the project success.

TEAM BASIS

Respondents at Aboriginal Affairs indicated that their preference would have been to create cross-functional teams and that this would have greatly enhanced the project. They felt that although the project was regarded as a success a cross-functional team

approach may have provided even better results and may have shortened the project timeline.

5.3.7. Outcomes of BPC and Performance Gains (Table 5.24)

To date no formal or informal assessment procedures have been implemented to evaluate the project and the success of the online strategy.

Aboriginal Affairs expected to see gains in customer satisfaction and service quality increases in providing more extensive Aboriginal Site and Heritage information through its online strategy, in particular in providing self-access information to large mining companies and developers to enable them to assist with preserving Aboriginal Sites and Heritage.

Construct	Evidence
Process Performance improvements	Site research reduced from weeks to minutes, users given direct access to information. Permit requests dealt with in a more timely fashion.
Quality of work life improvements	More time available to register new sites. Less time spent conducting site searches. Able to value add to requests for information. Transparent process for recording Sites. More confidence from Aboriginal elders and developers that sites are appropriately protected.
Overall results	Met objectives

Table 5.24 Aboriginal Affairs Outcomes and Performance Results

5.4.   Summary of Findings

Overall the case study demonstrated that the online strategy projects undertaken by the three organisations were successful in achieving what they set out to achieve. Each had varying degrees of success (refer Appendix 1 which covers each construct of the research model with summarised findings. The tables summarise interpretation of the data gathered for each construct.).

Through the examination of the three cases the results indicate that the projects' success directly correlates with the number of positive facilitators. The major issues that the

respondents continuously pointed to as the main facilitators of success were the need for a project champion, senior executive support and a requirement to involve all sections of the organisation. Whilst Aboriginal Affairs did not have direct senior executive support or involvement and had limited cross functional involvement the indication was that the project could have been extended beyond the actual outcome and should have taken into account more components of the organisation's core business than it did.

The project team at Legal Aid agreed that success was greatly assisted by having a senior executive as a project champion. The team indicated that this greatly assisted in gaining both executive support and involvement as well as assisting in gaining the involvement of the different business units within the organisation.

Sport and Recreation indicated that the support and involvement of the majority of the senior executive from the beginning assisted in the development of cross functional teams and ensured appropriate data was captured that represented all parts of the organisation. Whilst the study found a requirement for the involvement of the IT section particularly in providing technical expertise the respondents at Legal Aid and Sport and Recreation all indicated that it would not have been appropriate to have the IT section as the driver of the project.

All respondents indicated one negative was experienced in ensuring functional units made the project a priority and felt that concentrating more on change management issues and establishing different ways of communicating would have improved the process. In particular at Legal Aid it was mentioned that workshop style sessions would have been more effective than forums that simply imparted information.

The indication was that there was also a requirement to develop strategies to involve external stakeholders and clients to assist in all processes within the project. Aboriginal Affairs in particular indicated that the project would not have been a success without the cooperation and input from all the key external stakeholders. In particular they indicated the involvement of the Aboriginal community and mining companies was vital.

Case	Strategic Initiative	Learning Capacity	Cultural Readiness	IT & Knowledge Sharing	Network Relationships	Change Management	Process Management
Legal Aid	top down strategy led from outset	needed to be more reflective. No use of clients. Limited use of external expertise	change agent leadership from top. Team , staff and management all worked towards objectives	IT played an important but supporting role	Cooperation across functions particularly as implementation progressed. Executive laid out mandate and led project	Executive displayed extensive support. All functions participated.	Limited use of measurement tools
Sport and Recreation	top down strategy led from outset	Did reflect on each stage, some involvement of clients but required more. Limited use of external expertise.	Initial change agent leadership from top but withdrew once team took on project. Limited number of functional areas involved	Began with concept that Communication/Policy section was principal driver but ended with IT taking on this role. This was viewed as limiting factor.	Lack of cooperation from some functional areas which reduced the effectiveness of the project in addressing all business areas	Executive readiness to effect change but some middle management resistance encountered	Limited use of measurement tools
Aboriginal Affairs	IT Strategy led from onset	Utilised extensive reflective practices. Heavy involvement from clients	Functional areas not ready fro the project. Senior Executive did not perceive the priority	Seen purely as IT project with functional areas not being involved	Lack of cooperation from all functional areas and limited support from Executive meant no ownership from the organisation for the project	Contained within the IT section	Limited use of measurement tools

Table 5.25 Summary of Overall Results For The Three cases

5.5. Conclusion

	Aboriginal Affairs	Sport and Recreation	Legal Aid
Stage of Growth	Delayed	Dependent	Drive
Internal	Single Business Unit Success	Multiple Business Unit Success but not all involved	Multiple Business Unit Success with all involved
External Reach	Multiple Clients as Stakeholders from opposing factions	Sporting Bodies and Sporting Groups	Private Practitioners, Community organisations and individual clients
Strategy Mode	Infrastructure Led	Business Led	Mixed
Strategy Achieved	E-Strategy for individual services	E-strategy for e-nterprise	E-strategy for e-nterprise

Table 5.26 Summary of Business Outcomes

(Adapted from Earl 1988)

Earl (1988), identified four stages of growth:

1. delayed – IT has no strategic significance

2. delivery – Computer based transaction systems underpin business operations

3. dependent – Business and functional strategies require major automation, information and communications capabilities and are made possible by these technologies; and

4. drive – Specific applications or technologies are exploited for developing the business and changing ways of managing.

The Aboriginal Affairs Department could be classified in the delayed category, as the executive did not perceive any strategic significance in IT. The project was mostly confined to the IT section of the organisation and the senior executive had no involvement in the project.

Whilst initially Sport and Recreation fall within the dependent category as the organisation and in particular the senior executive believed that their business strategies increasingly depended on IT for their implementation. In particular they indicated that over the past eighteen months they had focussed on IT developing an internal infrastructure to enable all staff to have access to a wide variety of information tools at their fingertips as well as recognising the need to effectively capture corporate information electronically. They indicated that the development of an e-strategy was

the next step and focussed on bringing external stakeholders and clients into their infrastructure.

Legal Aid clearly fit into the drive category in that it believed that IT provides new strategic opportunities and was extremely focussed on changing the way it had traditionally conducted business. The major aim of the e-strategy was to exploit technologies to change its way of doing business and shift the business to external stakeholders and clients.

Earl (1988) identified three modes of strategy:
1. infrastructure led – IT is the means of delivering goods and services in the sector
2. business led – Business strategies increasingly depend on IT for their implementation
3. mixed – IT potentially provides new strategic opportunities

Aboriginal Affairs was very much infrastructure led. As Earl (1988) states the project was 'back office' orientated and 'technologists-controlled'.

Whilst initially Sport and Recreation would have been classified as infrastructure led, concentrating on laying down telecommunications networks and developing sound business systems foundations, it has moved into the business led category. Initially this organisation clearly focussed on the development of a solid internal infrastructure. Once that had been achieved it quickly moved on to looking at its e-business strategy and actively sought to redefine how it would better deliver information electronically.

Legal Aid fitted well within the mixed mode as from the onset they saw opportunities for changing the way they traditionally did business and demonstrated the ability to implement these by taking the infrastructure to the user community. The strategy was very much business led and developed from a top down approach with business needs being the main concern that created an environment for technology.

Legal Aid experienced the greatest level of success and this was attributed to the level of senior executive involvement, willingness of all sections of the organisation to be involved in the project and the presence of a project champion. Sport and Recreation

achieved success but not to the same level as Legal Aid due to the senior executive not taking an active role and lack of involvement of some of the business units. Aboriginal Affairs experienced success within a small sphere of its business. This was attributed to the fact that it was compartmentalised within the IT branch therefore only achieving an e-strategy for individual services as opposed to the development of an enterprise wide e-strategy.

In the next two chapters this analysis will be utilised to review each of the cases in terms of the e-Government knowledge management strategy framework and the model of e-Government.

CHAPTER 6. E-GOVERNMENT KNOWLEDGE MANAGEMENT STRATEGY FRAMEWORK

This chapter provides an analysis of the data collected for each of the three case studies against each of the three dimensions of the e-Government Knowledge Management Strategy Framework (refer Figure 2.4). Each case is analysed individually and then a summary that compares each is provided and each case is plotted onto the framework at the end of the chapter.

6.1. Knowledge Acquisition and Exploitation

Moody and Shanks (1999) identify four broad objectives when looking at knowledge acquisition and exploitation:

1. create knowledge repositories;
2. improve knowledge access;
3. enhance the knowledge environment; and
4. manage knowledge as an asset.

6.1.1. Legal Aid

Legal Aid's main objective ties in very closely to Moody and Shanks' objectives. The project set out to capture knowledge within the organisation, improve access to the repositories by their clients through utilisation of web based technology whilst simultaneously recognising that information and knowledge are major organisational assets and must be managed effectively to ensure that the repositories are continually updated and expanded.

The repositories have proven to be useful to external clients and also invaluable within the organisation, not only to assist in provision of advice but also to reduce legal liability when providing advice.

Davenport (1999) talks of two rounds of knowledge management. He indicates that round one was related to managing knowledge management or capturing information

and placing it in one place. Certainly this is what the project has done. Davenport terms stage two capturing the tacit knowledge. He indicates that capturing this knowledge must be 'baked' into the job. Through its update mechanism and constant review process the project has endeavoured to continually capture the knowledge within the organisation, expand on and improve the repositories that have been established and utilise the expertise from all parts of the organisation. This process has proven to be a valuable tool in capturing and creating knowledge within the organisation and providing it to a broad spectrum of the community through web based technology.

Legal Aid can be considered as fitting into the explorer/emergent category. The organisation has explored extensively its internal sources to gather information, and gathered expertise from all parts of the organisation to create and provide extensive knowledge resources to a broad spectrum of clients. The next phase will see the organisation combining external sources to create and expand its knowledge and move into the innovator/opportunist category.

6.1.2. Sport and Recreation

Sport and Recreation's objectives were very similar to those of Legal Aid. The project set out to capture knowledge within the organisation, improve access to the repositories by their clients through utilisation of web-based technology and to extend its reach to sectors of the community not previously considered as clients.

In relation to Davenport's (1999) two rounds of knowledge management the project has worked on capturing knowledge held within all parts of the organisation and placing it into one place, making it accessible to all parts of the community. As with Legal Aid, Sport and Recreation carefully considered an update mechanism and review process to continually capture the knowledge within the organisation, expand on and improve the repositories that have been established and utilise the expertise from all parts of the organisation.

Sport and Recreation can be considered as fitting into the explorer/emergent category. The organisation has extensively explored its internal sources to gather information, and create knowledge.

6.1.3. Aboriginal Affairs

AAD has tackled its project in such a way as to take into account Moody's and Shanks' objectives and effectively addresses these objectives. It has ensured the involvement of all stakeholders, in particular Aboriginal elders and large mining companies at the early stages to obtain 'buy-in' and by doing an environmental scan up front, have been able to implement systems rapidly whilst not falling into pitfalls that other organisations had encountered.

AAD have developed an infrastructure that clearly supports knowledge work particularly in a geographically disperse or virtual environment. The environment also facilitates the reuse of knowledge across the organisation.

In terms of Davenport's two round of knowledge management the project has succeeded in capturing and placing knowledge in one accessible location with evidence to show that it is being utilised worldwide. In relation to round two, from the outset the project concentrated on capturing the tacit knowledge and creating procedures that one utilise the essence of this knowledge as well as ensuring the ongoing capturing of knowledge. The procedures that have been put in place continue to utilise staff from each of the different areas as well as documenting Aboriginal elders' knowledge of sites. When information about a new site is provided the Aboriginal custodians are consulted to enable their knowledge of the site to be documented from an ethnographic and archaeological perspective.

AAD can be considered as fitting into the innovator/opportunist category. The organisation has explored both internal and external sources to gather information, gathered expertise from internal sources, direct clients, competitors and external sources to improve knowledge access, the knowledge environment and manage knowledge as an asset. AAD has focussed on bringing together a wide range of players within the industry to capture and exploit information to create and extend its knowledge base as opposed to becoming a user of knowledge.

6.2. Primary Knowledge Source

6.2.1. Legal Aid

Legal Aid's main source of information for creating its knowledge repositories has been internal. Whilst Legal Aid looked to the external environment to provide feedback for the project, external sources were not utilised for the development of its knowledge repositories.

Legal Aid can be considered as fitting into the internal category. As stated earlier the organisation has explored extensively its internal sources to gather information to create its knowledge base.

6.2.2. Sport and Recreation

Sport and Recreation's main source of information and resources came from within. As with Legal Aid, Sport and Recreation also looked to the external environment but mainly utilised external resources to provide feedback for the project as opposed to utilising external information and resources to enhance the creation of the knowledge repositories.

Sport and Recreation can be considered as fitting into the internal category. The organisation has explored extensively its internal sources to gather information and create knowledge. From the outset one of the project's objectives was to bring external knowledge and resources into the project, however to date there is little evidence of this occurring with the major focus being on the internal.

6.2.3. Aboriginal Affairs

Aboriginal Affairs utilised both internal and external sources for developing its knowledge repositories. The organisation effectively combined the two sources and utilised both internal and external expertise to develop its knowledge base and present it to the client base.

Aboriginal Affairs can be considered as unbounded when examining the sources of its knowledge for the project. The organisation has explored extensively its internal sources to gather information and create knowledge. From the outset one of the projects objectives was to bring external knowledge and resources into the project however to date there is little evidence of this occurring with the major focus being on the internal.

As stated in the previous section AAD has focussed on bringing together a wide range of players within the industry to capture and exploit information to create and extend its knowledge base as opposed to becoming a user of knowledge.

6.3.   Organisation Knowledge Base

The three areas associated with organisation knowledge base are:
1. appropriation – retention and effective utilisation of internal knowledge
2. learning – acquisition and exploitation of external knowledge
3. teamwork – integration of diverse knowledge bases

6.3.1.   Legal Aid

Legal Aid falls within category one – appropriation. The project concentrated on capturing internal knowledge, ensuring the retention of this knowledge through the development of a single location repository and the effective utilisation of this knowledge through utilising web based technology to provide it to all parts of the community. The project also looked at utilising this knowledge within its day-to-day operations and making it available to its business partners to aid them when assisting the broader community. The project has yet to move into exploitation of external knowledge or integration of both internal and external knowledge to create a diverse knowledge base.

6.3.2.   Sport and Recreation

Sport and Recreation falls within category one – appropriation. As with Legal Aid, the Sport and Recreation project concentrated on capturing internal knowledge, ensuring the retention of this knowledge through the development of a single location repository

and the effective utilisation of this knowledge by providing it to the community. The project has yet to move into exploitation of external knowledge or integration of both internal and external knowledge to create a diverse knowledge base.

6.3.3. Aboriginal Affairs

The project undertaken by AAD provides an excellent example of utilising the three building blocks to develop an effective knowledge management system. The project focussed on capturing internal knowledge and utilising internal expertise from various parts of the organisation whilst exploiting external knowledge sources to create an integrated and diverse knowledge base that is accessible to the broader community as well as being invaluable to the organisation's direct clients and business partners.

6.4.   Summary

When looking at implementing an e-Government strategy an organisation must carefully consider its knowledge management strategy. As a first step the organisation needs to determine the value of knowledge to its business. In other words it must align its knowledge resources and capabilities to the intellectual resources of its strategy. This should be measured against three dimensions and related to knowledge aggressiveness. The first dimension addresses the extent to which an organisation is primarily a creator or user of knowledge and the second addresses whether the primary sources of knowledge are internal or external and thirdly the organisations knowledge base. These together will provide the strategic framework in which knowledge management strategy combines within a framework to develop an online e-strategy.

All three projects focussed on capturing and utilising internal knowledge. All three conducted analyses of people based processes during the development of the online strategies. These analyses aided in the reengineering of procedures to provide an improved quality service to clients, the establishment of quality controls and the linking of procedures with a modern information system directly accessible by clients regardless of location.

For the first time the Aboriginal Affairs Department brought together experts from a wide range of fields inclusive of information management, cartographic services, system development, library management, records management, archaeological services and anthropological services. This ensured that each aspect of the system received appropriate input from experts in each field to develop a solution that met all requirements. By obtaining input directly from mining companies, land developers and Aboriginal elders the project was able to fully exploit and capture external knowledge and build this knowledge into the system, policies and procedures.

Both Legal Aid and Sport and Recreation developed processes that brought together all parts of the organisation to develop facilities that enhanced their service delivery and aided their partners in assisting their respective client bases as well as reaching the broader community that had not previously had access to the knowledge locked inside the organisation.

Whilst all three organisations have successfully combined knowledge management processes within their e-strategy it could be said that Aboriginal Affairs took it one step further in that they managed to substantially enhance their internal knowledge by exploiting external knowledge to create an unbounded knowledge base. This process served to enhance and extend its ability to provide the quality service that was being demanded by the client base and business partners.

An awareness of the three dimensions allows an organisation to experiment and learn as it uses the technology over time. Most importantly, it offers a systematic approach with which to understand and better manage the realities of technology-based change in organisations today. If an organisation is embarking on an online e-strategy it is imperative that knowledge management strategies are carefully considered. It could be said that the major component of the strategy involves knowledge management.

In relation to the e-Government knowledge management strategy framework Aboriginal Affairs can be placed in the unbounded/innovator/team work quadrant as they have utilised both internal and external knowledge as well as developing a teamwork approach with internal, business partner and client resources to create unbounded integrated knowledge repositories. Both Legal Aid and Sport and Recreation have

created knowledge repositories from internal knowledge utilising internal resources. Therefore they would be placed in the internal/explorer/ appropriation quadrant. (refer Figure 6.1)
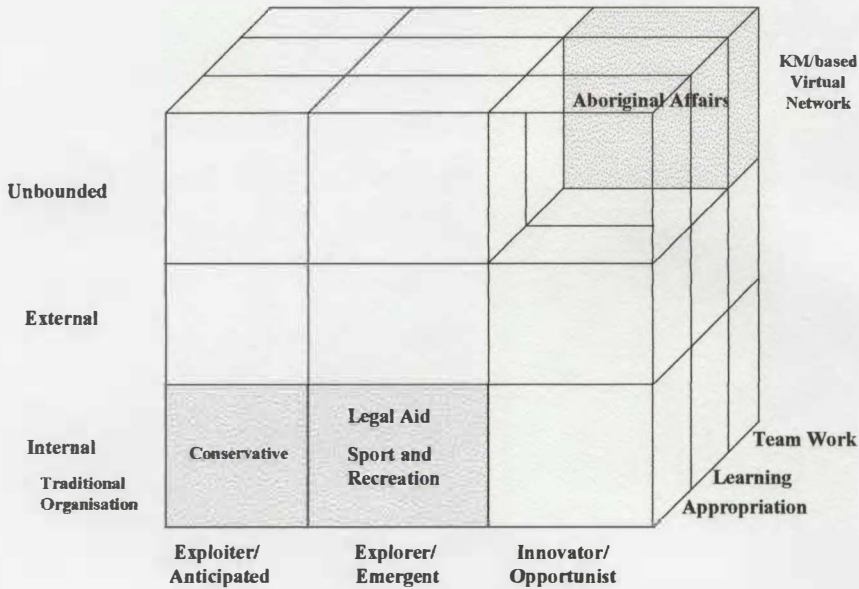
Figure 6.1 Placement of Organisations on e-Government Knowledge Management Strategy Framework

As stated projects can achieve their objectives regardless of where they are placed on the framework, however it is essential that an e-strategy project does have an understanding of the framework and by striving to create a teamwork approach utilising internal, business partner and client resources and knowledge to create unbounded knowledge bases the project will be in a position to provide an enhanced service to the community that takes advantage of a knowledge management based virtual network. This approach will assist the organisation in extending its knowledge base internally as well as increasing its capacity to meet customer-focused capabilities. These capabilities enable firms to build lasting distinctiveness with customers of choice.

Within a Government context the products and services a customer applies for or needs to perform with public authorities are public services. Public services reflect the external point of view whereas a process refers to the internal viewpoint and reflects the organisation's organisational responsibility and domain of expertise. Wimmer (2002)

indicates that the internal verses the external viewpoints have to be mapped and integrated in a coherent way without:

1. disturbing organisational matters, responsibilities and expertise of public administrators
2. requiring that external citizens or business clients have knowledge of the public authorities' internal organisation

An e-Government strategy should include:

- pervasive knowledge sharing, feedback and communication
- integration of environmental considerations
- effective partnerships with partners and customers
- commitment to using business partners and customer to drive changes in operations, goals and vision

CHAPTER 7. E-GOVERNMENT MODEL

This chapter provides an analysis of the data collected for each of the three case studies and maps it against each of the components of the extended model for e-Government Management. Each case is analysed individually and then a summary of the findings for each is provided and a comparison between the three given at the end of the chapter.

7.1. Unit of Analysis

7.1.1. Legal Aid

G2G
Legal Aid was very proactive in its approach focussing on changing the way it approached its business. The project was strategy led from the onset with the decision making being classified as bureaucratic and a project champion from within the senior executive who emerged during the project.

G2B
The project extended the information base for individual clients, enabling 24-hour access. It provided for an extended client base by breaking down distance barriers and greatly reducing the requirement for printed output. Whilst the project was mindful of the extended enterprise there was limited involvement of other service providers and customers.

G2C
There was no evidence to suggest that a value alliance developed nor did the project consider developing a value alliance to enhance its outcomes.

In summary the project was predominately done within the agency. Whilst the strategic focus was on working more closely with its partners, other service providers and customers the organisation did not consider developing an extended network or creating a value alliance to enhance its online strategy.

7.1.2. Sport and Recreation

G2G

Sport and Recreation was proactive in its approach focussing on changing the way it approached its business. The project was strategy led from the onset with the decision making being classified as bureaucratic with a member of the senior management chairing the steering committee.

G2B

The project extended the information base for individual clients enabling 24-hour access. It provided for an extended client base by breaking down distance barriers and greatly reduced the requirement for printed output. The project was mindful of the extended enterprise and sought constant feedback from other service providers and customers.

G2C

There was no evidence to suggest that a value alliance developed during the project. Whilst mechanisms were put in place to obtain partner and customer feedback the project did not fully develop the notion of an alliance or utilising an alliance to implement its strategy.

In summary the project was predominately done within the agency. Whilst the strategic focus was on working more closely with its partners, other service providers and customers the organisation did not consider developing an extended network or creating a value alliance to enhance its online strategy.

7.1.3. Aboriginal Affairs

G2G

Aboriginal Affairs was initially reactive in that it was reacting to criticism in the provision of access to Aboriginal Sacred Site information by developers and the mining industry. The organisation later became proactive by extending the project to other business processes. The project was contained within the IT section and strategy led from the onset with the decision-making being classified as bureaucratic.

G2B

The project extended the information base for individual clients enabling 24-hour access. It provided for an extended client base by breaking down distance barriers and greatly reducing the requirement for printed output. The project utilised its major stakeholders extensively to determine requirements and eventually to establish a two-way flow of information.

G2C

A value alliance did develop between the organisation and some of its major stakeholders. This alliance was created to ensure the exchange of information, particularly in the area of Sites information so that the information bases could be synchronised and Site knowledge could be extended.

In summary whilst the project was predominately done within the agency and the strategic focus was on working more closely with its partners, other service providers and customers, the organisation did develop a value alliance with some partners/clients to enhance its online strategy.

7.2. Resources

7.2.1. Legal Aid

G2G

Within the agency IT played an enabling role. The IT section did not take a dominant role within the project but provided the required technical expertise to assist with implementing the strategy. The project team viewed IT as an underlying tool that could be utilised as a transport mechanism to enable the delivery of the strategy.

The project team saw communication technology as a major project enabler. Email was used extensively to improve cross-divisional communications and in particular to enable regional offices to take part in the project.

There was a high degree of cross-functional cooperation. This cooperation ensured that expertise from across the organisation was fully utilised and incorporated into the strategy.

G2B

There was little evidence of interorganisational process linkages and respondents indicated that the main focus was on utilising internal expertise, resources, knowledge and information. The organisation saw this as the next step in the development and implementation of the strategy.

The organisation did look to its partners to review the strategy and initial implementation to provide feedback and suggestions for improvement.

G2C

The organisation did not consider its clients as relevant contributors to the strategy. The emphasis was on ensuring the provision of information to its customers whilst ensuring the organisation was not open to legal liability in the provision of the information.

The organisation did not do an environmental scan to determine what other agencies had done nor to look for expertise within other agencies to assist with the development of the strategy.

7.2.2. Sport and Recreation

G2G

Within the agency IT played a sociotechnical role. The IT section took on the responsibility for managing the project as well as providing technical expertise. Sport and Recreation viewed IT as experts in the technical and project management fields.

The project team saw communication technology as a major project enabler. Email was used extensively to improve cross-divisional communications and in particular to enable regional offices to take part in the project.

There was a high degree of cross-functional cooperation. This cooperation ensured that expertise from across the organisation was utilised and that information from across the organisation was incorporated into the strategy. Initially some groups within the organisation, in particular the Camp section responsible for managing dormitory type

facilities in regional locations, and regional offices were reluctant to be involved in the project, however this changed as they saw the project progress.

G2B

There was little evidence of interorganisational process linkages and respondents indicated that the main focus was on utilising internal expertise, resources, knowledge and information whilst obtaining feedback throughout from partners and customers.

G2C

The organisation did consider its clients as relevant contributors to the strategy. Customers were mainly utilised to provide feedback for the project

The organisation did do some environmental scanning to determine what other agencies had done but did not utilise expertise within other agencies to assist with the development of the strategy.

7.2.3. Aboriginal Affairs

G2G

Within the agency IT played a dominant role. For the most part the project was contained within the IT section with little input from other sections within the organisation.

The project team saw communication technology as a major project enabler. The use of email was extensive in order to improve interorganisational communications.

There was little cross-functional cooperation. This limited the business benefits that could be gained from the strategy.

G2B

There was evidence of interorganisational process linkages with key external stakeholders. The organisation saw this as a mechanism to outsource their data gathering, expanding their knowledge base particularly in the area of Aboriginal Sites and to further protect these sites.

G2C

The project team considered its clients as relevant contributors to the strategy. The emphasis was on ensuring the provision of information to its customers whilst still protecting Aboriginal heritage.

The organisation did not do an environmental scan to determine what other agencies had done nor look for expertise within other agencies to assist with the development of the strategy.

7.3.   Basis For Access To Competence

7.3.1.   Legal Aid

G2G

Legal Aid looked very closely at its expertise to develop the information required to deliver the online strategy. In particular it decided the best approach to implement the strategy was by way of revolutionary change. Legal Aid completely developed its strategy and then gathered all the information prior to launching the strategy. Prior to implementation legal experts within the particular field under development carefully gathered the information. All information was then carefully checked for readability by communication experts and then rechecked for legal correctness.

G2B

Privileged access to particular internal information available online to Legal Aid staff is envisaged in the next stage of the strategy development. Also the organisation is looking at developing a system for its partners to lodge applications for grants of aid electronically on behalf of clients.

G2C

Legal Aid does not see itself as working directly with customers through its online strategy. The development of infrastructure to enable ongoing dialogue with customers does not form part of its strategy.

7.3.2. Sport and Recreation

G2G

Sport and Recreation looked very closely at its expertise to develop the information required to deliver the online strategy. In particular they decided the best approach to implement the strategy was by incremental steps. In this way groups within the organisation who lagged behind or who were not committed to the project had the opportunity to see what had been done and to opt in at any stage.

G2B

Sport and Recreation's strategy was formulated into phases. Phase one dealt with providing information to any individual. Phase two incorporated access to privileged information to its partners.

G2C

Sport and Recreation sees its customers having access to a range of information produced both by Sport and Recreation, its partners and other service providers. It sees its online strategy as a mechanism for providing a sport and recreation portal for all its customers to utilise as well as providing for ongoing dialogue.

7.3.3. Aboriginal Affairs

G2G

Aboriginal Affairs looked very closely at its expertise to develop the information required to deliver the online strategy. In particular they decided the best approach to implement the strategy was by way of incremental change. This decision was based on minimising risk and enabling learning -by -doing to occur so as to assist in determining how to progress to the next stage.

G2B

For the most part all information was made available to any individual however the implementation did include the establishment of agreements with key stakeholders to access privileged information and for the transfer of information in a two-way direction.

G2C

The project envisaged development of mechanisms for ongoing dialogue with key stakeholders inclusive of mining companies, large developers and Aboriginal communities.

7.4. Added Value of Managers

7.4.1. Legal Aid

G2G

Senior Management's support of the project was seen as a major factor contributing to the success of the project. From the beginning senior management played an active role in the project. This support and involvement assisted in ensuring middle management involvement and played a vital part in the change management process.

Middle managers, with encouragement from the senior management, assisted in providing information and expert opinion throughout the project.

G2B

The senior management involvement assisted the project team by encouraging divisions and branches within the organisation to collaborate throughout the project. This enabled the project team to bring together a range of expertise to develop the strategy and was vital during the implementation stage, particularly as a range of legal expertise was required to review information prior to publication.

G2C

Managers played a vital part in keeping Legal Aid's partners informed of progress of the strategy development and implementation as well as encouraging these partners to utilise the information once it was made available.

7.4.2. Sport and Recreation

G2G

As with Legal Aid, Senior Management's support of the project was seen as a major factor to contributing to the success. From the beginning senior management played an

active role in the project. This support and involvement assisted in ensuring middle management involvement and played a vital part in the change management process.

Middle managers assisted by providing information and expert opinion throughout the project.

G2B
The senior management involvement assisted the project team by encouraging divisions and branches within the organisation to collaborate throughout the project. This enabled the project team to bring together a range of expertise to develop the strategy and was vital during the implementation stage.

G2C
Managers played a vital part in keeping Sport and Recreation's partners and clients informed of progress of the strategy development and implementation as well as encouraging these partners and clients to utilise the information once it was made available.

7.4.3. Aboriginal Affairs
G2G
Limited support both at the senior and middle management level made the project more difficult to undertake and meant areas that could have benefited from e-business did not experience this opportunity.

G2B
Without the senior management involvement there was limited collaborative effort within the agency. Through the efforts of the Manager of the IT section, the Heritage and Culture section could see the benefits of the project and there cross collaboration between the two sections developed, which assisted the Aboriginal Site section of the project. In particular this collaboration assisted in involving the Aboriginal communities who are the Site custodians and ensuring their objectives for Site protection were met.

G2C

As stated the collaboration with the Heritage section enabled close interaction with Aboriginal Communities and ensured that as custodians the agency was acting in their best interest in terms of protecting sites through making information more readily available. The IT management team played a vital role in working with external partners not only to ensure that the strategy met the partners' needs but in also gaining access to information that the partners had that could be utilised to enhance the online strategy.

7.5. Value Creation

7.5.1. Legal Aid

G2G

The development of the strategy and implementation was quite autonomous. There was very little involvement by business partners. The main involvement was towards the end of the project when partners were shown the online strategy and asked to provide comment and feedback.

G2B

Very little effort was made to collaborate with partners. As indicated the project could be considered autonomous and kept within the bounds of the organisation.

G2C

Clients were considered users of the final product. There was no attempt to collaborate with clients during the project.

7.5.2. Sport and Recreation

G2G

The development of the strategy and implementation was quite autonomous. There was very little active involvement by business partners. The main involvement revolved around obtaining comment and feedback throughout the process.

G2B

Very little effort was made to collaborate with partners. As indicated the project could be considered autonomous and kept within the bounds of the organisation.

G2C

Targeted clients were utilised to provide comment and feedback during the strategy development and implementation phases.

7.5.3. Aboriginal Affairs

G2G

From the outset the project's objective was to utilise information from key external stakeholders. Whilst much of the strategy development was autonomous the project constantly looked to external partners and stakeholders as a mechanism for enhancing the project through the provision of relevant data.

G2B

The project team looked for collaborative partnerships wherever possible to enhance the strategy. Whilst partners were not directly involved in the project heavy reliance was placed on these partners to provide key data to ensure the strategy could deliver its objectives.

G2C

As with key partners the project team looked towards key clients/stakeholders to review the project as well as provide data that they had to broaden the range of information required to boost the outcomes.

7.6. Sources of Managerial Tension

7.6.1. Legal Aid

G2G

As indicated there was positive cross-functional cooperation and the project looked at leveraging core competencies within the organisation. There was some evidence of

some service units resisting involvement in the project however this was broken down through senior management being directly involved in the project.

G2B

Again partners were seen initially more as users of the information and were not used as collaborators within the project.

G2C

Customers were not involved in any stages of the project.

7.6.2. Sport and Recreation

G2G

As indicated there was positive cross-functional cooperation and the project looked at leveraging core competencies within the organisation. There was some evidence of some service units resisting involvement to the project however this was broken done through senior management being directly involved in the project and the adoption of an incremental approach.

G2B

Partners were seen as neither collaborator nor competitor but utilised to provide feedback and comment throughout the project

G2C

As with partners customers were utilised as a feedback mechanisms and therefore not seen nor utilised as collaborators or competitors.

7.6.3. Aboriginal Affairs

G2G

The project could be classified as service-unit autonomous. Although there were efforts to leverage on core competencies within the agency, without the senior management support there was very little cross collaboration between units within the agency and for the most part the development and implementation of the project was left to the IT section.

G2B

From the beginning the agency's partners were seen very much as collaborators and competitors. Prior to the project the agency looked upon its partners very much as competitors and were reluctant to collaborate with them at all. The project itself assisted in proving that these partners could become collaborators and assist Aboriginal Affairs in conducting its core business.

G2C

Customers were seen in the same light as the agency's partners, that is, as competitors. Again through the project this perception was altered and cross collaboration developed particularly in the area of exchanging data.

7.7. Knowledge Appropriation

7.7.1. Legal Aid

G2G

A major focus of the project was to build up a knowledge base around the core competencies within the organisation. There was a clear pattern of efforts to enrich the knowledge base for the purpose of better understanding the business and the client requirements. As a result, the project was able to tap into this knowledge base to develop a product that crossed all boundaries of the organisation.

G2B

The organisation made limited use of external information to enhance learning capacity. Minimal effort was put into scanning the environment for new developments and opportunities

G2C

There was no process put in place to survey clients or enable clients to have input into the project.

7.7.2. Sport and Recreation

G2G

As with Legal Aid, Sport and Recreation focussed on building up a knowledge base within the organisation and to develop strategies to deliver this knowledge to its clients.

G2B

A major aim of the project was to develop a portal of information that brings together a wide range of organisations involved in the sport and recreation industry to enable clients to have access to a full range of services. Partner organisations were consulted but at the time of the study little had been done to bring their information into the organisation. The main consultation revolved around reviewing the internal information.

G2C

Sport and Recreation were very focussed on external clients and put in place initiatives to consult with them. This consultation was aimed at gaining insight and feedback into their requirements and to utilise this information to improve on the service being provided. This indicates that the organisation was utilising the information as knowledge to expand and improve on their knowledge base.

7.7.3. Aboriginal Affairs

G2G

Whilst Aboriginal Affairs indicated that the effort was focussed around the client and providing an increased service the lack of involvement of functional areas meant that the knowledge developed was not being passed onto staff within these areas. As such the project was not regarded as improving or enhancing core competencies but more seen as a mechanism for providing information outside the normal work

G2B

A major effort revolved around working with partner organisations. This proved extremely valuable in that as the project progressed information from partner organisations was utilised to both confirm internal information and to extend the information available to the organisation's direct clients.

G2C

The Aboriginal Affairs Department has two major clients

- Aboriginal People (direct clients)
- private companies involved in large-scale development (particularly mining companies)

As both clients have opposing views it was extremely important that the Aboriginal Affairs Department acted as a go between whilst ensuring that the interests of both parties were protected. The indication was that the project was successful in bringing the two parties together and created processes that both approved of and assisted in extending the information held and provided.

7.8. Primary Knowledge Sources

7.8.1. Legal Aid

Legal Aid's primary knowledge source could be regarded as internal. Very little attention was paid to information gathering in conjunction with both business partners and clients. It could be stated that Legal Aid fits under the G2G category.

7.8.2. Sport and Recreation

Whilst Sport and Recreation aimed for unbounded knowledge sources, it predominately utilised internal information. However it did work closely with its partners and clients to verify their information and to utilise the two groups to provide knowledge that could be utilised to extend its internal information. Therefore it could be stated that whilst the organisation concentrated on internal knowledge it is tending towards external/unbounded knowledge sources.

7.8.3. Aboriginal Affairs

For the Aboriginal Affairs Department the indication is that they have progressed to an unbound primary source of knowledge as the project involved client and business partners from the start of the process. This achieved a very good knowledge base that has assisted in extending the service and increased user satisfaction from the two opposing client bases.

7.9.   Extent Knowledge is Acquired and Exploited

7.9.1. Legal Aid

Legal Aid's primary knowledge source could be regarded as internal. Therefore it has acquired knowledge internally. The focus was on learning internally and utilising internal resources.

7.9.2. Sport and Recreation

Whilst Sport and Recreation acquired knowledge internally it utilised both clients and partners as a learning resource. This process was successful in developing teamwork between partners and clients. Whilst there was evidence of teamwork, developing this at the time of the case study had not led to knowledge sharing or Sport and Recreation exploiting external knowledge.

7.9.3. Aboriginal Affairs

For the Aboriginal Affairs Department a strong partnership developed between partners and clients. This relationship created a strong learning environment and developed teamwork between opposing clients that had not previously existed.

7.10.   Summary

7.10.1. E-Business Change Environment

	Legal Aid	Sport and Recreation	Aboriginal Affairs
Unit of analysis	**G2G** Evidence: • Strategic Initiative – proactive, strategy led from onset, Bureaucratic decision making. • Relationship Building – minimal involvement of partners/clients	G2G Evidence: • Strategic Initiative – proactive, strategy led from onset, Bureaucratic decision making. • Relationship Building – minimal involvement of partners/clients	**G2B → G2C** Evidence: • Strategic Initiative (IT Only)– proactive, strategy led from onset, Bureaucratic decision making. • Relationship Building –involvement of partners/clients from beginning, value alliance created with key stakeholders

	Legal Aid	Sport and Recreation	Aboriginal Affairs
Resources	G2G Evidence: • Cultural Readiness – high degree cross-functional cooperation • IT Leveraging – enabling role • Knowledge Capability – limited interorganisational linkages	G2G Evidence: • Cultural Readiness – high degree cross-functional cooperation • IT Leveraging – enabling role • Knowledge Capability – limited interorganisational linkages	G2B → G2C Evidence: • Knowledge Capability – interorganisational linkages maximised • Relationship building – Strong interaction with partners and clients.
Basis for access to competence	G2G → G2B Evidence: • IT Leveraging – enabling role • Knowledge Capability – high degree cross-functional cooperation • Relationship Building – privileged access to partners/clients	G2G Evidence: • IT Leveraging – enabling role • Knowledge Capability – high degree cross-functional cooperation • Relationship Building – partners/clients consulted throughout	G2B → G2C Evidence: • Knowledge Capability – high degree interorganisational linkages • Learning Capacity – stage approach with reflection to improve subsequent stage implementation • Relationship Building – Strong interaction with partners and clients.
Added Value of managers	G2B Evidence: • Knowledge Capability – high degree cross-functional cooperation	G2B Evidence: • Knowledge Capability – high degree cross-functional cooperation	G2B → G2C Evidence: • Knowledge Capability – high degree interorganisational linkages • Relationship Building – Strong interaction with partners and clients – shaped customer expectations.
Value creation	G2G Evidence: • Relationship Building – high degree cross-functional cooperation, limited interorganisational linkages	G2G Evidence: • Relationship Building – high degree cross-functional cooperation, limited interorganisational linkages	G2C Evidence: • Relationship Building collaborated with partners and customers
Sources of managerial tension	G2G Evidence: • Knowledge Capability – high degree cross-functional cooperation, some units opting out or not committed • Relationship Building – Partners/Clients seen as user of information and utilised to provide feedback only	G2G Evidence: • Knowledge Capability – high degree cross-functional cooperation, some units opting out or not committed • Relationship Building – Partners/Clients seen as user of information and utilised to provide feedback only	G2C Evidence: • Relationship Building – Identified Partners/customers as collaborators and competitors.

	Legal Aid	Sport and Recreation	Aboriginal Affairs
Knowledge Appropriation	G2G Evidence: ▪ built knowledge base around core competencies ▪ efforts to enrich the knowledge base to better understand business and client requirements. ▪ crossed all boundaries of the organisation. ▪ limited use of external information ▪ Minimal effort put into scanning the environment was no process put in place to survey clients	G2G ➔G2C Evidence: ▪ focussed on building up a knowledge base within the organisation ▪ Partner organisations were consulted but little had been done to bring their information into the organisation ▪ consultation was aimed at gaining insight and feedback into their requirements and to utilise this information to improve on services	G2C Evidence: ▪ major effort revolved around working with partner organisations ▪ successful in bringing the two parties together and created processes that partners and clients approved of and assisted in extending the information held and provided
Primary Knowledge Sources	G2G Evidence: ▪ primary knowledge source could be regarded as internal ▪ little attention was paid to information gathering in conjunction with both business partners and clients	G2G ➔G2C Evidence: ▪ utilised internal information ▪ work closely with partners and clients to verify information ▪ utilised partner and client knowledge to extend their internal information	G2C Evidence: ▪ involved client and business partners from the start
Extent knowledge is Acquired and Exploited	G2G Evidence: ▪ primary knowledge source could be regarded as internal ▪ focus was on learning internally and utilising internal resources	G2B Evidence: ▪ acquired knowledge internally ▪ developed teamwork between partners and clients ▪ limited knowledge sharing ▪ limited exploitation of external knowledge	G2C Evidence: ▪ strong partnerships ▪ strong learning environment ▪ developed teamwork between opposing clients

Table 7.1 Extended Model of e-Government

Legal Aid

The two main shortcomings of the Legal Aid project was the limited involvement of clients and partners and the limited exploitation of inter organisational linkages. These two shortcomings mean that a wide range of information and knowledge could be missed or not utilized and this represents a risk to the effectiveness of the project and meeting all requirements of the clients and partners.

The primary focus was on obtaining internal information which again represents a risk to the project in relation to not fully exploiting knowledge and information vital to the success of the project and to covering all requirements for providing services through e-Government.

Sport and Recreation

As with Legal Aid the two main shortcomings of the Legal Aid project was the limited involvement of clients and partners and the limited exploitation of inter organisational linkages.

The primary focus was on developing a knowledge base within the organisation which again risked the organisation not fully providing the services clients and partners expect through e-Government.

Aboriginal Affairs

Aboriginal Affairs built up a strong relationship with clients and partners and concentrated heavily on interorganisational linkages. This proved to be very effective in developing systems that met the requirements of the clients.

A major shortcoming was the lack of cross-functional cooperation. This meant that the focus was not on all aspects of the organizations core business.

A second shortcoming was the lack of senior executive participation or a senior executive champion. This is considered a risk as without senior executive support the project could have been halted at any stage and not proceeded with as well as the risk of funding being stopped.

In conclusion senior executive involvement as well as the development of cross-functional and interorganisational linkages should be carefully considered and utilised to assist in successfully implementing an e-Government strategy. By considering these areas and making them priority areas then it is likely that more information will be captured that can enhance the organisations knowledge base and better provide services through e-Government.

CHAPTER 8. RESEARCH FINDINGS

8.1.   Research Question and Method

E-Government efforts could be considered one of the current underlying change dynamics and a fundamental paradigm shift for Government.   Moreover most Government organisations today are conducting one or more e-Government based projects.   This research emerged from an interest in the study of change management and utilisation of electronic based business and the effects that e-business would likely have on Government organisations and if the introduction of e-business involved change management.   A review of the empirical literature led to the development of three research questions:

- What is the most effective structural network for e-Government?
- Is there a staged growth model for e-Government and can knowledge management be incorporated into the model?
- What are the most effective roles and relationships to manage this change?

The research was done as a series of phases with the first phase being a pilot study of a Government organisation that had embarked on developing an e-Government strategy and was reengineering the organisation to develop a better customer focus.   This helped to focus the research and to refine the research questions that had been developed through the literature review.   Most IS studies in the past decade have reflected a positivist orientation, in that they have been preoccupied with the test of theoretical models or hypotheses, rather than an interpretivist one, where the goal is to build theoretical models as a result of eminently exploratory studies (Orlikowski and Baroudi, 1991).

In order to increase the originality of the research, it was decided to start with a pilot case study to test an e-Government model that had been developed during the literature review stage.   For the pilot, the selected organisation was working on developing a virtual organisation strategy and had been working on implementing an e-Government strategy.   This proved to be extremely valuable in testing the e-Government model as

well as helping to determine areas that have an impact on e-Government strategy. Data from the pilot case assisted in developing the research instrument and refining the research models. Research data collection and analysis was carried out by the researcher in three Government organisations that had embarked on an e-Government strategy implementation in the form of unstructured interview notes, documents, archival records, direct observation and physical artefacts. The research was conducted through three iterations of the case study cycle. The first research iteration was based on e-Government change management; the second on the e-Government strategy framework and the third on the knowledge management strategy framework. Each iteration led to the building of descriptive data based on the framework being analysed. At the completion of each research iteration, its findings were compared with those from previous iterations.

8.2. Summary of Research Findings

8.2.1. Summary of Findings Against the Research Questions

The following section summarises the research findings against each research question

WHAT IS THE MOST EFFECTIVE STRUCTURAL NETWORK FOR E-GOVERNMENT?

A value-alliance is effective as it can be built around customer value chains and enables the sharing of resources, skills and knowledge to produce a 'best' customer solution and enable agencies to be more responsive to customer requirements and offer superior quality of service. Each agency may be required to form several value-alliance virtual organisations depending on what requirements have been identified for one-stop processes for clients.

A value-alliance establishes information flows that:
- ensure customers and front line staff can impact on the strategic planning process through passing information upwards
- agreed goals are passed to all levels of each agency

- these goals are articulated to clients
- planning takes place across agencies at all levels

Each partner in a value alliance:

- brings its core competence
- has access to other competencies and customer life cycles
- develops flexible collaborative partnerships – the amount of involvement each agency has in each of the goals varies depending on the agency's specific skills and over time the amount of involvement will change as progress is made towards achieving the goals
- trusts and is trusted – for this co-alliance to be successful mutual cooperation needs to develop
- establishes appropriate communication links where all stakeholders have evidence of information flowing up and down the model
- must see immediate benefits and be able to impact on the goal setting process

What the research showed was that this was an essential element for success. The study also brought out the need for each group to share information, to enable each to add value to it to create new information and to ensure that organisation used the information to create knowledge.

The main challenge was that of enabling the sharing of resources and information through the use of modern communication technology. This was essential to remove the tyranny of distance and to remove the reliance of availability of human resources to obtain a service or information. Coupled with this is the need to ensure that senior management are supportive of the initiatives, take an active role and work on reducing the traditional stovepipes that can be found in most large organisations. One of senior management's roles is to encourage middle management to work together for a common goal and for this concept to permeate the entire organisation.

IS THERE A STAGED GROWTH MODEL FOR E-GOVERNMENT AND CAN KNOWLEDGE MANAGEMENT BE INCORPORATED INTO THE MODEL?

The research shows that success directly correlates with the number of positive facilitators in the e-Government model. The main facilitators of success were the need for a project champion, senior executive support and a requirement to involve all sections of the organisation. Whilst the study found a requirement for the involvement of the IT section, particularly in providing technical expertise, the indication is that it is not appropriate to have the IT section as the driver.

Change management issues and establishing different ways of communicating are vital for success. The research also demonstrated that external stakeholders and clients are vital to success

It is essential that an e-strategy project strives to create a teamwork approach utilising internal, business partner and client resources and knowledge to create unbounded knowledge bases to be able to provide an enhanced service to the community that takes advantage of a knowledge management based virtual network. This approach will assist the organisation in extending its knowledge base internally as well as increasing its capacity to meet customer-focused capabilities. These capabilities enable firms to build lasting distinctiveness with customers of choice.

Within a Government context the products and services a customer applies for or needs to perform with public authorities are public services. Public services reflect the external point of view whereas a process refers to the internal viewpoint and reflects the organisation's organisational responsibility and domain of expertise. Wimmer (2002) indicates that the internal verses the external viewpoints have to be mapped and integrated in a coherent way without:

1. disturbing organisational matters, responsibilities and expertise of public administrators
2. requiring that external citizens or business clients have knowledge of the public authorities' internal organisation

An e-Government strategy should include:

- pervasive knowledge sharing, feedback and communication
- integration of environmental considerations
- effective partnerships with partners and customers

- commitment to using business partners and customer to drive changes in operations, goals and vision

WHAT ARE THE MOST EFFECTIVE ROLES AND RELATIONSHIPS TO MANAGE THIS CHANGE?

The e-business change management model provided an extensive insight into the three cases studied. This insight supplied extensive information on each aspect of their online strategy implementation and provided a clear understanding of what areas of management are appropriate at each stage of growth in the e-Government model.

It can be concluded that an e-business change management model can be applied and is particularly useful in determining appropriate management practices to ensure successful implementation of e-Government strategies.

8.2.2. Concluding Remarks

As previously stated there are many e-Government models that outline stages of maturity as businesses embrace more of the capabilities of the WWW. Most models concentrate on stages that business goes through as they mature in their use of web technology.

Riley (2001) outlines a model containing 3 progressive stages; e-Government, e-Governance and e-Democracy. In this model, Governments move from net presence (e-Government), through to service provision and representative democracy (e-Governance), to a final stage of e-Democracy. E-Democracy is a stage where a citizen interacts with Government or influences the legislative process in a full participatory democracy.

Stamoulis et al. (2001) offer an alternative suggesting that Governments and their agencies mature in various spaces rather than in distinct stages. However the model concentrates on maturity levels or spaces.

This research has concentrated on closely examining organisations' development and implementation of an e-Government strategy as a change management process.

The research has highlighted a number of factors that must be carefully considered:
- internal
    - cultural readiness – The strategy must be supported by the senior executive, all parts of the organisation must be involved and there must be information flows between sections of the organisation
    - strategic initiatives – The senior executive need to fully sponsor the project
    - learning capacity – The organisation must be prepared to reflect on its experiences, refocus if necessary and be able to utilise the experience of business partners and customers
- external
    - relationship building – the organisation must build working relationships with both external partners and customers and share information and experiences
    - knowledge acquisition/sources – there is a need for pervasive knowledge sharing, feedback and communication; integration of environmental considerations; Effective partnerships with partners and customers; and commitment to using business partners and customer to drive changes in operations, goals and vision
    - value alliance - brings core competencies together from partners and customers and ensures access to other competencies and customer life cycles

From the research a model has been developed that becomes a framework for Government showing the issues that need to be considered at each stage of transformation. Table 8.1 looks at the model in relation to internal and external at each level and what constitutes 'best practice'

	Internal	External
Unit of analysis	The strategy must be supported by the senior executive, all parts of the organisation must be involved and there must be information flows between sections of the organisation	The organisation must build working relationships with both external partners and customers and share information and experiences
Resources	The organisation must be prepared to reflect on their experiences and refocus if necessary	Access to other agencies' competencies, as well as customers' competencies and investments of time and effort
Basis for access to competence	Internal agency-specific processes	Infrastructure for active ongoing dialogue with diverse customers
Added Value of managers	Nurture and build competencies within their sphere of influence and work closely with other managers within the organisation	Harness customer competence, manage personalised experiences, and shape customer expectations
Value creation	All sections of the organisation must work together to determine the organisations core competencies and combine these to extend and enhance these competencies.	Bring core competencies together from partners and customers and ensure access to other competencies and customer life cycles.
Sources of managerial tension	The organisation must focus on removing any barriers between sections within the organisation and develop information flows and intra-organisational working groups	Develop strategies to bring the customer into the centre of the organisation and to reduce the barriers to services both within the organisation and business partners
Knowledge Appropriation	Develop strategies to share knowledge across the organisation	There is a need for pervasive knowledge sharing, feedback and communication; integration of environmental considerations; Effective partnerships with partners and customers; and commitment to using business partners and customer to drive changes in operations, goals and vision
Primary Knowledge Sources	Identify all internal knowledge sources and develop strategies to combine these to extend the organisation knowledge	Unbounded
Extent knowledge is Acquired and Exploited	Identify knowledge within the organisation and utilise the organisations knowledge to extend and improve services	Develop a teamwork approach with partners and customers to acquire knowledge and utilise these knowledge sources to improve services

Table 8.1 Extended Model of e-Government – Best Practice

When these aspects are brought together with change management strategies then it is possible to create an integrated customer-centric e-Government strategy that enhances the working environment, ensures efficient resourcing and generates customer success (refer Figure 8.1).
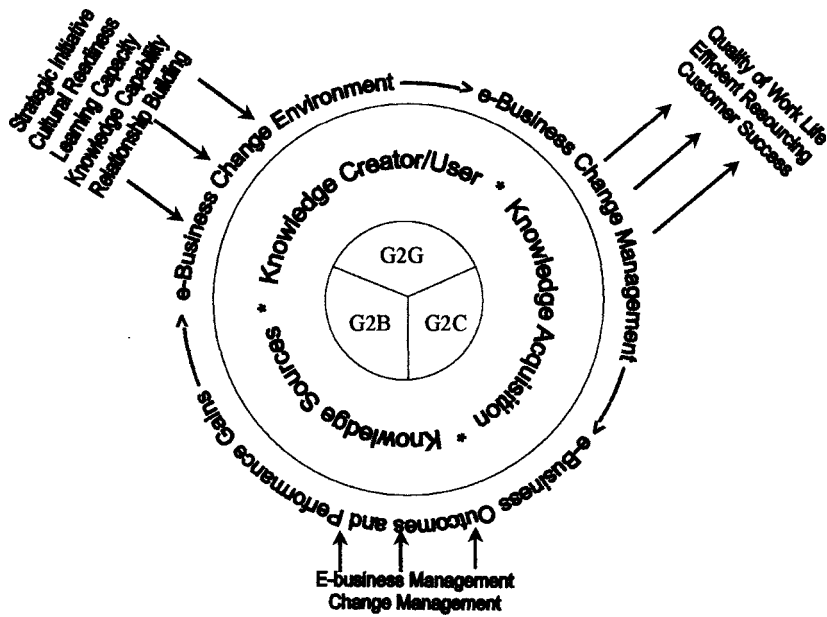
Figure 8.1 e-Government Strategy Model

8.3.   Implications of The Findings

The research suggests a number of implications both for practitioners, particularly those involved in or planning organisation-wide e-Government strategy, and researchers. These implications are discussed in the next subsections, split into implications for practitioners and researchers.

8.3.1.   Implications for Practitioners

The research findings support the general assumption that the e-Government model is beneficial to Government organisations when developing and implementing an e-Government strategy, and suggest that organisations should try to use the model for e-Government projects.   However, the research suggests two main implications for practitioners that should be carefully considered.   One of these implications is that organisations should concentrate on changing some of the characteristics that seem to negatively moderate effectiveness.   The second implication is that it is of prime

importance to concentrate on change management processes as these impact on all areas.

The research suggests that organisational staff will not be motivated to be involved if they believe that service or their area's effectiveness is not improved or is decreased. This lack of motivation can lead to lack of use, which will in turn lead to losses in organisation effectiveness. This research indicates that most of these characteristics relate to the organisation, with just a few being related to the individual. Moreover, a number of previous studies converge on the idea that changes in organisational characteristics can lead to changes in how individual staff behave and that these changes should start with how the organisation is managed (Argyris, 1992; Champy, 1995). The findings of this research appear to suggest changes in at least three organisational dimensions. The first is management support. Consistent with much of the previous research on information systems implementation success in general (Kwon and Zmud, 1987), this research suggests that the more intense and widespread management support beginning with the senior management, the more likely the organisation will accept change and the more likely the implementation will be successful. On the other hand, it appears that a decrease in management support can be a strong failure factor.

The second dimension is trust. The main interpretation of trust here is: the degree of confidence that internal staff, external partners and customers have that information they disclose candidly will be utilised to improve customer services. The negative effect on the perception of member contribution threats, and its consequent contribution towards reducing member sincerity and member learning, can be reduced by building an organisational culture that fosters trust between process team members, interdepartmental staff, partners and customers. The third dimension is process improvement. Improvement can be obtained by the building of a culture of participative management.

8.4. Implications for Researchers

The use of distinct frameworks assisted in examining complex phenomena at various levels of abstraction.

The major framework is the Model for e-Government. This model has been developed and extended through a review of Quirks e-Government model that depicts e-Government outputs, a model of e-Government inputs and a framework for e-Government knowledge management strategy.

The research has shown that the Guha (1997) model can be applied to the e-Government model as a 'measurement instrument' to assess appropriate management practices at each stage of growth.

The research can be replicated with a wider sample of organisations to confirm the findings.

8.5.   Opportunities for Future Research

There is much research left on the subject of the implementation of the value alliance model in a Government agency, especially with regard to the distribution of information and communication. Managing a virtual organisation may require a whole new set of virtual information leadership skills (Morin et al., 2000). Storing knowledge and expertise from both partners and customers are also important areas of consideration.

When considering these matters, several questions arise for future research:
- How will agencies deal with information and communication that must be passed both up, down and across functional boundaries, so that close co-operation and teamwork can be increased?
- How can the value alliance store knowledge and expertise and provide this to all members of the virtual network?

Two dimensions - *trust* and *management support* – were discussed on which effectiveness-related findings seemed to be contingent. However, there is potential for the identification of other dimensions that were not completely clear from this research project. A set of possible dimensions whose study could be promising and original are social facilitation factors, where social behaviour influences individual behaviour and

vice-versa (Argyris, 1992), leading to a reality constructed as a result of individual interactions. The difference is the medium through which social influence is exerted on individual behaviour - face-to-face contact and Internet based systems.

8.6.   Concluding Remarks

This research contributes a large body of evidence that can be used as a basis to build a better understanding of the dynamics of e-Government. This body of evidence was only partially explored in this thesis, and therefore can yield new findings if analysed from different perspectives.

In particular this research has:
1. developed an e-Government model that can be utilised as a framework for Government showing the issues which need to be considered at each stage of transformation
2. determined that the e-business change model can be applied as a 'measurement instrument' to assess appropriate management practices at each stage of growth within the e-Government model
3. provided a number of frameworks for future research

APPENDICES

Appendix 1   Summary of Findings

This section covers each construct of the research model with summarised findings. The tables in each subsection summarise interpretation of the data gathered for each construct.

STRATEGIC INITIATIVE

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence
Stimuli 　Proactive 　Reactive	Proactive – came out of business reflection process	Proactive – initiated by two members of the Executive	Reactive/Proactive – began with need to react to criticism in relation to sites extended to other business processes
Formulation Scope 　Incremental 　Revolutionary	Revolutionary	Incremental	Incremental
Decision Making 　Autocratic 　Bureaucratic 　Champion 　Emergence	Bureaucratic → Champion - Emergence	Bureaucratic	Bureaucratic (IT section)
Strategy Led 　Onset 　Eventually 　No	Onset – Business Strategy	Onset – Online Strategy	Onset – IT Strategy

Table 1 Summary of Strategic Initiative Results

LEARNING CAPACITY

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence
Adaptation 　Response to technology change 　Learning from others	Response to technology change	Response to technology change	Response to technology change
Improved Efficiency 　Learning by doing	Insufficient Learning by doing	Learning by doing	Learning by doing – limited to IT group
Declarative Knowledge 　R&D resources and technology developed 　Knowledge base 　Focus on core competencies	Knowledge base Focus on core competencies	Knowledge base Focus on core competencies	R&D resources and technology developed Limited Focus - IT
External Information Base 　Boundary spanners 　Technology gatekeepers 　Customers	Contractor – used for development none	Contractor – used for development Customers - medium	Technology gatekeepers Customers +

Table 2 Summary of Learning Capacity Results

CULTURAL READINESS

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence
Change agents and Leadership	Senior Executive Champion	Mixed – started by Senior Executive	Information Team

Risk Aversion
    Cautious
    Aggressor
	Cautious +	Cautious	Cautious

Open Communications	Medium	High	Medium - external

Table 3 Summary of Cultural Readiness Results

IT LEVERAGABILITY AND KNOWLEDGE-SHARING CAPACITY

Construct	Legal Aid Evidence	Sport and recreation Evidence	Aboriginal Affairs Evidence

IT Role
    Enabling
    Sociotechnical
    Dominant Factor
	Enabling	Sociotechnical	Dominant

Use of Communications technology	Medium	Medium	Medium

Table 4 Summary of IT Leveragability and Knowledge Sharing Capability Results

NETWORK RELATIONSHIPS

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence
Interorganisational linkages	none	some	Key external stakeholders

Cross-functional cooperation
    Cooperative
    competitive
	Cooperative	Cooperative – some areas opted not to participate	none

Table 5 Summary of Network Relationship Results

CHANGE MANAGEMENT

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence

Pattern of change
    No formal process
    Semiformal
    Formal phased
	No formal process	No formal process	No formal process

Management's readiness to change
    Committed
    Participative
    Resistant
	Committed and Participative	Committed	Neither committed nor resistant

Scope of Change
    Improvement
    Radical
	Improvement	Improvement	Improvement

Managed Change
    Alleviate employee dissatisfaction
    Vision for change
    Well-managed process of change
    Evolutionary/ revolutionary change
	Yes
	
	Semiformal
	
	Evolutionary
		Yes
		
		Semiformal
		
		Evolutionary
			Yes
			
			Semiformal
			
			Evolutionary

Table 6 Summary of Change Management Results

PROCESS MANAGEMENT

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence
Process Measurement			
Use of Process metrics	None	None	None
Process Information capture	-	-	-
	-	-	-
Improvement	-	-	-
Feedback loop	-	-	-
Audit	-	-	-
Tools and technique	Low	Low	Low
Team based	Yes	Yes	Yes

Table 7 Summary of Process Management Results

OUTCOMES OF BPC AND PERFORMANCE GAINS

Construct	Legal Aid Evidence	Sport and Recreation Evidence	Aboriginal Affairs Evidence
Process Performance improvements	Extended information base for individual clients to access. Legal Liability issues addressed	Extension of client base down to individual citizens.	Site research reduced from weeks to minutes, users given direct access to information. Permit requests dealt with in a more timely fashion.
Business Improvements	Extended range of information. Information available all hours regardless of location. Reduced requirement for printed output.	Extended range of information. Information available all hours regardless of location. Reduced requirement for printed output.	More time available to register new sites. Less time spent conducting site searches. Able to value add to requests for information. Transparent process for recording Sites. More confidence from Aboriginal elders and developers that sites are appropriately protected
Overall results	Met objectives	Met objectives	Met objectives

Table 8 Summary of Outcomes and Performance Results

Case	Strategic Initiative	Learning Capacity	Cultural Readiness	IT & Knowledge Sharing	Network Relationships	Change Management	Process Management
Legal Aid	top down strategy led from outset	needed to be more reflective. No use of clients. Limited use of external expertise	change agent leadership from top. Team , staff and management all worked towards objectives	IT played an important but supporting role	Cooperation across functions particularly as implementation progressed. Executive laid out mandate and led project	Executive displayed extensive support. All functions participated.	Limited use of measurement tools
Sport and Recreation	top down strategy led from outset	Did reflect on each stage, some involvement of clients but required more. Limited use of external expertise.	Initial change agent leadership from top but withdrew once team took on project. Limited number of functional areas involved	Began with concept that Communication/Policy section was principal driver but ended with IT taking on this role. This was viewed as limiting factor.	Lack of cooperation from some functional areas which reduced the effectiveness of the project in addressing all business areas	Executive readiness to effect change but some middle management resistance encountered	Limited use of measurement tools
Aboriginal Affairs	IT Strategy led from onset	Utilised extensive reflective practices. Heavy involvement from clients	Functional areas not ready fro the project. Senior Executive did not perceive the priority	Seen purely as IT project with functional areas not being involved	Lack of cooperation from all functional areas and limited support from Executive meant no ownership from the organisation for the project	Contained within the IT section	Limited use of measurement tools

Table 9 Summary of Overall Results For The Three cases

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Appendix 2   Statement of Intent

DBA RESEARCH PROJECT - AN ANALYSIS OF STRATEGIC APPROACHES TO E-GOVERNMENT

This research is investigating the strategic approaches taken by Western Australian Government organisations to implement an online strategy.   This research will investigate approaches that have been taken by three organisations. The research will look at the relationships between management, information, technology, organisational structure, and people and map these relationships against environmental conditions for change and the ability of the organisation to manage change. From this an analysis of each approach will be conducted to provide a comparison overview of each approach and the outcomes of each project. The research has several key data collection points relevant to your organization. These are:

- Semi-structured interviews of key management inclusive of the Director General, Divisional Directors or their representative, and the management staff within the Information Management section. There will be an initial interview of 15-20 minute duration. A follow up interview after the analysis of initial interviews is completed of 15-20 minute duration with the same personnel covered in the initial interview.

- Document Review – examination and possible duplication for later analysis by the researcher of any documents that only directly relate the implementation of the organisation's online strategy.

The research will involve the analysis of existing data that is already stored within your organisation. It will no doubt be beneficial to helping you make informed decisions the use of the WWW in your organisation.

All data will be stored in a secure format and will not be used for any purposes other than the conduct of this research.

Any questions concerning or about the project can be directed to Greg Robins of Edith Cowan University on ▮▮▮▮▮▮

If you have any concerns about the project or would like to talk to an independent person, you may contact Professor Janice Burn of Edith Cowan University.

✄ ═══

I/we _____ have read the above information and any questions I/we have asked have been answered to my satisfaction. I/we agree to participate in this activity, realising I/we may withdraw at any time without prejudice. I/we agree that the research data gathered for this study may be published provided I/we are not identifiable.

Participant or authorised representative Date:

Investigator Date:

Appendix 3   Letter of Introduction

Saturday, 8 January 2005

Dear

I am writing this letter to see whether your organisation would be willing to participate in research conducted here in Western Australia. This research is investigating e-Government within the context of the Western Australian Government. The research is significant to all Government agencies that have implemented or are implementing an online strategy.

The research will involve the analysis of existing documentation that is stored within your organisation in regard to the your online strategy. The outcomes of this research will extend the current knowledge of strategic approaches to e-Government and provide valuable insight into the approaches being taken to implement e-Government. It will no doubt be beneficial in helping you make informed decisions about the use of the WWW in your organisation. There will be some brief interviews with your key management and your key IS staff and under the direction of yourself or nominated representative interviews with some of your key external clients.

Any data collected will be stored in a secure encrypted format and will not be used for any purposes other than the conduct of this research. Confidentiality of data will be maintained at all times and will not be used to identify your organisation in any research findings.

Should you wish to partake in this study or discuss anything further with me about this research please contact me on ███████████

Yours sincerely

Greg Robins
DBA Student
Edith Cowan University

Appendix 4   Online Strategy Interview Questions

> **Key For KM Strategy Framework**
> X: Exploiter; Explorer; Innovator
> Y: Internal; External; Unbounded
> Z: Appropriation; Learning; Teamwork

Strategic Initiatives (X, Y)
the key constructs: stimuli (proactive versus reactive), formulation scope (incremental versus revolutionary), decision making (autocratic, bureaucratic, champion emergence), and whether the change process is strategy led (onset, eventually, none).

- Do you consider the development of an online strategy a reaction to external pressures or was the organisation proactive in developing a strategy to enhance traditional approaches to its business. (*stimuli*)
    - Why did you initiate the project.
    - Would you do it again.

- Did the implementation of the strategy follow an incremental approach or was it implemented fully as a 'big bang approach'. (*formulation scope*)
    - Was the strategy implemented in small steps or all at once

- Was the decision to implement passed down by the Senior Executive or did the project emanate from a group within the organisation. (*decision making*)
    - Who started the project or decided to initiate the project

- Did the project have a 'champion' from the beginning or did a champion emerge during the project. (*decision making*)
    - How were decisions made about the project.
    - Who were the main leaders or decision makers

- Was the strategy in the agency's strategic plan from the beginning, or was it subsequently added or is it still not part of the agency's strategic plan. (*strategy led*)
    - Was it identified as part of the agency business planning.

Learning Capacity (X, Y, Z)
The key constructs: adaptation (response to technology change, learning from others), improved efficiency (learning by doing), declarative knowledge (R&D resources and technology development, knowledge base, focus on core competencies), external information use (boundary spanners, technology gatekeepers, customers), learning type (double-loop, deutero).

- Did the agency use other organisations as models to develop its strategy. (*adaptation*)
  - Did you look at other agencies strategies.
  - Did you look at other projects in your agency to help decide how to tackle the project
  - How did you learn what to do.

- Was the entire agency involved from the outset and if not did other groups become involved during the project. If so what factors influenced their involvement. (*improved efficiency*)
  - Which parts of the agency were involved in the project.
  - Which parts of the agency were involved from the start and which parts joined later.
  - Why did the members change (If the sections involved changed)

- Did the project plan alter as the implementation progressed. Did the process fundamentally change during implementation. (*improved efficiency*)
  - What changes did you make during the project and why

- How important was external information to the project. (knowledge base)

- Was an environmental scan completed and were clients consulted during the project. (knowledge base)

- Were external consultants used for the project. (knowledge base)

- Did the project attempt to define the organisations core competencies. (core competency focus)
  - Did you look at how the project helped core business

- Did the project team and/or the organisation as a whole adapt or change its strategies for learning based on successes or failures as the project progressed. (learning type)
  - Did you have any failures during the project and what did you do when this occurred

Cultural Readiness (Z)
The key constructs: change agents and leadership, risk aversion (cautious, aggressive), and extent of open communications.

- Who most influenced the project. (*leadership*)

- What part did the senior executive play in the project. (*leadership*)

- How was the project initially reported to all sections of the organisation. (*communications*)

- Who were the project team members. (*communications*)

- To what extent were sections of the agency informed of the project during and to what extent could staff members influence the project. (*communications*)
  - o Did you have sessions for the entire organisation to show what was being done
  - o Could all staff add input and how.

IT Leveragability and Knowledge Sharing Capability (Y, Z)
The key constructs: IT role (enabling, sociotechnical, dominant factor).

- What was the IT sections role in the project.
  - o Did IT drive the project
  - o What technology was used.
  - o Did you need to learn about the technology
  - o Would you say the technology is right for the project.

Network Relationships Balancing (Y, Z)
The key constructs: interorganizational linkages and cross-functional cooperation (cooperative, competitive).

- To what extent were clients and other organisations involved in the project.
  - o Did you consult external clients
  - o Did you involve external clients and how and who
  - o Did you involve other organisations, how and who

- What resistance was encountered to the project.
  - o Was anyone or any group not in favour of the project and what are their feelings now.

Change Management Practice (Z)
The key constructs: pattern of change, management 's readiness to change (committed, participative, resistant), scope of change (improvement, radical change), managed change (alleviation of dissatisfaction; a vision for change; and a well-managed process of change, evolutionary or revolutionary change tactics use).

- Did the project have a change management process. (*pattern of change*)

- Did the project team utilise a formal change management process during implementation. (*pattern of change*)
  - o Can you describe how you implemented the project.
  - o Was a formal change management process used

- What were the main objectives of the project. (*scope of change*)

- How would you rate the change management process and what level of staff dissatisfaction was evident. How was staff dissatisfaction handled.

PROCESS MANAGEMENT PRACTICE

The key constructs: process measurement (use of process metrics, process information capture, improvement feedback loop, audit), use of tools and techniques, and use of team-based structures.

Outcomes of BPC and Performance Gains (X, Y, Z)

The key constructs: gaps between effectiveness expectations (goals) and actual performance improvements, QWL (employee satisfaction).

- Was the project assessed to validate the objectives had been achieved.

- Has a process to judge client access and satisfaction been implemented.

- What is the level of satisfaction with the outcomes by the agency staff.

- How would you rate the overall performance of the project.

Appendix 5   Interview Coding Tables

For each interview each construct was given a plus (Yes) or a – (No) based on responses to the questions which then provided an overall response to each construct.

STRATEGIC INITIATIVE

Construct	Interview 1	Interview 2	Interview n
Stimuli			
Proactive	+/-		
Reactive	+/-		
Formulation Scope			
Incremental	+/-		
Revolutionary	+/-		
Decision Making			
Autocratic	+/-		
Bureaucratic	+/-		
Champion	+/-		
Emergence	+/-		
Strategy Led			
Onset	+/-		
Eventually	+/-		
No	+/-		

LEARNING CAPACITY

Construct	Interview 1	Interview 2	Interview n
Adaption			
Response to technology change	+/-		
Learning from others	+/-		
Improved Efficiency			
Learning by doing	+/-		
Declarative Knowledge			
R&D resources and technology developed	+/-		
Knowledge base			
Focus on core competencies	+/-		
	+/-		
External Information Base			
Boundary spanners	+/-		
Technology gatekeepers	+/-		
Customers	+/-		

CULTURAL READINESS

Construct	Interview 1		
Change agents and Leadership	+/-		
Risk Aversion			
Cautious	+/-		
Aggressor	+/-		
Open Communications	+/-		

IT ROLE AND EXTENT OF KNOWLEDGE SHARING

Construct	Interview 1	Interview 2	Interview n
IT Role			
Enabling	+/-		
Sociotechnical	+/-		
Dominant Factor	+/-		
Use of Communications technology	+/-		

NETWORK RELATIONSHIPS

Construct	Interview 1	Interview 2	Interview n
Interorganisational linkages	+/-		
Cross-functional cooperation			
Cooperative	+/-		
competitive	+/-		

CHANGE MANAGEMENT

Construct	Interview 1	Interview 2	Interview n
Pattern of change			
No formal process	+/-		
Semiformal process	+/-		
Formal phased process	+/-		
Management's readiness to change			
Committed	+/-		
Participative	+/-		
Resistant	+/-		
Scope of Change			
Improvement	+/-		
Radical	+/-		
Managed Change			
Alleviate employee dissatisfaction	+/-		
Vision for change			
Well-managed process of change	+/-		
Evolutionary/ revolutionary change	+/-		
	+/-		

PROCESS MANAGEMENT

Construct	Interview 1	Interview 2	Interview n
Process Measurement			
Use of Process metrics	+/-		
Process	+/-		
Information capture	+/-		
Improvement	+/-		
Feedback loop	+/-		
Audit	+/-		
Tools and technique	+/-		
Team based	+/-		

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