

Strategic information systems planning (SISP) for the adoption of e-business : heterogeneous networks, social praxis and context

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**STRATEGIC INFORMATION SYSTEMS PLANNING (SISP) FOR
THE ADOPTION OF E-BUSINESS: HETEROGENEOUS
NETWORKS, SOCIAL PRAXIS AND CONTEXT**

VOLUME I

CATHERINE ANNE HARDY

A thesis submitted in fulfilment
of the requirements for the degree of
Doctor of Philosophy

Postgraduate Board

University of New South Wales

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Thesis/Project Report Sheet

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E-business has received widespread attention in terms of its capacity for changing social and economic behaviour of public and private actors, institutional settings and concomitant opportunities and challenges. However, the "euphoria" that once flourished around the e-business vernacular has also been met with tales of failures. Care must be taken when seeking to be innovative and forward thinking that due consideration and evaluation is given to the rationale for adopting innovations as they may require substantial financial investments and present significant exposure to failure for both systems and the organisation. The purpose and objectives of this study are to assist organisations in the successful adoption of e-business by comparing current practice with existing strategic information systems planning (SISP) models and to the extent that these models may be considered incomplete present alternative model(s) which place SISP in context, to provide a rich picture of the structures, processes and actors involved.

The "theoretical apparatus" that supported and informed the research draws upon multiple perspectives from the network, innovation, organisation and strategic management literature stressing the materially heterogeneous reality of e-business in which social and technical relations are embodied. Underlying the investigation is an 'interpretive-constructivist' paradigm of inquiry, providing a wide-ranging eclectic framework, which is sensitive to: the context within which human interpretations and meanings are manifested; the importance of language; the relationships between the researcher and what is studied; and, the situational constraints that shape inquiry. Six case studies were conducted across a range of industry groups.

The findings of this research revealed that the majority of e-business adoption processes were opportunistic, reflexive and reflective endeavours. Multiple meanings and differing valences of e-business were represented across different times, spaces, discourses and communities. Uncertainty as to the potential of e-business and how it may be realised reduced the propensity for organisations to prepare and implement formal strategies. Therefore the SISP adoption model developed from this investigation provides a more complete analysis tool of the SISP process advancing SISP theory in two key areas. Firstly, the model integrates temporal aspects into SISP which has received limited attention. Secondly, the model assists in explaining the diversity of SISP models in the literature as organisations use different methodologies at different SISP adoption episodes, multiple methodologies are utilised in the same episode and opportunistic approaches are more commonly adopted at each episode.

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ABSTRACT

E-business has received widespread attention in terms of its capacity for changing social and economic behaviour of public and private actors, institutional settings and concomitant opportunities and challenges. However, the “euphoria” that once flourished around the e-business vernacular has also been met with tales of failures. Care must be taken when seeking to be innovative and forward thinking that due consideration and evaluation is given to the rationale for adopting innovations as they may require substantial financial investments and present significant exposure to failure for both systems and the organisation. The purpose and objectives of this study are to assist organisations in the successful adoption of e-business by comparing current practice with existing strategic information systems planning (SISP) models and to the extent that these models may be considered incomplete present alternative model(s) which place SISP in context, to provide a rich picture of the structures, processes and actors involved.

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I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at UNSW or any other educational institution, except where the acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at UNSW or elsewhere, is explicitly acknowledged in the thesis.

I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.

(Signed)

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CHAPTER ONE

AN INTRODUCTION: PURPOSE, OBJECTIVES AND SIGNIFICANCE OF THE RESEARCH

1.0 PURPOSE AND OBJECTIVES

Electronic business (e-business) has received widespread attention in terms of its capacity for changing social and economic behaviour of public and private actors, institutional settings and concomitant opportunities and challenges (Kalakota & Whinston 1997; Nath et al. 1998; Giaglis et al. 1999; Kalakota & Robinson 1999; Lawrence et al. 2000; Turban et al. 2000). Despite the enthusiasm with which industry has embraced the concept of e-business, the uncertainty it presents is a major impediment to its widespread adoption (Elliot 2002, 292). Uncertainty also exists at a theoretical level with regards as to how and why organisations and individuals decide to adopt (or not adopt) e-business (ibid 2002, 292). While an array of strategic information systems planning (SISP) methods and methodologies exist, limited attention has been given towards inter-organisational systems planning issues (Finnegan et al. 1999) that arise in an e-business context and the process of adopting and implementing technology (Bacon 1992; Elliot 1996; Grover et al. 1997; Swanson & Ramiller 1997; Elliot 2002).

Therefore the purpose and objectives of this study are:

1. to assist organisations in the successful adoption of e-business by comparing current practice with existing SISP models, and
2. to the extent that existing models may be considered incomplete, present alternative model(s), which place SISP in context, to provide a rich picture of the structures, processes and actors involved.

The scope of e-business definitions, are broad and encompassing, largely dependent on the lens used to view the e-business landscape (McConnell 1996; Kalakota & Whinston 1997). In general operational terms e-business may be defined as the fundamental change to commercial practices with the substitution of existing market arrangements by computer aided buying and selling (Malone et al. 1989; Wigand 1997). It has also been described as a catalyst for change in business, providing and challenging

organisations with new ways to conduct business and exchanging and communicating information and ideas (Raghunathan & Madey 1999) transforming relationships with customers, suppliers and business partners (Elliot 2002, 291). The transformative affect of the Internet and information and telecommunication technologies (ICTs) on economic activity has been viewed by some commentators as similar to the impact of the steam engine, railways and electricity in the past (OECD 2001; Rayport & Jaworski 2001).

Despite the number and variety of financial projections of rapid profit growth¹ cast for the “electronic wave” (Pollard 1999) and “exuberant predictions” (Orlikowski & Barley 2001) such as “the death of distance” (eg. Cairncross 1997), “frictionless” electronic commerce (Bakos 1998), “the new economy” (eg. Boulton et al. 2000) and “paradigm shifts” in business (Wigand 1997), the much anticipated “revolution” (Giaglis et al. 1999) has not been realised. The “euphoria” that once flourished around the e-business vernacular has been met with tales of failures and metaphorical descriptions such as the “gold rush” period (Evans 2001; Rosen & Howard 2000; Howcroft 2001), “glitzy Silicon Valley start-ups” (Oliver 2000) and “stock exchange gambles” (Drucker 2000 cf. Oliver 2000). The linkage created between the proclamations of e-business with the notion of a revolution is not new, as similar alacrity and hyperbole have been observed in the past where “leading edge technology” has been “mythologised and glorified” (Howcroft 2001), such as, IS outsourcing, the Internet and the World Wide Web (Galliers & Swan 1999; Avison et al. 2001).

The purpose of this discussion, is not to be iconoclastic suggesting that there has been no significant impact, nor any opportunities for the future, as there is substantial evidence of growth and potential for significant change in the long term (Giaglis et al. 1999; Brache & Webb 2000; Gefen 2000; Rosen & Howard 2000; Turban et al. 2000; Benamati & Lederer 2001a; Grover & Teng 2001; Phan 2001; OECD 2001; Straub & Watson 2001). The extent to which the Internet and related ICT advances will affect business is unclear as are the potential benefits that may be realised through further development of Internet-based strategies (OECD 2001, 7). Therefore, care must taken

¹ Rosen and Howard (2000) posit that the wide disparities of estimates themselves are because of varied definitions and inclusions in the calculations.

when “seeking to be modern, innovative and forward thinking” that due consideration and evaluation is given to the way the new “strategic resource” is viewed and managed (Galliers & Swan 1999) as critical thinking is sometimes lost with the hype and rhetoric that inevitability surrounds new technologies (Baskerville & Smithson 1995; Fincham & Roslender 1995; Orlikowski & Iacono 2000). The strategic importance of e-business needs careful exploration (Giaglis et al. 1999) as it entails great risk, “an uncharted frontier” with limited tested models for guiding decision making (Brache & Webb 2000).

While “myths” of technological breakthroughs are rooted in some aspect of reality and so may catalyse change, problems arise when decisions are based solely upon a mythology “that is willing the e-business vision” (Howcroft 2001) as they represent attempts to generate systematic responses to the pervasive need for change by, as some would argue, “trends in management consulting” (Siegal 1996). Faced with a “constant onslaught of new and emerging IT” (Benamati & Lederer 2001a), managers need to be able to evaluate their business, in terms of strengths, weaknesses, opportunities and risks, along the “value chains” of both the virtual and physical worlds (Rayport & Sviokla 1995) and with regard to social and economic impacts (Giaglis et al. 1999) involving considerations such as what the underlying motivations are for the organisation to adopt e-business (Vadapalli & Ramamurthy 1998).

Finding solutions to these issues are difficult as: e-business is both a business innovation and an information system (IS) innovation (Grover et al. 1997); inter-organisational systems (IOS) have led organisations to cooperate and compete with each other simultaneously (Loebbecke & Van Fenema 1998); adoption may require substantial financial investment and a significant exposure to failure for both systems and the organisation, including vulnerability to obsolescence because of lengthy acquisition deliberations (Nath et al. 1998; Benamati & Lederer 2001b); and the ultimate scope and effect of IS based innovations in their crucial initial stages are by definition uncertain (Ciborra 1993).

Organisations need a managerial and technological “road map” (Kalakota & Whinston 1997; Wigand 1997) an analytical mechanism (Raghunathan & Madey 1999) to assist in their understanding of the rationale for adoption (Whiteley 1998), which involves not

only technical considerations but also the organisational and wider social context within which these systems will exist (Nath et. al 1998). Further an element of reflexivity is required as the path ultimately taken may not necessarily be the one first considered (Savin & Silberg 2000). Key commentators in the field (eg. Keen cf. Elliot 2002) have called for more holistic approaches to the research of particular implementations of e-business as researchers remain uncertain about many of these broader issues.

Therefore, this study proposes a theoretical framework focused on adoption decision making at a strategic organisational level, in the context of e-business, that aims to support a more integrated research approach, to extend current theoretical and empirical understanding of e-business and better assist organisations faced with the multi-faceted challenges relating to the adoption of e-business. Based on these aims and objectives, in the following section 1.1, the significance of the study is discussed followed by an examination of the research framework, questions and the approach adopted in the study. The final sections of this chapter provide a conclusion and summary of the organisation of the thesis.

1.1 SIGNIFICANCE OF THE STUDY

The significance of this study may be categorised into two areas, theoretical and empirical. SISP has remained an important topic for both researchers and practitioners for more than a decade (Brancheau & Wetherbe 1987; Galliers 1993; Lederer & Salmela 1996; Watson et al. 1997; Gottschalk 1999; Segars & Grover 1999) as it is regarded as a central resource for the achievement of business success, creating competitive advantage, and initiating new services and products (Hsiao & Ormerod 1998; McNurlin & Sprague 1998). It is also considered a critical area of investigation because it is often unsuccessful (Lederer & Salmela 1996), with IS strategies left to “gather dust” (Ward & Griffith 1997) remaining “on the page” (Taylor 1997).

Though there exists an extensive range of literature on SISP, a majority of studies have focused on the development of tools and methodologies for conducting strategic planning (Lederer & Sethi 1996; Doherty et al. 1999; Segars & Grover 1999) which are designed to: identify opportunities for competitive advantage (Porter & Millar 1985; Ross et al. 1996); assist in aligning IS strategies with business strategies (Reich & Benbasat 1996; Chan et al. 1997; Teo & King 1997; Kearns & Lederer 2000); and guide

strategic data planning (Goodhue et al. 1992). The emphasis on technique development and description is considered by key commentators to be largely responsible for narrow characterisations of the planning process raising the need for more innovative and integrative SISP (Earl 1993; Sambamurthy et al. 1993; Lederer & Sethi 1996; Rockart et al. 1996; Chan et al. 1997; Teo & King 1997; Segars & Grover 1999). In addition, models and frameworks to assist organisations in planning strategically for the adoption and implementation of information technology have been relatively sparse (Huff & Munro 1985; Bacon 1992; Elliot 1996; Swanson & Ramiller 1997), with limited attention given towards inter-organisational planning issues (Finnegan et al. 1999). Further, strategy has generally been used to define an understanding of the function of senior management in creating long term visions for locating the organisation in changing markets. This assumes that senior management recognise the need and intrinsic worth of the technology and are able to select the required technologies to achieve competitive advantage (Fincham & Roslender 1995), overlooking unexpected features and “novel” and “puzzling” behaviours (Ciborra & Lanzara 1994).

This study specifically addresses these theoretical gaps by developing a multidisciplinary view of SISP, which gives attention to the behaviour of decision makers to assist organisations in understanding the rationale for adopting e-business. In mapping the set of methodologies onto the adoption opportunity space, there is a limit to what can be achieved by formal rational methods. This limit becomes evident when decision makers rely on “tinkering” and “bricolage” (Ciborra 1994) and decision making is emergent or improvisational, “ruled by intuition, competence, design and chance” (Ciborra 1999). This study aids improved understanding of these more complex processes by integrating multiple theoretical perspectives from the organisation, strategic management and information systems disciplines (see section 1.2), to provide a context-rich multi-layered representation of SISP for the adoption of e-business.

The second significant function that this study serves is its empirical contribution. The piecemeal nature of the e-business literature shows a general lack of theoretical grounding and the theories that do exist are far from being conclusively supported or refuted. Further, e-business has been widely promoted as the essential way of doing business. While e-business may, however, have a significant role to play it may not meet all trading requirements nor provide competitive advantage to all businesses

(Whiteley 1998). Therefore, research examining the rationale of its adoption may prove useful for managers in both private and public institutions², and in the broader global arena (Shaw et al. 1997) to reduce uncertainties, relating to not only the security, confidentiality and legality of transactions, but also diverse organisational change issues (Segal 1995; Shaw et al. 1997; Turban et al. 2000). Such radical changes present fundamental questions to managers and decision makers such as whether the benefits achieved by employing e-business outweigh the costs needed for setting up and maintaining the necessary infrastructure. Understanding the complex dynamics of how such change occurs is identified in the IS literature as an important issue (Hislop et al. 2000). Further, few studies examine the relationship between IS innovation and business innovation, which is critical in an environment where information technology provides the impetus for organisations to reinvent the way they do business (Grover et al. 1997). Studying such relationships can help bridge the gap between organisational and IS theory (ibid 1997), a key issue highlighted elsewhere by Orlikowski and Barley (2001). The discussion in section 1.2, turns to the theoretical framework adopted in this study, which incorporates the rationale behind the research questions of this investigation.

1.2 THE THEORETICAL FRAMEWORK AND RESEARCH QUESTIONS

1.2.1 THE THEORETICAL FRAMEWORK

The “theoretical apparatus” (Orlikowski & Iacono 2001) or “conceptual context” (Maxwell 1996) for this investigation, that is the system of concepts, assumptions, expectations, beliefs and theories that supported and informed the research purposes, questions, methodology and unit of analysis, were built upon past lessons in the SISP, inter-organisational information system (IOS) and e-business literature and the systematic integration of socio-technical, socio-economic and strategic choice and organisational decision making perspectives. These perspectives were informed by actor network theory and the social construction of technology (eg. Pinch & Bijker 1987;

² Significantly increasing the use of e-business by Australian businesses is a strategic priority of the Commonwealth government (the Commonwealth) (see for eg. the National Office for the Information Economy <http://www.noie.gov.au>).

Callon et al. 1980; Latour 1987, 1991; Law 1991, 1992), structuration theory (Giddens 1979, 1984), organisational and institutional theory (eg. Pettigrew 1985; DiMaggio & Powell, 1991; Scott 1995; Pfeffer 1997), social network theory (eg. Granovetter 1979; Wasserman & Galaskiewicz, 1994), innovation theory (eg. Wolfe 1994; Rogers 1995; Slappendel 1996) and strategic management theory (eg. Child 1972, 1997; Mintzberg et al. 1976; Quinn 1980).

Specifically it is argued that when these perspectives are brought together, they complement each other and provide insights into the determinants, components and implications of SISP adoption processes for e-business. That is, from a socio-technical perspective, the e-business 'black box' is opened, working 'outwards' to show how the content of e-business itself, not just its effects, are socially shaped through the interpretations and meanings given to it. From a socio-economic perspective, the e-business 'black box' is opened, working 'inwards' to show how organisational and other socio-economic factors shape its content. From the strategic choice and organisational decision making perspective, technological change is seen as the product of choice and decision making.

The theoretical framework proffered for this investigation provides a contextual view of SISP, which takes into account the embeddedness of the strategic information system in some time, place, discourse and community so that the material and the cultural, is not "ignored, abstracted or assumed away" (Orlikowski & Iacono 2001). The theoretical perspectives are framed in accordance with the ideas of contextualism (Pettigrew 1987), reflecting the need to articulate a wide appreciation of e-business adoption decisions in action and the processes by which it occurs. This methodology provides the lens for case analysis, where e-business adoption decisions are seen in terms of three interrelated components, the content, context and process of change. In contextualism the main focus of research is to trace the dynamic interlinking between aspects of the components over time. This can be done via longitudinal studies, or as in the present study, by an in-depth retrospect analysis of case material and interviews (Orkilowski & Baroudi 1991; Walsham & Waema 1994), discussed further in section 1.3.

1.2.2 THE RESEARCH QUESTIONS

Based on the preceding theoretical framework, the manner in which choices are to be made (or not made) and decisions negotiated or contested (or not as the case may be) is seen as a reflection of organisational specific characteristics of the content of change

(e-business) itself and the organisational context and wider context in which change takes place. Through the socio-technical perspective, attention is directed to the constitutive as well as reflective roles of technology (Hopwood 1987), in that emphasis is placed on discernible issues created by e-business and the means by which they in turn mediate the recognition of problems and options available, shift perceptions of organisational functions and issues, and permeate the patterns of meaning, significance and language within the organisation.

An awareness of the more enabling properties of e-business itself extends the range of influence patterns within the organisation, where it is seen as playing a role in both shifting the preconditions for organisational change and in influencing its outcomes, including the possibilities for its own transformation. However, this is not to suggest that a diverse array of other factors and processes could not impinge upon the adoption decision process. By incorporating the socio-economic and strategic choice perspectives in the model, the broader structures, material relations and power systems in which interpretation takes place (McLoughlin 1999) are revealed. In examining these mutual processes of interaction, an attempt is made to move from a conceptualisation of decision making that has a meaningful independent existence, toward a broader view of decisions as an evolving and ongoing process of social construction and collective action that is embedded in organisational tasks, involving a range of actors who bring their own knowledge and interests to the process (Kriger & Barnes 1992; Laroche 1995).

Therefore, in considering the purposes and conceptual context of this investigation, the study addresses three research questions:

1. How do e-business adoption decisions evolve in organisations?
2. What are the major drivers and inhibitors of these adoption decisions?
3. How do these findings of industry practice compare with existing SISP models?

As mentioned above, this makes no explicit assumptions about the processes or circumstances in which decision making occurs.

Consistent with the philosophical orientations underpinning this research, discussed further in section 1.3, the researcher began with a substantial base of theoretical

knowledge, which generated certain questions about the phenomena being studied broadly determining the focus and scope of the study. In the earlier stages of the research, these questions were left as broad as possible, due to the broad multiple perspectives in the theoretical framework and limited knowledge of the settings, allowing the precise focus of the research to evolve during the research process itself (Marshall & Rossman 1999, 53). Narrowing the questions in the earlier stages of the research would have prematurely delimited the study, distracting the researcher from seeing the whole picture (Morse 1998, 68). Rather, the questions generated in the earlier stages were used to search for patterns and were refined during the research process (Marshall 1996). A discussion regarding the research design follows.

1.3 FRAMING THE STUDY: PARADIGM, METHODOLOGY AND STRATEGY OF INQUIRY

Building on, and interrelated with the preceding sections, is the research design which, to use Janesick's (1998, 2000) metaphor of dance, is an interpretive art form, an event, a process where the interpretation and representation of different forms of problematic experiences are connected with different phases. It is based on the arrangements of elements governing the functioning of the investigation, incorporating the purpose of the study, its underlying theoretical and epistemological stance, its research questions, and methods of collecting, analysing and verifying data. That is, the research is planned in terms of the purpose, conceptual context and research questions, as the researcher seeks to answer questions such as: What strategy of inquiry seems likely to provide what we are looking for? What does that strategy direct us to do to achieve our aims and objectives? (Crotty 1998). Such decisions are justified in terms of the philosophical orientations underpinning the research (Maxwell 1996).

The theoretical approach adopted by this research treats organisations and information systems as socially constructed phenomena (Berger & Luckman 1966; Pinch & Bijker 1987), analysed as systems of shared meaning sustained through social, political and cultural processes (Smircich 1983; Pinch & Bijker 1987; Law 1991; Scott 1995; Pfeffer 1997). In particular the importance of the subjective meaning of e-business for individuals within organisations and the social structures and processes, which shaped and enabled such meanings was emphasised. Hence, a variety of design strategies

needed to be employed to: make sense of information collected in light of the different systems of meaning; gain awareness of the theories and assumptions that guide such practice; and determine how the researcher would situate herself in the "wide cultural panorama" (Creswell 1998, 81). Empirical approaches were required that emphasise a greater sensitivity to the context within which these interpretations and meanings are manifested (Sahay et al. 1994), namely a qualitative research process that stresses the socially constructed nature of reality, the relationships between the researcher and what is studied, and the situational constraints that shape inquiry (Denzin & Lincoln 2000, 8).

The beliefs underlying this investigation are styled in the constructivist-interpretivist paradigm of inquiry (Denzin & Lincoln 2000) as it is a wide-ranging eclectic framework (Schwandt 1994, 128), sensitive to the context within which human interpretations and meanings are manifested (Erlandson et al. 1993) and "aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context" (Walsham 1993, 4-5). These are key issues raised in the theoretical framework and research questions of this investigation. However an extreme relativist position is not adopted as one of the aims of this research is to develop a theoretical model to assist organisations in their e-business adoption process.

The development of the interpretive³ paradigm of inquiry in IS research (see for eg. Orlikowski and Baroudi 1991; Walsham 1993; Walsham 1995a; Walsham 1995b; Lee & Liebenau 1997; Sahay 1997; Klein & Myers 1999; Markus & Lee 1999) has not escaped controversy and debate regarding its relative merits to the more dominant paradigm of positivism (Walsham 1995a; Lee 1999; Goles & Hirschheim 2000). However, arguing where paradigms are in contention is considered "less useful than to probe where and how paradigms exhibit confluence and where and how they exhibit differences, controversies and contradiction" (Lincoln & Guba 2000, 164). Therefore, the intention of the research is not to argue the sanctity of the constructivist-interpretivist paradigm, but to reveal what shaped the meaning of the study's research

³ There are varied philosophical positions of interpretivism, which are addressed in Chapter Four. However, at this point of the discussion, the term "interpretive" is broadly used to refer to the "family of persuasion" that is unified by its opposition to positivism and its commitment to investigating the world from the point of view of the interacting individual (Denzin & Lincoln 1994, 100).

questions, the purposiveness of the research methodology and the interpretability of the research findings (Crotty 1998, 17) moving beyond the positivism vs antipositivism debate while developing research morally rich and useful to organisations and the communities in which they operate (Wicks & Freeman 1998).

The methodology of the constructivist-interpretivist view is “iterative, interactive, hermeneutic, at times intuitive and most certainly open” described as a hermeneutic/dialectical process (Guba & Lincoln 1989, 183). The process is considered hermeneutic in that it is interpretive in character developing (joint) constructions and dialectic in that it involves the “juxtaposition of divergent views” with a view of achieving a higher level of synthesis (ibid 1989, 149). The broadened inquiry provided by the hermeneutic/dialectic methodology is suited to the broad based theoretical framework and the emergent design (ibid 1989, 54) of this investigation.

With studies shaped by the interpretive paradigm, there is less emphasis on well-formulated hypotheses, tightly defined sampling frames, structured interview schedules and predetermined research strategies, methods and forms of analysis (Denzin & Lincoln 1998, xii). Rather, the researcher follows a path of discovery, using a model of qualitative inquiry, with an interpretive, naturalistic approach to the subject matter (ibid 1998, 3). Therefore, conceptualising the study and developing a design that was clear, flexible and manageable was a dialectic and iterative process, involving the researcher “tacking back and forth between the different components of the design, assessing the implications of purposes, theory, research questions, methods and validity threats for one another” (Maxwell 1996). The connections between the different components of the research design were not rigid rules or had fixed implications. Previous design decisions needed to be modified in response to emergent insights as the researcher interacted with the situation in which the study was being conducted (Maxwell 1996). The qualitative design needed to allow for what Maxwell (1996) describes as certain amounts of “give” or elasticity to ensure that “methodological blinders” were not created in making sense of the data, whilst imposing certain constraints which if violated, would make the design ineffective. The researcher’s assumptions, biases and motivations in collecting and interpreting the data were key factors in such decisions (Trauth 1997, 238). As the researcher became more acquainted with what was salient, the research design became more focused (Guba & Lincoln 1989, 180) until the conceptual framework and the specific design features became “more and more elegantly related” (Marshall & Rossman 1999, 54).

Interpretive researchers bring constructed realities to their research settings and in these human settings find other constructions of reality among their respondents. The process of inquiry becomes one of developing and verifying shared constructions that will enable the meaningful expansion of knowledge (Erlandson et al. 1993; Trauth 1997); an interactive process shaped by the researchers own personal history, biography, gender, social class, race, and those of the participants in the setting (Denzin & Lincoln 1998, 4). The researcher becomes inextricably part of the phenomena studied accessing other people's interpretations, filtering these through the researcher's conceptual apparatus and providing a version of events to audiences (Walsham 1995b); a complex human process exhibiting "reflexivity" (Maxwell 1996, 67). As the researcher is the research "instrument" (Marshall & Rossman 1999, 66) her presence in the lives of the participants invited to be part of the study is fundamental to the qualitative paradigm. The outside observer's role (Walsham 1995b) is adopted in this investigation as the study is focussed on SISP in its social context requiring access to a number of organisations to examine the social phenomenon integral to the investigation namely e-business adoption decision processes in varying situations. Therefore, the primary concern was to maximise the opportunities for gathering data in different contexts to ensure full responses to the research questions.

The case study approach is adopted for this investigation as it stresses the unique strengths of the genre of research that assumes the value of context and setting, typically focuses on society and culture, whether a group, program or an organisation (Marshall & Rossman 1999, 60), is particularly important when theoretical knowledge of a phenomena is limited (Cavaye 1996b, 235), is recognised as a highly versatile research strategy in the IS field (Galliers & Land 1987; Cavaye 1996b) and is a common vehicle for interpretive investigation in IS (Walsham 1995a); key issues in this investigation. Further, the case study's multi-faceted nature enables issues to be investigated from different epistemological standpoints, at various stages of knowledge using various methods (Cavaye 1996b, 235).

The case being studied, or the unit of analysis in this investigation, is the organisation. A collective case study (Stake 1998, 89) of organisations was conducted to canvas a range of rich viewpoints of e-business adoption decision processes. The use of a multiple-case design provides an opportunity to compare cases, which are different in context, to verify the emerging theoretical model in a variety of different circumstances,

that is theoretical replication (Yin 1994, 48; Cavaye 1996b, 237). Each organisation was looked at in depth and its contexts scrutinised to facilitate an understanding of the structures and processes surrounding the adoption of e-business.

A purposeful sampling strategy was adopted in which particular settings, persons and events were selected deliberately in order to provide "information rich cases" (Paton 1990; cf. Miles & Huberman 1994) to enable the research questions to be answered (Miles & Huberman 1994, 27-24; Maxwell 1996, 70; Creswell 1998, 118). A "maximum variation" strategy was employed to investigate compelling and unusual settings (Marshall & Rossman 1999) so as to fully capture multiple perspectives about the cases (Creswell 1998, 120) and provide the "broadest scope of information" (Guba & Lincoln 1989, 178). In addition to its theoretical interest, the sampling decision also involved considerations regarding the relationship with study participants, ethical issues and validity concerns so that data quality and credibility of the study could be reasonably assured (Maxwell 1996, 72; Marshall & Rossman 1999, 69).

The researcher adopted the principle of "natural controls" in her research design, remaining flexible on the issue of who and what needed to be considered, arising initially from the researcher's understanding of what she considered important (Erlandson et al. 1993). These earlier decisions were largely dependent on the conceptual framework and prior theory. Therefore, the viewpoints of senior managers were concentrated upon initially, who acted as a "gatekeeper" to other informants (Creswell 1998, 117). As the researcher became better acquainted with what was salient, the sample became "more directed, the data analysis more structured, the construction more definitive" (Erlandson et al. 1993). Sampling was terminated when "theoretical saturation" was reached (Eisenhardt 1989) or when no new information was forthcoming (Lincoln & Guba 1985). Therefore, both the research questions and the data collected determine the point in which the researcher has collected sufficient data from cases to facilitate appropriate analysis (Cavaye 1996b, 237). Based on this criterion, six organisations were ultimately selected for the study representing a cross section of industry groups, size, maturity and products and services. In addition, in keeping with the above discussion, each organisation was also selected on the basis of some unique characteristic(s) to ensure maximum variation.

As the researcher wanted to examine the contexts, processes and interactions that shaped organisational e-business adoption decisions a dialogue with persons involved in these decision making processes was considered necessary. Therefore, the researcher relied on interviews as the primary method of data collection because of its recognised strengths in: providing context information; fostering face to face interaction with participants and usefulness in uncovering participant's perspectives; being able to collect data in natural settings; facilitating immediate follow-up for clarification; describing complex interactions; and, facilitating analysis, validity checks and triangulation (Marshall & Rossman 1999, 134). In addition to the texts generated from the interviews, a variety of retrospective fieldnotes, popular press and organisational texts such as annual reports, company announcements and web sites were also used.

Interviews with multiple informants at each site allowed the research to triangulate findings across sources and test issues of validity. While the interviews were typically more like conversations than formal events with predetermined response categories, the researcher is cautious in classifying the structure of the interview along the structured-unstructured continuum to avoid the "moribund corner" of the methodological literature on method driven debates such as the "supposed opposition" between structured and unstructured approaches (Pawson 1996). Therefore, while a case study protocol was prepared to keep the interview focused, it was non directive, and used flexibly according to what emerged (Gillham 2000, 4) as interviewee's statements are seen more as being "co-authored" than what was collected (Kvale 1996).

There appears to be no defining moment when analysis begins in interpretive type research, as it is a "matter of giving meaning to first impressions as well as to final compilations" (Stake 1995, 71). Therefore, data analysis is described as being "choreographed" (Huberman & Miles 1994) where the qualitative researcher "learns by doing" (Creswell 1998, 142), so that the unusual and serendipitous is preserved, allowing the writer to "craft each study differently, using analytic procedures that evolve in the field" (ibid 1998). The researcher moves in analytic circles rather than using a fixed linear approach, entering the spiral with data and text and exiting with an account or a narrative (ibid 1998). It can be a "messy, ambiguous, time-consuming, creative and fascinating process" (Marshall & Rossman 1999) as the narratives "do not just lie around in organisational situations, nor do documents wait to be related" (Ng & DeCock 2001). They need to be "authentically crafted and configured" (Golden-Biddle & Locke 1997) from a variety of sources. In this research interviews, direct field

observations and the systematic collection of textual data were woven together as the researcher brought meaning and insight to the words and acts of the participants in the study (Marshall & Rossman 1999).

The technique of analysis rests with the researcher and the research questions which follow through the designing, interviewing and transcribing processes (Kvale 1996), relying heavily on the researcher's intuitive and interpretive capacities and the conceptual template (Myers 1995; Stake 1995; Van Maanen 1998; Marshall & Rossman 1999). Because of the broad based perspectives adopted in this investigation, the researcher had to ensure that the breadth and depth of treatment was not privileged over one another. Therefore, the researcher needed to engage with the text searching for segments to generate and illustrate categories of meaning, whilst teasing out the unusual and the serendipitous (Marshall & Rossman 1999, 151). The editing and immersion strategies for analysis were thus complex, ambiguous and creative (ibid 1999).

The "interpretive practice" proposed by Gubrium and Holstein (1997) was useful in guiding the analysis as it has a broad conceptual bases ranging from social phenomenology and ethnomethodological programs of talk and interaction to the studies of institutional and historical discourses of Michel Foucault (Gubrium and Holstein 2000, 488). While not arguing the sanctity of this "interpretive practice" it provided the researcher with an orienting procedure for focusing on the "whats" and "hows" in order to "assemble both a contextually scenic and a contextually constructive picture of everyday language in use" (Gubrium & Holstein 2000, 500) when considering and using the analytic options, of memoing (such as notes of the researcher's observations and tentative ideas), categorising (such as coding and thematic analysis) and contextualising (such as narrative analysis) (Maxwell 1996).

Issues of validity in qualitative research are a much more amorphous topic contrasted with the classic criteria of validity in quantitative research (Newman & Benz 1998, 27). As the research questions guide what methods are selected, the methods used to answer the research questions must be legitimate if the research outcomes are to be of any value (ibid 1998). While the design decisions are "emergent" in good qualitative research, the conceptual linking of question, method, and "truth value" must be linked, defensible and predetermined (ibid 1998). Therefore, validity considerations for this research was a continuous process integrated with theory, requiring the researcher to continuously assess her assumptions, examine her findings and implications and re-appraise the limitations of the study (Gummerson 2000, 93).

The researcher does not try to efface her role from the representational force she brings to the text as “a good deal of selectivity stands behind any author’s decision about what details to include, what organising concepts to use and what events to highlight” (Ng & DeCock 2002). The understanding that the researcher presents is ultimately “factive fictions” which have been crafted from numerous sources, influenced by the availability and quality of different materials (Barry 1996; Ng & DeCock 2002). As a case study strategy of inquiry is used in this investigation, the potential for increased validity existed, as multiple data collection techniques were used (eg. interview and documents) and as case study knowledge is concrete, contextual and interpreted through the reader’s experience, it may be argued that it has epistemological similarity to a reader’s experience (Newman & Benz 1998).

1.4 CONCLUSION

Examining the e-business adoption decision making process as an evolving issue, without drawing boundaries between other choice and issue areas for the organisation and the organisational context, revealed a number of decision ‘episodes’ shaped by a wide range of issues such as: the heterogeneous network of actors involved in (and excluded from) decision making processes; e-business and organisational discourse; the meanings attached to e-business and its negotiation to justify the decision made; knowledge resources and the value attached to particular knowledge domains; and the institutional arena within which the scope of e-business is considered.

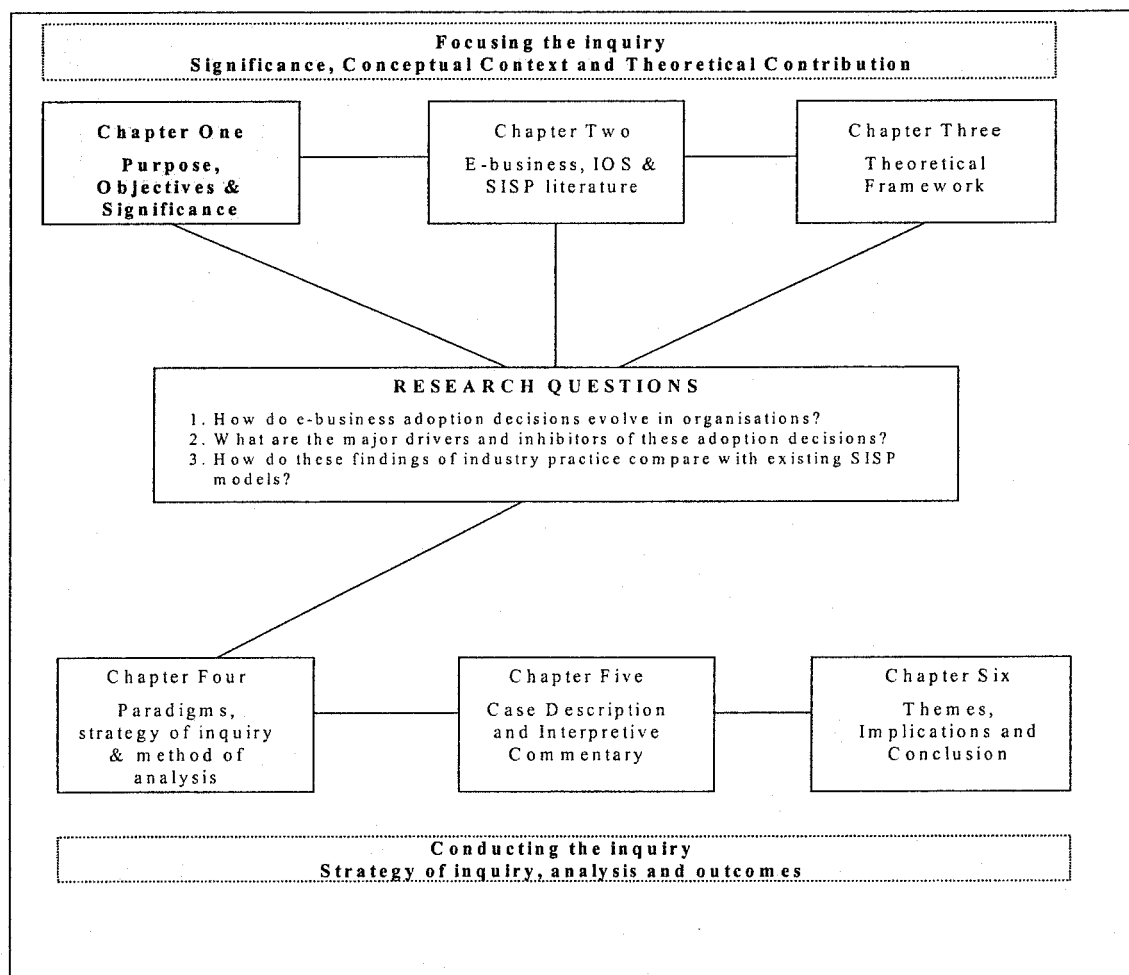
Before the discussion turns to the detailed review and analysis of this investigation a ‘blueprint’ of the thesis is provided to assist the reader in following how the research ‘story’ is crafted.

1.5 THE DESIGN OF THE THESIS

This chapter has provided an outline of the purpose, significance, theoretical framework, and research approach of this study, crucial in justifying why the study is worth doing, its theoretical contribution and the research questions, which are at the centre or hub of the research design. The following is a summary of how the thesis is organised, diagrammatically represented in Figure 1.1. Chapters Two and Three establish the study's conceptual context. Chapter Two identifies the literature, which the study was designed to complement and extend. This chapter explains the current theory and knowledge surrounding e-business, inter-organisational systems (IOS) and strategic information systems planning (SISP) informing the purpose and objectives of the study

and laying the foundations for Chapter Three. Chapter Three deals with the development of the theoretical model providing an alternative way of framing the issues through the integration of different approaches, lines of investigation and theories from other disciplines and perspectives. The chapter examines the rationale for the research questions, which is related to the purposes of the study, what is already known about the phenomena being studied and the theoretical tools that can be applied to SISP adoption processes. Chapter Four explains the research design, examining the paradigm of inquiry, methodology and methods used in the empirical research to answer the research questions. It also addresses plausible validity threats to these answers, which depends on the questions and methods chosen. Chapter Five contains the data analyses and interpretation. Chapter Six draws conclusions from the findings and interpretations, acknowledges the study's limitations and examines avenues for further research. The diagram representing the schema of chapters will be shown in each chapter for the purpose of situating the reader as the research 'story' unfolds. It is not representative of the research design, which is discussed fully in Chapter Four.

Figure 1.1 Schema of Chapters: Chapter One



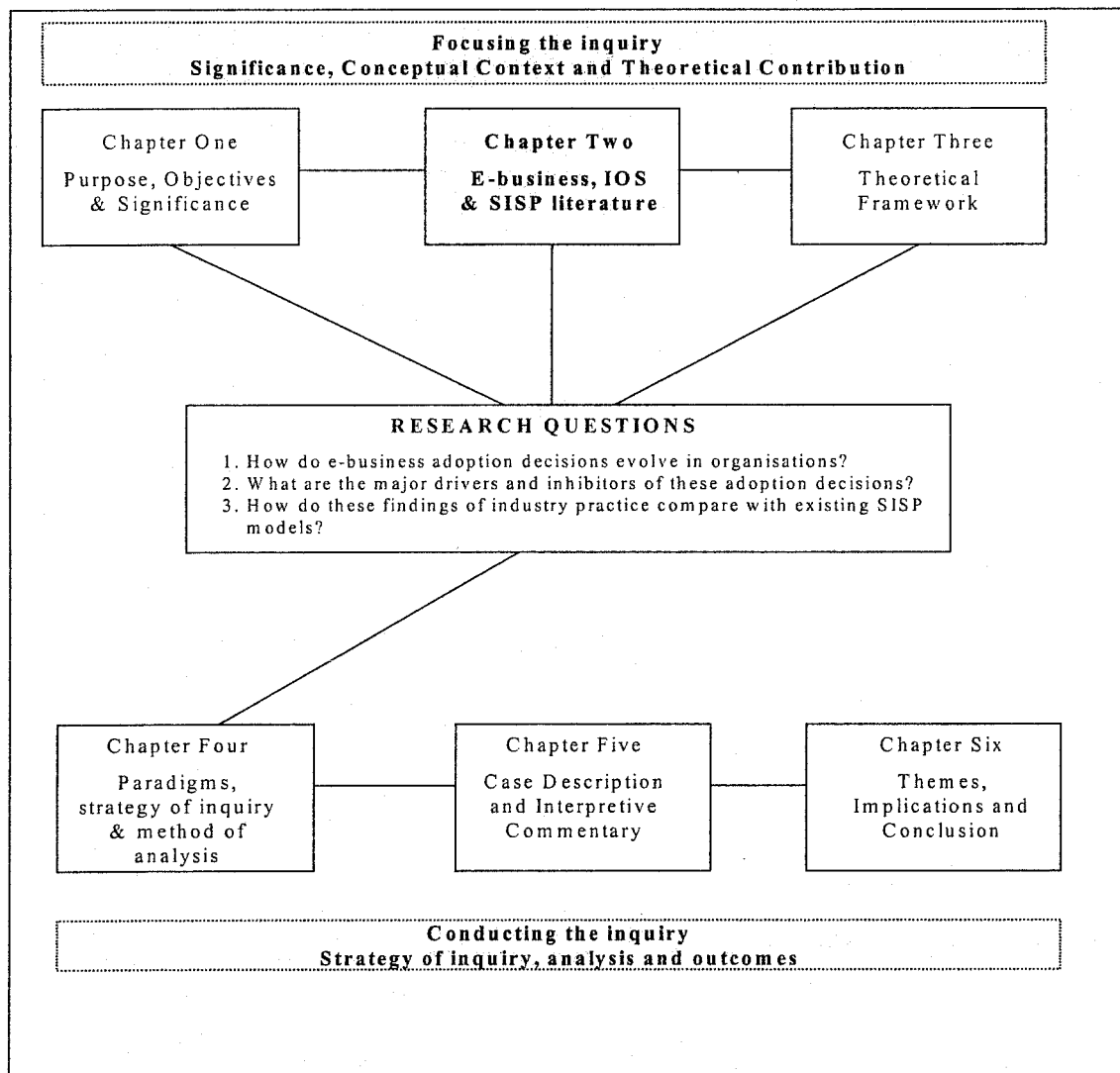
CHAPTER TWO

THE LITERATURE: E-BUSINESS, INTER-ORGANISATIONAL SYSTEMS (IOS) AND STRATEGIC INFORMATION SYSTEMS PLANNING (SISP)

2.0 INTRODUCTION

Connecting closely to the purpose and objectives of the study detailed in Chapter One, is its conceptual context, the system of concepts, assumptions, expectations, beliefs and theories that supports and informs the research (Maxwell 1996, 25). The conceptual context of this investigation is discussed in Chapters Two and Three. The major purpose of Chapter Two is to review existing theories and research in the e-business, inter-organisational systems (IOS) and strategic information systems planning literature, as shown in Figure 2.1, identifying theory, problems, contradictions or holes in existing views to: support and justify the importance of the study's focus on strategic IS adoption decisions; and, lay the foundations for Chapter Three where the theoretical framework for this study is constructed, providing an alternative way of framing the issues through the integration of different approaches, lines of investigation and theories from other disciplines and perspectives. The review of the literature in Chapter Two also serves to inform decisions about methods, suggesting alternative approaches or revealing potential problems and in later stages of the research provide a source of data to see if the results of this investigation are supported or challenged by these studies. The first section of this chapter reviews the e-business literature. The second section is a review of the IOS literature as IOS, are part of the overall e-business infrastructure, and may be viewed as an early or traditional form of e-business (Senn 1996; Kalakota & Whinston 1997; Wigand 1997). The third section reviews the SISP literature, outlining major characteristics, objectives and methodologies. The final section provides a conclusion of the review.

Figure 2.1 Schema of Chapters: Chapter Two



2.1 E-BUSINESS: AN INTRODUCTION

Despite the existence of a substantial body of work on e-business there has been general lack of theoretical grounding and many of the theories that do exist are far from being conclusively supported or refuted. The review of the literature revealed four broad research streams: the conceptualisation and classification of e-business; the impact(s) and business value of e-business; adoption and implementation issues; and, security, risk and control. Each of these areas are examined to delineate the conceptual domain of e-business given the wide array of differences in terminology, disciplinary orientations and underlying assumptions, for the purpose of identifying adoption and planning issues.

2.1.1 CONCEPTUALISATION AND CLASSIFICATIONS OF ELECTRONIC BUSINESS

By its very nature, the scope of e-business definitions are broad and encompassing, largely dependent on the lens used to view the e-business landscape (McConnell 1996; Graham et al. 1996; Kalakota & Whinston 1997; Lawrence et al. 2000). Even the terms used to refer to it have evolved over time, with some differentiating between the terms commerce and business (eg. Kalakota & Robinson 1999) while others using the terms interchangeably (eg. Turban et al. 2000). The term e-business is seen to incorporate not only buying and selling over digital media (e-commerce), but also encompassing both the front and back office applications that “form the engine for modern business” (Kalakota & Robinson 1999). For the purposes of this research, the term e-business will be used and defined not in terms of perhaps the colourful rhetoric one may see used in the e-business literature, but in general business terms proposed by Malone et al. (1989), namely, the fundamental change to commercial practices with the substitution of existing market arrangements by computer aided buying and selling. From this definition one can see that e-business is a mix of business vision and enabling technologies. It includes the sell-buy relationships and transactions between companies, as well as the corporate processes that support the commerce within individual firms. The technology can be anything and is not limited to particular technologies such as the Internet (McConnell 1996), however, a fundamental feature is networked technologies (Zwass 1996, 1998). Further, the definition also suggests a fundamental change to both intra and inter-organisational processes.

E-business may exist in many different configurations (Kalakota & Whinston 1997; Turban et al. 2000) as a product can be physical or digital, a delivery agent (or intermediary) can be physical or digital and the process can be physical or digital (Choi et al. 1997). Further, as e-business has been viewed from a range of perspectives, different classification schemes and taxonomies have evolved to capture diverse concepts (Graham et al. 1996). Turban et al. (2000) classify e-business in terms of its applications and by the nature of the transactions. Applications of e-business are categorised into (1) buying and selling goods and services, usually referred to as electronic markets; (2) facilitating inter and intra-organisation flow of information, communication and collaboration, sometimes referred to as inter-organisational

systems; and, (3) providing customer service. The different types of e-business transactions are classified into six areas: business to business (B2B); business to consumer (B2C); consumer to consumer (C2C); consumer to business (C2B); non business e-business; and intrabusiness (organisational) e-business. Themistocleous et al. (1998) incorporated public administration into these classifications, with Public Administration to Business (eg. public procurement, health, tax collection) and Public Administration to Citizen (eg. tax collection).

In addition to the types of e-business, there are different technologies that individually or mutually enable e-business (Wigand 1997). Kalakota and Whinston (1997) categorises these technologies into four infrastructure groupings: business service infrastructure (eg. smart card, electronic payments); messaging and information distribution infrastructure (eg. EDI, Hypertext Transfer Protocol and e-mail); multimedia content and network publishing infrastructure (eg. HTML, Java, World Wide Web); and, network infrastructure (eg. Internet, VAN, WAN, LAN, Intranet, Extranet). Turban et al. (2000, 6) include a further category of interfacing infrastructure to databases, customers and applications.

The different ways that e-business has been conceptualised and classified reflects its multidisciplinary nature and diverse concepts. The next section examines the literature regarding the impact of e-business which questions the frameworks through which we view and frame competition, business (Kalakota & Robinson 1999) and non business models (Turban et al. 2000).

2.1.2 IMPACT OF E-BUSINESS: BUSINESS VALUE AND ORGANISATIONAL AND MARKET TRANSFORMATIONS

As the field of e-business is still a relatively new area, much of the research is descriptive, often anecdotal, accounts of the perceived value and potential impact of e-business (Turban et al. 2000). The following discussion examines these studies conducted at both the organisational and market level, beginning with organisational impacts.

Bloch and Segav's (1996) ten point business value framework (see Table 2.1) provides a useful guide of the range of concepts and associated theories relating to research regarding business value and potential impacts of e-business.

Table 2.1: The components of business value of electronic business

The Organisation	Source of business value
Improve it	<ul style="list-style-type: none"> • product promotion • new sales channel • direct savings • time to market • customer service • brand image
Transform it	<ul style="list-style-type: none"> • technological and organisational learning • customer relations
Redefine it	<ul style="list-style-type: none"> • new product capabilities • new business models

[Source: Bloch & Segev (1996)]

The three “super-categories” of improving, transforming and redefining are used to measure the amount of change in the “global” business model of an organisation and the impact in terms of business results. Further, these three categories are understood to be flexible, inter-related and overlapping. In a recent survey by Lederer et al. (2001), regarding the rationale for conducting business on a web shopping mall, the majority of respondents cited the creation of strategic advantage through improved customer relations resulting from greater business efficiency and better information access and flexibility, confirming the inter-relationships referred to by Bloch and Segev (1996).

The Bloch and Segev business value model is grounded in industry and competitive advantage (Porter 1980, 1985) and business process re-engineering (Davenport 1993; Hammer & Champy 1993) frameworks, consistent with the majority of IS impact studies in general, such as Scott Morton’s (1991) MIT Corporation of the Nineties study, and much of the earlier research regarding the impact of e-business. Earlier studies of the impact of e-business mainly related to the model of single firms developing proprietary systems such as EDI, to gain competitive advantage (Segal 1995; Graham et al. 1996), or what is referred to as the “hub and spokes” model of e-business (Young et al. 1999). These types of models were challenged in the late 1980s, as e-business systems emerged based on cooperation between competing firms, and developing links with suppliers (Segal 1995). Development costs for linking to suppliers through proprietary systems were not only duplicated but suppliers had to bear the additional cost and inconvenience of maintaining parallel systems (Graham et al.

1996). The conflict between competitive advantage and operational efficiency meant that organisations needed to make decisions concerning whether they would develop the proprietary system, cooperate with potential competitors by joining a 'global community', or wait to see how the technology would develop (Suorni 1991). Decisions to cooperate with competitors to develop e-business implied a shift from competitive advantage to its use in reducing costs by improving efficiency (Graham et al. 1996).

As discussed above, the organisational impact of e-business has also been discussed in terms of business process re-engineering (BPR) (Hammer & Champy 1993). As IT is viewed in BPR as an enabler of radical change to organisational processes, the impact of e-business has been described in terms of facilitating the restructuring of supply chains (Malone et al. 1987), the processes within firms (Swatman & Swatman 1991) as well as inter-organisational business process redesign (Clark & Stoddard 1996).

A more recent case study conducted by El Sawy et al. (1999) of Marshall Industries, highlighted four "shifts" in the logic in the way business and information technology is managed due to the impact of the "electronic economy." First, the shift from traditional value chains to concurrent value constellations. That is, a constellation of customers and suppliers engaged in a "rich web of relationships" instantiated in various ways and directions. Second, the shift from a competitive advantage logic to value innovation logic. That is, as the "electronic economy" is derived from what is valued by the customer without being constrained by existing industry rules. Third, the shift from IT-supported innovation, to IT shaped cybermediation. That is, the role of intermediaries in evolving from a "mere conduit for transactions to creating value" in cyberspace, supported by changes in processes, IS, knowledge management and supplier and customer relationships. Finally, from the alignment of IT strategy and business strategy to managing the dynamic unfolding of IT strategy and business strategy.

Research regarding the impact of e-business on markets has typically been grounded in two major theoretical areas: industry organisation economics, more specifically Porter's (1980, 1985) industry and competitive analysis framework; and transaction cost economics (Williamson 1975). Clarke (1992) used Porter's (1980) five forces model to link the implementation of e-business to the sectoral context of the firms involved. Transaction cost economics analysis has been used to explain for example: functionality

and strategic potential of electronic marketplaces (Bakos 1991; Bakos 1997; Bakos 1998); overall shift towards electronic markets and electronic hierarchies (Malone et al. 1987; Benjamin et al. 1990; Hess & Kemerer 1994); roles of electronic intermediaries (Bailey & Bakos 1997); transactions cost savings in electronic markets vs traditional markets (Strader & Shaw 1997); electronic markets as coordinating mechanisms (Malone et al. 1989; Benjamin & Wigand 1995; Wigand 1997) and modelling exchange processes across different market structures (Kambil & Van Heck 1998). More recently sociological perspectives have been incorporated into the analysis of e-market structures (eg. Balasubramanian & Mahajan 2001; Brynjolfsson & Kahin 2000).

While the above literature focuses on sources of strategic value for organisations and the effects of implementing e-business at both the organisational and industry level, the following research stream examines issues surrounding the actual adoption and implementation processes.

2.1.3 ADOPTION AND IMPLEMENTATION OF E-BUSINESS

Since e-business covers a wide range of technologies and applications, the assessment of actual benefits and limitations of the different applications is no easy task (McConnell 1996). A number of authors have provided an inventory of major success factors for e-business (eg. Mouggayer 1998; Turban et al. 2000; Raisch 2001; Porter 2001). In their investigation of assessing the value of EDI, Fearon and Philip (1998) found that the estimation of benefits was a very subjective exercise, identifying the need for the link between strategy and implementation because of poor quality IT decision-making processes and an “over-reliance on benefit frameworks which promote strategic awareness and understanding but do not relate to practice.” Chan and Swatman (1998) posited that a better understanding of the adoption and implementation process and the factors contributing to this process would assist organisations in developing a more effective e-business implementation strategy. Table 2.2 provides a summary of the literature relating to this research stream.

A review of this stream of research revealed the use of two major theoretical models namely, innovation based models (eg. Rogers 1995) and intention based models, that is the Theory of Planned Behaviour (Ajzen 1991) and Theory of Reasoned Action (Ajzen & Fishbein 1980) in identifying factors that influenced the adoption of e-business.

Table 2.2 Adoption and implementation of e-business

Author	Theoretical Focus	E-business application	Method	Key Findings
Lee & Clark (1997)	Adoption of electronic markets from a reengineering perspective	E-markets	Description of four cases studies	Three types of adoption barriers <ul style="list-style-type: none"> • electronic product description • thin market • resistance to change
Chan & Swatman (1998)	Adoption & implementation of e-business	EDI	Prescriptive	Factors that influence the implementation process: <ul style="list-style-type: none"> • technological • organisational <p>Description of how people, technology and processes interact during implementation</p>
Choudhury et al. (1998)	Use and consequences of electronic markets	Inventory Locator Service (ILS) in aircraft parts industry	In-depth interviews and survey	Buyers use e-markets for purchases that are low in asset specificity and complexity of product description, together with other contextual factors. <p>Impacts:</p> <ul style="list-style-type: none"> • Price - dependent upon scope of the electronic market. • Brokers - shift in the nature of brokers roles • Market makers – scope of information provided dependent on type of market, easier identification of potential trading partners.
Fearon & Phillip (1998)	Implementing e-business – business value	EDI	Prescriptive	<ul style="list-style-type: none"> • Pre-implementation expected benefit • Post-implementation realised benefit • Extent of Benefit • Planning Gap <ul style="list-style-type: none"> - Deficiency - Neutrality - Efficiency
Fong et al. (1998)	Implementing electronic markets	Electronic market – livestock & crop marketing	Prescriptive	Factors useful when conducting strategic planning of e-markets: <ul style="list-style-type: none"> • market operators should provide basic, core functions initially • IT alone can not produce optimal pricing and efficiency • system should complement the existing value chain for sales • national government style can determine the success of the system • virtual e-markets should be integrated into the existing sales value chain

Author	Theoretical Focus	E-business application	Method	Key Findings
Vadapalli & Ramamurthy (1998)	Adoption and use of the Internet	Internet	Case study	Determinants of business use <ul style="list-style-type: none"> • innovation specific characteristics (social & technological context) • organisation-specific context (organisation boundaries, transaction cost economics and organisational cognition)
Bolisani et al. (1999)	Knowledge transfer in design & implementation of e-business	EDI On line catalogues	Description of empirical case studies conducted by other authors	Different types of knowledge and processes of knowledge transfer relate to the nature of the transactions and to the use of the new service and its associated technological artifact.
Giaglis et al. (1999)	Discrete-event Business Process Simulation (BPS) – quantitative modelling of investment evaluation	EDI	Case study	BPS effective vehicle for investment appraisal.
Jarvenpaa & Tiller (1999)	Integrating market, technology and policy opportunities in e-business strategy	E-business	Prescriptive	E-business firms need to integrate their technology and market strategies with the political, social and regulatory environments in which e-business finds itself.
Rose et al. (1999)	Impediments to the adoption of e-business	B2C	Prescriptive	Six categories of technological impediment <ul style="list-style-type: none"> • download delays • limitations in the interface • search problems • inadequate measurement of Web application success • security (real & perceived) weaknesses • lack of Internet standards
Elliot & Loebebecke (2000)	Adoption of interactive inter-organisational innovations in e-business	Smart cards	Case study	<ul style="list-style-type: none"> • Need for a more detailed scheme for classification of Rogers (1995) innovation attributes which enables distinction between more complex, multi-participant interactive innovations. • Rogers (1995) Five stage innovation process model needs revision to allow for the complexity of multiple participants within each innovation and for variation of processes within different participants. • Supported two of Rogers (1995) decision making approaches, optional & authority
Gefen & Straub (2000)	Importance of perceived ease of use in IS adoption	E-business	Free simulation experiment	Perceived ease of use is dependent upon whether the type of use is intrinsic or extrinsic to the IT.

Author	Theoretical Focus	E-business application	Method	Key Findings	
Han & Noh (2000)	Critical failure factors that discourage the growth of e-business	E-business	Survey	<p>Critical failure factors that affect:</p> <p>Satisfaction with e-business</p> <ul style="list-style-type: none"> • unstable systems • lower levels of data security • inconvenient use • unsatisfactory purchase 	<p>E-business usage</p> <ul style="list-style-type: none"> • unstable systems • lower levels of data security <p>E-business usefulness</p> <ul style="list-style-type: none"> • unsatisfactory purchase • social disturbance • inconvenient use
Tan & Teo (2000)	Factors influencing the adoption of Internet Banking	Internet Banking	Survey	<p>Attitudinal factors</p> <ul style="list-style-type: none"> • relative advantage • compatibility • trialability • risk 	Perceived behavioural control, availability of government support, self efficacy
Beatty et al. (2001)	Factors influencing the adoption of corporate web site – diffusion of innovation	Web Sites	Survey	<p>Reasons for early adoption were:</p> <ul style="list-style-type: none"> • Benefits • Compatibility of technology • Organisational support 	Reasons for later adoption did not place as much emphasis on the above factors as the uncertainties faced by earlier adopters were not as prevalent.
Kendall et al. (2001)	Adoption of e-business in small to medium enterprises in Singapore	E-business	Survey	<p>Factors affecting adoption</p> <ul style="list-style-type: none"> • Relative advantage • Compatibility • Trialability 	
Mehrtens et al. (2001)	Internet adoption by SMEs	Internet	Case study	<p>Factors that significantly affect Internet adoption</p> <ul style="list-style-type: none"> • Perceived benefits • Organisational readiness • External pressure 	
Plouffe et al. (2001)	Adoption of smart card based payment system	Smart Card System	Survey	<ul style="list-style-type: none"> • Perceived characteristics of Innovating (PCI) developed by Moore & Benbasat (1991) significantly outperformed the Technology Acceptance Model (TAM) in predicting merchants' intention to adopt the new smart card system. 	
Sadowski et al. (2002)	Adoption of the Internet by small – and medium sized companies	Internet	Survey	<ul style="list-style-type: none"> • Small & medium sized enterprises are opportunistic in the adoption of the Internet – “wait-and-see” attitude. • Communication requirements key motivating factor of Internet adoption. 	

While this research provides valuable insight, it is limited in that: problems have been found with these extant theories in an e-business context (see for eg. Elliot & Loebbecke 2000; Plouffe et al. 2001); and, the adoption of e-business is more than the adoption or diffusion of an innovation (Chan & Swatman 1998). It needs to be also viewed as an organisational change process that takes into account the involvement of the people and the technology during the process (Olsen et al. 1998). These issues are discussed further in Chapter Three. Further, the studies outlined in Table 2.2 are largely grounded in positivist assumptions. Methodologies are required that emphasise greater sensitivity to the context within which such social phenomena are manifested and interpreted, such as 'interpretive' based approaches.

2.1.4 SECURITY, CONTROL AND RISK

Concomitant with the considerable interest and adoption of e-business, are uncertainties surrounding issues such as the security, confidentiality, and legality of transactions (Banaghan & Bryant 1998). The risks posed by e-business have the potential to affect the integrity, authenticity, confidentiality and availability of transactions as well as corrupting essential business and production processes (CCH Australia Limited 2001). A large body of literature in this area is from an auditing perspective examining risk methodologies and control technologies. This aspect is not discussed here, as it does not directly relate to the objectives of this research, regarding strategic IS considerations, notwithstanding its importance. Studies that have considered more of the strategic aspect, include Ratnasingham et al. (1998) who posit that there is a need to strengthen the security of information in order to meet the strategic objectives of an organisation and assist in removing barriers of adoption. Such research has highlighted the importance of trust to enable mutually beneficial systems (Ratnasingham 1998; Tan & Thoen 2001) as well as an important antecedent in people's intentions to partake in e-business transactions (Gefen 2000).

E-business may be seen as having its origins in IOSs, such as electronic data interchange (EDI) (Finnegan et al. 1998), a hybrid of information links and electronic markets (Senn 1996). Therefore, research relating to IOSs may provide valuable insight into "past lessons" and the way organisations form partnerships based on a willingness and ability to cooperate and perform the work (Galliers 1999). A review of this literature follows.

2.2 INTER-ORGANISATIONAL SYSTEMS (IOS): THEORIES, ANTECEDENTS, PROCESSES AND IMPACTS

Interorganisational information systems (IOS) may be broadly defined as “an automated information system shared by two or more companies” (Cash & Konsynski 1985, 134), assembled around computer and communication technologies that facilitate the “creation, storage, transformation and transmission of information” (Sabherwal & Vijayasarathy 1994, 269). Included in this definition are the hardware, software, data, databases and expertise shared between two or more organisations (ibid 1994), allowing one organisation to allocate resources and initiate business processes in another organisation directly (Schultheis & Sumner 1998). IOS have increasingly led organisations to cooperate and compete with each simultaneously; a phenomena referred to by Brandenburger and Nalebuff (1996; cf Loebbecke & Van Fenema 1998) as “coopetition.” However, while both organisations may benefit from cooperation, determining the quantity, and type of knowledge that should be shared and with whom it should be shared with raises strategic issues for organisations (Loebbecke & Van Fenema 1998). The strategic significance of IOS has drawn considerable attention from IS researchers (Barua & Lee 1997) discussed further below.

IOS research has been influenced by three major theoretical perspectives (Sabherwal & Vijayasarathy 1994), namely, transaction cost analysis (eg. Williamson 1975, 1981), industry and competitive analysis (eg. Porter 1980, 1985) and resource dependency theory (Pfeffer & Salancik 1978). These perspectives offer different explanations for investigating inter-organisational relationships, summarised in Table 2.3. Further, IOS studies fall into three broad research streams. First, classification schemes based on their business purpose, functions they perform, relationships among the participating organisations and their level of participation (eg. Barret & Konsynski 1982; Cash & Konsynski 1985; Johnston & Vitale 1988; Hong 2002). The second stream provides theoretical discussions of the role of IOS in changing market structures and characteristics (eg. Malone et al. 1987; Benjamin et al 1990; Clemons et al. 1993; Klein 1996; Bensaou 1997; Grover 1999). The third stream concentrates on the impact of IOS, the processes by which they are accomplished and the antecedents of IOS use (Sabherwal & Vijaysarathy 1994). As this latter stream of research is most relevant for this investigation, seminal and more recent research in this area is discussed further below.

Table 2.3 Major Theoretical Perspectives in IOS Research

	Transaction Cost Analysis	Industry & Competitive Analysis	Resource dependence
Central concepts	Transaction costs	Value chain and competitive forces	Power and control
Explanation of interorganisational (IO) linkages	Economic mechanisms (markets or hierarchies) that coordinate the flow of goods and services between organisations are contingent on the production and coordination costs associated with the transactions ensuing from the relationships.	Company's operations are examined as a series of interdependent activities comprising the value chain. Emphasis of five key competitive forces, firm's customers, suppliers and competitors, potential new entrants into the industry and possible substitute products.	Interorganisational relationships (IOR) are established because organisations rely on external entities for information, human resources, and monetary and physical resources, etc. The need to mitigate the uncertainty associated with this dependence is the primary motivation for IOR. IO linkages need not necessarily be efficient, as they may be aimed at gaining power and influence over organisations possessing scarce resources.
Examples in IOS literature	Bakos & Treacy (1986); Malone et al. (1987) Benjamin et al. (1990)	Cash & Konsynski (1985); Johnston & Carrico (1988)	Johnston & Vitale (1988)

[Content of table sourced from Sabherwal & Vijayasarathy (1994)]

Studies focused on the impacts and value of IOS have applied: Porter's (1980, 1985) concepts of value chain and key competitive forces in discussing the strategic potential of IOS for gaining competitive advantage through linking an organisation's value chain with its customers and suppliers (eg. Cash & Konsynski 1985; Porter & Millar 1985; Johnston & Carrico 1988; Venkatraman 1991); business process redesign (Clark & Stoddard 1996); models grounded in traditional economic theories (eg. Clemons & Kleindorfer 1992; Mukhopadhyay et al. 1995; Bensaou & Venkatraman 1996; Barua & Lee 1997; Gebauer & Buxmann 2000); resource dependency (Johnston & Vitale 1988) and social network theory (Reekers & Smithson 1996). Two broad types of benefits have generally been identified in this stream of research, namely increased efficiency of interorganisational transactions and internal operations and greater bargaining power for the organisation sponsoring the system, reflecting the transaction cost and resource dependency perspective respectively (Sabherwal & Vijayasarathy 1994).

Research relating to the processes by which IOS are accomplished and the antecedent factors that may facilitate or inhibit use are summarised in chronological order in Table 2.4.

Table 2.4 A summary of processes by which IOS are accomplished and antecedents of IOS use

Author(s)	Theoretical Focus	Method	Research Sample	Key Findings/Outcomes	
				Process/Model	Factors
Johnston & Carrico (1988)	Strategic IS use	Case study	11 companies from different industry groups		<ul style="list-style-type: none"> • Environmental uncertainty • IS maturity
Johnston & Vitale (1988)	Development of IOS – Search and planning process	Prescriptive model	n/a	Explanatory framework for the competitive advantages achieved through IOS and process steps for identifying new IOS.	
Reich & Benbasat (1990)	Planning process for customer oriented information systems (COS)	Case study	Eleven COS	<p>Planning is an informal process.</p> <p>Five stage model</p> <ul style="list-style-type: none"> • Idea generation • Développement • Early adoption • Longer term penetration • Competitive advantage 	Product champion is a key facilitator of the development process and different factors are important at different stages of the development process.
Galliers & Sutherland (1991)	Identifying and implementing strategic IS	Prescriptive model	n/a	A socio-technical approach for identifying and implementing strategic IS contingent on a 'stages of growth model'	
Sabherwal & Vijayasathya (1994)	Use of telecommunication based IOS	Mail Survey	425 medium sized US companies – 86 responses		<ul style="list-style-type: none"> • Environmental uncertainty • Product information intensity • Value chain intensity • IS maturity
Iacovou et al. (1995)	Adoption of EDI	Case study	7 small businesses		<ul style="list-style-type: none"> • Organisational readiness • External pressures to adopt • Perceived benefits
Galliers et al. (1995)	SISP and EDI implementation	Prescriptive		Organisations considering EDI implementation should adopt a business strategy-based approach.	

Author(s)	Theoretical Focus	Method	Research Sample	Key Findings/Outcomes	
				Process/Model	Factors
Premkumar & Ramamurthy (1995)	Adoption of IOS – EDI	Survey	1200 organisations – 201 responses		Inter-organisational <ul style="list-style-type: none"> • Competitive pressure • Exercised power Organisational <ul style="list-style-type: none"> • Internal need • Top management support
Bensaou & Venkatraman (1996)	Inter-organisational strategies that leverage IT capabilities	Prescriptive	n/a	Three types of uncertainty, environmental, partnership and task give rise to a set of information processing requirements balanced by a set of mechanisms, structure, process & IT.	
Cavaye (1996a)	Adoption and implementation of COS	Case study	9 COS		<ul style="list-style-type: none"> • Marketing of the system • Technological awareness of customers
Cox & Ghoneim (1996)	Adoption & implementation of EDI – Drivers and barriers	Survey & Case study	300 British organisations across different industries – 85 responses Government body case study		<ul style="list-style-type: none"> • Operating gain, remaining competitive & improvement to IO relationships seen as primary drivers but varied depending on the state of EDI adoption within the sector & individual organisational requirements. • Perceived benefits varied between industry sectors • Benefit associated with integration of EDI with internal business processes • Relationship between EDI applications and core business activities
Ferratt et al. (1996)	Development and implementation of an advanced communication	Action and case study research	Patient Health Information Network Project	Managing development through leadership from multiple sources, maintaining movement toward project	<ul style="list-style-type: none"> • System is competitively neutral • Prior history of successful collaboration

Author(s)	Theoretical Focus	Method	Research Sample	Key Findings/Outcomes	
				Process/Model	Factors
	network			goals and positioning the project as low risk.	<ul style="list-style-type: none"> • Appropriate incentives
King & Teo (1996)	Facilitators & inhibitors for the strategic use of IT	Survey	419 executive MBA graduates – 121 responses		Facilitators <ul style="list-style-type: none"> • Innovative needs • Competitive position • Environment • Economies of scale • Top management guidance Inhibitors <ul style="list-style-type: none"> • Lack of IT drivers • Lack of economies of scale • Lack of innovative needs
Chau & Tam (1997)	Adoption decisions of open systems	Field survey – structured interviews	89 organisations		<ul style="list-style-type: none"> • Perceived barriers • Perceived importance of complying with standards • Satisfaction with existing systems
Choudhury (1997)	Strategic choices in the development of IOS	Case Study	Aircraft parts industry	A firm can develop an IOS competitively or cooperatively	Choice of IOS dependent on <ul style="list-style-type: none"> • Demand uncertainty • Market variability Decision of how to develop IOS depends on <ul style="list-style-type: none"> • Strategic significance of IOS • Size and bargaining power of the firm
Hart & Saunders (1997)	Adoption and use of EDI	Case Study	Large office retail supply firm		<ul style="list-style-type: none"> • Power • Trust
Pouloudi & Whitley (1997)	Development and implementation of IOS	Field interviews - Stakeholder identification	Stakeholders of drug use management system	Identification of stakeholders	
Premkumar et al. (1997)	Adoption of EDI in the transportation industry	Survey	950 motor transport firms –		<ul style="list-style-type: none"> • Size of the firm • Competitive pressure

Author(s)	Theoretical Focus	Method	Research Sample	Key Findings/Outcomes	
				Process/Model	Factors
			181 responses		<ul style="list-style-type: none"> • Customer support • Top management support
Spinardi et al. (1997)	Development of EDI	Case study	Public sector organisation		Importance of political and organisational factors
Finnegan et al. (1999)	Nature and extent of IOS planning	Survey	400 large organisations in UK & Ireland – 25% response rate	<ul style="list-style-type: none"> • IOS planning is in its infancy • Over reliance on traditional IS planning methods • Development of processes required to meet particular needs of IOS planning 	
Riggins & Mukhopadhyay (1999)	Adoption and implementation of EDI	Prescriptive model	n/a	<p>Nature & magnitude of strategic & operational benefits dependent on who initiates the system (buyer or supplier) and how the system is implemented.</p> <p>Initiators should adopt a formal plan for subsidising the system's adoption by their trading partners.</p>	
Johnston & Gregor (2000)	Adoption of IOS at the industry level – theoretical exposition	Theoretical model	n/a	Model proposed based on meta-theoretical framework of Markus & Robey (1988) to assist in discussing the concerted action or agency of industry groups in the adoption of IOS.	
Chwelos et al. (2001)	Adoption of EDI	Survey	Members of the Purchasing Managers Association of Canada – 545 members, 58% response rate.		<ul style="list-style-type: none"> • Organisational readiness • Perceived benefits • External pressure

The review of this literature revealed: pertinent determinants of the adoption and use of IOS, generally classified into three levels, namely technological, organisational and interorganisational (Kumar & Crook 1999; Chwelos et al. 2001) the importance of which may change over time (Reich & Benbasat 1990); the research mainly has positivist foundations that marginalise the impact of social processes; and, there is limited research into information systems planning for IOSs. Planning approaches for IOS have generally been viewed as an extension of internal planning systems neglecting the influence of different organisational structures, technical infrastructures, diverse business strategies and cooperative arrangements (Finnegan et al. 1999). The SISP literature has been recognised as both relevant and potentially helpful to organisations implementing IOS, if they are to gain the advantages they seek from such an investment (Galliers et al. 1995). A review of this literature follows.

2.3 STRATEGIC INFORMATION SYSTEMS PLANNING (SISP): THEORY, METHODOLOGY AND PRACTICE

While it is difficult to provide a comprehensive definition of SISP (O'Connor 1993), it has been commonly viewed (Galliers 1987, 1991) as "the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realising its business goals" (Lederer & Sethi 1988, 446). However, Galliers et al. (1995) posit that there is evidence to suggest that organisations are also seeking to provide through SISP, "new products and services, an environment which provides a platform for flexibility and change, and a means by which business processes may be re-engineered in line with opportunities afforded by new information technology (IT) and by changed business imperatives." The main objectives of SISP have traditionally included business alignment, competitive advantage, resource management, and technology architecture (Earl 1993; Sabherwal & Tsoumpas 1993; Flynn & Hepburn 1994; O'Brien 1998), involving longer term planning horizons (Ang & Teo 1997).

SISP has remained an important topic for both researchers and practitioners for more than a decade (Brancheau & Wetherbe 1987; Galliers 1993; Lederer & Salmela 1996; Watson et al. 1997; Gottschalk 1999; Segars & Grover 1999) as it is regarded as a central resource for the achievement of business success, a way of creating competitive advantage, and the initiator for new services and products (Hsiao & Ormerod 1998;

McNurlin & Sprague 1998). It is also considered a critical area of investigation because it is often unsuccessful (Lederer & Salmela 1996) as it is a “complex and multifaceted activity encompassing a broad range of managerial, system and technological components” (Raghunathan & Raghunathan 1994, 327). Therefore, SISP research has centred its attention, not only on techniques, procedures and methodologies but also traits and characteristics of planning and its success or effectiveness (Earl 1993).

The following discussion outlines the extensive range of literature that exists in SISP, with the following aims: (i) to identify key dimensions of SISP; (ii) describe and compare nine widely used SISP approaches based on these planning dimensions; and (iii) identify key issues and problems relevant to this study.

2.3.1 KEY ELEMENTS OF SISP RESEARCH

An extensive range of literature exists on SISP, which is summarised in Table 2.5 broadly using the seven “constructs” of the theory of SISP proposed by Lederer and Salmela (1996) as a framework: (1) the external environment; (2) the internal environment; (3) planning resources; (4) the planning process; (5) the information plan; (6) the implementation of the information plan; and (7) the alignment of the information plan with the organisation’s business plan. While the literature is grouped into each of these categories, it is for analysis purposes only as they are interrelated.

As highlighted in Table 2.5, SISP has been viewed in terms of prescribing factors influencing decision makers, discussed further in section 2.3.2, as well as in terms of planning behaviour, yielding different constructs of SISP. Through theoretical and empirical analysis, researchers have sought to identify, synthesise and classify characteristics of SISP independent of particular methods that “manifest across a variety of organisational and environmental contexts” (Segars & Grover 1999) for the purpose of evaluating prospective methodologies or a completed SISP process (Lederer & Sethi 1991). A sample of these studies is provided in Table 2.6. The table illustrates that few studies have examined SISP from an holistic perspective (Sabherwal & King 1995). Attention is specifically directed at definitional (the ‘what’ of SISP), processual (the ‘how’ of SISP), contextual (the ‘why’ of SISP) or effectiveness (the ‘success’ of SISP) issues with an overarching concern of achieving some competitive advantage or operational efficiency. Further, studies that have combined these perspectives have tended to do so in dichotomous terms for example, content-process dimensions, context-process dimensions or process-effectiveness dimensions.

Table 2.5 Key Elements of SISP Research

Effect of external environment on planning process	Author(s)
Changes in supplier trends, customer preferences, emerging technology, government legislation, competitor's actions	Eg. Lederer & Mendelow (1990), Raghunathan & Raghunathan (1991), Sillince & Frost (1995)
Economic stability of the industry and country	Eg. Raghunathan & Raghunathan (1991)
Information intensity of business sector and external stakeholders	Eg. Earl (1993), Sambamurthy et al. (1993), Sambamurthy et al. (1994); Premkumar & King (1994b).
Geographic regions, cultures and other macro-economic features of the organisation	Eg. Galliers (1987), Elliot (1996), Teo et al. (1997)
Effect of internal environment on planning process	Author(s)
Corporate culture, planning and control style	Eg. Earl (1993), Applegate et al (1996), Fletcher & Wright (1997), Teo et al. (1997)
Organisation size, structure (eg. mechanistic vs organic/ internal networks), management style (eg. entrepreneurial vs conservative)	Eg.; Premkumar & King (1994b), Fletcher & Wright (1997)
Decision making approach (eg. group or individual, revolutionary or incremental)	Eg. Guimares & McKeen (1989), Fletcher & Wright (1997)
IT sophistication/involvement and organisational decision making	Eg. Fletcher & Wright (1997), Chou et al. (1998)
Sophistication in business planning	Eg. Lederer & Sethi (1988)
Maturity of organisation's information systems management experience	Eg. Earl (1993)
IS maturity (as the organisation becomes technologically more mature, SISP also evolves)	Eg. Benbasat et al. (1984), King & Kraemer (1984), Galliers & Sutherland (1991),
Locus of IS resources & management responsibilities (centralised vs decentralised) – influences manner in which resources are made available to uses and thus affects the planning process	Eg. Guimares & McKeen (1989)
End-user sophistication – SISP responds to end-user preferences	Eg. Lederer & Mendelow (1990), Raghunathan & Raghunathan (1990)
Information planning goals and objectives <ul style="list-style-type: none"> • Gaining competitive advantage • Identifying new and higher payback applications • Identifying strategic applications • Increasing top management commitment • Improving communications with users • Allocating IT resources • Forecasting IT resource requirements • Developing an information architecture • Increasing the visibility of information systems 	Eg. Galliers (1987), Segars & Grover (1998) Eg. Galliers (1988) Eg. Sullivan (1985), Chou et al. (1998) Eg. Earl (1993) Eg. McLean & Soden (1977) Eg. Bowman et al. (1983) Eg McLean & Soden (1977) Eg. Goodhue et al. (1992) Eg. McLean & Soden (1977)

Level of existing consensus about goals and objectives of SISP	Eg. Sambamurthy et al. (1994)
Changes in business objectives and priorities threaten the business value of IS projects as well as their implementation	Eg. Clemons & Weber (1990), Lederer & Mendelow (1993)
Proactive vs reactive role of IS function and nature of relationship between IS and business function	Eg. King & Teo (2000)
Effect of planning resources on planning process	Author(s)
Participation of top management, user management, IS managers and professionals	Eg. McLean & Soden (1977), Lederer & Sethi (1992), Premkumar & King (1994b), Reponen (1994)
Skills and experiences	Eg. Sambamurthy et al. (1993), Lederer & Gardiner (1992).
Software	Eg. Lederer & Mahaney (1996)
Organisation's business plan	Eg. McLean & Soden (1977), King (1988)
Effect of planning process on the plan	Author(s)
IS methodologies	See discussion in section 2.3.2.
Team exercises, lectures and reports from experts	Eg. Galliers et al. (1994), Reponen (1994)
Prescriptions to make SISP more successful <ul style="list-style-type: none"> • Conceptual focus on potential prescriptions • Descriptive surveys of planning practices across large sets of companies in different countries • Case studies from a data architecture perspective • Survey/case study research suggesting specific problem areas to be addressed by practices during SISP • Survey research of prescriptions most associated with successful SISP 	Eg. Boynton & Zmud (1987), Earl (1993), Eg. Galliers (1987), Galliers (1991) Eg. Goodhue et al. (1992) Eg. Lederer & Sethi (1988), Min et al. (1999) Eg. Lederer & Sethi (1996), Doherty et al. (1999)
Description and process dimensions of SISP <ul style="list-style-type: none"> • Characteristics: eg., comprehensive planning and incremental planning practices, formalisation, participation, internal co-alignment • decision processes concerning the development of strategic applications of IS. • investment appraisal and evaluation techniques • strategy formation processes 	Eg. McLean & Soden (1977), Guimares & McKeen (1989), Premkumar & King (1991), Earl (1993), Ciborra (1994), Sambamurthy et al. (1994), Segars et al. (1998), Salmela et al. (2000) Eg. Sabherwal & King (1992), Sabherwal & King (1995) Eg. Bacon (1992), Farbey et al. (1992), Wilcocks & Lester (1996), Fletcher & Wright (1997) Eg. Walsham (1993), Walsham & Han (1993)
Insufficient attention to planning issues results in a plan that proposes technical solutions to the wrong business problems	Eg. Byrd et al. (1995)
IS planning problems associated with phases of planning	Eg. Teo & Ang (2001)

Effect of information plan on implementation	Author(s)
<p>Implementation of SIS plans is important because:</p> <ul style="list-style-type: none"> • Failure to implement SIS plan can cause lost opportunities, duplicated efforts, incompatible systems and wasted resources • Extent to which SIS plan meets its objectives is determined by implementation • Lack of implementation leaves firms dissatisfied with their SISP • Lack of implementation creates problems establishing & maintaining priorities in future SISP 	<p>Eg. Lederer & Sethi (1988), Lederer & Mendelow (1993), Lederer & Salmela (1996) Eg. Earl (1993), Lederer & Sethi (1996)</p> <p>Eg. Galliers et al. (1994), Premkumar & King (1994b) Eg. Lederer & Mendelow (1993)</p>
Resource plans for project implementation, systems for monitoring the plan implementation, and top management and user participation in monitoring process improve chances of implementation	Eg. Premkumar & King (1994b)
Relevance of proposed projects in the plan to organisation goals	Eg. Bergeron et al. (1991)
IS planning maturity and IS project manager performance	Eg. Jiang et al. (2001)
The presence or absence of sections of the plan can influence plan implementation	Eg. Flynn & Goleniewska (1993)
Relationship between implementation of an IT strategy and the content of the strategy	Eg. Gottschalk (1999)
Effect of plan implementation on alignment and performance	Author(s)
Alignment of IS objectives/plan with business objectives/plan	Eg. Parker et al. (1989), Burn (1993), Powell (1993), Atkins (1994), Reich & Benbasat (1996), Chan et al. (1997), Teo & King (1997), Teo & Ang (1999), Kearns & Lederer (2000), Reich & Benbasat (2000)
Evaluation of SISP – measuring SISP success	Eg. Premkumar & King (1991), Raghunathan & Raghunathan (1991), O'Connor (1993), Raghunathan & Raghunathan (1994), Chan et al. (1998), Segars & Grover (1998), Kunnathur & Shi (2001)

Table 2.6 SISP Dimensions

Author(s)	Planning Aspect	Dimensions	Purpose
Lederer & Sethi (1991)	Process	Organisation, Implementation, Database, Cost and Hardware	Characterise SISP approaches in terms of the problem areas in conducting it.
Das et al. (1991)	Content	Distinctive competence, Information systems technology, Systems design & development, MIS infrastructure	Develop a framework for linking the content and process dimensions of SISP with competitive strategy.
	Process	Formality, Scope, Participation, Influence, Coordination	
Earl (1993)	Process Implementation	Business Led, Method-Driven, Administrative, Technological, Organisational	Develop a taxonomy of SISP experiences to provide a diagnostic tool for analysing and evaluating an organisation's experience with SISP.
Sabherwal & Tsoumpas (1993)	Context	Location, Environmental uncertainty, Size, Organisation structure, Sector, IS maturity, IS planning	(1) Examine the process leading to SIS applications; (2) Investigate how this process may be affected by contextual factors
	Process	Decision making processes, Design & development, Implementation	
Sambamurthy et al. (1993)	Context	Reliance on IT, Market heterogeneity, IT planning group's existing knowledge & experience, IT planning group's existing level of agreement	To examine how organisations should design IT planning systems to manage the conduct of their IT planning processes.
	Process	Information acquisition, Information distribution, Process comprehensiveness, Critical inquiry, Locus of authority	
Sabherwal & King (1995) (Following on from earlier 1992 study)	Content	Topic of decision making: Effect at the internal strategy level, Effect at the competitive strategy level	To develop a taxonomy of strategic IS decision processes and examines the conditions under which each process is used.
	Context	Context of the decision: The external environment (Dynamism, Heterogeneity, Hostility), The organisation (Centralisation, Formalisation, Size), The IS department (IS maturity)	
	Process	Attributes of the decision making process: Activities in the decision-making process (analysis, planning, incrementalism, politics), Influences in the decision making process (external influence, internal influence, top management influence, IS influence)	
Yasai-Ardekani & Haug (1997)	Context	Competitive pressures, Organisational complexity, Technological inflexibility, Low-cost orientation	Explore the effects of multiple contingencies on planning design dimensions
	Process	Formality, Size of effort, Sophistication, Top management involvement, Planning horizon	
Segars et al. (1998)	Process	Comprehensiveness, Formalisation, Focus, Participation, Consistency	(1) Theoretically develop & operationalise empirically dimensions of planning systems within the realm of SISP. (2) Test and reconcile "best performing" planning profiles.
Segars & Grover (1999)	Process	Comprehensiveness, Formalisation, Focus, Participation, Consistency	(1) Identify & describe profiles of SISP across multiple dimensions; (2) Assess the efficacy of these profiles across multiple dimensions of planning success.
	Effectiveness	Rational adaptation	

The discussion now turns to an examination of nine SISP methodologies adopted in this study. The critique begins with a discussion of the rationale behind their selection and a description of each model, concluding with a comparison of the models broadly based upon key SISP dimensions.

2.3.2 SISP METHODOLOGIES, METHODS AND APPROACHES

To perform SISP an organisation may follow one of several, similar well-defined and documented methodologies (Lederer & Sethi 1999). There is a plethora of IS methodologies in the literature, some 'proprietary' methods such as Method 1, Business Systems Planning (BSP) or Information Engineering while others are generally available techniques such as critical success factors and value chain analysis (see McNurlin & Sprague (1998) and Lederer & Sethi (1999) for a discussion of these different methodologies) and more recently sustainability analysis (Hidding 2001). No particular methodology dominates as each has its own set of strengths and weaknesses (Premkumar & King 1991; Finnegan & Fahy 1993). In this section a comparison of nine SISP approaches is provided namely, stages of growth, critical success factors, scenario planning, information technology assessment and adoption models, information economics, investment strategy analysis, linkage analysis planning, creative problem solving and enterprise modelling. These have been chosen as they are in wide use (see Lederer & Sethi 1988; Remenyi 1991; McNurlin & Sprague 1998; Ward & Peppard 2002), contain several contrasting features and appear most relevant for the purposes and objectives of this research, in that their primary focus is decision information.

2.3.2.1 STAGES OF GROWTH (SOG)

The stages of growth model (SOG) provides an explanatory framework for organisations to use in understanding the evolution of computer usage in separate stages from initiation, contagion, control to maturity. The original SOG model, developed by Nolan and Gibson (1974), had four stages: early successes, proliferation, control of proliferation and mature use. Nolan (1979) later extended the model into six stages, adding integration and data administration prior to maturity. In addition to data

processing (DP) expenditure, Nolan identified four major elements that could be analysed to place an organisation in the stages of growth model:

1. scope of applications, progressing from financial systems through to broader operational systems to management information systems;
2. focus of the DP department, progressing from centralised and inward looking to data resource management;
3. focus of DP planning and control from internal focus in first three stages to external focus in the latter three;
4. level of awareness, progressing from being driven by DP department, through driving DP to partnership in the final stages.

There are several criticisms of Nolan's model. First, there is difficulty in substantiating its claim to represent varying situations in different organisations, either in describing the phases of growth or as a means of predicting change (Benbasat et al. 1984; Gregoire & Lustman 1993). Secondly, reliance on database technology as an indicator serves to date the model (Galliers & Sutherland 1991). Thirdly, organisations have different learning curves with respect to different information technologies (Earl 1989). In addition, different parts of an organisation may be at different stages with respect to a particular information technology (Galliers & Sutherland 1991).

Despite these limitations, Nolan's model is considered seminal due to its influence it has had on IS theory and practice (Earl 1989). It has been further developed and modified by others (Galliers & Sutherland 1991). These later studies primarily addressed the simplistic and subjective assumptions of the original model and attempted to provide a more comprehensive and useful model by integrating the evolution of the IS functions with activities and organisational structures needed to support the IT growth stages, improving the organisational and management focus. However, while these subsequent models provide assistance to organisations in placing themselves within a particular stage of IT or IS planning maturity, there is difficulty in: incorporating sufficient indicators to enable individuals to firstly place their organisation in a particular stage, and; identifying the key issues associated with progressing through to subsequent stages. A review of one of these later models, Galliers and Sutherland's (1991) seven stages of growth model follows.

The Galliers and Sutherland (1991) seven stages of growth (7S SOG) model, comprises a matrix created through the application of McKinsey and Company's 'Seven Ss' elements. These elements, used in the analysis of organisational processes and management, are summarised in Table 2.7. The 7S SOG model has been found to be effective in "not only clarifying the location of each organisation in IT maturity terms, but also in providing insights into aspects of IS management and planning which appear to require particular attention" (Galliers & Sutherland 1991, 110).

Table 2.7: The Seven 'Ss'

Strategy	Plan or course of action leading to the allocation of a firm's scarce resources, over time, to reach identified goals
Structure	Characterisation of the organisation chart (ie. functional, decentralised etc)
Systems	Procedural reports and routine processes such as meeting formats
Staff	Description of important personnel categories within the firm
Style	Characterisation of how key managers behave in achieving the organisation's goals; also the cultural style of the organisation
Skills	Distinctive capabilities of key personnel in the firm as a whole
Superordinate goals	Shared values or culture of the organisation

[Source: Galliers & Sutherland (1991, 97)]

The key contributions of the 7S SOG model are seen by the authors as: focusing management attention onto a broad range of issues associated with the planning and management of information systems; surfacing assumptions and attitudes held by key executives about the role IT does and might play in achieving/supporting business objectives, and; providing an easily understood means of putting IS/IT management on the senior and middle management agenda (ibid 1991, 112).

While recognising the contribution of the model in providing a holistic view of information systems management, some difficulties have been identified in its application. First, the indicators for progression in the later stages are written in positive terms, suggesting that the model appears to have been developed from the perspective of the organisation in the middle stages. The authors acknowledge that the early stages appear negatively and present "an uninviting and somewhat derogatory picture of IT

utilisation and management” (ibid 1991, 98). The negative view is not considered representative of all organisations at these early stages as there also may be periods of optimism as organisations move into their initial IT experience. Second, database systems are no longer considered signs of sophisticated systems. Third, IS may be manual and/or IT based in systems stage one. Fourth, the gaps in the indicators of stages three and four provide limited assistance on direction in the middle stages. Fifth, the model appears to have been developed for large companies with multiple strategic business units. Sixth, the model presumes in-house development of systems, thereby not considering the common practice of purchasing commercial packages. Further, many systems may be integrated which is accompanied by a low level of sophistication in their usage. Finally, inter-organisational systems, such as EDI, may be used differently in different companies. For example, smaller companies may operate EDI via fax as opposed to complete integration found in larger companies. Notwithstanding such limitations, the framework assists in assessing, in broad terms, the current IS status within an organisation enabling questions to be raised regarding the feasibility and desirability of an IS (Galliers et al. 1995; Ward & Peppard 1996).

2.3.2.2 Critical Success Factors (CSF)

The Critical Success Factors (CSFs) method was developed by John Rockart and his colleagues at the Sloan School of Management, Massachusetts Institute of Technology, in 1977 (Rockart 1979). Critical success factors are defined as “those few things that must go well to ensure success for a manager or an organisation” and therefore are representative of key areas that need to be given special and continual attention to bring about high performance (Boynton & Zmud 1984). The methodology is a procedure that attempts to make explicit key areas that dictate managerial or organisational success (Boynton & Zmud 1984). CSFs are said to emerge from structured dialogues between a skilled CSF analyst and key executives. Rockart (1979) identified four major sources of CSFs, namely: industry, company, environment and temporal. Further, he found two types of CSFs. First, monitoring, which is keeping abreast of ongoing operations. Second, building, relating to tracking the progress of programs of change initiated by the executive.

The CSFs method focuses on individual managers and their information needs and can be applied as a means of supporting both IS planning and requirements analysis (Boynton & Zmud 1984). The purpose of the CSFs method is not to specifically develop a detailed set of requirements specifications, but rather to identify critical areas of concern and provide descriptions of information measures that reflect these critical areas (p. 17). CSFs may be used to direct an organisation's efforts in developing strategic plans as well as identifying critical issues associated with implementing a plan (p.18). There are various ways to use the CSF method (McNurlin & Sprague 1998). The analysis from the two case studies conducted by Boynton and Zmud (1984) suggested several guidelines on when, where and how to use CSFs.

Boynton and Zmud (1984) identified three principal areas of weakness with the CSF method. First, the CSF method is difficult to use. Discovering appropriate measures may be difficult and time consuming. Therefore, it is considered by the authors that a "skilled analyst" needs to direct the CSF method. However, it may be argued that this statement could apply to all IS methodologies. Second, the validity of the CSF method has been questioned because of the threat of bias introduced through the interview process. Third, the CSF method may yield an information model that is simple and thought provoking but not an accurate representation of the actual environment. The CSF method focuses on the information needs of individual actors rather than building up a set of core systems for the organisation. Further, it does not assist in building architecture or provide a plan.

Despite these criticisms, two key strengths of the CSF have been identified. First, the CSF method generates acceptance at the senior executive level. Engaging senior management's attention will assist in ensuring that the systems meet the most critical business needs (Rockart & Crescenzi 1984). Second, the CSF facilitates a structured, top-down planning process. It initially focuses on a key executive's critical issues, and then proceeds to refine the issues in a manner which allows for continuous examination for validity and completeness (Boynton & Zmud 1984).

Rockart and Crescenzi (1984) incorporated the CSF methodology into their three phase process model of engaging top management with information systems. The process was based on three major concepts. First, critical success factors, to engage management's

attention and ensure that the systems meet the most critical business needs. Secondly, decision scenarios, to demonstrate to management that the systems to be developed would aid materially in the decision making process. Incorporating scenario planning into strategic decision making is discussed further in the discussion following. Thirdly, prototyping, to allow management to quickly gather system results, which are to be part of the development process and minimise initial costs.

2.3.2.3 Scenario Planning (SP)

Scenario planning is a common technique for many types of planning and is often supported by computer based decision support systems (McNurlin & Sprague 1998). Schoemaker (1993a) posits that it has been incorporated into strategic decision making of numerous firms in response to increased uncertainty, interdependence and complexity such as with the emergence of new technologies. Scenario planning has been examined from different perspectives such as decision theoretic terms, psychological viewpoints, economic perspectives, business planning terms and from a forecasting angle (ibid 1993a, 194).

In SISP, scenario planning provides a way of managing assumptions by creating scenarios. It is considered a learning process that aims to create knowledge about how products, markets, industry and the economy may change and then integrating that knowledge into their decision making (Fahey 2000). Managers may create a range of possible or likely scenarios and select the one they believe most likely as the basis for long-range planning. The scenarios provide flexibility, whereby if a particular scenario is wrong other scenarios may be reconsidered. Therefore, this planning method may assist managers who are having difficulty in aligning strategies by providing various scenarios that may make them see major issues more clearly or allow them to reconsider areas which appear problematic. Further, by considering a range of scenarios, management assumptions and biases that are irrelevant may be highlighted and removed (McNurlin & Sprague 1998).

There are many different variables that may influence plans. The elements that need to be considered in scenario planning for IS include, the business environment, government and society, "people" changes, financial considerations and technology (McNurlin & Sprague 1998, 109-110). Schoemaker (1993a) characterised the process of

developing scenarios into ten steps: defining the scope; identifying the major stakeholders; identifying basic trends; identifying key uncertainties; constructing initial scenario themes; checking for consistency and plausibility; developing learning scenarios; identifying research needs; developing quantitative models; and, evolution toward decision scenarios.

The goal of scenario planning is to cover the widest range of possibilities and highlight competing perspectives or unexpected changes while focusing on interlinkages and the internal logic between each future. However, the major challenge that this method presents is creating a manageable number of scenarios that are believable from which plans can be developed (McNurlin & Sprague 1998).

2.3.2.4 Information Technology Assessment and Adoption (ITAA) Models (Huff and Munro)

Huff and Munro (1985) developed four separate models of the IT assessment and adoption (ITAA) process following a field study of 10 large Canadian private sector corporations. The models were based upon the relative emphasis placed by firms on business and technology issues. Business issues emphasis is considered a top-down process where issues have been determined by top management on the basis of business need through a formal planning process. Conversely, technology emphasis is a bottom-up process, which is driven by the identification of an interesting technology. Table 2.8 outlines the four models of ITAA, namely, issue driven, technology driven, opportunistic and normal ideal.

Table 2.8 Huff and Munro's (1985) Models of the processes in IT assessment and adoption

		Business Issues Emphasis	
		High	Low
Technology emphasis	High	Normative ideal	Technology driven
	Low	Issue Driven	Opportunistic

A discussion of each of these models follows, summarised in Table 2.9.

Table 2.9 Key elements of ITAA driving forces models

	Normative ideal	Issue driven	Technology driven	Opportunistic
ITAA process	Comprehensive assessment of both organisational issues and IT	Geared to corporate and systems planning process	Identification of an interesting technology	Falls between issue and technology driven models "learn-as-we-go"
Technological scanning	Assessment of hardware, systems software, applications software, communications, technical and user personnel and vendors and suppliers	Within the scope of each issue	Potential technological opportunities and options	Unorganised and not managed.
Key players	Business and IS managers and users	Small study team	Technical gatekeepers and analysts	IS management team and middle-led user managers
Approach	Comprehensive	"Top down"	"Bottom up"	"Middle-out"
Limitations	Very costly	Heavy expenditures	Large amount of organisational slack and flexibility required within the IS department	Important issue or technological solution may be overlooked or unseen

The normative ideal model represents the approach that fully rational firms with limited resource restrictions, (the "ideal" situation) should follow. Processes in this model include: assessment of current IS environment; assessment of future goals of organisation; assessment of current and future IS applications; forecasts of the availability of new technology; and, mapping of technology assessments to organisational needs. While the major strength of the normative ideal model, is that in principle it is comprehensive with respect to both IT and organisational issue, problems and opportunities, it is very costly with respect to the reviews required.

The issue driven model is geared to the corporate and systems planning processes, where the issues of current organisational importance are discussed, prioritised and eventually funded. Each issue that emerges from this planning process becomes a focal point in the search for solutions. A small study team is the mechanism for conducting the ITAA process, performing information searches via for example, literature, vendor contacts, internal gatekeepers, and counterparts in other organisations. The issue driven model is characterised as a "top down" approach in that the process starts with the

delineation and prioritisation of issues at the senior management level (for both corporate and systems planning) proceeding to more detailed levels of analysis. While there are heavy expenditures relating to planning activities, efficiencies are gained in the search for information regarding solutions as the issues are well focused.

In contrast to the previous model where thorough planning is an important activity, the ITAA sequence for this model, progresses from the identification of an “interesting technology”, often by individuals that in terms of their positions are relatively low in the organisation, to the location of an organisational problem to which it can be applied; that is a “bottom up” approach. The technology driven approach is thorough with respect to awareness of potential technological opportunities and options and in its scanning of technology information sources. Key players tend to be “technical gatekeepers” and analysts, as they generate ideas for new technology to be introduced to the organisation. The limitations with this approach is that important organisational issues may be overlooked, and that higher levels of slack are required in the IS department which could offset savings made in limited, if any, planning processes.

The ITAA process in the opportunistic model falls “somewhere between” the issues driven model and the technology driven model. Such organisations are seen as a “sea” of partially developed issues and partially investigated technology options, with neither playing a leading role. That is, the organisations are purposefully not comprehensive with respect to either their issue identification procedure (planning processes) or their technology identification procedure. On the occasions that a match between issue and technology occurs, it is to do more with serendipity than with deliberate decisions. There is a “learn-as-we-go” ethic common to these organisations, where the ITAA process is taken a step at a time, “feeling their way in a somewhat cautious relatively unstructured mode.” While this model is the lowest in terms of organisational overhead or need for flexibility and slack, a key problem is the risk that an important issue or technological solution is overlooked or unseen.

While these models describe the ITAA process in terms of the relative emphasis that organisations place on technology and organisational issues, they are limited in that they do not discuss why organisations place particular emphasis on one or the other or both, that is the context in which such decisions are made. Further, the ITAA processes are

viewed in terms of six phases, awareness, interest, evaluation, trial, implementation and diffusion, adapted from Rogers (1995) phase model of innovation. The limitation of the six phase model is that it is considered a linear process, which marginalises the impact of social and political processes.

2.3.2.5 Information Economics (IE)

The purpose of the Information Economics (IE) model proposed by Parker et al. (1989) is to develop a systematic approach to assess factors influencing the decision-making process of investment proposals. Factors inherent in the decision making process consist of three broad categories: economic benefits (eg. cost benefit analysis, ROI, IRR, NPV), value (eg. strategic match, competitive advantage, strategic IS architecture) and risk and uncertainty (eg. strategic uncertainty, organisational risk, IS infrastructure risk). While considered well chosen, Wiseman (1992), in their study of the adaptability of IE to organisations, calls for further research into the relevance of these factors.

Information economics applies a decision framework that separates the business justification for IT from the technology viability for the proposed application. While both are considered necessary, their measurements and considerations are considered to be separate and so determined separately. Parker et al. (1989) posit that the successful application of IT in a company is a complex process consisting of four different, distinct but related phases:

1. A common business and technology vision
2. Development of business ideas surrounding the IT application occurred
3. Business and information technology planning and decisions about applications and projects
4. Successful execution of the business and IT plans.

The authors explain that a large part of the literature in this area either focuses on phases 1 and 2, or 3 and 4, but not on the processes as a whole. The processes are considered to differ from company to company but will generally cover these four phases. While information economics is considered a decision process rather than an idea process, which comes from planning, it depends on having a planning process in place to produce the ideas and projects about which decisions are to be made. Consideration in developing a planning process that culminates in decisions are described ranging from

formal processes (eg. establishment of steering committees, long-range hardware and software plans, and data and communication architectures) and informal processes (eg. interaction between IS director with user management over time). Making decisions is intertwined with the planning process that creates the choices. Therefore, Parker et al (1989) emphasise the following four decision processes:

1. A decision process for deciding between one or more alternative investments.
2. A decision process that get line of business management involved; gets the management that makes fiscal investment decisions involved; and makes decisions based on business performance.
3. A decision process that seeks out the opportunities.
4. A framework for the implementation of the opportunities. This is the role of the IS blueprint and architectures and an implementation that includes, bottom-up project planning, steering committees, consensus, IS blueprint, and IS architecture.

IE has been applied in research such as the Management in the 90s program (Scott Morton 1991). It attempts to bridge the quantitative/qualitative divide, recognising “costs” in terms of strategic, technological uncertainty and organisational risk (Farbey et al. 1999). However, it is considered to be time-consuming to conduct and requires substantial expertise and resources (ibid, p. 189). Further, the model assumes that it is the planning process that initiates the decision processes from a common business and technology vision, ignoring for example, social and political pressures. A detailed critique of IE is provided by Willcocks (1994).

2.3.2.6 Investment Strategy Analysis (ISA)

Nolan, Norton and Co. (1985) (cf. McNurlin & Sprague 1998) developed an approach to assist organisations in planning their investment strategies for IS. The framework is based on portfolio and investment analysis (eg. McFarlan 1981). In using this analysis, Norton sees that there are four major types of applications:

1. Institutional procedures – processing of internal transactions
2. Professional support systems, such as engineering support, and managerial decision making support
3. Physical automation
4. Systems that serve external users such as customers and suppliers

In addition, there is also expenditure relating to basic technical infrastructures such as network protocols and database standards.

A matrix comprising portfolios (that is application areas) and users (functional components of business) is constructed to develop a framework for an investment strategy. Investment strategy analysis does not explicitly collect information on investment strategies. It is used, as a means of tracking how IS investment strategies change over time (McNurlin & Sprague 1998). The investment strategies become evident through data collection and discussions with executives. Analysing the investment in current technologies may assist in disclosing beliefs about investment. A disadvantage of this method is that there can be substantial differences in the ways that companies in the same industry may invest in IS. However, investment strategy analysis allows managers to observe where current IT investments are being made, and then make decisions as to where they should be made, in order to align the IT investments with the business strategy.

2.3.2.7 Linkage analysis planning (LAP)

Primozic et al. (1991) developed linkage analysis planning which is essentially a planning methodology with the goal of creating a strategy for utilising electronic channels by examining the links that organisations have with one another. The methodology is grounded in Porter's (1980, 1985) competitive forces model. There are five parts to linkage analysis planning which are outlined in Table 2.10.

The focus of this planning methodology is to determine which of the linkages are critical to organisational strategy. Defining external links and strategic alliances is a major objective in linkage analysis planning. Electronic channels are of particular importance in understanding how organisations share information, what information they decide to share and with whom they decide to share the information. These issues are of strategic significance in the context of inter-organisational systems and in the broader marketplace of electronic business. However, a limitation of the methodology is that understanding 'waves of innovation' and defining power relationships may be difficult due to political and cultural influences both within and between organisations. Further, linkage analysis is focused on producing a "strategic action" plan, which proceeds in a linear fashion.

Table 2.10 Parts of Linkage Analysis Planning

Part	Description
1. Identifying “waves of innovation”	Innovation and technology tend to evolve in the form of waves as: 1. reducing costs; 2. leveraging investments; 3. enhancing products and services; 4. enhancing executive decision making; and 5. reaching the consumer. The organisation assesses its position with respect to the waves of innovation as well as forming an understanding of the industry as a whole and the position of the competition. Bypassing a wave in an attempt to catch up with competition is considered difficult, risky and expensive. The waves are classified as concentrating on saving money (waves 1-2) or concentrating on making money and remaining in business (waves 3-5). The management implications inherent in the waves of technology lead to an analysis of how the management culture and philosophy of the organisation must change as it begins to innovate and use highly advanced technology. Further, business risk and technical risk need to be appropriately managed and understood.
2. Exploit experience curves	Analysis of experience curves provides a new lens to assist in determining how to exploit the trends that are the basis for the waves. Experience curves are connected, where each new curve represents fundamentally different technologies. It generally requires substantial risk in choosing the technology required to switch from one experience curve to another. The cost of converting to a new experience curve has many components including capital cost of production, management time, personal emotions and the cost of overcoming inertia. In addition to a purely cost-savings viewpoint, new technology allows the organisation to change the rules of competition, to significantly alter a process, to eliminate expensive functions, or to radically alter the structure of the industry when shifting from one experience curve to another.
3. Define power relationships	An analysis of changing industry power relationships is a tool for assessing an organisation’s competitiveness. Charts of key linkages are used to determine which of them are most important to the enterprise and to anticipate how they are likely to change and how technology can be used to redefine power relationships, such as through strategic business alliances. By examining and clearly understanding industry power relationships, top management can begin to have an understanding of how the enterprise must operate in the context of an “extended enterprise.”
4. Map out “extended enterprise”	Organisations need to have a clear understanding of how the enterprise interacts with external organisations. Through the use of an extended enterprise chart the organisation identifies the key parts of its extended enterprise, highlighting the key linkages that exist in the external environment. The organisation then learns how to manage these linkages. The creation of strategic advantage in the extended enterprise begins by establishing simple electronic channels that allow members of the extended enterprise to exchange business transactions with one another.
5. Plan electronic channels	Electronic channels constitute major tools for implementing and exploiting the extended enterprise. An important task is to identify the electronic channels that will be required for the enterprise to remain in business. Electronic channels are distinguishable from ‘simpler’ IOS from which they evolve, emphasising “information and knowledge rather than just data.” The information or knowledge manipulated by an electronic channel support system may constitute a primary product or service, or it might provide an ancillary service or a complementary enhancement to a primary product or service.

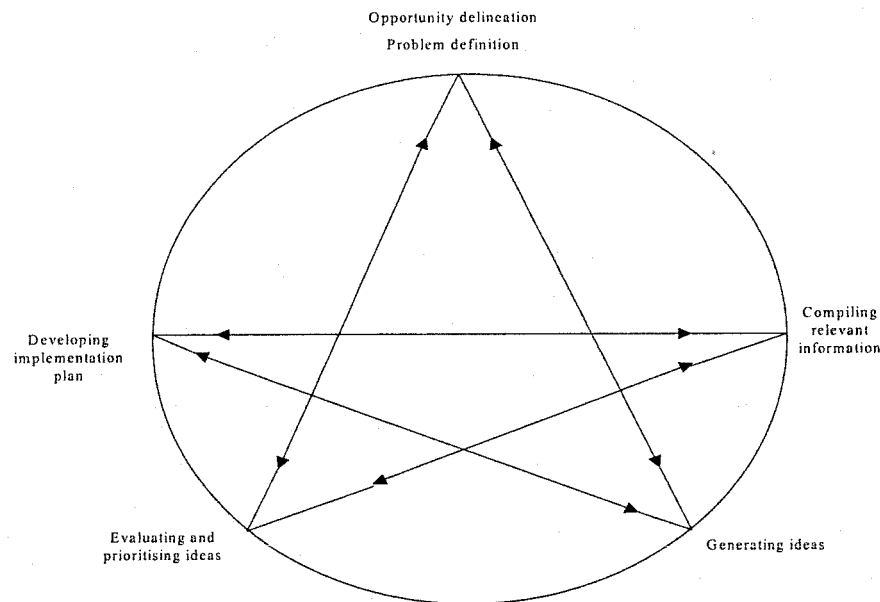
2.3.2.8 Creative problem-solving (CPS)

CPS approaches are procedures and techniques used to solve complete problems in “creative and innovative ways” (McNurlin & Sprague 1998). The approach captures parts of different methodologies, which are considered by Couger (1995, 1996) as variants of the framework for problem solving developed by Herbert Simon (1960) consisting of, intelligence, design and choice. There are generally five phases to this approach: fact finding, problem finding, idea finding, solution finding and acceptance finding (McNurlin & Sprague, 118). While many variants of CPS exist, the approach taken by Couger (1995, 1996) is discussed here as it has been incorporated into IS planning (McNurlin & Sprague 1998).

Couger (1995) made three refinements to the five phase model. Firstly, an additional opportunity identification step called “creative opportunity delineation and problem definition” was added. Couger (1995, 119) posited that equal emphasis should be given towards opportunity identification, as fact finding and compiling relevant information is considered a second phase for most opportunities and problems. However, Couger did highlight that there are situations where problems exist but have not been specifically identified and so some facts will need to be acquired and assessed before the problem definition can be developed. Further situations exist where not all phases are necessary and the solution may begin beyond phase one of the model. This later point leads to the second refinement, that is the nonlinearity and recursiveness of the model. Third, the CPS model was converted into a methodology by identifying a representative list of techniques to assist in each of the phases, such as transforming, problem reversal, and wishful thinking. Imagery, analogy and metaphor are advocated in the earlier phases of discovery (Couger 1996). A diagrammatic representation of the model is provided in Figure 2.2.

While this model assists in identifying problems it may be a time consuming process and would need to be facilitated by an individual or group that encouraged discussion and ensured the formulation of positive outcomes (McNurlin & Sprague 1998).

Figure 2.2 Couger (1995) – alternate portrayal of the CPS model showing that stages do not necessarily occur in sequence



2.3.2.9 Enterprise modelling (EM)

This modelling approach (see McNurlin & Sprague 1998) is focussed at the enterprise level and where necessary draws together several techniques and methods. The UTM case that illustrates enterprise modelling uses general planning techniques as its foundation and so therefore may be applied by an organisation. The work on the enterprise model has led UTM to address four important issues:

1. reshaping business processes through IT
2. aligning IS and corporate goals
3. instituting cross-functional systems
4. utilising data

The enterprise model in the UTM case study has provided a foundation for building long-range IS plans and has facilitated alignment of the IS plan with the business plan. The purpose of the model's integration blueprint is to enable IS managers to supply general management with concise, timely and accurate information to support their

decision making process. Further, the enterprise model is used to assist in developing a culture through improved teamwork and communications within and between departments (McNurlin & Sprague 1998).

While there are a number of positive outcomes illustrated in the UTM case, the enterprise modelling approach would require significant resources in time, people and capital. Forming and managing teams and initiating actual change processes may be hindered to some degree by organisational "inertia." Further, mapping all the business processes to systems and defining target system architectures would require careful coordination and expertise to ensure that all interrelationships and IT requirements are defined. The exclusion of any major process, system or relationship could prove to be extremely costly in terms of time and financial resources (McNurlin & Sprague 1998).

2.3.3 PLANNING SYSTEM DIMENSIONS AND SISP METHODOLOGIES: A FRAMEWORK

Studies that have investigated planning practices used by organisations (such as Lederer & Sethi 1988; Premkumar & King 1991; Earl 1993; Finnegan & Fahy 1993) have generally found that no particular methodology dominates as they have different objectives (Earl 1989, 40) with their own set of strengths and weaknesses (Lederer & Sethi 1991) that may fit better in different contexts (Earl 1993). Therefore, in performing SISP an organisation may apply one or more of existing methodologies or create its own (Lederer & Sethi 1991). However, with the emphasis placed on the development and description of frameworks and methodologies in the SISP literature, there has been a propensity to conceptualise the planning process as a choice of known methodologies (Segars et al. 1998). While there are useful insights to be gained from examining the types of environments and organisations in which particular planning tools and techniques are used effectively (or not), this approach is limited in that aspects of the SISP process that may determine how planning occurs and techniques implemented are not considered (ibid 1998).

As discussed in section 2.3.1, SISP dimensions are a function of managerial values, beliefs and experiences and so represent “planning infrastructures upon which tools, techniques and methodologies are adopted” (Segars et al. 1998, 304). Therefore, searching for themes that characterise planning in practice and contrasting these efforts with characteristics of existing SISP models (Lederer & Sethi 1991) may assist planners in selecting or creating a methodology. However, the researcher acknowledges that there is a limitation in this approach as the outcomes from using planning frameworks may differ to what was initially intended, that is there may be a difference between “intended” and “realised” strategies (Venkatraman 1989).

A framework of dimensions that captures the range of dimensions outlined in Table 2.6, is the well researched McKinsey 7s model (strategy, structure, systems, style, skills, superordinate goals) (Galliers & Sutherland 1991; Ward & Peppard 2002), discussed above in section 2.3.2.1. This framework of dimensions is useful in that it provides an organisational perspective with respect to the planning and management of IS. In Table 2.11 a comparison of the SISP methodologies, discussed in section 2.3.2, is provided based on this framework. While conceding that this framework can not like all models encompass every aspect that may be relevant, within this limitation it provides a useful method to structure dialogue.

So far in this discussion SISP has been examined in terms of its attributes, characteristics or dimensions as well as common methodologies and tools. An overarching aspect of strategy process is the nature of the process itself (Earl 1993). The SISP methodologies described above tend to adopt a mechanistic approach where strategy is the result of a “systematic stepwise process, consisting of right people in the right positions, one group being the engine and another group manipulating the steering wheel” (Smits et al. 1997). The following section 2.3.4 provides a brief discussion of the theoretical perspectives that have been influential in the development of IS planning models, for the purpose of highlighting alternative approaches that stress counter rational realities.

Table 2.11 SISP methodologies and Dimensions

SISP methodology	Strategy	Structure	Systems	Staff	Style	Skills	Superordinate goals
7S Stages of growth (SOG)	✓	✓	✓	✓	✓	✓	✓
Critical Success Factors (CSF)		✓	✓	✓			
Scenario Planning (SP)		✓	✓				
IT Assessment & Adoption (ITAA) • normative • issue • technology • opportunistic	✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓ ✓			
Information Economics (IE)		✓	✓				
Investment Strategy Analysis (ISA)	✓	✓	✓				
Linkage analysis (LAP)	✓	✓		✓			✓
Creative problem-solving (CPS)				✓			
Enterprise modelling (EM)	✓	✓	✓				✓

2.3.4 ALTERNATE VIEWS ON STRATEGIC PRACTICE

The nature and prescribed patterns of strategic planning systems identified within the strategic management literature have been drawn upon in SISP research as a means of building a solid foundation for structuring and testing similar concepts (Segars et al. 1998). Therefore, analogous phases in the development of alternate perspectives of the strategy process in the strategic management literature may be identified in the IS literature (Burn 1993) albeit not as fully developed in some areas (Segars et al. 1998).

The earlier phases were characterised by the classical rational approach emphasising the design of individual strategy models and functional approaches, such as Nolan's (1979) stages of growth model and the critical success factor model (Rockart 1979), followed by Porter's work (1980, 1985) which whilst still prescriptive focused on the competitive position of the firm in its industry when selecting one model from several generic classifications (Burn 1993). Parallel to the development of formal strategic processes, was the power-behaviour approach to strategy where the focus was on social context rather than the analytic process (ibid 1993). This pluralist perspective views organisations as "plural social systems" (Burns 1969 cf Fincham & Roslender 1995) encompassing rational and political action, such as Cyert and March's (1963) bounded rationality, Child's (1972) concept of strategic choice and Pettigrew's (1973) contested choices of dominant coalitions in organisational environments where social/political behaviour is closely representative of organisational decisions making (Burns 1993).

The phase of incrementalism (for eg. Quinn 1980; Mintzberg 1979) followed by the steady emergence of the idea that places strategy formulation in the context of a broader holistic analysis (for eg. Miles and Snow 1978; Pettigrew 1985; Mintzberg 1987, 1991, 1994) were informed by critiques of decision making emphasising "counter-rational realities" (Fincham & Roslender 1995). Mintzberg and Quinn (1991) rejected mechanistic distinctions between strategy formulation and implementation instead viewing them as complex intertwined processes in which management styles, cultures, values and politics shape strategic action. Outcomes are influenced by strategy and structure combined in "complicated ways" (ibid 1991, xvii). Therefore strategies are considered "formed" rather than "formulated" and "crafted" rather than "planned" (ibid 1991), which relates to Mintzberg's own notions of emergent strategy (Mintzberg et al. 1976; Mintzberg & Waters 1982, 1985) capturing both the component parts of strategy

as well as the context (Burn 1993). These transitions follow patterns suggestive of different organisational configurations with distinguishing characteristics (Burns 1993) such as Miles and Snow's (1978) prospectors, defenders, reactors and analyzers.

Similar to incrementalism in the strategic management literature is a contingency based approach in the IS literature (eg. Parker et al. 1989; Earl 1989). This approach suggests that different stages of growth in the use and development of IS require different approaches to strategy, that is planning is a rational response to the evolving IS environment (Burn 1993). While this viewpoint offers a plethora of IS strategy frameworks from which to choose, guidance on selecting a method is often inadequate (ibid 1993). The broader contextualist view in the IS literature has received minimal attention relative to the general strategy literature. Studies such as Sabherwal and King (1992, 1995) adopted a formal rational view in examining the contingency effects of the subject matter and contextual factors on SIS decision processes. In examining the practice of IS strategy in three organisations, Walsham (1993) adopted an alternate to rationalist understanding viewing strategy as part of the enactment process in that organisational members are considered to form or enact their environments, in keeping with Weick's (1969) enactment theory. Further, the strategy process was characterised by political conflict at all stages, influenced by Pettigrew's (1985) work. Ciborra's (1994, 21) analysis of four cases showed how the strategic application of IT can be the "result of tinkering, bricolage, bubbling up of new ideas from the bottom of the organisation ..." and so requires a different style of planning, "more germane to prototyping, learning and intervention, than to the structured analysis of a business strategy..." That is, competition may more closely reflect a process of innovation in product, market or technology than the structure of the industry within which firms operate or their unique strengths or capabilities (ibid 1994, 9).

While there is no accepted classification scheme of strategic processes, the above discussion illustrates how strategy researchers have emphasised planning decision processes, from a variety of perspectives and approaches that broadly represent four schools of thought namely: (1) rational and bounded rationality models, (2) process and trial and error type models; (3) political and coalitional models; and (4) anarchy, garbage can and serendipitous type models (Choo 1998). These schools of thought are discussed in detail in section 3.4.2 of Chapter Three as part of the theoretical framework of this study.

2.3.5 KEY ISSUES AND IMPLICATIONS

While extensive research has been conducted regarding SISP, the review revealed that a large proportion of the literature emphasises analytical tools, frameworks and techniques designed to assist IS planners in formulating strategies and plans, aligning their strategies with those of the business, identifying opportunities to utilise information technologies (IT) for competitive advantage, and, evaluating the adequacy of the SISP process. Further, some of these methods have become the basis for characterising the entire process of SISP, which unnecessarily narrow the types of processes, actions and behaviours generated by and surrounding SISP (Sambamurthy et al. 1993; Grover et al. 1998; Cunningham 2001). These issues are discussed under three broad headings, namely, the purpose, scope and domain of SISP.

2.3.5.1 PURPOSE OF SISP

The literature tends to adopt a broad dichotomous view of SISP (Lederer & Sethi 1988). That is, on one side of the dichotomy it is used to assist organisations in aligning IS strategies with their business strategies. On the other side of the dichotomy SISP may assist in organisations in searching for applications that will have a high impact on organisational strategies and the ability to create a competitive advantage (ibid 1988). While there are merits in focussing on these issues, limited attention has been explicitly given towards adoption decision processes (eg. Rockart & Crescenzi 1984, Huff & Munro 1985, Parker et al. 1989; Sabherwal & King 1995), the factors that influence these processes and the circumstances and organisational contexts under which such decisions are made (Bacon 1992; Farbey et al. 1992; Sabherwal & King 1992, 1995; Elliot 1996; Wilcocks & Lester 1996; Fletcher & Wright 1997; Chou et al. 1998). Details of the latter group of studies, are provided in Table 2.12.

The literature outlined in Table 2.12 focuses on two areas of SIS decision making. The first examines episodes in strategic IS adoption decisions, such as the evaluation of strategic IS/IT investments (Bacon 1992; Farbey et al. 1992; Willcox & Lester 1996), (itself a part of a broader literature base regarding IT evaluation - see for eg. Ballantine et al. 1999; Bannister & Remenyi 2000) and the identification and approval of strategic IS applications (Sabherwal & King 1992, 1995). The second focuses on the relationship of the decision making process with its context (Sabherwal & King 1992; Elliot 1996; Fletcher & Wright 1997; Chou et al. 1998). While this literature provides valuable insight into SIS adoption decisions, it is limited in that it is grounded in positivistic assumptions, thereby discounting the meanings and values assigned to such decisions and the interplay between social, cultural and political processes.

Table 2.12 SIS adoption factors and processes

Author	Theoretical Focus	Method	Research Sample	Key Findings
Bacon (1992)	Use of management, financial and development decision criteria in allocating strategic IS investments	Survey	80 companies in USA, UK, Australia & New Zealand	Management criteria to support explicit business objectives was ranked the highest followed by the financial criteria internal rate of return. Commonality amongst decision making factors was found according to the size of organisations and across several industry sectors.
Farbey et al. (1992)	The investment decision process and evaluation techniques used to justify investments in IT – how projects had been evaluated.	Field survey - Structured interviews	16 IT projects	No consistent cost justification applied, and few evaluation techniques were used to justify investment. Marginally more than 50% of organisations had a formal justification procedure.
Sabherwal & King (1992, 1995)	Decision processes for developing strategic applications of information systems – identification of strategic opportunities.	Survey	Single informants from 85 organisations	<p>Depending on the conditions, different strategic IS decision making processes were used, namely:</p> <ul style="list-style-type: none"> • planned • provincial • incremental • fluid • political <p>Factors affecting the decision making processes:</p> <ul style="list-style-type: none"> • environmental dynamism, • environmental heterogeneity, • environmental hostility, • centralisation, • formalisation, • organisations size, • IS maturity, • effect at internal strategy level, • effect at competitive strategy level.

Author	Theoretical Focus	Method	Research Sample	Key Findings
Elliot (1996)	Applicability of Western models of IT adoption to Chinese business organisations.	Case study	Four firms in banking industry	The first and second most important factors by the banks were business requirements and financial returns consistent with Western models. Secondly, the major processes identified are consistent with Western models of processes of IT assessment and adoption, with elements of each of Huff & Munro's (1985) models present.
Willcocks & Lester (1996)	Evaluating IT investments at the feasibility stage and subsequent stages of the development cycle	Survey	50 organisations	There were considerable problems with the evaluation process, financial criteria were used predominately during evaluation, evaluation is more prevalent during feasibility.
Fletcher & Wright (1997)	Strategic & organisational determinants of the adoption & sophistication of IS	Survey	86 companies in UK financial service industry	Organisational context appeared to be of greater importance in the decision to adopt than the strategic context.
Chou et al (1998)	Impact of IT intensity in strategic investment decisions	Survey	Taiwanese firms (number not specified)	A higher IT involvement in a strategic investment decision is likely to be associated with the reduced effectiveness of strategic investment decisions.

2.3.5.2 SCOPE OF SISP: MEANS AND ENDS

SISP methodologies have a different focus and/or emphasise different processes in conducting SISP as discussed in sections 2.3.2 and 2.3.3. Underlying these models are economic and technological imperatives, which assume some sort of Darwinian natural evolution towards some competitive advantage or efficiency and effectiveness. Such perspectives proceed from a position of methodological individualism that deny the very reality of the institutions and organisations being explained (Pfeffer 1997). Further, variations in SISP content and process dimensions between different organisations are explained in terms of organisational characteristics (for eg. size and structure), organisational adaptation to the environment (for eg. Miles & Snow's (1978) strategic orientation typology), and environmental characteristics (for eg. environmental uncertainty and hostility). SISP is a complex process occurring in organisational environments that are inherently social and relational entities that may be conceived in a variety of ways (Walsham & Han 1993). Existing models provide limited "representations" of the realities of these processes (Doyle 1991), which may explain the mixed views within the literature regarding the value of formal IS planning methodologies (Sabherwal & King 1995) and why many IS applications result from informal processes (Huff & Munro 1985).

2.3.5.3 THE DOMAIN OF SISP

From a definitional perspective, most of the SISP research takes a normatively rational approach defining it in terms of 'long to medium' impacts on business activities, which is decided by the highest levels of management in locating the organisation in changing markets. The temporal view may be problematic in the context of changing business and technological environments, as it suggests that SISP frameworks will be as "true tomorrow as they are today" (Doyle 1991). By following these models, it may be difficult to make the distinction at the crucial initial stages of IS-based innovations where the ultimate scope and effects of the IS (such as e-business systems) are by definition uncertain (Ciborra 1993). Further, this view suggests that top management are capable of recognising the need for and value of the technology and are able to select the specific technologies necessary for achieving competitive advantage (Fincham & Roslender 1995).

Finally, classification systems based on strategic/non-strategic schema are powerful methods of ordering organisational realities, which not only shape the management of particular activities, such as cueing particular decision criteria, but also supplying retrospective legitimisation (Scarbrough 1996, 1997). Making distinctions on this basis may result in the organisational processes involved in arriving at such a distinction being bypassed as the “the attribution of strategic status is primarily a social construct,” involving interactions between different expert groups (Scarbrough 1997, 172). Alternative approaches, where the pursuit of meaning and understanding is seen as subjective and knowledge as a social construction (Walsham 1993; Walsham & Waema 1994), may assist in understanding divergent views of strategy, such as those that consider it as a plan, ploy, pattern, position (Mintzberg et al. 1998) or accident (Ciborra 1994).

2.4 CONCLUSION

The review of the three bodies of literature above revealed the following. Firstly, the piecemeal nature of the e-business literature showed a general lack of theoretical grounding and the theories that do exist are far from being conclusively supported or refuted. Further, e-business has been widely promoted as the essential way of doing business, just as some would argue that EDI was to be the way that all inter-organisational transactions were to be executed and electronic markets would create efficient market structures. However, while it may have a significant role to play it may not meet all trading requirements nor provide competitive advantage to all business (Whiteley 1998). Therefore, a deeper empirical understanding of the rationale of its adoption which, in addition to technological and economic issues, provides an understanding of the organisational fabric required to support the system and the complexity of the social system within which these systems exist (Nath et. al 1998) would prove useful (Whiteley 1998; Mahadevan 2000; Plouffe et al. 2001).

As a predecessor in the field of e-business, the IOS literature provided “relevant lessons” (Galliers 1999), revealing a number of factors, which influenced its adoption, incorporating technological, organisational and inter-organisational factors. However, there have been limited studies to date that have examined the planning process for IOS, requiring the alignment of business and IT strategies with collaborating companies

(Galliers 1999). The SISP literature has been recognised as both relevant and potentially helpful to organisations in implementing IOS to gain the advantages they seek from such an investment (Galliers et al. 1995).

Considering the breadth and depth of research on SISP the volume of research concerned with the process of making (specifically) SIS adoption decisions is minimal. Similar calls for further research and a general theoretical or organising framework to investigate IT adoption decisions has been raised in the IS innovation literature (Moore & Benbasat 1991; Grover et al. 1997; Harrison et al 1997); discussed in Chapter Three. The SISP literature is also characterised by a proliferating variety of frameworks and techniques with sweeping assumptions of managerial rationality based on “objectively” defined business and technological contingencies (Scarbrough 1996, 1997). As will be discussed further in Chapter Three, the way decision makers make strategic IS decisions may be more subtle or accidental, as posited by Ciborra (1994). Therefore, existing models may be inconsistent with actual planning activities and impractical to adopt. To assist in advancing knowledge about these complex decision making processes a different approach to understanding the situation may be needed, that is a model that focuses upon sequences of incidents, activities and actions as they unfold and situated in their social and organisational contexts. Further, by documenting the SISP process for the adoption of e-business as it actually is the researcher may contrast these descriptive efforts with existing models found in the SISP literature. The results could assist organisations manage and execute SISP efforts and strengthen decisions regarding the adoption of e-business. In order to move towards a further understanding of this process, I now turn to a detailed examination in Chapter Three of alternative theories used in developing the theoretical framework for this study.

CHAPTER THREE

THE THEORETICAL FRAMEWORK: A CONCEPTUAL PLATFORM BUILT ON MULTIPLE DISCIPLINES AND PERSPECTIVES

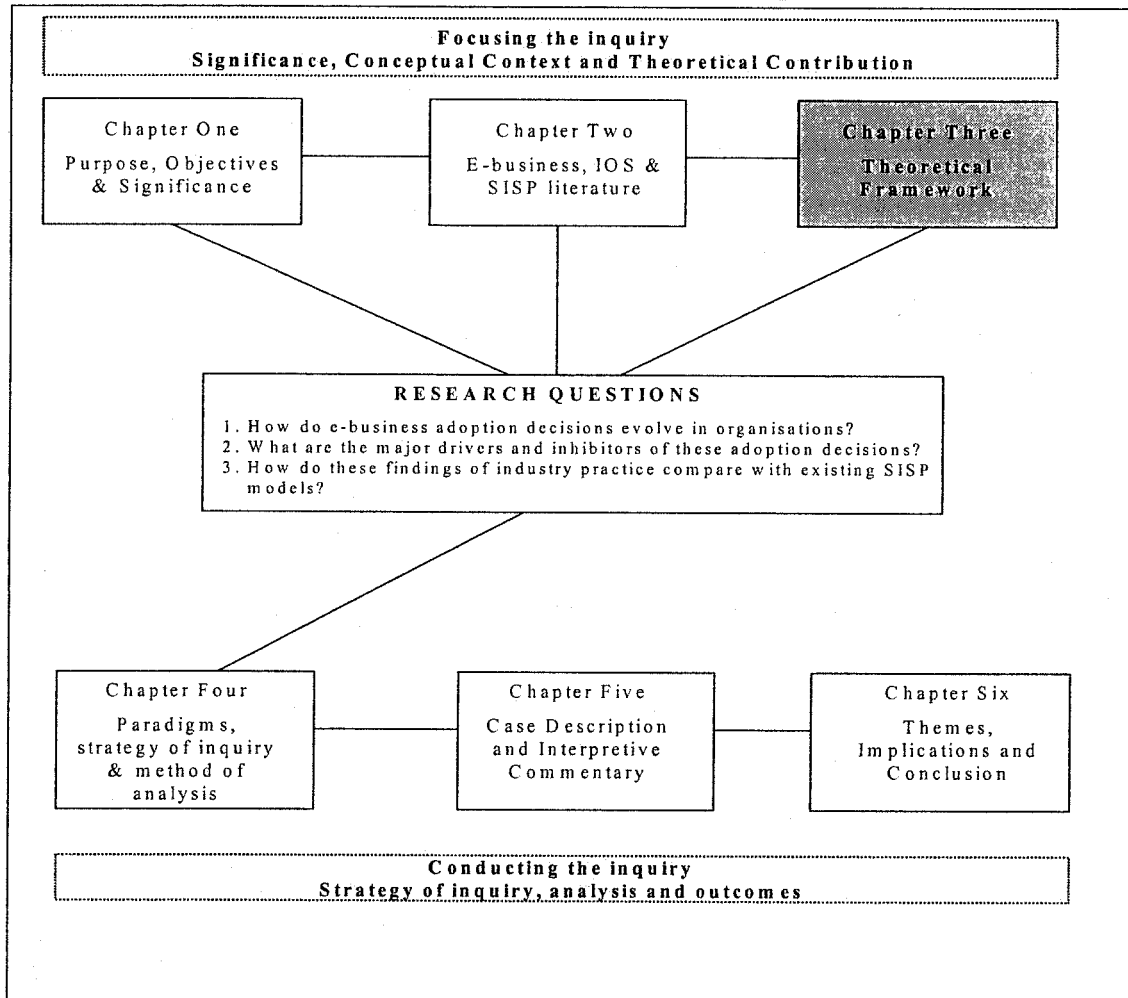
3.0 INTRODUCTION

Chapter Three forms the second part of the conceptual context of this study, as illustrated in Figure 3.1. The critical review of existing theories and research in Chapter Two, illuminated the ideological hegemony, unanswered questions and contradictions in existing ideas, laying the foundations for constructing theory that will best inform this study. Therefore, the purpose of Chapter Three is to construct the theoretical framework around which this study is based, providing an "alternate" theory of what is happening and why (Maxwell 1996) and in doing so revealing new insights and a broader understanding of SIS adoption decision processes. To achieve this objective, the theoretical framework brings together various strands of research and synthesises the issues raised in the organisation, strategic management, innovation and network literature, with a view of developing a conceptual template driven by different "conceptual motors" (Van de Ven & Poole 1995) that captures varying interpretations and the realities of social contexts to assist in examining e-business adoption decisions in organisations. Therefore, combined with Chapter Two, this chapter informs the research design in: supporting the importance of the study's focus; developing a theoretical framework that is more holistic than previous work discussed in Chapter Two in terms of its consideration of the whole adoption process and range of contextual issues from multiple disciplines; yielding cogent constructs and concepts; developing relevant research questions; and, identifying appropriate methods of investigation and potential validity threats to the conclusions.

The chapter is divided into five major sections. The first section (section 3.1) begins with a review of the meta-theoretical orientation of the proposed theoretical framework. On the basis of a multi-disciplinary literature review, the second (section 3.2), third (section 3.3) and fourth (section 3.4) sections outline theories which are categorised into three broad perspectives, namely socio-technical, socio-economic, and strategic choice/decision making which cross-cut varying intellectual traditions and schools of thought. In the final section 3.5, the theoretical perspectives are utilised in the construction of the

theoretical framework, which is used to guide the development of explanations during data collection and analysis; whilst remaining sensitive to events and relationships that do not fit the analytic abstraction.

Figure 3.1 Schema of Chapters: Chapter Three



3.1 META-THEORETICAL ORIENTATION: BROAD THEORETICAL PERSPECTIVES

While the philosophical assumptions underpinning this study, are broadly grounded in a relativist ontological and subjectivist epistemological position, the proposed framework uses a range of theoretical perspectives to widen the scope of inquiry and integrate knowledge derived from research that spans disciplines and methodologies. As discussed in Chapter Two, e-business is a relatively new area with transforming capabilities for organisations. Therefore a broad range of knowledge is needed requiring multiple methodologies some theoretic and some instrumental to capture that reality. To

use a single research perspective would be unnecessarily restrictive, and fail to capture rich insights gained from studying the relationships between information technology, people, and organisations (Orlikowski & Baroudi 1991; Landry & Banville 1992). Therefore the interplay between different perspectives assists in gaining a more comprehensive understanding of SISP for the adoption of e-business as “any one theoretical perspective invariably offers only a partial account of a complex phenomenon” (Van de Ven & Poole 1995). The multiple perspectives brought to this study allow context and technology to be treated symmetrically, thereby differentiating it from context oriented and technology oriented disciplines, such as management and computer science (Vidgen & McMaster 1996). However, in using multiple perspectives, the intent is not to advocate the superiority of any one theory but to argue that theoretical integration is necessary for the full comprehension of e-business adoption decisions.

Adopting a multiple perspective does not necessarily remove the problem of ignored aspects in a study, “as a way of seeing is also way of not seeing” (Poggie 1965 cf. Knights & Willmott 1992). However, it does assist in exposing more aspects than a single perspective would present (Hatch 1997, 34). The juxtaposition of different theoretical perspectives provides opportunities to examine divergent and contrasting views so that new theories have “stronger and broader explanatory power than the initial perspectives” (Van de Ven & Poole 1995). However, while integration is desirable it needs to preserve the distinctiveness of individual alternative theories. Theories may be built on a variety of perspectives, assumptions and concepts, which may compete or conflict with each other resulting in uncertainty, ambiguity, contradiction and paradox (Hatch 1997, 49). Ackroyd (1992) posits that while different theoretical perspective or paradigms may be irreconcilable at a philosophical level, they may not be incommensurable when applied to the study of organisational phenomena. Further, Van de Ven and Poole (1995) contend that integration of different perspectives is possible if they are considered as providing alternative pictures of the same organisational processes without “nullifying” each other. By identifying the viewpoint from which each theory applies and the circumstances of their inter-relationship it is possible to preserve the authenticity of distinct theoretical areas, while advancing theory building (Markus & Robey 1988; Van de Ven & Poole 1995). Without an attempt to draw upon

and reconcile the insights offered by various perspectives, research may run the "serious risk of becoming little more than an arena of 'clashing cymbals' (or indeed symbols), making little real theoretical advance and having nothing useful to say for practice" (Child 1997).

As shown in Table 3.1, the two focal areas of this study, SISP and the adoption of e-business, discussed in Chapter Two, connect three core disciplines of organisations, strategic management and information systems. The three perspectives, socio-technical, socio-economic and strategic/organisational decision making, applied to the two focal areas, cross-cut the three disciplinary areas. The term perspective is used since in each case "a number of varying approaches that bear a strong family resemblance" are considered rather than dealing with a single unified model (Scott 2003, 30). Therefore the notion of perspective serves as a "conceptual umbrella" under which related views are gathered (ibid 2003). The examination of the three perspectives commences in section 3.2 with a discussion of the schools of thought that exemplify the social technical perspective followed by the socio-economic (section 3.3) and strategic/organisational decision making perspectives (section 3.4). Thus, each perspective offers insight into the e-business adoption decision processes. That is, technological systems and non technical structures are seen as socio-technical networks shaping social and technical arrangements, for example, an IS or organisational routine. These socio-technical webs of relations are seen to be embedded in socio-economic contexts, where the final form and content of the technologies are defined in terms of social, political and economic interests. Finally, these relations and interests are seen to act as reference points for key actors within the organisation in making choices and decisions about the adoption of e-business. These perspectives partially overlap, partially complement and partially conflict with one another. That is, there are "varied portraits painted by the theorists embracing each of the conceptions" each having its "own charms as well as blemishes" and carrying its "own truths and biases" (ibid 2003).

Utilising the theories outlined in Table 3.1 and the more general perspectives with which they are associated, provides the scaffolding to conceptually locate a number of theoretical viewpoints in a broader analytic framework, discussed further in section 3.5. The theoretical framework brings together multiple theories to provide a rich analysis of the context in which e-business adoption decisions are made, how they are made, as

well as the meaning, capabilities, uses, properties and recursive transformations of e-business, and how it becomes interdependent with socio-economic contexts and adoption decisions processes. The latter issue is identified by Orlikowski and Iacono (2001) as a key area because IT artifacts have tended to be taken for granted in IS studies limiting “our ability as researchers to understand many of their critical implications.”

Table 3.1 Three broad perspectives: Socio-Technical, Socio-Economic and Strategic Choice/Decision Making

FOCAL AREAS OF INVESTIGATION <ul style="list-style-type: none"> • SISP (Chapter 2 Section 2.3) • Adoption of e-business (Chapter 2, Sections 2.1 and 2.2) 	
DISCIPLINES <ul style="list-style-type: none"> • Organisations • Strategic Management • Information Systems 	
PERSPECTIVES <ul style="list-style-type: none"> • Socio-Technical (Section 3.2) • Socio-Economic (Section 3.3) • Strategic/Organisational decision making (Section 3.4) 	
REPRESENTATIVE THEORIES THAT EXEMPLIFY THE PERSPECTIVES	
Socio-Technical (Section 3.2) <ul style="list-style-type: none"> • Social construction of technology (eg. Pinch & Bijker 1987) • Actor network theory (eg. Callon 1980; Latour 1987; Law 1991a) • Innovation and IS adoption models (eg. Davies et al. 1989; Rogers 1995) 	(Eg. Walsham 1993)
Socio-economic (Section 3.3) <ul style="list-style-type: none"> • Institutional theory (eg. Scott 1995) • Resource dependency theory (eg. Pfeffer & Salancik 1978) • Social network theory (eg. Granovetter 1973) 	↑ Structuration theory (Giddens 1979, 1984) Actions & institutions are recursively related ↓
Strategic choice/Organisational decision making perspective (Section 3.4) <ul style="list-style-type: none"> • Strategic choice theory (eg. Childs 1972) • Rational and bounded rationality models (eg. March & Simon 1958) • Process/Trial & Error models (eg. Mintzberg et al. 1976) • Politics and power models (eg. Allison 1971) • Garbage can/anarchy models (eg. Cohen et al. 1972; Ciborra 1994) 	(eg. Whittington 1992)

While there are debates surrounding the diversity in IS research relating to problems researched and the underlying theoretical perspectives and research methods used (see Benbasat & Weber 1996; Robey 1996), the research perspectives adopted in the proposed framework pursue distinct avenues of research that are consistent with existing general theoretical paradigms in IS research. The concentration of different theoretical perspectives in a research domain highlights opportunities for cross perspective dialogue and learning (Oliver & Ebers 1998). Such views are resonated by commentators such as Orlikowski and Barley (2001) in their call for the “intellectual engagement” and “fusion of perspectives” in the fields of information technology and organisation studies, “a fusion more carefully attuned to explaining the nature and consequences of the techno-social phenomena that increasingly pervade our lives” rather than simply as a “matter of enrichment.” The following discussion in section 3.2 provides a review of the socio-technical perspective adopted in the theoretical framework, which is broadly grounded in social constructionism.

3.2 SOCIAL CONSTRUCTIVISM AND TECHNOLOGY: THE SOCIAL CONSTRUCTION OF TECHNOLOGY (SCOT), ACTOR-NETWORK THEORY (ANT) AND INNOVATION

Social constructionists have criticised the notion that the form of technologies is fixed and is derived from an immutable technical logic where technology determines or forces changes in the social system (McLoughlin 1999, 103). The aim of the social constructionist’s mode of inquiry is to carefully examine the artefacts and varieties of technical knowledge in question as well as the social actors whose activities affect their development, rather than employing broad gauged notions of technological determinism or imperatives (Winner 1993). The social constructionist perspective uses the ‘black box’ metaphor to highlight the socially contingent form of technology itself, extending the analysis to both the context of the design and development of technology as well as its ‘technical’ content (McLoughlin 1999, 103).

The origins of the constructionist approach to technology may be traced back, whilst not exclusively, to the developments in the 1970s and 1980s of the sociology of scientific knowledge (SSK) (see Pinch & Bijker 1987). A particular objective of the SSK approach was to show how knowledge could be understood and explained as a social construct, “that is, explanations for the genesis, acceptance, and rejection of knowledge claims are sought in the domain of the social world rather than the natural world” (p. 18). Since the 1980s attention by some of the SSK community has turned towards the social construction of technological knowledge embodied in individual artefacts and systems (McLoughlin 1999, 90). Technology is regarded as “congealed social relations” (Latour 1991) and social and cultural products open to social analysis, “not just in their usage but especially with respect to their design and technical content” (Bijker et al. 1987, 4). While the “turn to technology” has been described by some commentators as “intellectual slumming” (Woolgar 1991), technologies as diverse as electrical power networks, the bicycle, missile guidance systems and communication technologies (see Fulk 1993) have been studied from this perspective.

From a social constructionist perspective, the key questions are not concerned with the social effects of the ‘machine-like’ characteristics and capabilities of a particular technology, technological paradigm or trajectories of technological development (McLoughlin 1999, 91). The social constructionists interpretation of technology emphasises contingency and choice rather than forces of necessity in the history of technology (Winner 1993) raising questions such as: “how does it happen that technologies firm up? Why is it that they take the form they do, rather than some other shape? How do things get settled?” (Bijker & Law 1992, 8). The constructionist approaches view the relationship between technology and the social as a heterogeneous network as technologies are considered not to be “purely technological ... as they always embody compromise” in the form of social, political, psychological, economic, professional preferences, prejudices, skills, possibilities and constraints (Bijker & Law 1992, 3).

Social constructionism is not an entirely unified viewpoint. Two principle approaches that are normally identified with the ‘turn to technology’ within SSK are: the social construction of technology (SCOT) approach and actor network theory (ANT) (McLoughlin 1999, 91). However, despite differences of emphasis, the basic disposition and viewpoints are fairly consistent (Winner 1993). These are considered below in turn.

3.2.1 THE SOCIAL CONSTRUCTION OF TECHNOLOGY (SCOT)

Pinch and Bijker (1987) applied the principles of SSK to the development of what they term the 'social construction of technology' (SCOT). The SCOT describes a theoretical approach to studying meanings of technology, and the affect that such meanings have on the implementation of technology within an organisation (Sahay et al. 1994). It is argued by Pinch and Bijker (1987) that the development of technology may be regarded as a multidirectional process in which a range of alternative design options exists that are gradually eliminated as a consensus emerges by relevant social groups over what the technology is and its capabilities. Relevant social groups are comprised of those who share a particular set of meanings and understanding of a given technology such as employers, customers and consultants. Identifying the relevant social group is discussed further in Chapter Four. Therefore, the central assumption of SCOT is that technological artefacts are open to sociological analysis, in their usage, design and technical content.

Technology is not viewed as a technical product or design or as shaped by social factors but rather it is grounded in and constituted by social factors (Lea et al. 1995). It is treated as part of a system composed of different but interlocking elements consisting of physical artefacts, institutions and their environment (Sahay et al. 1994). Therefore the approach calls for an investigation of the technical, social, economic and political aspects of technology (p.249). Relevant social groups articulate different interpretations of a technology, giving rise to different artefacts or systems, that is, they exhibit *interpretive flexibility* (Lea et al. 1995; McLoughlin 1999, 92). The different interpretations, goals and values that groups possess are derived from their *technological frame* that is their shared assumptions, knowledge and underlying belief systems in relation to the technology (Orlikowski & Gash 1994; McLoughlin 1999, 92). Once the relevant social groups have been identified and the interpretive flexibility established, the next analytical step called for by the SCOT approach is to demonstrate how closure occurs (McLoughlin 1999, 93). Pinch and Bijker (1987, 44-45) discuss closure in two ways. Firstly, through *rhetorical closure* the superiority of one design is identified by the relevant social group as a better solution to their perceived problem than other competing designs. Secondly, through *problem redefinition*, the problem is redefined so as to demonstrate the utility of the technology. For example, where

consensus is not reached regarding a technology that has been presented as a solution to one problem, it may be stabilised by presenting it as a solution to another problem which generates acceptance amongst a broader constituency of social groups (McLoughlin 1999, 93).

SCOT seeks to open the 'black box' of technology. It has a 'work outwards' approach whereby in order to understand 'technology' one has to open the 'black box' and move inside to follow actors as they engage in the making of technology to expose why technology comes to assume one particular form from a range of possible alternatives (McLoughlin 1999). Technological artefacts are viewed as both culturally constructed and interpreted, not just in terms of how they are viewed by different groups, but also fundamentally in terms of the actual design of the technological system (ibid 1999, 93). Therefore, "technical decisions are considered to be a "matter of meaning, established throughout a social process of interpretation and negotiation" (ibid 1999). In 'working outwards' the social content of a particular technological development is shown as opposed to approaches, discussed in section 3.3, that start from social context and 'work inwards' to reveal how this shapes technology and the direction of its development.

While the SCOT approach has contributed to presenting alternative views to technological determinism it has been criticised for: making the innovation process appear 'unproblematic' by ignoring power relations and social conflicts between the relevant groups in society; and missing the wider social context, thereby failing to account for the changes of industrial infrastructure and the role of cultural changes (Rammert 1997, 172; McLoughlin 1999). That is, while it appears adequate for the study of technology at the micro level, there are deficiencies in linking it with social processes at the macro level. Giddens's theory of structuration (see Giddens 1979, 1984) is proposed as a means of overcoming this problem as it provides a way of linking social structure and social action in terms of aspects of power relations, meanings and values (Walsham & Han 1993; Rammert 1997) and has been influential in IS adoption studies (see for eg. Walsham & Han 1991; Orlikowski & Robey 1991; Walsham 1992).

As structuration theory (discussed in detail in section 3.3.1) is essentially about social systems, the incorporation of physical systems has not been without some difficulty (Orlikowski & Robey 1991; Johnston 2001). More recently, Actor-Network Theory

(ANT) has gained some popularity in addressing the micro and macro levels in IS studies (see for eg. Monteiro & Hanseth 1996; Walsham 1997; Walsham & Sahay 1999; Monteiro 2000) as it is more specific and concrete with respect to the functions of the technology where the process of constructing technology and its users is seen as a reflexive process in which both technology and social actors mutually explicate each other (Lea et al. 1995). This is not to suggest that ANT is an improvement over structuration theory in every respect, because as will be discussed further in section 3.3 the structuring abilities of institutions is better framed within structuration theory than within ANT (Monteiro & Hanseth 1996). Finally, in contrast to SCOT, the ANT approach focuses on entrepreneurial political activity in enrolling human and non human actors into actor-networks (McLoughlin 1999, 101). A discussion of ANT follows.

3.2.2 ACTOR-NETWORK THEORY (ANT)

The origin of actor-network theory (ANT) may be traced to the works of Michel Callon (eg. Callon 1980; Callon et al. 1986), Bruno Latour (eg. Latour 1987, 1991) and John Law (eg. Law 1991a, 1991b, 1992). “Drifting” from a sociology of science and technology and social theory (Latour 1999), ANT has mixed perspectives including semiotic/structuralism, phenomenology, ethnomethodology and branches of post structuralism such as Foucault’s notion of power/knowledge (Calas & Smircich 1999; Latour 1999). The theory is at an ontological level relativist in that the world is considered to be organised in many different ways, but also empirically realist in that it allows the production of description of organisational processes (Lee & Hassard 1999). Hence, ANT is a relational and process oriented theory that treats agents, organisations and devices as interactive effects (Law 1992). Therefore, it is considered to be a theory of agency, a theory of knowledge and a theory of machines (Law 1992). In contrast to diffusion theory (see section 3.2.4) or social network theory (SNT) (see section 3.3.3), ANT considers that relevant actors are not defined by the structural boundaries of organisations, divisions, or work groups prior to the technology but are co-constructed through their interaction with each other (Lea et al. 1995).

Law (1992) posits that social effects should be explored, whatever their material form, to understand the “how” questions about structure, power and organisation (Law 1992). ANT approaches the duality of structure and agency in sociology as what Law (1992) describes in “ a radical spirit, for it not only effaces the analytical divisions between

agency and structure, and the macro-social and the micro-social, but it also asks us to treat different materials – people, machines, “ideas” and all the rest – as interactional effects rather than primitive causes.” Therefore, ANT sees ‘technology,’ other material and natural phenomena, as being capable of intentional actions like human agents (Walsham 1997); an issue that has been called into question (Pels 1995).

While ANT, like other constructivist approaches, is concerned with the heterogeneous nature of the socio-technical world, it extends the SCOT approach beyond its primary concern with the influence of prior social groups upon the form and function of the technology (Lea et al. 1995). ANT sees the constructing of technology as a reflexive process where both social groups and technology “mutually elaborate each other” (ibid 1995,464), creating “complex heterogeneous webs of juxtaposed technical, social and natural elements” (McLoughlin 1999, 94). Establishing whether it is the technological, social, natural or other material factors that determine the relationships between the technical is a complex empirical question, the solution to which will vary from context to context (ibid 1999). No definitive line may be drawn between what is considered ‘technological’ and that which is ‘social’ (ibid 1999). Therefore, innovation is understood as a process of changing networks of social and technical relations in ANT, such as identities, expectations, beliefs, values, machines and material resources (ibid 1999). The outcome of the process is a stabilised set of relationships between both human (organisational, economic, political, legal, etc) and non-human (technical, material, natural, etc) (ibid 1999).

Drawing upon this body of knowledge may be problematic for the researcher as its theoretical development has been revised and extended by its developers (Walsham & Sahay 1999), described by some commentators as “analytical flexibility” (Lee & Hassard 1999). However, some of its key concepts (see Law 1992 for a detailed and complete description) have remained relatively stable over time, which are summarised by Walsham and Sahay (1999) as set out in Table 3.2 to assist with a description of the theory. Notwithstanding the desirability of providing a “glossary” of key terms, the researcher does so with some apprehension in view of Latour’s (1999) comments,

I will start by saying that there are only four things that do not work with actor-network theory: the word actors, the word network, the word theory and the hyphen! Four nails in the coffin (ibid 1999, 15).

Table 3.2 Summary of key concepts in Actor-Network Theory

Concept	Description
Actor (or actant)	Both human beings and nonhuman actors such as technological artefacts.
Actor-network ¹	Heterogeneous network of aligned interests, including people, organizations and standards.
Enrollment and translation	Creating a body of allies, human and non-human, through a process of translating their interests to be aligned with the actor-network.
Delegates and inscription	Delegates are actors who “stand in and speak for” particular viewpoints that have been inscribed in them, eg. Software as frozen organizational discourse.
Irreversibility	The degree to which it is subsequently impossible to go back to a point where alternative possibilities exist.
Black box	A frozen network element, often with properties of irreversibility.
Immutable mobile	Network element with strong properties of irreversibility and effects that transcend time and place, eg. software standards.

[Source: Walsham & Sahay (1999)]

The heterogeneous network metaphor lies at the heart of ANT.² Actor-networks are the consequences of aligned interests (Walsham & Sahay 1999). The construction and transformation of these socio-technical networks involves the alignment of an initially diverse set of actors and interests into new relationships and networks described as local and global networks (Lea et al. 1995). The global network refers to a set of relatively dependable preforming networks. Preforming a network refers to the reciprocal process in which well established networks are mobilised to provide support for a project whilst at the same time reworked or reshaped by the project. A negotiation space is generated through the successful construction of a global network, that is a space, period of time, and set of resources, provided by the global network in anticipation of a future return. Through the building and stabilising of a local network in this negotiation space, the conduct of the project is achieved (Law & Callon 1992).

¹ Throughout this study the term “actor-network” is used interchangeably with what Callon (1991) calls actors networks, and Law (1992) calls heterogeneous networks.

² Latour (1999, 15) questions the continued use of the word ‘network.’ He believes that the technical metaphor of ‘network’ has lost its “cutting edge” as it is “now the pet notion of all those who want to modernise modernisation.” He believes that the “new usage” of the word network associated with the advent of the World Wide Web, relates to “unmediated access to every piece of information,” what Latour describes as “double click information.” This meaning is considered by Latour to be exactly the opposite of the “older usage” which meant a series of “transformations – translations, transductions – which could not be captured by any of the traditional terms of social theory.” Latour believes that “double click information has killed the last bit of the critical cutting edge of the notion of network.”

Alignment³ is dependent on the enrolment of a sufficient body of allies and the translation of their interests into particular ways of thinking and acting in which they are willing to participate to accord with those prescribed by key actors (Lea et al. 1995; McLoughlin 1999; Walsham & Sahay 1999). In analysing translation and the methods of overcoming resistance, ANT adopts the concept of power as an effect (concealed or misrepresented), rather than as a set of causes; similar to Foucault's (1979) notion of power as power relations (c/f Law 1992). However, it is not only Foucauldian as, prior research has pointed to various devices being utilised, such as the use of persuasive rhetoric to construct and maintain network allegiances, drawing from Machiavelli (Law 1992; Walsham & Sahay 1999). That is, enrolment and re-enrolment of support engaged in by 'Princes' through conscious strategies and the unintended consequences of alliance building (McLoughlin 1999, 95). Therefore whenever an innovation is introduced in an organisation, it creates new meanings, which are fixed in an "obligatory passage point," such as "rhetorical devices," that present the solution to the problem in terms of the resources of the agent proposing it. Therefore, obligatory passage points allow the formation of alliances and control over the resources that agents need to achieve their outcomes (Introna 1997).

Callon (1986) elaborates on the concept of translation, identifying four phases ('moments') in the translation process. The first moment is *problematization*, or how to become indispensable, in which an issue is defined to be problematic by a group of actors (or one actor), who presents a solution to the problem in terms of their resources, by use of rhetoric, establishing themselves as indispensable (that is the actors attempt to establish themselves as an 'obligatory passage point'). The second moment is *intéressement*, consisting of the deployment of devices aimed at imposing the roles and identities defined during the problematization moment on other actors. Isolating the group of actors experiencing the problem, impedes other possible alliances, or interferences that may challenge the legitimacy of the proposed obligatory passage point and conversely engaging the members of the group in confirming the second obligatory

³ Monteiro (2000) compares the notion of 'alignment' in the SISP literature with an ANT perspective, the latter which he posits makes it "strikingly clear" that 'alignment' is "neither straightforward nor controllable in any strict sense" and instructs us that "it is not so much an exercise in juxtapositioning two neatly packaged entities as an attempted orchestration of all the elements of a truly extensive, heterogeneous actor network."

passage point. If the *intéressement* is successful it will confirm the validity of the problematization and the alliances leading to the actual *enrolment* (the third moment). During this third step a stable network of alliances are established through bargaining and mutual concessions. The fourth moment is the *mobilization* of the allies, whereby whatever solution, fact or technology, the actors gain wider acceptance, subject to the translations that occur.

The notion of inscription refers to ways in which technical artefacts embody patterns of use (Monteiro 2000). The strength of inscriptions, whether they must be followed or can be avoided is dependent upon the irreversibility of the actor network into which they are inscribed (ibid 2000, 78). For example, one and the same work routine can be inscribed into components of different materials, through a process of translation, with the components linked together into a socio-technical network. These inscriptions accumulate strength as they are added and superimposed (ibid 2000). Therefore, in addition to human agents, non-human resources also can be used to “stand in and speak for” or be delegates for, particular viewpoints that assist in maintaining a particular network of alliances (Walsham & Sahay 1999). Further, the concept of immutable mobiles is used in ANT to describe network elements that are mobile across time and space and display strong properties of irreversibility (Walsham & Sahay 1999, 43). Walsham and Sahay (1999, 42) use the idea of software as frozen organisational discourse as an example of an inscription that resists change and displays properties of irreversibility. Latour (1999 cf. Monteiro 2000) described the degree of irreversibility as a process of institutionalisation operating in two ways. Firstly, an increased degree of irreversibility is signalled by a firmer institutionalisation. Secondly, the construction of institutions function as a way to align the network and make it increasingly irreversible. Institutional theory provides a detailed analysis of institutionalisation processes, discussed in section 3.3.2.

The element, which ultimately ties the network together and allows it to become stabilised is in the words of Latour (1987), the building of a ‘machine,’ a ‘black box’ with what McLoughlin (1999, 96) adds its lid firmly closed. A black box is a frozen element that is not “opened” to question by the actors in the network. In this sense the machine becomes the ‘obligatory passage point’ that holds the elements of the network together. If the ‘machine’ is successful, it “concentrates in itself the largest number of

hardest associations ... this is why we call such black boxes 'hard facts', or 'highly sophisticated machines,' or 'powerful theories,' or 'indisputable evidence' (Latour 1987, 139).

A major criticism of ANT is that it addresses the local and contingent, but pays little attention to broader social structures that influence the local (Walsham 1997). Therefore, the theory needs to be complemented by other social theories, which take better account of broader social structures (Walsham 1997) such as institutional (see section 3.3.2) and structuration (see section 3.3.1) theory. However, notwithstanding this limitation, ANT is recognised as being "peculiarly suited" to developments in organisational thinking and practice (Lee & Hassard 1999) and IS studies discussed further below in section 3.2.3. In the following section the two constructivist approaches are briefly compared and contrasted and their limitations discussed.

3.2.3 SCOT AND ANT: COMPARISONS, CONTRASTS AND LIMITATIONS

The discussion above, has shown how social constructivists have criticised the idea that the form of technologies is derived from an immutable technical logic, inviting one to 'open' the closed lid of the 'technology black box' (McLoughlin 1999, 103). Both SCOT and ANT draw on a variety of metaphors such as 'black box,' 'seamless webs,' 'networks,' socio-technical ensemble' to assist in understanding the way in which technology is socially constructed. They show that by following the actors in space and over time where the artefacts actually occur, the social basis of technology may be exposed (ibid 1999, 100). However, the two perspectives diverge to varying degrees on how the social construction of technology can be understood. The SCOT is concerned with the 'relevant social group' and the manner in which differing meanings given to the technology are resolved. Resolution brings with it diminishing 'interpretive flexibility,' 'closure' and 'stabilisation.' The embodiment of these and other enabling and constraining elements are embodied in 'technological frames' (ibid 1999). Networks are seen as being constituted by human beings, who build consensus through negotiation within the network. Unlike ANT, the SCOT is less concerned with conflict. In contrast, networks for ANT are not seen to be exclusively social phenomena, or as exclusively technical. Network building may be understood as 'heterogeneous

engineering' involving the political action of both human and non-human actants, where social, political and economic arguments are bound up with the technical (ibid 1999, 101).

Criticisms of SCOT and ANT may be grouped into three broad areas. The first area relates to the relativist underpinnings of constructivism. The relativist position is highly controversial for some scientists and technologists who at the extreme regard it as an "intellectual tragedy" (Winner 1980), an attempt to undermine the basis of their expertise, a crude "conspiracy," and as "flying in the face" of nature and the "real" accomplishments of modern science and technology (Atkins 1994 cf. McLoughlin 1999, 117). Others criticise the constructionist inquiry for becoming so widely stretched that it appears as the "social construction of absolutely everything" (Hacking 1999), characterising it as a "shibboleth" than as a coherent domain of research and/or theorising (Coulter 2001).

Other non-constructivists see weaknesses in the use of metaphors, such as "actor-network" and "technology as text." That is, while metaphors may enlighten theoretical understanding, they are considered to have a degree of counter-intuitiveness, which may limit their ability to cross the boundary between source and target domains (McLoughlin 1999, 116). That is, as the metaphor depends upon identification of the similarities between similar things, discursively comparing one subject with another may sacrifice the "distinctive power and effectiveness of a good metaphor" (Black 1993). There is the possibility of overextending the metaphor taking it to ridiculous extremes creating blind spots in perception and reasoning (Hatch 1997, 54) thereby mystifying and distorting views of social reality (Tinker 1986). In emphasising this point, Tsoukas (1993) uses the example of "technology is like text" stating that it may be equated with a similar apparent absurdity that "a computer is like coffee." While the role of metaphors in theorising is at the centre of controversy in ANT (as well as organisational theories discussed in sections 3.3 and 3.4 below), advocates of metaphorical thinking argue that they enrich and diversify a discipline's resources (Tinker 1986) challenging one to dislodge the "normal" ways of thinking about technology and organisations and search for new ones (Walck 1996). Further, when metaphors are used in their social context and political potential within that context, such as in this study, they may enlighten social and technical relations (Tinker 1986).

A second criticism of SCOT and ANT is that there are disputes between constructivists in the use of the "black box" metaphor (eg. see Grint and Woolgar 1997). It is believed that once constituted the technological black box appears at that point to be capable of having 'effects' as it "offers considerably more resistance to human attempts to use it for purposes other than those prefigured by the designer" (Grint & Woolgar 1997, 20), thereby questioning whether such approaches as SCOT and ANT do avoid technological determinism. Alternative approaches (for example see Hill 1988; Zuboff 1988; Grint & Woolgar 1997) choose to use the metaphor of "technology as text" in attempting to avoid the deterministic trap (McLoughlin 1999, 105). While a number of metaphors have been evoked, from different perspectives, to describe the technology "black box" such as "seamless-web," "actor-networks," "socio-technical ensembles" and "technology texts," each of them have sought to show that technology is, in the words of Weick (1990), "equivocal" and therefore subject to "interpretive flexibility" (McLoughlin 1999, 148). Therefore, whilst there are disputes between constructivists, the fundamental insight from this perspective is that the term 'technology' may be seen as "shorthand for a complex network of socio-technical relationships" (ibid 1999). The constructivist perspective shifts attention away from the seemingly fixed characteristics and capabilities of a technology to the strategies and choices inherent in shaping technology (ibid 1999, 115), or as Westrum (1987, 76) states "the focus is now on the way that decision-making about technologies takes place; with different decisions we get different directions for society."

By considering not only which decisions are made but also decisions which never "land on" the agenda and issues that are seldom (or never) articulated or legitimated, one begins to understand the deeper cultural, intellectual and economic origins of social choices, a third contentious area for social constructionism (Winner 1993). The general problem faced by constructionists is in relation to the broader structures, material relations and power systems in which interpretation takes place (Winner 1993; McLoughlin 1999). According to some critics, the constructivist position involved "opening the black box, getting inside and closing the lid behind you" (Williams & Russell 1987, cf. McLoughlin 1999, 121). There have been calls to look outside of the 'black box' as constructivist studies have "become absorbed in the internal intricacies of development" and have lost sight of "the objective of demonstrating connections to

wider interests” (Bijker 1994, 115-117). Such concerns are addressed in the third section of this chapter (section 3.3), where the socio-economic perspective is examined.

Since the concept of IS as social systems was first put forward by socio-technical researchers in the 1980s, a stream of research on the social aspects and consequences of IS innovation in organisations has followed (Avgerou 2001) drawing from several theoretical and epistemological traditions of the social sciences (eg. Lyytinen 1992; Orlikowski 1992; Walsham 1993; Hirschheim et al. 1996; Introna 1997; Bloomfield et al. 1997; Ciborra 2000) and a different foci of investigation such as social theory driven conceptions of systems development (eg. Mumford 1995; Hirschheim et al. 1996), soft systems methodology for the analysis of IS in relation to human activity systems (eg. Checkland & Holwell 1998), web models analysis (eg. Kling & Scachhi 1982), and the diffusion and adoption of IS innovation. The latter is reviewed below in section 3.2.4, as it identifies with the aims and objectives of this research.

Notwithstanding its limitations, the constructivist approaches have been influential in the more recent socio-technical discourse on IS (eg. Woolgar 1991; Bloomfield et al. 1992; Orlikowski & Gash 1994; Bloomfield & Vurdubakis 1997; Bloomfield et al. 1997; Brigham & Corbett 1997; Jackson & Van der Weilen 1998; Walsham & Sahay 1999). Avgerou (2001) posits that viewing the content of change associated with IS innovation as a heterogeneous network “conveys” more accurately what the socio-technical perception of IS as social systems has been struggling to connote.

3.2.4 INNOVATION AND IS ADOPTION MODELS

As discussed in Chapter Two, e-business may be seen as both a business innovation and an IS innovation. Therefore, issues raised in the innovation literature may have implications for e-business and strategic change. Innovation is defined in this investigation as a socially constructed process involving the development and implementation of new ideas in an institutional context (Van de Ven 1986), which presents individuals and/or organisations with new means or alternatives to solve problems and/or seek and exploit opportunities (Rogers 1995). The study of organisational innovation (see for eg. Wolfe 1994, Rogers 1995, Slappendel 1996) and

IS innovation (see for eg Swanson 1994) has attracted broad interest resulting in a vast literature across a range of disciplinary and theoretical perspectives (Galliers & Swan 1999).

Despite the prodigious research on innovation, there have been few consistent findings regarding the causes, consequences or management of the innovation process, which Wolfe (1994) argues is due in part to the contextually embedded and complex nature of the innovation process and the adoption of different methodologies to investigate it. Research has therefore tended to focus on different aspects of the innovation process (eg. diffusion, design, adoption and implementation) (Galliers & Swan 1999). As innovation research deals with different types of innovation processes, at different points in time in different organisations across different industries that may be at different stages of development, it is considered by some commentators that it is unlikely to produce consistent findings (Galliers & Swan 1999). Therefore, notwithstanding the mixed results and varied approaches, the underlying theoretical perspectives may offer useful insights into the various aspects of the innovation process (Galliers & Swan 1999) such as adoption decision processes for e-business in the context of this investigation.

Research on organisational innovation and IS innovation appears to converge at least to some extent in that they both identify three broad areas for analysis of innovation: diffusion research, factor research and process research (Wolfe 1994; Galliers & Swan 1999). As will be seen in the discussion below, these strands of research are not mutually exclusive nor tightly bound but offer a useful structure for an analysis of innovation processes (Galliers & Swan 1999) such as the adoption of e-business. The following discussion draws from these areas of analysis, synthesising lessons learned from both the organisational and IS innovation literature, so as to provide a more critical understanding of the adoption of e-business.

3.2.4.1 ORGANISATIONAL INNOVATION

Within the organisational innovation literature are discernible streams of research. For example, Wolfe (1994) identifies three streams of research, namely, diffusion of innovation, organisational innovativeness and process theory research, while Slappendel (1996) adopts three broad perspectives, namely, individualist, structuralist and an

interactive process. Rather than arguing the merits or disadvantages of such classificatory systems, or provide an in depth analysis of the research that is already extensively reviewed by these widely cited authors, the following discussion outlines the type of research in each of these categories to synthesise the issues with a view to highlight the implications for the adoption of e-business.

Innovation diffusion research focuses on understanding the communication, spread and adoption of new ideas through social communities, providing insight into the reasons surrounding the widespread uptake of new ideas, such as e-business, by communities of firms (Wolfe 1994). There are various theories relating to the diffusion of innovation, each offering its own unique model of the process (see for eg. Jaakkola 1996; Newell et al. 2000; Baskerville & Pries-Heje 2001 for a discussion of different models). One view more prominent in the organisational literature are 'ecological' models which take a macro and meso perspective in which conflict and competition characterise the behaviour of those involved in the diffusion of innovation process, such as actor network theory, discussed in section 3.2.2 above. A second broad dimension takes a 'genealogical' view, which centralises consensus and regulation in the behaviour of those in the innovation process (Baskerville & Pries-Heje 2001). Such perspectives have also influenced the diffusion of IS innovation, discussed below in section 3.2.4.2.

Wolfe's (1994) organisational innovativeness stream captures parts of Slappendel's (1996) individualist and structuralist perspectives. That is, the research in these areas focuses on identifying factors at the micro level (eg. individual traits, "champions", leaders) and macro level (eg. size, strategic type, centralisation of decision making, environment) that enhance an organisation's capacity for strategic innovation (Clark 1995). However, whilst offering useful insights into the complex array of variables that may potentially influence innovation, such perspectives have been criticised for failing to fully address the complex interactions between the individual and organisational variables and the social construction of innovation processes (Slappendel 1996).

Process theory research attempts to fill this void by analysing the processes, incorporating social, political and cognitive, through which new ideas are perceived, developed and implemented within organisations (Wolfe 1994; Slappendel 1996). The earlier process stream of research was largely predicated on stage model assumptions,

such as 'stages of growth' models in the field of IS management (eg. Nolan 1979; Galliers & Sutherland 1991 discussed in Chapter Two) and innovation process models (eg. Rogers 1995 discussed further below) based on linear, rational assumptions about cause and effect sequences (Galliers & Swan 1999). However, these models have been criticised for failing to explain adequately processes of innovation, which have been found to be "complex, iterative, and circuitous, being both contextually embedded and socially shaped" (Galliers & Swan 1999). Developments in process research in the sociological and organisational literature have allowed for an understanding of complex innovation 'episodes' as they emerge and unfold over time (Wolfe 1994), grounded in social constructivist theories (Galliers & Swan 1999) such as Swan and Clark's (1992) study of organisational decision making for technological innovation. The following section 3.2.4.2 turns to the IS innovation literature, which in parts has been influenced by this body of literature.

3.2.4.2 IS INNOVATION

Research into IS innovation in organisations has incorporated a wide range of technology based innovations (Swanson 1994), but as discussed above in section 3.2.4, has tended to focus on particular aspects of the innovation process (Galliers & Swan 1999). A large body of this research has tended to focus on the episode of IS implementation (and IS failure) based on the premise that the technology has been identified and so the key issue revolves around its implementation (Newell et al. 2000). Numerous factors ranging from micro individual level factors to macro organisational and environmental factors, such as adoption behaviours, structural arrangements, technological issues, task-related factors and environmental factors (Kwon & Zmud 1987) have been used to predict greater or lesser success with IS implementation (Galliers & Swan 1999). However, processes that occur before implementation such as decisions regarding the selection of technologies, and the alternatives that may exist prior to implementation have received relatively less attention (Newell et al. 2000).

The following discussion reviews the IS diffusion and adoption literature. In doing so, the purpose is not to suggest that innovation stops at adoption, as the social constructionist perspective underlying this research, views innovation as complex, iterative and continuous 'episodes' that emerge and unfold over time (Wolfe 1994),

where social, cognitive and political processes mediate the "articulation, construction and outcomes" of the innovation episodes (Galliers & Swan 1999). The aim is to provide some insight into theoretical perspectives that have been used in the analysis and understanding of the diffusion and adoption of IS innovation, whilst acknowledging the long tradition of work relevant to considerations of IS/IT and strategic change in the IS implementation (and failures) literature, which in parts may "echo" (Galliers & Swan 1999) issues in the following body of literature.

3.2.4.2.1 IS Adoption: Innovation and Intention Based Models

The literature relating to the adoption of IS based innovations largely incorporates two major areas namely intentional based models and innovation models (Elliot & Loebbecke 2000; Plouffe et al. 2001). Intention models (or behavioural decision theories) have generally drawn from psychological theories to predict new IS technology adoption (Plouffe et al. 2001). For example, the Technology Acceptance Model (TAM) (Davis 1989; Davis et al. 1989), is one of the most widely applied individual-level technology adoption models in the IS literature (Plouffe et al. 2001). Davis' model draws primarily from Fishbein and Ajzen's Theory of Reasoned Action (1975) as its theoretical foundation, but also incorporates expectancy theory and self efficacy theory (see Plouffe et al. 2001). Broadly speaking, it is based on the premise that the sole determinant of use of technology is the intention of the user, based on the perception of the ease of use of the technology and of its usefulness, incorporating the capability to be used advantageously (Elliot & Loerbbecke 2000). There have been many applications and extensions of TAM since its inception. For example, independent testing of constructs (eg. Szajna 1996; Straub et al. 1995), assessing IS adoption characteristics of small firms (Igbaria et al. 1997); examining differences between genders (Gefen & Straub 1997) and across cultures (Straub et al. 1997), extending TAM by adding additional constructs to the core model (eg., Matheison 1991; Compeau & Higgins 1995; Taylor & Todd 1995a; Jackson et al. 1997; Venkatesh & Davis 2000) and the comparative assessment of different models (eg. Taylor & Todd 1995b; Plouffe et al. 2001).

While TAM is recognised for its parsimony, applicability and robustness (Elliot & Loebbecke 2000; Plouffe et al. 2001) it has been criticised for largely ignoring institutional and environmental issues (King et al. 1994), as individual responses to new

technologies are likely to differ depending on the context in which they are encountered (Plouffe et al. 2001). In response to such criticisms Moore and Benbasat (1991, 1996) developed a wider variety of adoption antecedents to technology adoption decisions. The Perceived Characteristics of Innovating (PCI) antecedents developed by Moore and Benbasat drew on intention based models (eg. Davis 1989) and earlier conceptual work by Rogers (1995) in the innovation literature. We now turn to this latter body of literature, focusing primarily on Rogers' diffusion of innovations perspective as it represents a strong body of ideas (Galliers & Swan 1999) and has had considerable influence on a number of disciplines, particularly the adoption of IS (Tornatsky & Klein 1982; McMaster et al 1997; Newell et al. 2000).

In the innovation literature, an innovation is considered evolutionary in that members of the social system innovate in adopting (and adapting) the communicated innovation to their own settings (Baskerville & Pries-Heje 2001). Therefore, from a diffusion perspective, the successful adoption of new IT implies the successful diffusion of innovation by people in organisations consisting of not only those who originally develop the IT but also those who adopt IT in that they need to be innovative in applying the IT in their own working environment (ibid 2001, 181). With regard to innovation diffusion theories relevant to IT, the conflict-regulation dimension found in the organisational literature, discussed previously in section 3.2.4.1, has also been used to distinguish the 'micro' perspective from the 'meso' and macro' perspectives in the IS innovation literature (ibid 2001, 182).

The meso and macro perspectives are grounded in "ecological" and "emergent" views (ibid 2001) from a range of theories. Organisational theories, such as strategic analysis, power dependency and institutional theory (discussed below in sections 3.3 and 3.4) and sociological theories such as, Actor Network Theory (discussed above in section 3.2) have been used as a theoretical basis to assist in understanding the diffusion of innovation (see for eg. Van de Ven et al. 1989; King et al. 1994; Webster 1995; Büsher & Mogensen 1997; Knights & Noble 1997; McMaster et al. 1997). The innovation literature typically adopts the genealogical view, a 'micro' perspective, relying on concepts from economics and innovation theory (Baskerville & Pries-Heje 2001) dominated in particular by the communications perspective of Rogers (1962, 1983, 1995).

Rogers' (1995) work is discussed here under three sections, diffusion, adoption decision process and adoption decisions. In essence Rogers' diffusion theory depicts technology transfer as a process over time and space in which four main sets of factors bear on the decision to adopt or to reject. Firstly, characteristics of the innovation, such as its complexity, relative advantage, trialability, compatibility. Secondly, characteristics of the adopters including social status, level of education, 'cosmopolitanism' and their attitude to change. Thirdly characteristics, such as norms, values and cultures of the social systems in which they inhabit. Finally, the social networks that enable the ideas to be communicated within and across communities of organisations. This latter issue is addressed further in the discussion of social network theory in section 3.3.3 below.

The innovation-decision process, that is the step through which the adopter passes from first knowledge of the innovation to the decision to adopt or reject are detailed in Rogers' 'Five Stage Innovative Processes' as: (1) Agenda Setting, whereby general problems in the organisation create a need for innovation; (2) Matching, involving fitting the problem with an innovation; (3) Redefining/Restructuring, where the innovation is modified to fit the organisation and altering organisational structure; (4) Clarifying, where the relationship between the organisation and the innovation is defined; and (5) Routinising, where the innovation is subsumed into organisation's activities. Rogers' (1995) groups stages (1) and (2) as initiation, and stages (3) – (5) as implementation, contending that the driver of the processes is the necessity to solve business problems and that later stages in the model can not be undertaken until the earlier stages have been settled (ibid 1995, 391).

Finally, Rogers (1995) identifies four approaches for adoption decisions at an organisational level, outlined in Table 3.3.

Table 3.3 Rogers (1995) Types of innovation-decisions

Type of innovation decision	Choice behaviour
Optional innovation decisions	Choices to adopt or reject an innovation that are made by an individual independent of the decisions by other members of a system.
Collective innovation decisions	Choices to adopt or reject an innovation that are made by consensus among the members of a system.
Authority innovation decisions	Choices to adopt or reject an innovation that are made by a relatively few individuals in a system who possess power, status, or technical expertise.
Contingent innovation decisions	Choices to adopt or reject that can be made only after a prior innovation decision.

A number of limitations have been identified with Rogers' diffusion theory and innovation decision process model (McMaster et al. 1997; Galliers & Swan 1999; Newell et al. 2000; Baskerville & Pries-Heje 2001). Firstly, at an epistemological level, the socio-technical stance of Rogers' diffusion theory is grounded in 'modernism' where the social system (people) is considered separated from the technology (things) thereby viewing diffusion as the adoption of technology by a social system. The implication is that as the 'technology' is considered to occupy an existence independent of humans, once the discovery or invention has been pointed out to people, it is "simply (more or less) a matter of time before everyone recognises it as being obvious" McMaster et al. (1997). It could be argued that Rogers (1995) acknowledged this problem in what he referred to as 'pro-innovation bias.' Further, McMaster et al. (1997) describes the "Rogerian" project as an "exercise in factor analysis" in search of factors that explain why some technology transfers are successful and others fail. The desire to make links between cause and effect, contrasts with an Actor Network Theory approach, discussed in section 3.2.2, which views the social system and technology as inseparable, concerning itself with the highly situated and "mundane translation" arising in actor networks rather than "the politics of explanation." However, a blend of these socio-technical perspectives may provide a rich conceptual resource in which explanation may be possible, by recognising that the defining characteristics of new technologies are perceived and therefore influenced by social, political and cognitive processes (Newell et al. 2000).

At a methodological level, problems have been identified with Rogers' supplier focused perspective (Gallier & Swan 1999; Newell et al. 2000) as well as the necessity for a more detailed scheme for classification of attributes to enable distinctions between more complex, multi-participant interactive innovations (Elliot & Loebbecke 2000). Further, developments in the organisational and sociological literature, have identified limitations in process models, such as Rogers five stage innovation decision process model, that are based on linear, rational assumptions about cause and effect sequences, as discussed above in section 3.2.4.1. In addition, Elliot and Loebbecke (2000) identified that the model required some revision to allow for the complexity of multiple participants within each innovation and for variation of processes within different participants. However, when the decision process is considered with other decision making models, discussed in section 3.4, such limitations may be overcome.

As seen above, intention based models and innovation models provide a rich resource for adoption theory. Further calls have been made for the convergence of the intention and innovation literature to provide a strong general theoretical framework to investigate IS adoption decision theories (Taylor & Todd, 1995b; Plouffe et al. 2001). Moore and Benbasat (1991, 1996) have attempted to integrate the intentions and innovations literature at an individual end-user level, but not at an organisational level. Further, despite its theoretically rich development the full set of PCI belief constructs has received relatively little empirical attention with IS researchers reducing the number of belief constructs employed (Plouffe et al. 2001).

The proposed research model attempts to examine decision processes that accurately reflects organisational adoption decisions through the integration of these adoption theories with institutional, structuration, network and organisational decision making theories. Adopting this multiple perspective, will provide a rich approach to make sense of a complex process that extends beyond behaviours of individual adopters and issues of communication design (Damsgaard & Lyytinen 1997). Further, as discussed in detail in Chapter Four, the underlying constructivist paradigm that influences this research calls for empirical approaches that emphasise a greater sensitivity to the context within which the adoption decisions are made. To this end, the interpretive, naturalistic approach taken in this research overcomes some of the limitations of 'reductionism' associated with models grounded in the positivist paradigm. The following section 3.3 turns to a discussion of the theories underlying the socio-economic perspective in this study.

3.3 THE SOCIO-ECONOMIC SHAPING OF TECHNOLOGY: SOCIAL, ECONOMIC AND POWER RELATIONS

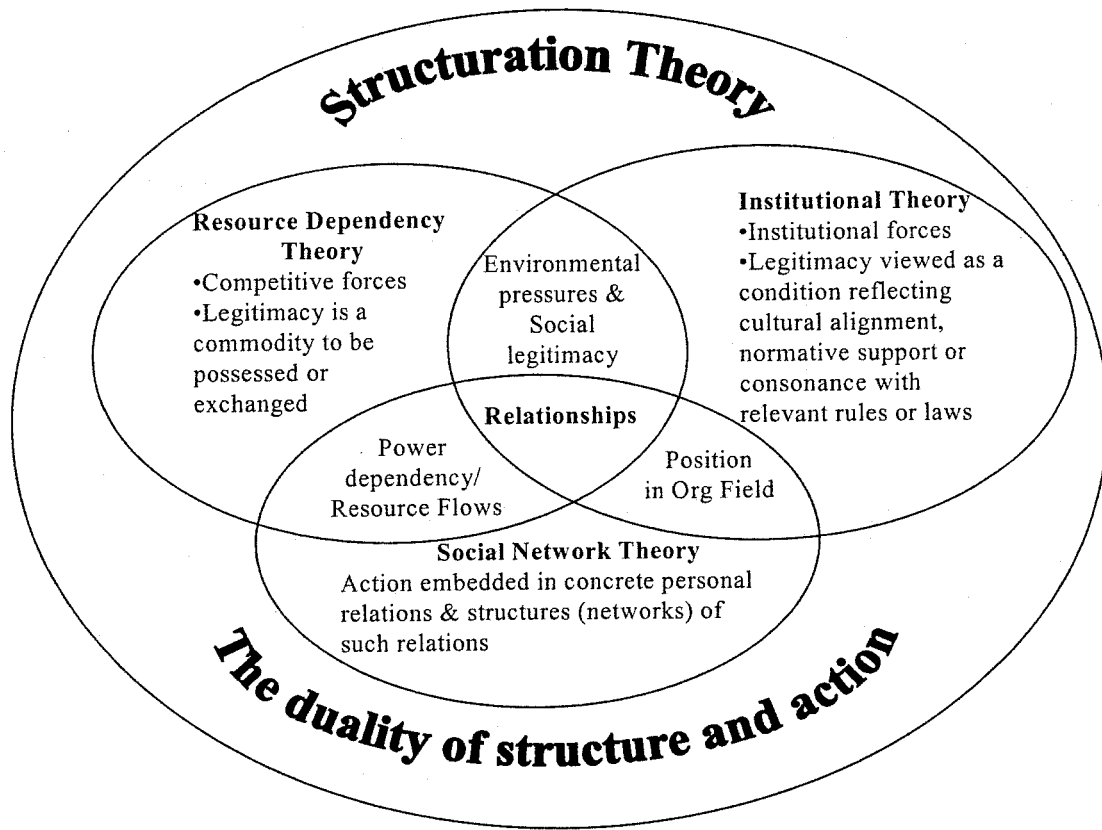
To understand the processes of change Pettigrew (1985) argues that actions and organisations need to be located both temporally and contextually. In contrast to section 3.2, this section 'works inwards' towards the 'black box' by taking a socio-economic perspective to reveal the social and economic factors that may shape interpretations about technology. In its entirety, the socio-economic perspective sees the adopting context as the key arena in which the final form and content of technologies are defined in terms of social, political and economic interests (McLoughlin 1999, 132). That is,

socio-technical relations are embedded in socio-economic contexts (Angell 1997). Embeddedness research draws attention to both the nested and constitutive aspects of context (Dacin et al. 1999). Therefore, not surprisingly, there are different models and variants of the socio-economic perspective reflecting the convergence and divergence of different theoretical positions and subject focus (Dacin et al. 1999; McLoughlin 1999, 132-140). It is beyond the scope of this chapter to discuss each of these perspectives in detail, as the purpose of the study is not to reproduce or resolve ongoing debates about the relative advantages and disadvantages of each in explaining socio-economic contexts, but rather offer new insights into the multi-level contexts (eg. organisational, industry, national, global) in which SIS adoption decisions are made.

There are different perspectives of organisations each offering fundamentally different ways of representing organisations, managers and preferred methods for conducting research (Burrell & Morgan 1979). In keeping with the relativist ontological and subjectivist epistemological theme, the symbolic interpretive perspective of organisations is emphasised in this study. Underpinning this perspective is enactment theory (Weick 1969) and the social construction of reality (Berger & Luckman 1966). Broadly speaking the symbolic interpretive perspective, like the modernist perspective, focuses on the organisation, but from a subjectivist epistemological position which stresses organising rather than organisation (Hatch 1997, 49). That is, the organisation is treated as a subject whose reality is defined by individuals subjective experiences within a socio-cultural context rather than as an object with dimensions that can be measured (pp. 48-49). In metaphorical terms, the organisation is seen as a culture, emphasising the customs, traditions, stories, myths, artefacts and symbols in contrast to the modernist metaphors of organism and machine (p. 54).

The following sections (section 3.3.1 – 3.3.4) examines four theories from the organisation and sociology disciplines which are used in this study to provide a frame of the socio-economic context, namely, structuration, institutional, social network and resource dependency theories. When combined with theories from the socio-technical (section 3.2) and strategic choice/decision making (section 3.4) perspectives a rich conceptual picture begins to unfold as to how adoption decisions are shaped by their context and how in turn such actions may shape the context. Figure 3.2 provides a broad conceptual picture of these four theories for the purposes of mapping the discussion that follows. A review of structuration theory follows.

Figure 3.2 The socio-economic perspective: A conceptual map



3.3.1 STRUCTURATION THEORY: STRUCTURE AND AGENCY

Structuration theory originates in the writings of Anthony Giddens (1979, 1984). It is a process-oriented theory that reconciles both macro and micro levels of analysis, centering its attention on human activity and treating concepts such as organisation and technology as both a product of and a constraint on human action (Taylor et al. 2001). Therefore, while structuration theory is categorised for the purposes of this discussion from a socio-economic perspective, it overlaps with all three broad perspectives as it has been used to describe socio-technical systems (see for eg. Walsham & Han 1991; Orlikowski 1992; Walsham 1993; DeSanctis & Poole 1994; Orlikowski & Yates 1995; Orlikowski 2000) and provide insights into organisation studies (eg. Pettigrew 1985, 1987; Whittington 1992; Barley & Tolbert 1997; Hatch 1997) providing a reflexive contextuality of social actions (Ritzer 1996) in its consideration of the duality of agency and social structures. To this end, a sketch of its relationship with all three perspectives in this study is provided, preparing the ground for its description and use in this research.

Structuration theory has been used to provide convincing conceptualisations of the enabling and constraining effects that IS have on the social processes of interpretation (Monteiro & Hanseth 1996). Jones (1999) categorises this research in the IS literature into five main streams, namely: reconstructing the theory to accommodate technology; application of the theory to the analysis of IS cases; using it as a meta theory; adopting particular concepts to be applied in the analysis of a particular case; and, integration with other theories or critiques in theoretical comparisons. Specific attempts to adapt structuration to incorporate the material aspects of IS have encountered a number of problems (Jones 1999). The integration of concepts from other theories with a more explicit concern with technology, such as Actor Network Theory (discussed in section 3.2.2) has received considerable attention in providing a more detailed and fine-grained analysis of the technical and non technical mechanisms employed in shaping social action (see Monteiro & Hanseth 1996; Jones 1999). This is not to suggest that structuration theory can not deliver this (Walsham 1993) or that it may be “seamlessly synthesised” with other theories such as Actor Network Theory to yield a “complete theory,” but rather that it facilitates reflection upon the gaps in structuration’s treatment of technology (Jones 1999). Further, integrating concepts from structuration theory with organisational theories, such as institutional theory (section 3.3.2) and strategic choice theory (section 3.4.1) provides a framework in understanding how actions and institutions are recursively related (Barley & Tolbert 1997) thereby directing attention to the agency of individual actors and avoiding inappropriate reification of social structures (Jones 1999). Therefore, as the theory “de-essentialises technology and organisation” it allows research questions to be framed as process and emergence rather than as cause and effect (Taylor et al. 2001). A review of central theoretical precepts in structuration follows.

Structuration theory is perhaps best known as the most articulated effort to link macro theories and micro theories (Cohen 1989) by drawing simultaneously on the tenets of functionalism/structuralism and hermeneutics/interpretivism (Ritzer 1996; Barley & Tolbert 1997; Taylor et al. 2001). Therefore, explicating the themes and extensive array of concepts established in structuration theory poses a difficult task. The exegetical stance taken in the following exposition of Giddens’ work is to confine the discussion to five major themes, namely the: ontological status and central role of social praxis in

structuration theory; duality of action and structure; social institutions and routines; reflexive monitoring, rationalisation and motivation of action; and, unacknowledged conditions and unintended consequences. The stance taken in providing an overview of these themes achieves two major objectives. Firstly to expound the key elements of structuration theory and secondly to highlight the intrinsic significance of these themes to this research.

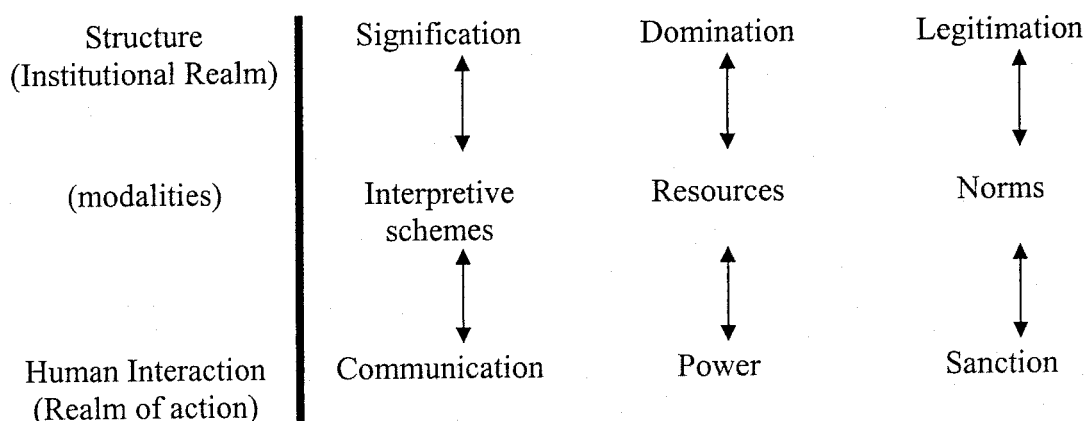
3.3.1.1 ONTOLOGICAL STATUS AND CENTRAL ROLE OF SOCIAL PRAXIS IN STRUCTURATION THEORY

Structuration theory proceeds from an ontological position that all social life is generated in and through social praxis, which includes the nature, conditions and consequences of historically and spatially temporally situated activities and interactions produced through the agency of social actors (Cohen 1989). The view of praxis is considered to be equally relevant to the constitution of action and the constitution of collectives as each aspect of social life is generated, reproduced or altered in and through social praxis itself. All human social activities are considered to be recursive (Taylor et al. 2001), that is, social structure provides enabling and constraining elements that are drawn on in human interactions, and in doing so, either produce or change social structures (Walsham & Han 1991). Therefore, the core of structuration theory lies in the concepts of structure, system and structuration. Structures collectively define the rules, resources, techniques, norms and behaviours, which are organised as properties of systems. Structure is considered to exist only as memory traces in human minds, which manifest only in instances when they are drawn on in human action and interaction (Walsham & Han 1993). Social actors are free to choose, given certain physical constraints and are a part of social systems. Systems are “reproduced relations between actors or collectivities, organised as regular social practices.” Structuration are the “conditions governing the continuity or transformation of structures, and therefore the reproduction of systems” (Giddens 1979). Although the theory does not develop substantive accounts of the empirical social world in any given socio historical domain it is designed to inform the development of such accounts providing the “ontological resources” for formulating empirically oriented theory and research (Cohen 1989, 2).

3.3.1.2 THE DUALITY OF ACTION AND STRUCTURE

A principle goal of structuration theory is to reconcile the agency/structure debate by characterising it as a duality in which neither structure or agency is privileged. As illustrated in Figure 3.3, Giddens (1979, 1984) identifies three dimensions of structure: signification, domination and legitimation. These interact with three dimensions of human interaction: communication, power and sanctions. Structure and human interactions are interlinked by three modalities of interpretive schemes, facilities and norms. Interpretive schemes are considered to be stocks of knowledge drawn upon by human actors (for eg. past experiences with IS) in order to make sense of their own and other's actions and behaviour. This produces and reproduces structures of meaning (for eg. views on the value of adopting e-business) that are termed structures of signification. Power is utilised by human actors by drawing on facilities such as the ability to allocate resources thereby creating, reinforcing or changing structures of domination. By drawing on norms and standards of morality (for eg. measures of economic and social value) human agents sanction their actions and thus maintain or modify social structures of legitimation. The separation of these dimensions is for analytical convenience, as they are intimately interlinked in practice.

Figure 3.3 Giddens' Model of Structuration



[Source: Cohen 1989]

3.3.1.3 SOCIAL INSTITUTIONS AND ROUTINES

In Giddens' account of the reproduction of regularities of 'praxis' he emphasises repeated forms of conduct and concentrates directly upon how forms of conduct are reproduced (the reflexive elaboration of context and action) and ascribes great importance to the trans-situational nature of human social skills (Cohen 1989). Further, in the duality of structure, Giddens establishes how social action may not only reproduce existing social structure but it may also produce new structures providing opportunities for innovation (ibid 1989, 38). Giddens' conception of reproduced forms of conduct is referred to as social institutions, specifically referring to routinised practices carried out or recognised by the majority of members of a collectivity rather than denoting forms of social organisation (ibid 1989, 39). Therefore, routinisation is considered important in explaining the 'fixity' of social conduct and the corresponding stability of institutions (Walsham & Han 1993). That is, by reducing the number of occasions choices have to be made and by repeating activities in a like manner on a daily basis, individuals tend to conform to patterns of behaviours which reflect and reproduce the structures (Kawalek & Hackney 1998) as it reinforces their sense of "ontological security" (Cohen 1989).

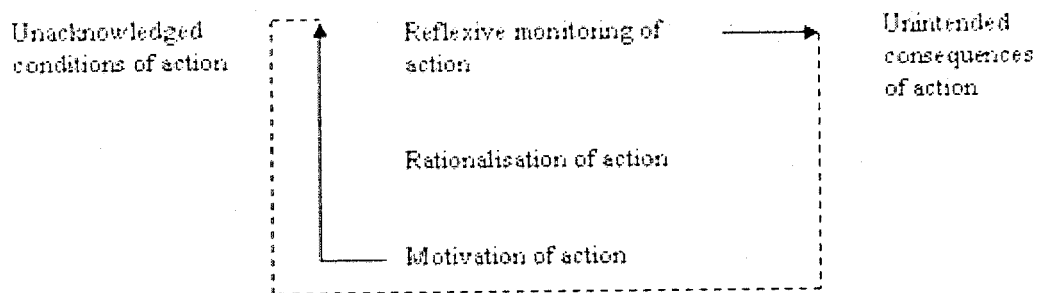
The physical aspects of social settings also play an integral role in the provision of conditions for the reproduction of both context and conduct (ibid 1989, 40). They do not impinge upon social conduct but are mobilised and categorised during the course of social action and interaction (ibid 1989, 40). The concept of "locale" in structuration theory is used to reflect the physical circumstances and human artifacts associated with institutionalised activities and how these material aspects of social settings are used during the course of social routines (ibid 1989, 41).

3.3.1.4 REFLEXIVE MONITORING, RATIONALISATION AND MOTIVATION OF ACTION

The terms "acting subject" is used by Giddens to link concepts relevant to the agent to the exercise of agency in social praxis. Therefore, at the centre of Giddens' theory of the acting subject is the reflexive monitoring of action, the rationalisation of action and the motivation of action, referring to aspects of the agent's subjectivity (Cohen 1989). These

are subjective processes sustained by the agent on an ongoing basis rather than states of mind (ibid 1989, 48). These processes are understood in terms of action, from the generation of unintended consequences back to the unacknowledged conditions of action as illustrated in Figure 3.4. The discussion now turns to a review of each of these three monitoring processes.

Figure 3.4 Giddens' model of reflexive monitoring, rationalisation and motivation of action



[Source: Cohen 1989, 48]

These monitoring processes are reflexive in severally analytically distinguishable, but interrelated ways in that the monitoring of social contexts and events as they occur influence the agent's monitoring of his/her conduct, which may influence the conduct of others and the collaborative generation of contexts (ibid 1989,49). Further, the reflexive monitoring of conduct is also considered to occur more often as a continuous flow rather than as a "punctuated series of moments of attention" (ibid 1989). Therefore, this coupled with the inevitability of unintended consequences of intentional human conduct implies that "all action carries with it seeds of change" (Walsham & Han 1991, 1993).

Giddens' understanding of the term reflexive is grounded in his perception of knowledge, distinguished as practical and discursive consciousness (Taylor et al. 2001). Practical consciousness is considered by Giddens to constitute the "vast bulk" of "mutual" knowledge of people involved in interaction which is "not directly accessible to the consciousness of actors" (Giddens 1984, 4). That is, "the kind of thing you know without being able to say what you know, or how you know it, like walking and talking" (Taylor et al. 2001). Discursive knowledge is considered to be what we consciously know represented by reasons actors offer for what they do, how they make sense to

themselves and others of what is going on (ibid 2001, 34). Therefore, human beings are seen as reflexive agents capable of monitoring their own action through practical (the ability to act in a knowledgeable way) and discursive (being able to explicitly describe action and motivation) consciousness. Much reflexive monitoring occurs tacitly on the level of practical consciousness as the capacity of agents are limited in maintaining a discursive awareness of the multitude of diverse aspects of their own conduct as well as that of others (Cohen 1989, 49).

Reflexivity is considered to not only involve people reflexively rationalising what they do when they do it on the basis that they do not know what they do until they do it (incorporated in Weick's 1969 theory of enactment) but also because of rationalisation itself (Taylor et al. 2001). That is, rationalisation gives action its purpose and its appearance of intentionality, where the agent's monitoring of his/her conduct is grounded in his/her intentions (Cohen 1989, 50). However, this is not to imply that agents are, or in principle can be, aware tacitly or discursively of all the consequences of their activities as unintended consequences (see section 3.3.1.5) are "recurrent features of social life in the ontology of structuration theory" (ibid 1989). While both practical and discursive consciousness are associated with this process, it is considered to primarily occur on the level of practical consciousness (ibid 1989) as human beings are more knowledgeable than "what they say" (Walsham & Han 1991).

Social structures consist of rules that may be formal and public, such as the laws of the State, or informal, governing the varied aspects of everyday life. Calling upon the distinction between practical and discursive knowledge, Giddens argues that while rules may be considered to operate on these two levels of consciousness (Walsham & Han 1991) most are practically not discursively grounded and so part of what we naturally do rather than necessarily what we consciously know (Taylor et al. 2001). If most activities exhibit practical knowledge, there is little that is problematical because everything is considered to work on the basis of tacit, implied, understood knowledge (ibid 1989, 35). However, when there are "relatively unusual circumstances, situations, which in some way break with the routine" people may be questioned about what they are doing and proffer a motivation as explanation or justification (Giddens 1984). Giddens' observation of the motivation of action is that many social practices are

performed without being directly motivated raising the question as to why agents engage in the performance of routines. An explanation, offered by Giddens, is that unconscious motives indirectly dispose agents to undertake institutionalised forms of conduct separated from both practical and discursive consciousness. That is by virtue of the mechanisms of repression and distortion, agent's recall of unconscious cognition and disposition are interfered with (Cohen 1989, 52-53).

3.3.1.5 UNACKNOWLEDGED CONDITIONS AND UNINTENDED CONSEQUENCES

As agents may employ a variety of skills without being aware that these skills are conditions for their participation in social life, the duality of structure may involve the unintentional reproduction of unacknowledged structural conditions (ibid 1989, 55). However, over a given historical period, unintended consequences and unacknowledged conditions may become discursively acknowledged by agents as ongoing outcomes of a condition for their own conduct, highlighting possibilities for social change (ibid 1989).

3.3.1.6 LIMITATIONS OF STRUCTURATION THEORY

There are various criticisms of Giddens' theory, such as its high level of generality and bias for stability and reproductiveness (see Clark 1990; Sewell 1992; Archer 1996) which makes it awkward when applied to situations of inconsistencies and deviations from current routines and other emergent properties in the process of change (Ciborra & Lanzara 1994). However, its value as a "sensitising device in guiding inquiry into the social process throughout the fieldwork, and focusing research attention on actions, mental models, and processes of reproduction and change" (Rose 1998) is demonstrated by its increasing use in the IS literature (see for eg. Walsham & Han 1991; Orlikowski & Robey 1991; Orlikowski 1992; Walsham 1993; DeSanctis & Poole 1994; Barrett & Walsham 1995; Sahay & Walsham 1996; Shanks 1997; Kawalek & Hackney 1998; Jones 1999; Walsham & Sahay 1999; Orlikowski 2000).

In the proposed framework, structuration theory is used as a "meta-theory" (Orlikowski & Robey 1991) to provide an overarching frame for exploring the relationships between SIS decision making, and the context in which this process occurs. While strands of this general theory will assist in the development of insights from the data collected, it will

not be explicitly used as a basis for the analysis of the empirical data but will be contemplated with other theoretical approaches discussed in earlier sections and to follow below. In adopting this multi theoretical perspective care has been taken to retain the meta-theoretical assumptions of structuration and ensure that in adopting these concepts into the research framework the key tenets of structuration are not contradicted or juxtaposed with incompatible concepts from other theoretical areas (Jones 1999). An attempt has been made to 'link' structuration theory with institutional theory (eg. Barley & Tolbert 1997), actor-network theory (eg. Walsham & Sahay 1999) and strategic choice and strategic choice/organisational decision making theories (eg. Whittington 1992).

3.3.2 INSTITUTIONAL THEORY: STRUCTURES, CULTURES AND ROUTINES

Within the organisational literature, four theories of organisation-environment relations are prominent, namely contingency theory, population ecology, resource dependency theory and institutional theory (Hatch 1997, 64; Hall 1999a, 271) the last representing as Hatch (1997, 64) describes the entry point of the symbolic interpretive perspective into the modernist discussion of organisation environments. While these theories are similar in that they rely on the environment to explain organisational structures, processes and outcomes, they differ in their viewpoints and assumptions (Hatch 1997, 86). For example, population ecology and institutional theory are similar in that organisations are shown as relatively passive elements of an environment that shapes them and determines their outcomes, whilst resource dependence theory depicts organisations as having an active role with the environment through counteraction (ibid 1997, 87). However, while population ecology explains the influences generated by the technical, physical and economic sectors of the general environment, institutional theory focuses on social, cultural, political and legal sectors (ibid 1997).

There is widespread acceptance in the organisational literature to examine the situation through the different lenses provided by these theories, rather than as competing explanations, so as to explain the largest amount of variance (Hatch 1997, 88; Hall 1999a 292). In considering the research questions of this study, two of these four theories, namely institutional and resource dependency theory (section 3.3.4) will be

used to offer insights into the organisational-environment relations. The population ecology model was found to be unsuitable as: the notion of "fit" between the environment and organisation is unclear; it draws on biological analogies which do not consider human decisions and motives; the theory most readily applies to populations that are highly competitive and not all populations fit this description; and, the approach is concerned with organisational populations rather than individual organisations (Hatch 1997, 83; Hall, 1999a, 277-278). Contingency theory offers foundations for organisation environment discussion and has been widely used in the IS literature to highlight the course of actions management should take to harness the potential of IT in order to secure a competitive position within its environment (eg. Porter & Millar 1985; Earl 1989; Scott Morton 1991; Hammer & Champy 1993). However, contingency analysis does not elaborate on the process through which particular change is related to its content (Avgerou 2001). Further, its insight that different environmental conditions called for different styles of organising may as Hatch (1997, 84) states appear "trivial" in that the importance of the environment is accepted in today's world almost without question. As institutional interdependence is increasingly recognised as an influential factor in shaping the adoption and use of inter-organisational systems and Internet technologies (Orlikowski & Barley 2001), institutional theory may provide insight into the role of institutional variables with respect to the adoption of e-business. A discussion of institutional theory follows.

Institutional theory has broadened the conception of the environment considered in other organisation theories, by calling attention to the importance of the social and cultural environment, in particular, to social knowledge and cultural rule systems (Scott 1995, xiv). This is in contrast to the theoretical underpinnings of the technical/rational perspective of planned action emphasised by resource dependence and contingency theorists on the importance of the technical environment, such as resources and technical know how, and behavioural theorists who concentrate on explaining informal structures and individual behaviour and attitudes. This school of thought explains the survival and development of organisations in terms of the strategic choices available to them (see section 3.4) and their inter dependence with the competitive environment to secure the necessary resources (see section 3.3.4). The institutional perspective, sees strategic choices coming from the institutional order in which an organisation is embedded (Hall 1999a, 106). Therefore, it takes a "situated approach" to the study of IS by providing a conceptual platform to investigate "irrationalities" which interfere with planned and methodical actions (Avgerou 2001). The situated action perspective (eg.

Ciborra & Lanzara 1994; Orlikowski 1996; Ciborra 1999; Ciborra 2000; Johnston 2001) characterises the IS innovation process as emergent and incremental intertwined with the social fabric of the organisation (Ciborra 1994; Avgerou 2001) viewing it more as a case of improvisation (Ciborra 1999).

Institutional theory is primarily concerned with an "organisation's relationship or 'fit' with the institutional environment, the effects of social expectations (norms) on the organisations and the incorporation of these expectations as reflected in organisational characteristics" (Martinez & Dacin 1999). Institutions are considered to not only constitute organisations but they also constitute the appropriate ways of acting, including acts that are responses to institutional pressures (Scott 1995, 151). Institutional theory argues that while economic resources are critical to an organisation's operation, organisations should not forget the importance of maintaining social legitimacy, that is, an organisation's acceptance within the society in which they operate. Social legitimacy is seen as a key theoretical contribution of the institutional perspective (Hatch 1997, 85). Legitimacy is viewed as a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws, rather than a commodity to be possessed or exchanged such as what a resource-dependence or social exchange approach proposes (Scott 1995, 45).

The institutional school of organisation studies has evolved from varied traditions (Scott 1995). However, in keeping with the philosophical foundations and multiple perspectives underlying this investigation, contemporary institutional theory (eg. DiMaggio & Powell 1991; Scott 1995) is emphasised. The contemporary approach focuses upon the intermediate, "meso area" between organisational level analysis and societal analysis and makes the claim that all organisations are institutionalised organisations (Clark 2000, 164). Institutions are considered to be the infrastructures that constrain and support organisations and therefore embody institutional and cultural logics (ibid 2000).

Scott (1995) provides a detailed analysis of the essential requirements and issues of institutional theory through a conceptual platform built on three "pillars" of thought and multiple levels of analyses, centred around what he describes as "three axes of controversy," that is varying emphases, varying carriers, and, varying levels. He endeavours to bridge the social and behavioural scenes by addressing the interface

between the assumptions of economists regarding rationality and historical and comparative sociological perspectives (Clark 2000, 164). Therefore, contemporary institutional theory: extends attention beyond the normative pillar that was the centre of earlier institutional thought to a three pillar approach and incorporates organisational fields as a key level of analysis; highlights the controversy between social constructionists, universalists and rational-instrumental perspectives; explores the role of the historical dimension; highlights the role of the state and professional associations in shaping the culture and structure of organisations; and incorporates multiple levels of analysis, reformulating the top-down and bottom-up debate, that is, societal institutions provide a context through their models and "menus" to the organisational fields, which are diffused downward through imposition and upward through negotiation (ibid 2000, 164-165).

Consistent with other contemporary institutionalists, Scott draws from Giddens structuration theory (discussed in section 3.3.1) in an "eclectic manner where the rules of borrowing are implicit rather than explicit" in examining the place and interrelation of three pillars of analysis, namely, regulative, normative and cognitive (p. 165). As discussed in section 3.3.1, structuration theory emphasises the mutual interpenetration of structure and action in social behaviour. Structures are considered to represent the outcomes of past actions, which in turn are both the context and the medium through which ongoing action unfolds (p. 165). The purpose of the following discussion in section 3.3.2.1, is to discuss in further detail Scott's work as it is recognised as "an incisive and penetrating" synthesis of institutional thought (Clark 2000, 164) providing a "careful and informative representation of the evolution of the study of institutions" (Dacin 1997).

3.3.2.1 SCOTT'S (1995) THREE PILLARS FRAMEWORK

The three pillars framework, set out in Table 3.4, outlines the differing assumptions and emphases of institutional thought, revealing the important areas of controversy. However, while dealing with the three main pillars of analysis separately, Scott endeavours to avoid treating them as "over integrated or over determined" (Clark 2000, 165). Differences among the three "pillars" are associated with the underlying assumptions concerning the nature of reality and the logic of social action. Theorists

focusing on the regulative pillar are more likely to embrace a social realist ontology and a rational choice logic of action. Theorists from the cognitive pillar are likely to have grounded their work with a social constructionist set of assumptions and take a broader view of social choice and action. Actors are viewed as having feelings and meanings, rather than narrow technocratic decision makers (Hall 1999a, 291). Finally, theorists stressing the normative pillar fall between these two “pillars”, however appear to be closer to the cognitive rather than the regulative position (Scott 1995, 49).

Table 3.4 Varying Emphases: Three Pillars of Institutions Source

	Regulative	Normative	Cognitive
Basis of compliance	Expedience	Social obligation	Taken for granted
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules, laws, sanctions	Certification, accreditation	Prevalence, isomorphism
Basis of legitimacy	Legally sanctioned	Morally governed	Culturally supported, conceptually correct

Source: Scott (1995, 35)

While each of these approaches will be considered in this study, the cognitive approach will be predominantly followed for two reasons. Firstly, the focus of the study is on developing a framework for examining the factors and processes that lead to the adoption decision, that is, how the innovation becomes legitimate for the organisation to adopt. Secondly, because this approach has phenomenology as its ontological stance, it makes it more appropriate for interpretive based research utilised in this study.

As well as the differences in philosophical assumptions, these models are also differentiated on the basis of compliance, mechanism of diffusion, type of logic, cluster of indicators and foundation for legitimacy claims (ibid 1995, 35). Scholars emphasising the regulative aspect of institutions are distinguished by the prominence given to: institutional and societal capacity to establish rules; monitoring activities relating to the extent to which those rules are accepted/rejected; and sanctions and rewards devised to influence action. Force, fear and expedience are seen as central elements of compliance. According to DiMaggio and Powell’s (1983) typology of

institutional pressures, the primary mechanism of control is coercion. The basis of legitimacy for the regulative pillar is on conformity to rules, that is, legitimate organisations are those established by and operated in accordance with relevant legal or quasi-legal requirements.

Scholars supporting the normative pillar emphasise normative rules, including both values and norms. Norms define how things should be done and the legitimate means to pursue valued ends (Scott 1995, 37). Normative systems not only define the goals or objectives (eg. making a profit) but also specify the appropriate ways to pursue them (eg. conceptions of fair business practices) involving a feeling of social obligation. That is there is an issue of the logic of appropriateness in a social situation rather than purely instrumental benefits. In clarifying the difference between a regulative and a normative conception of institutions, an instrumental logic asks, "What are my interests in this situation?" whereas, a logic of appropriateness asks, "Given my role in this situation, what is expected of me?" (ibid 1995, 39). Institutional pressure that comes from cultural expectations, such as via the professional training of organisational members, is said to have normative institutional pressures at work (Hatch 1997, 84). A normative view of legitimacy emphasises a deeper, moral base and issues of ethics (Scott 1995, 47).

The third set of institutionalists, stress the centrality of cognitive elements of institutions, that is the rules that constitute the nature of reality and the frames through which meaning is made (ibid 1995, 40). According to cognitive theorists, compliance occurs in many circumstances because other types of behaviour are inconceivable, and routines are followed because they are taken for granted (ibid 1995, 44). Therefore cognitive approaches draw attention to common frameworks of meaning in organisations and how their constitutive rules define the differences between organisations. DiMaggio & Powell (1983) posit that the mechanism, which captures the cognitive dimension of isomorphic processes, is imitation, or what they call mimetic processes. A principal indicator of the strength of mimetic processes is prevalence, or the number of similar individuals or organisations exhibiting a given form or practice. Within organisational fields, those performing similar tasks confront strong pressures for structural isomorphism (Scott 1995, 45). A cognitive view of legitimacy stresses the legitimacy that comes from adopting a common frame of reference or definition of the situation. Adopting an orthodox structure or identity in order to relate to a specific situation is to seek the legitimacy that comes from cognitive consistency (ibid 1995,47).

The three pillars are described as being embedded in different ways in terms of culture, social structure and routines. Whilst not discussing it in detail Scott (1995) also raises technology. Table 3.5 outlines the various types of “carriers” and the major aspects emphasised according to the institutional perspective.

Table 3.5 Institutional pillars and carriers

Carrier	Pillar		
	Regulative	Normative	Cognitive
Cultures	Rules, laws	Values, expectations	Categories, typifications
Social structures	Governance systems, power systems	Regimes, authority systems	Structural isomorphism
Routines	Protocols, standard procedures	Conformity, performance of duty	Performance programs, scripts

Source: Scott (1995, 52)

Cultures are considered to be carriers that rely on codified patterns of meanings and rule system, or what Scott (1995, 53) describes as interpretive structures. Interpretive schemes inform and constrain behaviour as well as being reinforced and changed by these behaviours (ibid 1995). These rule systems may exist at the societal level, or apply to specific organisational fields or organisations. Cognitive systems are embedded in categories, distinctions, and typifications. The normative framework of shared values and normative expectations is embedded in the authority systems and routines of conformity. The regulative pillar is embedded in rules, laws and conventions (ibid 1995 53).

Social structures are considered to be carriers that rely on patterned expectations connected to networks of social positions, or what is described as role systems (ibid 1995). Structures constrain and empower the behaviour of actors whilst also at the same time reproduce and transform this behaviour. Some structural forms are widely shared across many organisations, creating structural isomorphism (similar forms), or structural equivalence (similar relations among forms) (ibid 1995, 54). This latter concept is addressed in section 3.3.3 regarding social network theory (SNT). Cognitive theorists stress structural isomorphism, whereby cognitive typifications are often coded into organisational structures as differentiated departments and roles. Normative and regulative theorists view structures as governance systems, emphasising either the normative (authority) or coercive (power) aspects of these structures (ibid 1995).

Routines are described as carriers that rely on patterned actions reflecting the tacit knowledge of actors that is deeply ingrained habits and procedures based on inarticulated knowledge and beliefs (ibid 1995, 54). Routines are viewed as activities ranging from “hard” such as activities encoded into technologies, to “soft” that is organisational routines such as assembly lines, but all involving “repetitive patterns of activity” (Winter 1990 cf. Scott 1995, 55). The linkage between each of these three “carriers” and their shaping of organisational features is seen as an important as well as a problematic issue (Clark 2000). Recent research has emphasised the cognitive basis (ibid 2000, 167) and has been used to explain the adoption of innovations. For example, Swan and Clark (1992) examined how the forms of knowledge institutionalised in the organisation may affect its ability to attend to innovations that may improve the internal capacities for co-ordination.

The third area of differentiation is that of level of analysis. Scott identifies six categories (1995, 56): levels of world systems, societal, organisational field, organisational population, organisation and organisational subsystem. One of the most significant levels to institutional theory, and this study, is that of the organisational field, which is defined by DiMaggio and Powell (1983) as “those organisations that, in the aggregate, constitute a recognised area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organisations that produce similar services or products.” As Scott (1995, 56) states, these conceptions build on the more conventional concept of “industry” by adding to the focal population of organisations operating in the same domain (indicated by the similarity of products or services), and other different organisations that critically influence their performance. Studying collective levels of analysis, such as organisational fields, assist in understanding how the wider and non-intuitive orders of social structure take shape and their impact on organisational elements and processes (ibid 1995, 93).

Organisational field approaches provide a basic framework to examine the links between wider social structures and organisational level strategy and activity (Dacin et al. 1999). The recursive interdependence of social activities and structures is referred to by Giddens (1979) as structuration (see section 3.3.1). DiMaggio and Powell (1983) use the term more narrowly in referring to the interaction and the nature of the inter-organisational structure that arises at the level of the organisational field. Whilst organisations in an organisational field are subject to institutional forces within the context, their response to such pressures may vary, according to their characteristics

and/or location within the field (Scott 1995, 118). These arguments direct attention to social networks (both individuals and organisations), which is discussed in detail in section 3.3.3. Further, organisations may react strategically to their situations as suggested by resource dependency and strategic choice theories discussed in section 3.3.4 and section 3.4.1 respectively.

Despite the appeal of institutional theory, there are some problems that raise issues in using the theory. Institutional theory has been criticised for providing over socialised explanations of organisational behaviour thereby often ignoring the role of power, interest and agency (Hall 1999a, 292; Martinez & Dacin 1999). However, DiMaggio and Powell (1983) hypothesised that institutional effects were more likely in situations where there were ambiguous goals and indeterminate technology, such as the circumstances surrounding this study. The empirical work in institutional literature has also largely concentrated on the diffusion of particular policies and practices. Research into the decision making process behaviours that underwrite these diffusion decisions are extremely limited “yet are particularly critical in understanding cases that do not involve some sort of legal coercion” (Barley & Tolbert 1997). As will be seen in section 3.5, the theoretical framework proposed for this study, utilises theories from the strategic choice/organisational decision making and socio technical perspective to assist in overcoming this weakness.

Institutional theory has also been criticised for largely ignoring how institutions are created, altered and reproduced in its empirical agenda (Barley & Tolbert 1997). While structuration theory focuses on the dynamics by which institutions are reproduced and altered, it provides little guidance into how to investigate the way in which action revises or reproduces an institution (ibid 1997). Therefore, when used together, structuration theory and institutional theory may provide complementary insights as both theories share the premise that action is largely organised by institutions (ibid 1997).

Notwithstanding such limitations, the value of the institutional perspective is recognised in the IS literature (see for eg. Christiaanse & Huigen 1997; Silva & Backhouse 1997; Orlikowski & Barley 2001). The proposed framework examines key features of institutional theory in examining the rationality and motivation behind adoption decisions, as institutions are considered to provide an implicit frame of reference and judgement upon which people rely on during decision making processes (Scott 1995).

3.3.3 SOCIAL NETWORK THEORY (SNT): TYPE AND STRUCTURE OF RELATIONSHIPS

The social network metaphor is widely used in the field of economic sociology in studying socio-economic behaviour and processes (Davern 1997). The social network tradition is based on the principle that the structure of relations among actors has certain behavioural consequences regardless of whether actors are individuals, organisations, professional associations etc (Mizruchi & Potts 2000). Within the network literature exists a “cacophony of heterogeneous concepts, theories and research results” which whilst providing a rich and diverse landscape, its fragmented and disjointed nature makes it difficult to follow (Oliver & Ebers 1998). Nohria (1992) posits that “anyone reading through what purports to be network literature will readily perceive the analogy between it and a terminological jungle in which any newcomer may plant a tree.” Social network theory (SNT) does not stem from a single all encompassing theory or methodology (Granovetter 1973) making it difficult to “pigeon hole” into any one perspective (Smelser 1988). However, to assume that it is atheoretical or lacks conceptual substance is considered by Wasserman and Faust (1994) to be inaccurate as it has emerged as a style of theory in its own right (Collins 1988).

Comprehensive reviews are available (see for eg. Nohria & Eccles 1992; Wasserman & Galaskiewicz, 1993) demonstrating the development of the social network perspective. Social network theorists differentiate their approach from “atomistic” and “normative” sociological approaches (Granovetter 1985; Degenne & Forsè 1999). Atomistic orientations focus on actors making decisions in isolation from each other, relying on their personal attributes and goals to explain social action (Ritzer 1996; Degenne & Forsè 1999). Normative approaches focus on culture and the socialisation process through which norms and values are internalised in actors, that is what holds people together is sets of shared ideas. The social network perspective not only avoids the reification of the macro structure but also a “disembodied” view of micro interactions by showing structures as patterns among individuals (Collins 1988). That is, SNT provides the conceptual and methodological “keys” to examine the pattern of relations among a set of actors – whether individuals, groups, organisations or countries – to explain outcomes, which are more than the sum of individual actors’ personal attributes

and internalised norms (Wasserman & Faust 1994; Ritzer 1996). Therefore, the key difference between network theorists use of social structure and other concepts of social structure is that social network analysts regard “structure as empirically discovered regularities of interactions of various types – regularities that are taken as they exist, not regarded as rooted in some more general theory of the individual and society – and regularities that constitute an independent variable in explaining individual behaviour and beliefs, as well as larger social processes” (Smelser 1988).

In contrast to ANT, social network theorists, as the starting point for investigation, generally take the system of structured positions in society and move from there to examine the kinds of structural relations among individuals that actually may develop in the larger context (Granovetter 1985; Smelser 1988). That is, social actors are embedded in a relational system whereby the relational context is a source of information regarding interpretation and perception of the actors environment and valued behaviours (Meyer 1994; Rowley 1997). The process by which the social context influences the attitudes and behaviours of individuals is termed social contagion (Meyer 1994). The context of the relations are considered to be any “kind of socially meaningful tie such as friendships, advice seeking, providing assistance, influencing, dominating” (Smelser 1988) or communication (Rogers 1995). The major focus for SNT then is to determine “how the relations are arranged, how the behaviour of individuals depends on their location in this arrangement, and how the qualities of the individuals influence the arrangement” (Smelser 1988).

Within SNT exist a number of conceptual and analytical categories, which Davern (1997) groups into four research components: the structural component; the normative component; the resource component; and, the dynamic component. First, the structural component, is considered the “basic building block” of network analysis examining the structure or configuration of the actors and ties within the network (ibid 1997, 2). Research in this area has traditionally examined how the social structure facilitates, shapes and/or constrains the flow of economic activity and information (Dacin et al. 1999). Therefore, this work focuses on the position that an actor occupies within the network and how this effects both the action and opportunities of an organisational actor (Burt 1992; Uzzi 1997) as well as outcomes (Hargadon & Sutton 1997). In addition, the way these “ties” are connected may vary in content, formality, strength and frequency

(Meyer 1994). A variety of criteria has been used to examine these concepts such as the length of time actors spend together, the degree of emotional intensity between actors, the amount of “like” or “dislike” for others and the amount of business two actors do together (Davern 1997). For example, Gulati (1995) examined the role of repeated transactions with the same parties in alliance formation.

The resource component focuses on the distribution within networks of various resources that differentiate among actors within similar structural network positions (Davern 1997). The “links” or “ties” represent diverse resource flows classified by Turner (1991) into three generic types: (1) symbols (information, ideas, values, norms, messages etc); (2) materials (physical things and perhaps symbols such as money that give access to physical things) and (3) emotions (approval, respect, liking, pleasure etc). For example an organisation with several high status connections within an inter-organisational network, such as interlocking directorships may be considered to have a large amount of resources. It is assumed that access to these resources provides actors with a higher probability of obtaining a favourable outcome in socio-economic processes (Davern 1997). This category of SNT research aligns closely with the resource dependency perspective discussed in section 3.3.4.

The normative component examines the norms and overt rules that influence the behaviour of actors within varying networks. Socio-cognitive aspects, such as trust, judgement, discretion and the prevalence of reciprocity amongst actors within the network as well as the regulatory rules and effective sanctions for enforcing the rules are considered (Dacin et al. 1999). The normative perspective ties closely to the institutional perspective discussed above in section 3.3.2. The normative component also considers the type of ties, determined by analysing the social roles connected through a tie such as kin related, work-related, friendships or some combination, as these are considered to have implications for social and economic behaviour (Davern 1997, 3). The fourth dynamic component is concerned with studying the structural, resource and normative changes in social networks to provide insight into socio-economic processes (ibid 1997 3).

While there is little disagreement with the notion that social structure is composed of relations among positions, network concepts can not capture all of the critical properties

of social structure, such as cultural, behavioural, temporal, psychological etc (Turner 1991, 557) as social networks are part of the study of behaviour and processes that researchers are trying to contextualise (Lazega 1997). However, when complemented with other perspectives such as institutional theory and resource dependency, it offers some insight, as the backbone of social structure is a system of interconnections among actors who occupy positions and who exchange resources (Turner 1991; Lazega 1997).

Further, SNT has been criticised at a methodological level, as predictions of network relations and their effects have not been consistently observed and there is some contention as to how to measure network ties (Ritzer 1996; Pfeffer 1997). This problem arises because ties amongst organisations are often complex and accomplished through a number of mechanisms such as friendship ties and director interlocks on company boards. Further, studies that ostensibly use network language do not employ formal network methods to analyse the actual structure of the network, reducing such measures to more simplistic terms that may not accurately evaluate the organisational network tie (Pfeffer 1997). Finally, since using formal network models requires a large volume of highly aggregated data on relations among individuals or organisations, studies are often confined to one or very few organisations limiting the researcher's ability to explore such models in different settings (Lazega 1997; Pfeffer 1997).

Notwithstanding such limitations, the theoretical richness inherent in the structural embeddedness view, is evidenced by a considerable body of literature particularly the strategic use of social networks (Burt 2000). Further, in keeping with the broad aims of this research, theoretical concepts from SNT are used to analyse the influence of social networks in SIS decision making rather than hypothesis describing and explaining the nature of, creation, development and use of specific networks (see for eg. Mizruchi & Stearns 2001).

3.3.4 RESOURCE DEPENDENCY THEORY: RESOURCES, POWER AND POLITICS

Network linkages not only affect behaviour through modelling and social contagion processes but also directly influence the flow of resources and legitimacy to organisations (Pfeffer 1997). Network models of organisations arose out of the resource dependency perspective, which was predominately developed by Pfeffer and Salancik

(1978). However, while resource dependency theory contains network concepts it does not employ formalised network measures (Pfeffer 1997, 65). The resource dependency perspective emphasises organisations as social units with an existence distinct from the members' (ibid 1997, 59) bringing organisational decisions and actions into consideration (Pfeffer & Salancik 1978).

The resource dependence model is grounded in the political economy model of organisations and the dependence-exchange approach (Hall 1999a, 279). The basic premise is that decisions are made within the internal political context of the organisations, which deal with environmental conditions faced by the organisation (p. 279). Managers may be assisted in understanding the power/dependence relationships that exist between their organisation and other network actors through an analysis of inter-organisational relations (Hatch 1997, 78). In contrast to institutional theory, which is formulated at the level of the environment, resource dependency theory is formulated at the organisational level of analysis and provides the perspective of management looking outward from the organisation to its surrounding environment (Hatch 1997, 86).

Pfeffer (1997, 63) summarises the basic arguments and premises of the resource dependence perspective as follows: (i) "the fundamental units for understanding inter-corporate relations and society are organisations; (ii) these organisations are not autonomous, but are constrained by a network of interdependencies with other organisations; (iii) interdependence, when coupled with uncertainty about what the actions will be of those with which the organisation is interdependent, leads to a situation in which survival and continued success are uncertain; and therefore (iv) organisations take actions to manage external interdependencies. Furthermore, (v) these patterns of dependence produce interorganisational as well as intraorganisational power, where such power has some effect on organisational behaviour."

Therefore, a resource dependence analysis begins by identifying an organisation's needed resources, such as raw materials, labour, capital, equipment, knowledge and technical innovations, and then tracing them to their sources (Hatch 1997, 78). The sources of these resources are considered to be other organisations. After identifying the resources and their source in the network, attention is moved to those environmental

actors who can affect these organisation-environment relationships, thereby supporting or interfering with the organisation's resource exchanges (ibid 1997, 79). As it is impossible to consider every source of dependence that an organisation has on its environment, resources are sorted according to their criticality and scarcity. The second step is to pursue ways, which assist in avoiding dependency or make other environmental actors dependent on the organisation (ibid 1997, 80).

While resource dependency theory examines how competitive pressures drive organisations to be different, it does not address what enables the initial innovation and early adoption of change by some organisations. It simply suggests that organisations facing resource scarcities will seek to be more competitive in acquiring resources or be innovative in ways that allow them to make use of alternative resources. It is here that institutional theory makes an important contribution (Scherer & Lee 2002). Institutional theory addresses this issue through its notion of legitimacy, identifying which organisations are more inclined to be initial innovators and early adopters, through its examination of institutional forces. However, both competitive and institutional forces play off one another in that without competitive forces, organisations may not need to change, highlighting the value in the integration of these two theories (Scherer & Lee 2002).

Resource dependence theory also builds on strategic contingency theory through its explanations of how the environment is linked to organisational action via political processes, that is, the links between uncertainty, power and the hierarchy of authority (Hall 1999a, 287-288). A key element of the resource dependence model is strategic choice (Child 1972). Strategic choice – resource dependence theory provides a framework for explaining why actors make particular strategic decisions and how they acquire the resources (see for eg. Campling & Michelson 1998). Although not intended a dichotomous distinction has arisen with the strategic choice concept between structural explanations on the one hand and those which stressed the capacity of human agents to shape both organisations and their environment on the other (Child 1997). The problem with dichotomising agency and structure is addressed in the discussion of structuration theory in section 3.3.1 as well as in the analysis of the strategic choice concept in section 3.4.1. However, for now, strategic choice will be considered in the context of the resource dependence perspective.

Internal power arrangements and the demands of external groups are considered central to the decision making process. However, regardless of the source of power, strategic choices remain tied to environmental pressures (Hall 1999a, 280). The idea of goals is not considered part of the decision making process, which Hall (1999a, 283) identifies as a weakness and recommends that this model be “augmented [with] a model that views organisational actions as being goal based as well.” Aldrich and Pfeffer (1976) discussed three ways in which strategic choices are made about the environment. First, decision makers have autonomy reflected in the fact that more than one kind of decision may be made about the environmental niche being occupied, that is more than one kind of structure is suitable for given environments. Secondly, the process of strategic choice may involve attempts to manipulate the environment. For example, organisations may enter into arrangements with other organisations to regulate competition. Thirdly, strategic choices about the environment may vary, as environmental phenomena may be perceived quite differently by different actors on the basis of their perceptions, interpretations and evaluations. That is, organisational actors define reality in terms of their own background and values (Hall 1999a, 281). There are also limitations on the range of choice available to organisational decision makers, such as legal and economic barriers. Further, decisions attempting to alter the environment may not be possible as, for example, small organisations may have less power than large organisations to modify their environments (ibid 1999a, 282).

A final aspect of the resource-dependence model, is that of retention mechanisms that organisations utilise to retain previously successful adaptations (ibid 1999a). Two major retention devices include bureaucratisation and socialisation. There are different interpretations of bureaucratisation as a form of administration. First, records and policies may provide the framework and content for decisions to be made, providing continuity for the organisation and ensuring past forms are retained. Role specialisation and standardisation also ensure that policies are followed. Second, advancement based on performance aids in continuity in that if actors are advanced through the system, their past experiences will be in common and so will react in a similar way to how people reacted in the past. Finally, a hierarchical structure serves the retention process in that the power of those at the top is viewed as legitimate. Therefore, authority is exercised and decisions not questioned (ibid 1999a 282). The socialisation process is centred around the issue that people entering an organisation are continually socialised in formal and informal ways resulting in the culture of the organisation being transmitted to new members (Dornbusch 1955 cf. Hall 1999a, 282).

As discussed above, the resource dependence model does not view organisational actions as being goal based. In part 3.4 the focus is on organisational processes and strategic choices surrounding technology and organisation. Technology adoption is understood in terms of decision making junctures involving a range of organisational actors at different levels, who may have markedly different objectives, resulting in conflict and goal divergence (Hill et al. 1997).

3.4 STRATEGIC CHOICE AND DECISION MAKING PERSPECTIVE

Whilst, factors such as the technological environment are important, they do not themselves shape the organisational outcomes of technological change, but rather act as "reference points," for the choices, decisions and negotiating activity of key actors within an organisation (McLoughlin 1999, 69). The following discussion provides an overview of the literature concerning managerial action with respect to decision making and strategic choice, which has been broadly categorised for the purposes of this study as the strategic choice/decision making perspective. This perspective stresses the role of organisation-specific processes of choice and decision making concerning the adoption of strategic information systems.

The study of organisations as decision making systems and as political orders introduces another metaphor, that is the organisation as a political arena. The following discussion examines strategic choice theory and organisational decision making theory separately. However, this is for the purpose of ease of analysis because of the numerous researchers that have investigated and written about these areas in the past several decades. As will become apparent, the two sections are inextricably linked as the subject of decision making, within organisation theory, has had a large influence on the development of the concept of strategy in the organisational (Hatch 1997, 270) as well as the SISP literature (see Chapter Two, section 2.3.3). However, they differ in parts because of perspectives regarding the nature of strategy, issues of level of analysis and questions about where in the organisation strategic actions emanate (Fincham & Roslender 1995).

3.4.1 STRATEGIC CHOICE PERSPECTIVE

The origins of the strategic choice perspective may be traced back to the writings of the Carnegie School in the late 1950s and 1960s, which challenged the situational determinism of neo-classical economics and organisational theory (Whittington 1994). The "human beings" of the Carnegie school were considered to be "boundedly rational," and "cognitively biased," (Whittington 1994). The earlier exposition of strategic choice was fundamentally concerned with the relationship between agency and environment. The ability of decision makers (agents) to make a 'choice' between policies depended upon the extent to which they could preserve autonomy within the environment, whilst achieving the levels of performance expected of them (Child 1972). Matters that were considered of importance to an organisation as a whole, particularly those impacting upon the organisation's ability to flourish within a competitive environment or to remain credible were referred to as "strategic" (Child 1972).

The Carnegie school was influenced by writers such as Cyert and March (1963), who highlighted the reliance placed on programmed decision making and organisational routines and Cohen et al. (1972) who focused on the arbitrary links between problem and solution streams. This perspective of strategic decision making influenced other literature areas. For example the routinised nature of strategy has been incorporated into the evolutionary theory of the firm (Nelson & Winter 1982) and contributed to Mintzberg and Water's (1990) scepticism about the importance of decisions, while the concept of cognitive bias supported the strategic orientations in Miles and Snow's (1978) strategy archetypes and Hambrick and Mason's (1984) upper echelons theory (see Whittington 1994 for a detailed discussion). Further, the Carnegie School's micro-politics played a large part in Child's (1972) seminal article on strategic choice which emphasised managerial discretion, power, dominant coalitions and top decision maker's perceptions and Pettigrew's (1985), influential empirical studies of organisational development and strategic change programmes.

Whittington (1988) criticised the individualistic perspective of the Carnegie tradition, advocating a theory of strategic choice with "some sociological grounding" (Whittington 1994). Whittington (1988, 1994) posits that in dichotomising agency and structure the preconditions for exercising agency tend to be ignored, giving the

impression that choice is exercised by actors because of the absence of external constraint. Whittington (1988) suggests that agency is constrained through interpretive frameworks through which decisions are made that may limit the range of available choices perceived and considered. Therefore, a more realistic distinction is considered to be between “environmental determinism” and “action determinism.”

The exposition of strategic choice from its inception in the Carnegie School has contributed to a diversity of perspectives on the subject which has inspired investigations into the internal constitution of the organisation and its decision making and stimulated debate on three key issues: (1) the role of agency and choice in organisational analysis; (2) the organisational environment; and (3) the relationships between organisational agents and the environment (Child 1997). Child (1997) discusses the “veritable plethora” of perspectives and research that has arisen in these areas which will be briefly outlined below for the purposes of showing how this perspective relates to structuration theory and the theories outlined above in section 3.2 and 3.3.

In examining the nature of agency and choice, Child (1997) refers to three phenomena, action determinism, political process and imperfect information, which may react upon each other. Action determinism provides insights from cognitive psychology as it draws attention to the relevance of prior factors, which shape the mind-set of key actors and how these could limit the range of choices recognised and considered. The political process perspective draws attention to what would be collectively acceptable within the ‘dominant’ decision making group, or acceptable to the organisation’s wider body of employees or members and the internal negotiation process through which agreement is reached. Contemporary institutional theorists, such as Scott (1995) (discussed in section 3.3.2), have explored how institutions can frame organisational members evaluations of appropriate structures and behaviours and hence determine the choices they make. Finally, the emphasis among members of the Carnegie School on what they called bounded rationality (March & Simon 1958), the costs of and limits to information processing (Cyert & March 1963; Quinn 1980) and the role of ambiguity in organisational decision processes (March & Olsen 1976) draws attention to the relevance of information in exercising strategic choice (see Child 1997). The two issues regarding information, raised by Child, are firstly concerns regarding the problem of

securing relevant information that is timely, and in an analysable form, which is not prohibitively expensive. The second concerns the problem of coping with information that is ambiguous, of questionable reliability and incomplete. The non-routine nature of strategic decision making and the time frame within which such decisions need to be made especially regarding IS, suggests that the degree of choice will be inhibited by limited and/or ambiguous information.

The second key area addressed by Child (1997) is the environment. Weick's (1969) enactment theory is seen by Child as fundamental to strategic choice analysis. Enactment has a strong focus on human agency and action, which bring certain environments into relevance or what Child describes as introducing "them onto the organisational stage." Once entered, the conditions of an environment are considered to assume objective properties that are of a significant nature for the organisation, according to the extent that they are filtered by a subjective interpretation or negotiated through interaction between internal and external actors. That is, economic, institutional, technological, infrastructure, political and social arrangements that shape our lives do not exist separately "out there" as part of nature, nor are they imposed upon us, but rather are equally shaped by our actions, individual and collective, intended and unintended (Brynjolfsson & Kahin 2000). In considering the interpretive view contained within strategic choice analysis, Child (1997) makes the point that while some writers have pursued the argument that the environment is enacted through the social construction of actors, the "emphasis on human agency and subjective interpretation contained in strategic choice analysis was intended to counteract the theoretical shallowness and inherent pessimism of environmental determinism, not to reduce either organisation or environment to being simply the products of a subjective understanding." The perspectives and theories discussed in sections 3.2 and 3.3 complements this viewpoint. Further, whilst, the 'task environment' view, which focused on economic and technological variables, dominated the 'traditional' strategic choice perspective, the contemporary perspective is more "conscious" of the social network properties of organisations and their contexts, discussed in section 3.3.3.

The third key area concerns organisational agents and the environment. Treating the environment simply as an external determinant of organisation action is considered by Child as a "misleading oversimplification." The social nature of an organisation's

environment is considered to act, under some circumstances, as a constraint upon action, or determining it, as well as enabling action and widening the range of available strategic alternatives. This viewpoint is recognised in resource dependency theory discussed in section 3.3.4. Social network theory, discussed in section 3.3.3 also raises doubts about how externalised an organisational environment is from its constituent organisations, recognising that from a strategic choice perspective, choice possibilities may be created through organisational actors relationships with people who are formally outside the organisation. Strategic choice as a process may also incorporate structuration theory (section 3.3.1) as action is bounded by the cognitive, material and relational structures existing within organisations and their networks, while at the same time it may impact upon those structures.

Child (1997) believes that a contemporary contribution of strategic choice analysis is its integrative potential derived from its articulation of strategic choice as a political process, which brings agency and structure into tension, locating them within a significant context. By regarding the relation of agency to structure and to environment as dynamic in nature, the strategic choice approach is considered to bridge not only a number of competing perspectives, but also “adopts a nondeterministic and potentially evolutionary position” (Child 1997). Further, when considered as a process, strategic choice, highlights the possibility of a continuing adaptive learning cycle “within a theoretical framework that locates ‘organisational learning’ within the context of organisations as socio-political systems” (p. 44). The importance of organisational learning in the examination of technological and organisational change has also been identified in the organisational innovation literature (Clark & Staunton 1993; Barrett & Walsham 1995). The following discussion examines the organisational decision making process literature, which as discussed above, are closely aligned in parts with the strategic choice perspective.

3.4.2 ORGANISATIONAL DECISION MAKING MODELS

A large part of research on organisational decision making is concerned with how decisions should be made, seeking techniques for improving the actions for organisational decision makers. While incidentally concerned with how decisions should be made in this study, the literature discussed below, focuses on how decisions

actually occur in organisations and ways to think about decision processes to assist in the development of the research framework consistent with the objectives of this research. In this context, when referring to organisational decision making theory the view is one that sees the organisation as a locus for decision making activity (Hatch 1997, 270).

Broadly speaking, the decision making perspective developed to challenge the rational, prescriptive, problem-solving approach to the making of choices in organisations, highlighting the influence of processes on the substance of choices (Laroche 1995); a factor acknowledged and incorporated in the contemporary strategic choice perspective discussed above in section 3.4.1. Numerous organisational researchers have investigated and written about organisational decision making (see Kriger & Barnes 1992 for a detailed discussion) and strategic decision making (see Eisenhardt & Zbaracki 1992; Schoemaker 1993b) from a variety of perspectives and approaches. The origins of organisational decision making theory may be traced to the works of March and Simon (1958) and Cyert and March (1963) which focused on politics in organisational decision making processes. These authors questioned traditional economic assumptions of rationality in organisational decision making processes offering empirical evidence that only under highly restrictive conditions could decision processes be called rational (Hatch 1997, 272).

The following discussion reviews the decision making literature by focusing on four dominant schools of thought, that is rationality and bounded rationality, process models, politics and power models and garbage can/anarchy models summarised in Table 3.6. The objective is to highlight key concepts rather than debate the advantages and disadvantages of each as it is argued in this study that decision making is best described by an interweaving of all four types of decision making processes with the possibility of them occurring at the same time (Eisenhardt & Zbaracki 1992; Hatch 1997, 279). For example, in Langley and Truax's (1994) conception of technology adoption in small firms all modes of decision making were identified with respect to the strategic commitment, technology choice and financial justification processes. Further in Choo's (1998) model of information use which consists of three arenas namely sense making, knowledge creation and decision making, each of these decision modes are considered in the latter arena.

Table 3.6 Organisational Decision Making Models

	Rationality & Bounded Rationality Models	Process/Trial & Error Models	Political/Coalitional Models	Anarchy/Garbage Can/Serendipitous Models
Sample author(s)	March & Simon (1993, 1958); Cyert & March (1992, 1963)	Mintzberg et al. (1976); Quinn (1980)	Allison (1971), Pettigrew (1973), Pfeffer & Salancik (1974)	Cohen, March and Olsen (1972), March & Olsen (1976), Levitt & Nass (1989)
Description	Basic features of organisation structure and function are derived from the characteristics of human problem-solving behaviour – ‘bounded’ rationality.	Elucidates the phases and cycles that give structure to apparently complex and dynamic decision making activities	Politics is seen as the mechanism of decision choice – dominated by powerful coalitions.	Choice behaviour in organisations may appear random and disconnected, determined more by available solutions, interested participants and existing decision situations.
Emphasis & Key Contribution	Problem solving. Breakdown of perfect rationality	Problem solving	Resolving conflict. Breakdown of consistent organisational goals	Problem wandering. Temporal logic rather than causal logic.
Goal ambiguity (structure and clarity of organisational goals)	Low – goal directed	Low – goal directed/ Sequential attention	High – conflicting goals, multiple interests	High - Goals are ambiguous/shifting
Conflict	Positive – but limited attention to resolution		High – stimulated game of politics	Not applicable

	Rationality & Bounded Rationality Models	Process/Trial & Error Models	Political/Coalitional Models	Anarchy/Garbage Can/Serendipitous Models
Technical Uncertainty (methods & processes by which tasks accomplished & goals attained)	Low – guided by rule, routines and performance programs/standard operating procedures	High – multiple options and alternative solutions	Low – certainty about preferred approach and outcomes	High - Processes to reach goals are unclear
Participation	Depends upon decision needs		Depends upon interests, power	Fluid, depends upon load and structure
Sample concepts/categories	<ul style="list-style-type: none"> • Quasi-resolution of conflict • Uncertainty avoidance • Problemistic search • Organisational learning 	<p>Activity phases or stages</p> <ul style="list-style-type: none"> • Identification phase - Decision recognition, diagnosis routine (Mintzberg et al); Sense need, develop awareness & understanding (Quinn) • Development phase - Search routine, design routine (Mintzberg et al.); develop partial solutions, increase support (Quinn) • Selection phase - Screen routine, evaluation-choice routine, authorisation routine (Mintzberg et al.); build consensus, formal commitment (Quinn) 	<ul style="list-style-type: none"> • Conflict and contradiction • Positions of authority and access • Negotiation and politics 	<p>Decision situations are characterised by</p> <ul style="list-style-type: none"> • Problematic preferences (serendipitous or random events) • Unclear technology • Fluid participation <p>Decisions are the outcomes of</p> <ul style="list-style-type: none"> • Problems (points of dissatisfaction) • Solutions (answers looking for a problem) • Participants • Choice opportunities (“garbage can”)

[Adapted from Choo (1998), Hatch (1997) and Eisenhardt & Abaracki (1992)]

The rational model initially developed by March and Simon (1958) and Cyert and March (1963) conceptualises decision making as goal directed and problem driven, with choice behaviour regulated by rules and routines so that the organisation behaves in a manner that is intendedly and procedurally rational (Choo 1998). The authors of this model posit that decision making in organisations requires “simplification” due to the limits of the human mind and the complexity of problems to be dealt with; that there is ‘bounded rationality.’ Performance programs (March & Simon 1958), for example, work activities and product/service specifications or standard operating procedures (Cyert & March 1963), for example, task performance rules, plans and planning rules, are relied upon to simplify decision making. The decision making model developed by Cyert and March is composed of four concepts: (1) quasi-resolution of conflict, (2) uncertainty avoidance, (3) problemistic search, and (4) organisational learning (Choo 1998, 174-175). Quasi-resolution of conflict relates to the notion that strategies exercised to resolve conflict are considered not to actually achieve consensus, but enable the organisation to continue to operate despite unresolved divergences. Organisations act to avoid uncertainty by focusing on the short term and attempting to control the environment. Problemistic search refers to the means by which organisations determine what choices are thought to be available. Finally, organisational learning is considered to take place in the decision making process through the adaptation of goals, attention rules and search rules. As discussed in Chapter Two, section 2.3, this school of thought underpins mainstream SISP research.

Process models of organisational decision making focus on stages, activities and dynamics of choice behaviours (Choo 1998). Mintzberg et al.’s (1976) analysis of twenty-five strategic decision processes, resulted in identifying phases and routines suggestive of an underlying structure of the decision making process. The model has a large number of elements, outlined in Table 3.5, reflecting what Mintzberg et al. (1976) saw as the complexity and open-endedness of strategic decisions. Decision makers in this set of conditions move cautiously, engaging in a succession of limited small decisions that can be brought together over time into a full plan of action. Further, since finding and evaluating information on all imaginable alternatives is not possible, that is, there is bounded rationality, decision makers find enough

information to make limited comparisons, most of which may be seen as increments to the last decision made. This emergent view is often referred to as logical incrementalism (see Quinn 1980). The notion that a decision, such as technology adoption, can be decomposed into a certain number of phases made up of different types of activities, was put forward by Rogers (1995), in his five stage innovation process model discussed in section 3.2.4.

The political model of organisational decision making explicitly addresses how actions and decisions are the result of the bargaining among players pursuing their own interests and exercising their available levers of influence (Choo 1998). Allison's (1971) political model adopted the metaphor of game playing for decision making, where players with positions, individual perceptions about issues, and influence act according to rules and their bargaining strength (cf. Choo 1998). Therefore, in situations where there is conflict and contradiction such as conflicting goals and competition over scarce resources, the actors with the most powerful position tend to dominate the decision-making process. By engaging in politics, actors can manage or manipulate the decision making process (Hatch 1997, 277). The political process involves individuals forming coalitions to unite their interests and propose alternatives that are collectively beneficial to themselves (ibid 1997). Coalition formation is based upon some "behind-the-scenes" negotiations, which strive to give consideration to all interests in the coalition's joint position (ibid 1997). As raised in Chapter Two, section 2.3.3, political models have been used in strategy research in studies such as Walsham (1993).

The anarchy model, sometimes referred to as the "garbage can model" is an alternative view put forward by Cohen et al. (1972) which suggests that organisations are organised anarchies in which decision situations are characterised by problematic preferences, unclear technology and fluid participation. Preferences are considered to be ill defined, comprised of a loose collection of ideas rather than a structured set, which may have to be discovered through serendipitous or random events than being known beforehand. The organisation's technology is also considered to be unclear in that its processes and procedures are not well understood, and the means of achieving a desired outcome are not readily identifiable. Participation is described as fluid as people vary in the amount of time and effort they give to different activities (Choo

1998, 184). Decisions are therefore considered to be the outcomes of four relatively independent streams of problems, solutions, participants and choice opportunities. Problems are considered to be junctures of dissatisfaction with current activities or performance requiring attention. Solutions are as Cohen et al. (1972) describe, answers actively looking for a question, in that actors may be attracted to an idea and support it as a logical choice regardless of the problem. Participants bring with them their own preferences and perceptions about problems or solutions, entering and leaving a decision situation depending on other demands on their time (Choo 1998, 184). Choice opportunities are described by Cohen et al. (1972) as “a garbage can into which various kinds of problems and solutions are dumped by participants as they are generated.” The anarchy or garbage can model contrasts sharply with the assumptions of the rational model of decision making, downplaying the instrumentality of decision making instead viewing it as an organisational drama within which decisions are social constructions of reality (Hatch 1997, 279) as demonstrated by Ciborra (1994) in his examination of the serendipitous nature of IS strategy.

The study of how decisions may occur in organisations has been described by March (1997, 10) as “a setting for a cluster of contested issues about human action.” Rather than choosing among the alternative explanations presented in the literature discussed above, the research framework proposed in section 3.5, weaves them together allowing each to complement and illuminate each other. In the following section 3.5, a framework is proposed to combine and reconcile these three perspectives. Major concepts and issues raised in the literature are synthesised, with the purpose of developing a theoretical framework, which serves as a mechanism through which a range of concepts, models, techniques and methodologies are clarified, evaluated and integrated to assist in providing a more holistic and coherent view of adoption decisions in SISP. By exploring the literature from the different views presented from the different perspectives the intent is to develop a conceptual template to assist in understanding how structures, processes and actors interact in context to create the set of issues that influence adoption decisions regarding e-business.

3.5 THE THEORETICAL FRAMEWORK: A CONTEXTUAL MODEL OF SIS ADOPTION DECISIONS

The discussion in this section provides analytical commentary, synthesising the system of concepts, assumptions, expectations, beliefs and theories, which together foster a creative use of literature in constructing the theoretical framework that supports and informs this research. Specifically the researcher was challenged to blend distinctive writings from socio-technical, socio-economic and strategic choice/decision making perspectives (sections 3.0-3.4) with research depicting and analysing adoption decision processes in the e-business, inter-organisational systems (IOS) and SISP literature (discussed in Chapter Two). As a result the researcher was confronted with an array of issues including the discipline bases and lenses for the inquiry, to capture the non rational, political and emotional aspects of adoption decision processes in organisations which may occur in dramatic and unanticipated ways (Kriger & Barnes 1992).

The situation specific, inductive approach of this study lends itself to questions about the meaning of events and activities to actors involved in the adoption of e-business, the influence of the technical and social context on these events and activities and how this compares with existing SISP models. Therefore this research encompasses three major questions, namely:

1. How do e-business adoption decisions evolve in organisations?
2. What are the major drivers and inhibitors of these adoption decisions?
3. How do these findings of industry practice compare with existing SISP models?

In asking these questions the researcher does not purport to provide the definitive answer. Rather, the aim is more modest, involving the construction and description of a multi-level conceptual framework to assist in understanding SISP for the adoption of e-business.

To deal with this, an initial conceptual model was derived from Walsham's (1993) interpretive framework which adopted the methodological approach of contextualism (see Pettigrew (1987) and Pettigrew & Whip (1991)) to analyse the formation and implementation of IS strategy. A key feature of this approach is to consider three dimensions of organisational change namely the content, context and process. The concepts of content, context and process represent a major taxonomic attempt in the field of strategy to understand the nature of strategic activity (Rouleau & Seguin 1995) seeking to capture the dynamic and multilayered image of strategic change, involving three major principles. First, the importance of embeddedness, that is to locate change in the context of interconnected levels of analysis. Secondly, the need to locate change in past, present and future time – temporal interconnectedness. Thirdly, the need to explore context and action that is how context is a product of action and vice versa (see Pettigrew 1985; Pettigrew et al. 1992).

Walsham's model was chosen as the basis for this research since a key aim of this study is similar to his work of understanding IS strategic processes in their context but with a focus on the adoption of e-business. That is, processes of choice and decision making regarding the adoption of e-business are considered to be shaped from the contexts in which they occur, the content of actions and decisions contained within the processes and the conduct of those who are active in these processes (McNulty & Pettigrew 1999). Thus the framework assists in tracing the dynamic interlinking among elements of SIS decision content, the process of SIS decision making and the different levels of organisational and wider contexts. The breadth of issues identified from this analytical effort may be compared to traits and characteristics of existing SISP models (see Chapter Two, Table 2.11) in determining the organisational reality of these planning frameworks.

Certain modifications are made to Walsham's model in order to adapt the framework to this study, extending its theoretical base. The resultant framework is summarised in Table 3.7. The rationale for the choice of particular theories and conceptual elements follows. The discussion is divided into two parts. Firstly, the three elements of the framework are examined (section 3.5.1). Secondly the issue of temporality is addressed (section 3.5.2). The role of time is discussed separately, in terms of how its analysis may strengthen and refine existing thought, as: strategy scholars generally

prescribe that research should incorporate temporal aspects of strategic choices (Mosakowski & Earley 2000); and, time may change the ontological description and meaning of theoretical constructs and the relationships between them (George & Jones 2000). However, while each of these two parts and the sections within them are examined separately it is for the purposes of analysis only as they are in reality interlinked.

Table 3.7 E-business adoption - framework for analysis

Components	Definition and associated elements
Content	<p>Strategic content - intended or emergent visions of change (Walsham's model)</p> <p>Images of e-business - Heterogeneous networks of social and technical actors (based on Actor Network Theory)</p>
Context	<p>Phenomena at different levels that affect and are affected by process (Walsham's model)</p> <p>Social and technical multi-level contexts (based on Institutional Theory and Actor Network Theory)</p>
Process	<p>Interconnectedness of events and actions over time in the processes through which e-business is decided on and adopted (SIS decision making models)</p> <p>Planned rational perspective - comprehensive analysis and planning are used to address aspects of content and context arriving at an array of proposed solutions, thereby maintaining or altering contexts and meanings of e-business.</p> <p>Process/Trial & Error perspective - organisation responds to aspects of content and context in stages or in incremental steps thereby maintaining or altering contexts and meanings of e-business.</p> <p>Political perspective - aspects of content and context are used in political actions seen as the mechanisms of decision choices dominated by powerful coalitions.</p> <p>Serendipitous perspective - organisations respond to aspects of content and context randomly or serendipitously thereby maintaining or altering contexts and meanings of e-business.</p>

3.5.1 SIS DECISION CONTENT, CONTEXT AND PROCESS

3.5.1.1 SIS DECISION CONTENT

The content of the subject matter may affect the course of the decision making process (Pool & Koopman 1992, 76), as the complexity, uncertainty or political nature of the subject matter impacts on what the organisation perceives as to what it can do, wants to do, might do and ought to do (Liedtka & Rosenblum 1996). Hence the first component of the framework is the strategic content. Walsham (1993, 150) posits that a major element of the content of an IS strategy may be the organisation's vision for change which may be embodied within it, either through deliberate design or as an emergent phenomenon; the latter referring to the situation where strategy can form in an organisation without being consciously intended (Mintzberg 1987) as discussed in Chapter Two. Such views are consistent with Orlikowski and Gash (1994) who identified technology strategy as including people's understanding of the motivation or vision behind the adoption decision and its likely value to the organisation, the latter involving people's views on success criteria in evaluating the technology. Hence the content of any organisational change program relating to IS is considered by Walsham (1993) to involve changes to products, processes and systems with respect to the organisation as well as changes in the IS involving computer hardware, software and related technologies.

While Walsham's model places an emphasis on the duality of technology, grounded in Giddens' structuration theory it is not specific about the technology itself viewing it more in terms of an embodiment of autonomy and control and vision for change. Ciborra's (1994) SISP interpretive based model, discussed in Chapter Two, emphasises the interpretation of technology but takes, broadly speaking, a phenomenological approach, focusing on the "tinkering" process in arriving at some understanding of SIS but not understanding itself. In this sense technology is seen as infinitely malleable with no particular characteristics *sui generis* (Mutch 2002). As discussed previously in section 3.2.3, this relativist position is highly controversial. Whilst risking criticism of professing to some position of technical determinism, the 'soft' relativist position taken in this study led to consideration of Mutch's (2002)

suggestion that success lies in recognising the specificities of particular applications and the constraints they impose. However, in moving towards a realist position, the strategic choice perspective and the IS innovation perspective largely take the meaning of technology for granted, viewing it in terms of a malleable resource that may be used in a variety of ways depending on some organisational strategy or ideology (Orlikowski & Iacono 2001), lodged in psychological elements, such as attitudes or perceptions or emanating from fixed characteristics such as its relative advantage. While continuing to reserve a place for Walsham's model and the use of structuration theory in dealing with institutional contexts, discussed further below, the specificity of technology and the unfolding processes that shape it required consideration of Actor Network Theory as it is ontologically relativist but empirically realist as discussed in section 3.2.2.

An ANT perspective views e-business as a process of changing networks of technical and social relations. As discussed in section 3.2.2, it argues that technology is interpreted and formed through the interactions (which have spatial and temporal dimensions) between social and technical actors, in local and global networks (Lea et al. 1995). The construction and transformation of these socio-technical networks is achieved through the process of translation where sets of relations between separate projects, goals, objects and interests are proposed and built (ibid 1995, 466). Unlike the context-behaviour approach, where there is a tendency to equate the social with the context and the technology with the content, the ANT approach argues both conceptually and empirically that both content and context are socially and technically constituted (ibid 1995, 476). Thus e-business is considered constitute of and constituted by heterogeneous networks of actors. ANT provides a neutral vocabulary that avoids privileging technology on the one hand or the social on the other, and a method of analysing the simultaneous reciprocal influences between content and context without legislating a priori the boundaries of either or between different types of actors (ibid 1995, 475) inviting more creative analysis and interpretation (Monteiro 2000) of the fabrication of e-business.

The notion of a collective agent is useful in considering decisions that emerge from the interactions of a multiplicity of actors as it provides some insight into what is technically possible, politically acceptable and economically viable (Scott 1995, 247). It is acknowledged that there are limitations in considering technology as

actors with powers of agency in the same way as individuals or interactive collectivities (Parkin 1994, 206). However, Law's (1992) position is embraced in that it is considered as "an analytical stance not an ethical position."

3.5.1.2 SIS DECISION CONTEXT

Decisions do not occur in a vacuum but in a specific context shaping the way actors perceive, understand, make sense and organise themselves in a situation bounded in time and space (Ciborra & Lanzara 1994). Therefore, in addition to understanding what an organisation pays attention to in its adoption decisions, are questions of what influences such decisions when forming judgements as to what it needs to do and how it will do it, adopting new ways or "sticking stubbornly to old ways" (ibid 1994). Hence the second element of the framework is the context within which e-business adoption takes place.

In addition to the emphasis placed on multi-level contexts, based on contextualism, Walsham adopted concepts from 'web models' to further enrich and make it more specific to the domain of IS. These models define the social context by examining the social relations among the participants concerned with the IS, the available infrastructure to support it and the previous history within the organisation of commitments made to IS. Extending on Walsham's work, the theoretical framework for this study explores the use of institutional theory as discussed in section 3.3.2. Understanding organisational context, from an institutional perspective, requires an appreciation of the organisation's wider social and cultural structures, as these environments create the infrastructures that support and constrain the operations of individual organisations (Scott 1995, 151).

As discussed in section 3.3.2, institutional theory argues that institutions are considered to not only constitute organisations but they also constitute the appropriate ways of acting, including acts that are responses to institutional pressures, consisting of coercive, normative or cultural-cognitive forces. Through the institutionalisation process socially constructed belief systems become part of organisations and their structure producing common understandings about what is considered appropriate and fundamentally meaningful behaviour (DiMaggio & Powell 1991). Thus, the institutional framework both defines the ends and shapes the

means by which interests are defined and pursued furnishing “vocabularies of motives” as well as modes of practice (Scott 2003, 139) and in doing so contextualising rationalities (Scott 1995, 151).

Institutions operate at or have differing jurisdiction over differing levels ranging from a world system to an organisational subsystem. However, in the context of this study the organisation and what is termed the organisational field, such as competitors, customers, suppliers, are focal areas. Emphasis is placed on the relationships between organisations rather than particular environmental or organisational characteristics. In order to survive and/or succeed organisations require more than material resources or technical information. By incorporating environmentally embedded and institutionally rationalised rules into their structures, organisations endeavour to show their conformity to institutional environments. In doing so, they attempt to maximise their legitimacy (Bloodgood & Morrow 2000) by securing resources and social support (DiMaggio & Powell 1983). Thus, organisations’ actions are considered to be the result of competition for legitimacy among competitors and resource-providing constituents (Bloodgood & Morrow 2000). Legitimacy is viewed as a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws whereby the organisation is seen to be socially acceptable and credible. This is in contrast to a resource-dependence or social exchange approach, emphasised in Walsham’s use of ‘web models,’ which treats legitimacy as a commodity to be possessed or exchanged. However, by incorporating the resource dependency perspective into this study’s theoretical framework, competitive pressures are also acknowledged in that without them organisations may not need to change.

Giddens’ structuration framework, as adopted in Walsham’s model, has influenced development in institutional theory, as both theories share the premise that action is largely organised by institutions. While institutional conceptions underlie the sources of social stability and order, structuration theory enables a simultaneous examination of the sources of both social order and social change (Scott 1995). For example, as a consequence of e-business, the structuration of an organisational field may occur, such as the emergence of interorganisational structures of domination or coalitions, prompting organisations to become more alike arising from mimetic forces because of uncertainty.

Therefore, when viewed through the institutional lens, the strategic decision making process is considered to be predominately situational in that shared interactions and institutionally-accepted modes of behaviour found within an organisational field influence the perceptions of decision makers driving the types of strategies considered and how they will be weighted for selection (Bloodgood & Morrow 2000). However, as discussed in section 3.3.2, institutional theory is criticised for providing over socialised explanations of organisational behaviour. In combining this theory with ANT, a relational view of the links between technology, time, space and social life unfolds. Therefore, not only is the organisational context considered to be comprised of individuals, groups (eg. the senior management team) and divisions (eg. the IS division), whose interaction and behaviour shape the technology and form organisational culture, but also technical structures (Lea et al. 1995), such as the presence and type of cabling already in place and available technical knowledge, and physical structures, such as the organisational geography (ibid 1995, 465), transcending both the social and the physical.

3.5.1.3 SIS DECISION MAKING PROCESS

The third element of the framework is the process under examination, which in this case is the interconnectedness of events and actions in the processes through which e-business is decided on and adopted. By separating this section, from the above discussion on content and context, the intention is not to conceptualise strategic decision making purely in terms of choice and decision processes, as it is acknowledged that these processes are shaped by features of the context, the content of action, and the conduct of those who are active in the decision process.

Models from the organisational decision making literature, namely planned/rational, political, process/trial and error, and serendipitous/garbage can discussed in section 3.4.3 underlie the analysis. The rationale for using these models is that they have been identified as important and appropriate in describing strategic IS decision processes (Sabherwal & King 1995). A dynamic view of organisational decision making is taken in this framework, that is, all four types of decision making processes may occur within any organisation and may even occur at the same time (Hatch 1997, 279).

The organisational decision making literature also suggests that making choices and taking decisions is the final episode in a continuous decision making process in context (McNulty & Pettigrew 1999). When taking strategic decisions, McNulty and Pettigrew (1999) are suggesting that the central cognitive structure, in the context of their study the board of directors, exert influence at the end point in the decision process. That is, in being presented with a proposal, the decision making body takes the decision to either accept or reject the proposal, or to refer it for modification (ibid 1999, 56). The question of whether the body of decision makers is merely decision-taking rather than decision making institutions, is discussed in the context of whether this action is "little more than ... the ritualistic function of rubber-stamping executive action" (ibid 1999, 57).

Whilst a range of behaviour earlier in the decision process may impact on the final decision that is taken, "taking strategic decisions" focuses on behavioural episodes of decision taking by the decision making body (ibid 1999, 58). Rogers' (1995, 372) four types of innovation decisions, based on choice behaviour, namely, optional, collective, authority and contingent type decisions, discussed above in section 3.2.4.2.1 may prove useful in analysing the final decision episode to adopt (or not) e-business.

3.5.2 TIME, SIS AND ADOPTION DECISIONS

Time and space have been identified as playing an important role in defining the social context and in shaping the interpretations of IS (Tyre & Orlikowski 1994; Sahay 1997). The concepts of time and space are integrated in the theoretical framework of this investigation. For example, the work of Pettigrew and others on corporate strategy and change (Pettigrew 1985; Pettigrew & Whip 1991; Pettigrew & Fenton 2000) locates change in past, present and future time, that is temporal interconnectedness. The Minnesota Innovation Research Program (MIRP) is an exemplary example of innovation and change in organisational settings (Van de Ven et al. 1989). Further, structuration theory treats agency and structure as being temporally and spatially specific. However, in being sensitive to temporal questioning, one needs to move beyond just clock time and chronology as time is not just "out there" as neutral chronology but also "in here" as social construction

(Pettigrew et al. 2001). The concept of time and its relationship to adoption decisions is further elaborated here based on a model proposed by Heejin & Liebenau (1999). This model provides a broad perspective of time, capturing both objective and subjective views, the latter of which is generally ignored in strategic process research (Mosakowski & Earley 2000). Therefore, the model assists in providing a coherent and congruous analysis of time where discrepancies and paradoxes exist stemming from methodological prescriptions and experientially lived impressions of time (Avital 2000).

Heejin & Liebenau (1999) classify interpretations of time in management and organisation studies, using two criteria, the concept of time and the role of time in research design. The concept of time is divided into two views, the clock time concept and the social time concept. Clock time is characterised as homogeneous, divisible in structure, linear, objective, absolute, and measurable (ibid 1999, 1038). The social time concept, is based on an underlying assumption that time is socially constructed, emphasising aspects of time such as social time, organisational time, subjective time, the plurality of time and event time (ibid 1999, 1040). The model assumes that the clock time concept should be complemented by these concepts of time.

The second criterion by which studies on time are classified by Heejin and Lee is the functional roles of time in research design. Whatever the concept of time is employed, two separate roles which time plays in research design, is the role of the independent variable and that of the dependent variable (ibid 1999). When time takes the role of independent variables, the focus is on the impacts of temporal factors on organisational processes. The role of time as a dependent variable is to examine how various organisational factors affect the time dimension. By intersecting the two criteria Heejin and Lee created four categories in which each study on time could be placed representing four notions of temporality, namely: deciding, working, varying and changing times. Table 3.8, provides an outline of these concepts in the context of this study.

Table 3.8 Four notions of temporality in SIS adoption decisions

	The concept of clock time (Time is presumed to be linearly flowing, evenly paced, divisible, measurable, eg. time allocation)	The concept of social time (Time is assumed to exist in many variations according to cultures, organisations or societies)
Independent variable <i>(How does time affect SIS adoption decision making behaviour?)</i>	Deciding Time <ul style="list-style-type: none"> • <i>time orientation</i> (eg. time orientation of individuals from different departments within the organisation may differ) • <i>time as resource</i> (eg. organisational resource that is finite and scarce, measured in terms of man-hours) • <i>time pressure & deadline effects</i> (eg. how does the amount of time available to make the adoption decision affect the quality of the decision and the process used to make it) 	Varying Time <ul style="list-style-type: none"> • <i>multiplicity of time</i> (i) different cultures have different dominant preferences of past, present or future orientation, eg. organisational, national and cybercultures. (ii) time is in the events and events are defined by organisational members. (Eg. IS managers working with managers from an economics or business background regarding two domains of time, strategic planning time and systems development & design time) • <i>strategy building</i> (eg. the future orientation of planning actors affects their preferences for short and long planning horizons)
Dependent variable <i>(How do the attributes and characteristics of the SIS affect the amount of time required for the adoption decision?)</i>	Working Time <ul style="list-style-type: none"> • <i>decision making and time horizon</i> (eg. how many alternatives are available and what knowledge is available about the SIS and the environment) 	Changing Time <ul style="list-style-type: none"> • <i>SIS and time frame</i> (i) eg. the introduction of SIS may cause profound changes in the time-frame patterns of the decision making process. (ii) different forms of temporality are the product of heterogeneous networks combining associations of human and non human elements.

[Adapted from Heejin & Lee 1999]

3.6 CONCLUSION

The framework developed promotes new theory by providing a broader contextual template in which to identify possible explanations of SISP for the adoption of e-business that do not exist in the current literature. The proposed framework is not exhaustive nor exclusive. It is illustrative, with the purpose of identifying issues that should be engaged, and a way of organising the conceptual task of bringing together the broad issues of SIS adoption decision making. While each of the theoretical perspectives contributes to our understanding of SISP each is concerned with a specific part of the larger phenomenon. Collectively, they address the structural and process characteristics of SIS adoption decisions, as well as their determinants within a holistic perspective.

The chapters discussed thus far (Chapters One to Three) stand together as the conceptual body of this thesis. Here the major (and minor) ideas for the thesis have been developed, their intellectual roots revealed, and the writings and studies of other researchers presented and critiqued. All of this endeavour is intended to advise the reader what the research is about (its subject), who ought to care about it (its significance), what others have described and concluded about the subject (its intellectual roots) and the theoretical contribution. The next chapter (Chapter Four) flows conceptually and logically from all that has gone before it in that the researcher builds a rationale for decisions about the study's overall design, making a case, based on the conceptual part of the thesis, for the particular methods, sample, data analysis techniques and reporting format chosen for the study. However, in using the theoretical framework, its purpose, consistent with the paradigm of inquiry, is to guide the research design decisions and assist in looking for discrepant data and alternative ways (including the research participants' ways) of making sense of the case study data (discussed in Chapter Five); rather than "imposing" theory on the study "shoehorning questions, methods, and data into preconceived categories and preventing the researcher from seeing events and relationships that don't fit the theory" (Maxwell 1996).

CHAPTER FOUR

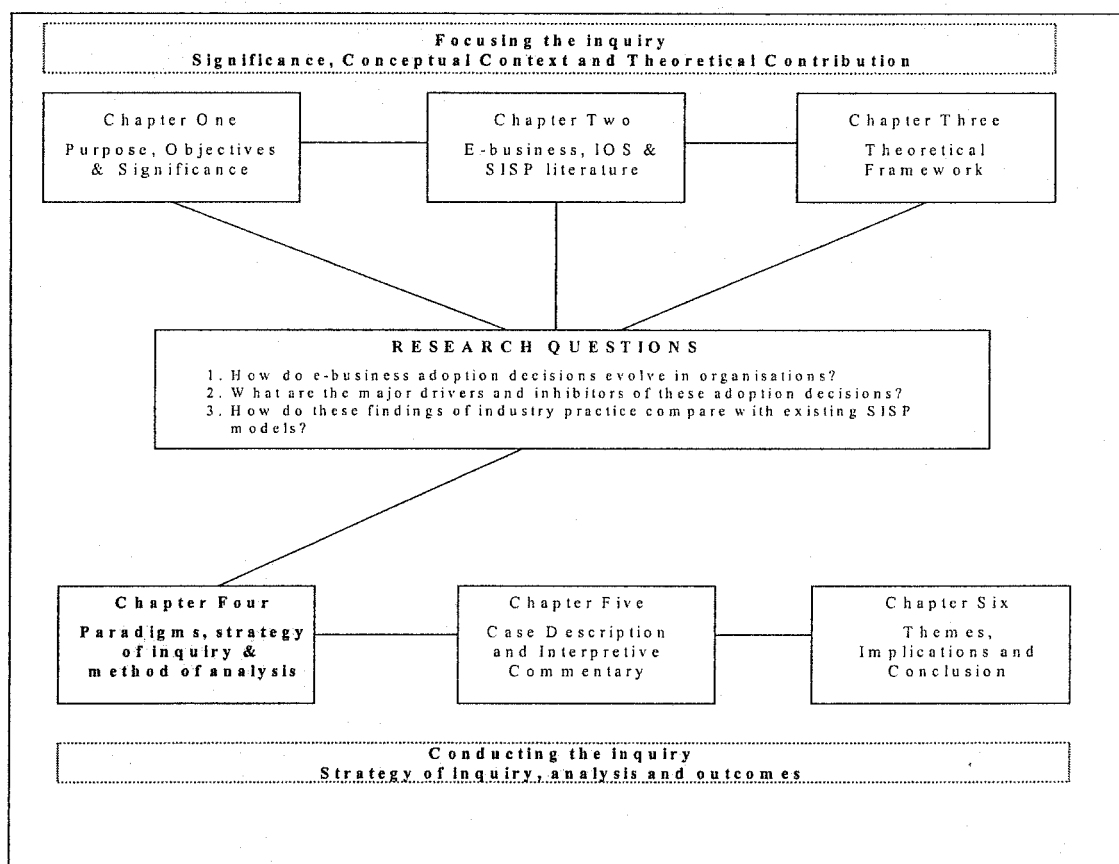
BUILDING THE RESEARCH DESIGN: PARADIGMS, STRATEGY OF INQUIRY AND METHOD OF ANALYSIS

4.0 INTRODUCTION

The preceding three chapters, as illustrated in Figure 4.1, detailed the study's purpose and significance, situated the study in the ongoing discourse about SISP and e-business, and developed the research questions and intellectual traditions to which the study links. Building on, and interrelated with these chapters is Chapter Four based on a conception of research design as the arrangements of elements governing the functioning of the investigation, incorporating the purpose of the study, its conceptual context, its research questions, and methods of collecting, analysing and verifying data. That is, the research is planned in terms of the purpose, objectives and research questions, namely: (1) How do e-business adoption decisions evolve in organisations? (2) What are the major drivers and inhibitors of these adoption decisions? (3) How do these findings of industry practice compare with existing SISP models? Therefore in this chapter the researcher seeks to answer questions such as: What strategy of inquiry seems likely to provide what we are looking for? What does that strategy direct us to do to achieve our aims and objectives? (Crotty 1998). Such decisions are justified in terms of the philosophical orientations underpinning the research (Maxwell 1996).

The theoretical framework and research design for this study address fundamental issues of strategy, change, technology, innovation, decision making and their interaction. In particular the importance of the subjective meaning of e-business for individuals within organisations and the social structures and processes, which shape and enable such meanings is emphasised. Investigating content, context and process issues was in response to the narrow characterisations and limited contextual studies of SISP and e-business, as discussed in Chapters One and Two. A variety of design strategies need to be employed to: make sense of information collected in light of the different systems of meaning; gain awareness of the theories and assumptions that guide such practice; and determine how the researcher would situate herself in the "wide cultural panorama" (Creswell 1998, 81).

Figure 4.1: Schema of Chapters: Chapter Four

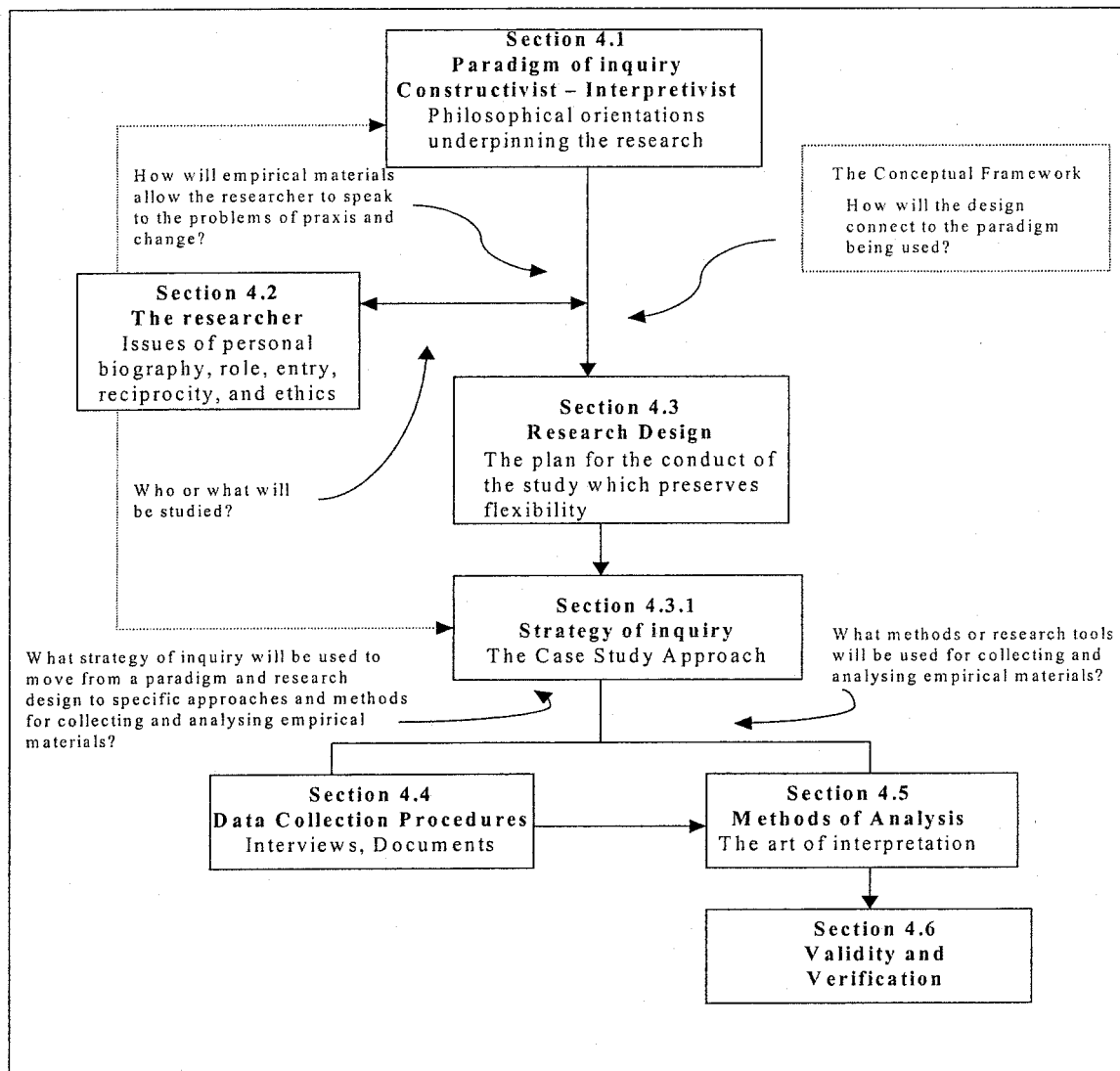


Therefore, there are two major objectives of Chapter Four. Firstly, to justify the methodological “palette” (Bradbury & Lichtenstein 2000) and methods for this study through an examination of the philosophical assumptions, underlying the investigation. In asking about these assumptions, the researcher examines the theoretical perspectives that lie behind the methodology in question and the epistemology informing the theoretical perspective (Crotty 1998, 2). Describing the philosophical stance that lies behind the chosen methodology provides a context for the research process and grounds its logic and criteria (ibid 1998, 7). The second objective of the chapter is to describe how the study was conducted that is the design and method as well as the role of the researcher in the investigation. Whilst focused on the “how” of the study, the intent is not to suggest that the research design is purely a pre-established plan for conducting the study or a sequence of steps, but rather the “scaffolding” providing a sense of stability and direction for the research (ibid 1998, 2). As the researcher moved towards understanding and expounding the research process, she was sensitive to preserving the design flexibility of interpretive practice so that the research could “unfold, cascade, roll and emerge” (Lincoln & Guba 1985, 209), fashioning the design in forms that suited the research purposes.

Concomitant with the philosophical concerns is the role of theory in the investigation (Walsham 1995b). Creswell (1998, 85) posits that whilst the question regarding the use of theory needs to be considered within the context of a particular study, broadly speaking it may differ according to the inquiry strategy used. As will be discussed in detail in section 4.3.1, a case study strategy is adopted in this investigation. Case studies employ theory in different ways. That is, it may be absent from the study with a focus on a description of the case and its issues (Stake 1995), used to guide the study in an explanatory way (Yin 1994), or employed in the final phases of the study (Creswell 1998, 87). In Eisenhardt's (1989) discussion of building theory from case study research, three distinct uses of theory were identified: to shape the research design by focusing the inquiry; as part of an iterative process of data collection and analysis; and guide the final output of the research. As the discussion unfolds in this chapter, it will become evident how the study identified with each of these uses of theory.

To assist in structuring the research design and frame this chapter, five questions proposed by Denzin and Lincoln (2000, 368), were considered: (a) How will the design connect to the paradigm or perspective being used? That is, how will empirical materials be informed by and interact with the paradigm in question? (b) How will these materials allow the researcher to speak to the problems of praxis and change? (c) Who or what will be studied? (d) What strategies of inquiry will be used? (e) What methods or research tools will be used for collecting and analysing materials. As illustrated in Figure 4.2, section 4.1 situates the inquiry within the philosophical and theoretical framework that the researcher brings to this study, namely the constructivist-interpretivist paradigm, as the methodology is inevitably interwoven with and emerges from the nature of particular disciplines and perspectives (Lincoln & Guba 2000, 164; Crotty 1998, 2). Section 4.2 discusses the role of the researcher in the research process in keeping with the paradigm of inquiry. The discussion in section 4.3 focuses on the overall research design, with sub section 4.3.1 providing the link between the paradigmatic level to the empirical world, through its examination of the strategy of inquiry used, namely the case study approach. In connecting these two levels of discourse, this section also sets the scene for the last three sections concerned with the actual conduct of the empirical work, incorporating three sections: data collection procedures (section 4.4); data analysis strategies (section 4.5); and methods of validity and verification for the study (section 4.6). The final section 4.7 draws conclusions on the use of interpretive case studies for this investigation.

Figure 4.2 Schema of Chapter Four



4.1 PARADIGMS OF INQUIRY AND THEORETICAL PERSPECTIVES

The conceptual framework developed in Chapter Three established the orienting principles of this investigation in how actors in organisations construct meanings of technology and how technologies may be redefined through negotiations and conflicts between different groups that may in turn be influenced by the nature of the organisation and its environment. Understanding such social phenomena requires approaches that emphasise a greater sensitivity to the context within which these interpretations and meanings are manifested (Sahay et al. 1994), namely a qualitative research process that stresses the socially constructed nature of reality, the relationships between the researcher and what is studied, and the situational constraints that shape inquiry (Denzin & Lincoln 2000, 8).

The discourse of qualitative research has no theory or paradigm that is distinctively its own, nor does it privilege any single methodological practice over another (ibid 2000, 6). For example, Yin (1994) adopts an implicitly positivist stance in his approach to case study research, yet his claims that case studies are the preferred research strategy to answer 'how' and 'why' questions are also accepted by the interpretive school of thought (Walsham 1995b). Qualitative inquiry is a research process defined by three generic interconnected activities labelled in a variety of ways, including theory, method, analysis, ontology, epistemology and methodology (Denzin & Lincoln 2000, 18). Behind each of these elements stands a biographically situated researcher who enters the research process from inside an interpretive community, which has its own research traditions and distinct points of view (ibid 2000). Therefore, many typologies of qualitative research have been offered (Marshall & Rossman 1999, 2) as such inquiries depend on hybrid practices informed by different discourses employed in relation to one another (Hall 1999b, 3) as seen in the IS literature (see Trauth 2001). As will be seen in the following discussion, the typology provided by Denzin and Lincoln (2000) is followed. These researchers challenged the historic assumptions of neutrality in inquiry and asserted that all research is interpretive guided by sets of beliefs about the world and how it should be understood and studied (Denzin & Lincoln 2000). While with any organising scheme there is a risk of "under-emphasising, transforming or ignoring contributions" (Gubrium & Holstein 1997) the purpose of following this typology serves the purpose for this discussion of clarifying various paradigms of qualitative inquiry, by laying bare alternative regimens of accounting for phenomena (Hall 1999b, 137).

The gendered multi-culturally situated researcher approaches the world with a set of ideas and frameworks (theory, ontology) that specifies a set of questions (epistemology) that the researcher then examines in specific ways (methodology, analysis) (Denzin & Lincoln 2000, 18). Therefore, as the researcher engages in activities of generating and interpreting data to answer questions about the meaning of what others are doing and saying and then transforming that understanding into public knowledge she is inevitably adopting "theoretical" concerns about what constitutes knowledge and how it is to be justified, participating in a continuous process of critical reflection and transformation (Schwandt 2000, 190) or what Alvesson and Skoldberg (2000) refer to as "reflective or reflexive empirical research." The researcher's ontological, epistemological and

methodological premises may be termed a paradigm¹, or a “basic set of beliefs that guides action” (Guba 1990, 17). In contrast, perspectives, are considered not to be as “solidified, or as well unified, as paradigms, although a perspective may share many elements with a paradigm, such as a common set of methodological assumptions or a particular epistemology” (Denzin & Lincoln 2000, 157). As will be discussed in detail in section 4.1.2, the beliefs underlying this investigation are styled in the constructivist-interpretivist paradigm of inquiry as this type of research focuses on: the plurality of perspectives that constitute organisational experiences; the integration of the observer into the process of knowing; and understanding the interdependencies within and between organisations and the environment in which they are embedded (Bradbury & Lichtenstein 2000). In terms of IS research it is “aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context” (Walsham 1993, 4-5); key issues in the theoretical framework and research questions of this investigation. However, an extreme relativist position is not adopted as the aim of this research is to develop a theoretical model to assist in guiding SISP for the adoption of e-business.

The development of the “interpretive”² paradigm of inquiry in IS research (see for eg. Orlikowski and Baroudi 1991; Walsham 1993; Walsham 1995a; Walsham 1995b; Lee & Liebenau 1997; Sahay 1997; Klein & Myers 1999; Markus & Lee 1999) has not escaped controversy and debate regarding its relative merits to the more dominant paradigm of positivism (Walsham 1995a; Lee 1999; Goles & Hirschheim 2000). Schwandt (1994, 130-132) identified four areas presenting challenges to interpretive work: the “perdurable” problems of criteria and objectivity; the lack of “critical purchase” or descriptivism and of privileging the views of actors; the problem of inquirer authority and privilege; and the confusion of psychological and epistemological claims.

¹ While a paradigm has intellectual aspects consisting of a set of guiding axioms about the broad character of nature and how it is to be studied, it is also argued that it has institutional aspects (Hollis 1995, 86). That is it is kept on track by highly organised activities enmeshed in a wider social and political system (ibid 1995).

² At this point of the discussion, the term “interpretive” will be used to refer to the “family of persuasion” that is unified by its opposition to positivism and its commitment to investigating the world from the point of view of the interacting individual (Denzin & Lincoln 1994, 100), that is, people think and act, and that they are active makers of their physical and social reality (Orlikowski & Baroudi 1991, 13). In section 4.1.2, a discussion of different epistemological stances of “interpretivism,” is presented, distinguished more by their commitment to questions of knowing and being rather than by their specific methodologies, which basically enact an emic, idiographic approach to inquiry (Denzin & Lincoln 2000, 158).

Associated with each paradigm of inquiry are a series of "tensions, contradictions and hesitations" (Denzin & Lincoln 2000, 24) confronted, if not confounded by "increasingly paradoxical, fluid and contradictory accounts of realities" (Keenoy et al. 1997). This intellectual milieu reflects an evolving and deeply perplexing array of "truths" (ibid 1997, 147) occupying an historical point in time "marked by multivocality, contested meanings, paradigmatic controversies and new textual forms" (Denzin & Lincoln 2000 162). Therefore, there is no single conventional paradigm to which all social researchers might ascribe (ibid 2000), as each are "bound within a net of epistemological and ontological premises which - regardless of ultimate truth or falsity - become partially self-validating" (Bateson 1972; cf. Denzin & Lincoln 2000, 19).

Denzin and Lincoln (2000, 19) posit that there are presently four major paradigms structuring and organising qualitative research: positivist and postpositivist; constructivist-interpretivist; critical (Marxist, emancipatory) and feminist-poststructural. The discussion in section 4.1.1, provides a brief description of these paradigms at both a metaphysical and 'practical' level. The purpose is not to be a "paradigm warrior" arguing the sanctity of competing views (Goles & Hirschheim 2000), but rather highlight the underlying philosophical assumptions from which the socially situated researcher conducted her inquiry. By "unpacking" these assumptions the researcher is revealing what shaped the meaning of the study's research questions, the purposiveness of the research methodology and the interpretability of the research findings (Crotty 1998, 17).

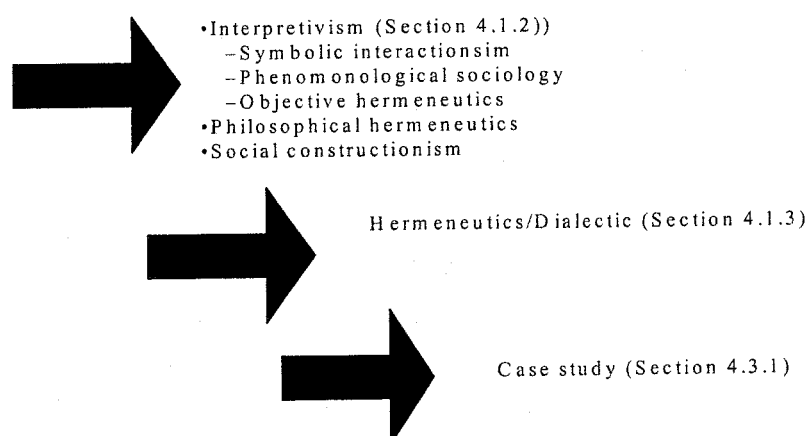
Lincoln and Guba (2000, 164) posit that paradigms are beginning to "interbreed" such that theorists previously thought to be irreconcilable "may now appear under a different theoretical rubric, to be informing one another's arguments." Because of these "permeable edges" and "so-called transition zones" (Mingers 2001), there is no "escaping" from the plurality of traditions, perspectives and philosophic orientations (Schwandt 1997, 124). This is not to suggest that the researcher is joining the ranks of "methodological anarchists" supporting multiple pathways to knowledge as methodologies of inquiry are not infinite and no inquiry can do everything at once (Hall 1999b, 14) nor adopting some "assumption-free metaparadigmatic stance that adjudicates between them" (Mingers 2001). Arguing where paradigms are in contention is considered "less useful than to probe where and how paradigms exhibit confluence and where and how they exhibit differences, controversies and contradiction" (Lincoln

& Guba 2000, 164) recognising the plurality and diversity of the world (Mingers 2001). Goles and Hirschheim (2000) refer to this paradigmatic coexistence, or *détente* as the pragmatist perspective, based on the proposition that the philosophical and/or methodological approach adopted is the one that works best for the particular research program under investigation. Pragmatism allows researchers to move beyond the positivism vs antipositivism debate and in the process develop research morally rich and useful to organisations and the communities in which they operate (Wicks & Freeman 1998).

Following the discussion in section 4.1.1, section 4.1.2 relates the constructivist - interpretive paradigm, to the theoretical lens of the researcher, thereby crystallising the underlying principles guiding the research. The explicit articulation of the principles is important in grounding the interpretive based research methodology as interpretive philosophy itself is comprised of many varied philosophical positions (Klein & Myers 1999). Figure 4.3 provides a schematic representation of the paradigm of inquiry, epistemological assumptions, methodology and strategy of inquiry³ adopted for this investigation, to assist in following the discussion of each throughout this chapter.

Figure 4.3 Schema of assumptions, epistemologies, methodology and strategy of inquiry

Constructivist - Interpretive Paradigm (Section 4.1 and 4.1.1)



³ In the social research literature, there is an array of terminology and classifications regarding ontologies, epistemologies, methodologies and methods (Crotty 1998). To discuss these classification 'schemes' is beyond the scope of this chapter. Therefore, to minimise confusion and maintain consistency throughout the chapter, the research has adopted the terminology and classifications proposed by Denzin & Lincoln (2000).

4.1.1. BASIC BELIEFS (METAPHYSICS) AND ‘CRITICAL’ ISSUES OF ALTERNATIVE INQUIRY PARADIGMS

Analysis at the metaphysical level requires an examination of the responses of proponents for each paradigm to ontological⁴, epistemological, axiological and methodological questions. The following discussion provides a brief description of each of these issues, summarised in Table 4.1, as it is beyond the scope of this chapter to analyse each in detail (see Chua 1986; Crotty 1998 and Lincoln & Guba 2000 for a detailed discussion). Rather, the purpose is to outline the philosophical assumptions and the criteria for evaluating research from each interpretive community, to highlight the underlying assumptions from which the researcher configured her research.

As seen in Table 4.1, positivist and postpositivist work from within a realist and critical realist ontology and objective epistemologies consisting of verified hypotheses that can be accepted as facts or laws. The axiological assumptions are based on the notion that the influence of values is denied and role of ethics are extrinsic to the investigation. Questions and/or hypotheses are generally stated in propositional form and subjected to experimental, quasi-experimental, survey and rigorously defined qualitative methodologies (eg. Benbasat et al.’s 1987 and Yin’s 1994 case study research) with the drawing of inferences about a phenomenon from a representative sample to a stated population (Orlikowski & Baroudi 1991; Denzin & Lincoln 2000, 21).

⁴ Crotty (1998, 8-12) posits that ontological and epistemological issues tend to emerge together and that in many cases authors are not talking about ontology but a theoretical perspective. For example, rather than discussing the “root definition” of ontology as the “science of study of being” authors take ontology to mean “the claims or assumptions that a particular approach to social enquiry makes about the nature of social reality,” stretching the meaning beyond its boundaries. Hall (1999b, 169) posits that the gap between objectivism and relativism has been “remapped onto a divide between modern and postmodern sensibilities.” Postmodernists believe that inquiry should be judged by humanistic and pragmatic standards of aesthetics, poetics, morals and interpretive insight rather than by objective standards of truth (p. 169). Further, there is a range of epistemologies and that in many cases people are actually describing subjectivism when they claim to be talking about constructionism. Whilst the researcher acknowledges this concern, the categorisation adopted from Lincoln and Guba (2000) is not to be seen as “watertight compartments” but provide an awareness of the host of assumptions underlying major paradigms, particularly alternatives to the more dominant positivist/postpositivist paradigm used in IS research.

Table 4.1 Basic beliefs of alternative inquiry paradigms

<i>Issue</i>	<i>Positivism</i>	<i>Postpositivism</i>	<i>Critical Theory et al.</i>	<i>Constructivism</i>	<i>Participatory</i>
Ontology	naïve realism – “real” reality but apprehendable	critical realism – “real” reality but only imperfectly and probabilistically apprehendable	historical realism – virtual reality shaped by social, political, cultural, economic, ethnic, and gender values crystallized over time	relativism – local and specific constructed realities	Participative reality – subjective-objective reality, cocreated by mind and given cosmos
Epistemology	Dualist/ objectivist; findings true	Modified dualist/ objectivist; critical tradition/ community; findings probably true	Transactional/ subjectivist; value-mediated findings	Transactional/ subjectivist; created findings	Critical subjectivity in participatory transaction with cosmos; extended epistemology of experiential, prepositional and practical knowing; cocreated findings
Axiology	Propositional knowing about the world is an end in itself, is intrinsically valuable		Propositional, transactional knowing is instrumentally valuable as a means to social emancipation, which as an end in itself, is intrinsically valuable		Practical knowing about how to flourish with a balance of autonomy, cooperation, and hierarchy in a culture is an end in itself, is intrinsically valuable.
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/ dialectic	Hermeneutic/ dialectic	Political participation in collaborative action inquiry; primacy of the practical; use of language grounded in shared experiential context

[Source: Lincoln & Guba 2000, 168]

The critical theorists, such as feminism, and Marxism privilege a materialist-realist ontology (Denzin & Lincoln 2000, 21), whereby the restrictive and alienating conditions of the status quo are questioned (Klein & Myers 1999). This line of research seeks to be emancipatory in that it aims to assist in eliminating the causes of unwarranted alienation and domination (ibid 1999, 69). To achieve this, critical theorists employ a subjectivist/transactional epistemology and dialogic/dialectic methodology (Denzin & Lincoln 2000, 21), believing that people are able to consciously act to change their social and economic conditions, however, their ability to do so may be constrained by various forms of social, cultural and political domination as well as natural laws and resource limitations (Klein & Myers 1999). The role of ethics is considered intrinsic, with a "moral tilt toward revelation" and the study value laden (Lincoln & Guba 2000). Example of a critical approach to qualitative research in the IS literature is Ngwenyama and Lee's (1997) study of electronic mail.

As seen in Table 4.1, the constructivist/interpretive paradigm assumes a relativist ontology, that is there are multiple realities, a transactional/subjectivist epistemology, that is the "knower" and respondent co-create understandings, and a dialectical hermeneutics methodology. This type of research assumes that one's knowledge of reality is achieved only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts (Klein & Myers 2000, 69). Therefore, it does not predefine independent and dependent variables, instead focusing on the complexity of human sense making as situations emerge, attempting to understand phenomena through the meanings assigned to them by people (ibid 2000). The role of ethics is considered intrinsic, with a "process tilt toward revelation" (Lincoln & Guba 2000). The investigator also admits the value-laden nature of the study and actively reports his or her values and biases. The varying social constructions are interpreted using conventional hermeneutical techniques, (exegetical method for identifying and explicating objective meanings of social action, eg. in a text, culture or the mind of a social actor), and are compared and contrasted through a dialectical interchange (method of comparing and contrasting social constructions through a process of iteration, analysis, critique, reiteration and reanalysis) (Guba & Lincoln 2000). Examples of this type of approach to IS qualitative research include Boland and Day (1989), Walsham (1993), Lee (1994), Myers (1994, 1995), Walsham & Waema (1994), Walsham & Sahay (1999).

According to Lincoln and Guba (2000, 167), the participatory paradigm⁵, reveals an orientation towards postpositive, postmodern and critical inquiry. That is, this category of thought echoes several theoretical and paradigmatic strands of research (ibid 2000). As this paradigm is representative of a number of characteristics reflected in the other communities of thought discussed previously, and is not the major paradigm adopted in this investigation, it will not be discussed any further here.

The philosophical assumptions in paradigms also have important consequences for the practical conduct of inquiry. Therefore, differences in paradigms can not be explained purely in terms of philosophical differences implicitly or explicitly (Guba & Lincoln 1994, 112). Lincoln and Guba (2000, 170-172) discuss the consequences of paradigm positions for a number of “contentious” issues, which while not exhaustive, they are believed to create the “intellectual, theoretical and practical space for dialogue, consensus, and confluence to occur.” Selected issues have been summarised in Table 4.2, for the purpose of highlighting arguments and dialogues of various perspectives and in doing so, creating the background for the researcher’s paradigmatic position in the investigation. While these issues have been categorised under various paradigms of thought, they are considered to be fluid, as the boundaries between the paradigms keep shifting (ibid 2000, 167).

Detailed discussion of the issues outlined in Table 4.2, for the constructivist paradigm are found in later sections of this chapter, particularly section 4.2, the role of the researcher and section 4.6 regarding validity and verification. For now, the purpose of Table 4.2 is to highlight the key assumptions of the major paradigms of inquiry, rather than provide a complete summation, emphasising how the traditions differ in the diversity of information collected, the unit of study being examined, the extent of field issues, and the “intrusiveness” of the data collection effort (Creswell 1998, 135).

⁵ Based on a model by Heron and Reason (1997) called the cooperative paradigm (cited in Lincoln & Guba (2000).

Table 4.2 Paradigm positions on selected issues

<i>Issue</i>	<i>Positivism</i>	<i>Postpositivism</i>	<i>Critical Theory et al.</i>	<i>Constructivism</i>	<i>Participatory</i>
Nature of knowledge	Verified hypotheses established as facts or laws	Nonfalsified hypotheses that are probable facts or laws	Structural/ historical insights	Individual reconstructions coalescing around consensus	Extended epistemology: primacy of practical knowing; critical subjectivity; living knowledge
Knowledge accumulation	Accretion – “building blocks” adding to “edifice of knowledge”; generalisations and cause-effect linkages		Historical revisionism; generalisation by similarity	More informed and sophisticated reconstructions vicarious experience	In communities of inquiry embedded in communities of practice
Action	Not the responsibility of the researcher; viewed as “advocacy” or subjectivity, and therefore a threat to validity and objectivity		Found especially in the form of empowerment; emancipation anticipated and hoped for; social transformation, particularly toward more equity and justice, is end goal	Intertwined with validity; inquiry often incomplete without action on the part of participants	
Goodness or quality criteria	Conventional benchmarks of “rigor”: internal and external validity, reliability and objectivity		Historical situatedness; erosion of ignorance and misapprehensions; action stimulus	Trustworthiness and authenticity	Congruence of experiential, presentational propositional, and practical knowing; leads to action to transform the world in the service of human flourishing

<i>Issue</i>	<i>Positivism</i>	<i>Postpositivism</i>	<i>Critical Theory et al.</i>	<i>Constructivism</i>	<i>Participatory</i>
Control	Resides solely in researcher		Often resides in “trans - formative intellectual”; in new constructions, control returns to community	Shared between inquirer and participants	Shared to varying degrees
Inquirer posture	“Disinterested scientist” as informer of decision makers, policy makers, and change agents		“Transformative intellectual” as advocate and activist	“Passionate participant” as facilitator of multivoice reconstruction	Primary voice manifest through aware self-reflective action; secondary voices in illuminating theory, narrative, movement, song, dance, and other presentational forms
Voice, reflexivity, postmodern textual representations	Voice of the researcher, principally; reflexivity may be considered a problem in objectivity; textual representation unproblematic and somewhat formulaic		Voices mixed between researcher and participants	Voices mixed, with participants’ voices sometimes dominant; reflexivity serious and problematic; textual representation on extended issue	Voices mixed; textual representation rarely discussed, but problematic; reflexivity relies on critical subjectivity and self-awareness
			Textual representation practices may be problematic – ie. “fiction formulas,” or unexamined “regimes of truth”		

[Source: Adapted from Lincoln and Guba (2000, 170-173)]

4.1.2 THE CONSTRUCTIVIST- INTERPRETIVE PARADIGM: ESTABLISHING THE EPISTEMOLOGICAL STANCES OF THE INVESTIGATION

The underlying perspectives of the conceptual framework discussed in Chapter Three, regard humans as active agents and their behaviour as generally indeterminate, whereby the constructed realities of no two human beings are identical. These agents create their own meaning of the world around them and to the behaviour they manifest in that world. Such perspectives are consistent with the "interpretive" persuasion (Sahay et al. 1994). Unlike the positivist predilection for a predictive understanding of phenomena (Myers 1995), it is not possible for interpretive researchers to generally follow a straightforward accumulation of knowledge, as it is assumed that human beings must operate within realities they themselves have constructed (Erlandson et al. 1993).

The interpretivist's dependency on context originates from the fundamental assumption that the subjects of such an inquiry are bound together by a complex web of unique interrelationships resulting in mutual simultaneous shaping (Erlandson 1993, 17). Interrelationships provide a context that may both extend and restrict the applicability of the research. That is, the intricacy of the context revealed by interpretive inquiry permits applications to interpersonal settings that are generally not possible with research strategies that follow the positivistic tradition (ibid 1993).

As discussed in section 4.1.1, proponents of the "interpretive" community believe that to understand the world of meaning one must interpret it, an emic point of view, where the world of lived reality and situation-specific meanings is thought to be constructed by social actors (Schwandt 1994, 118). The inquirer must "elucidate the complex processes of social interaction involving history, language and action, by particular actors, in particular places, at particular times to fashion meaning out of events and phenomena" (ibid 1994).

While the discussion of ontology, epistemology and methodology distinguishes the positivist tradition, it does not provide any definitive answers as to what precise philosophical stance should be adopted by the interpretive researcher (Walsham 1995a). Social constructionism, interpretivism and hermeneutics are terms that routinely appear

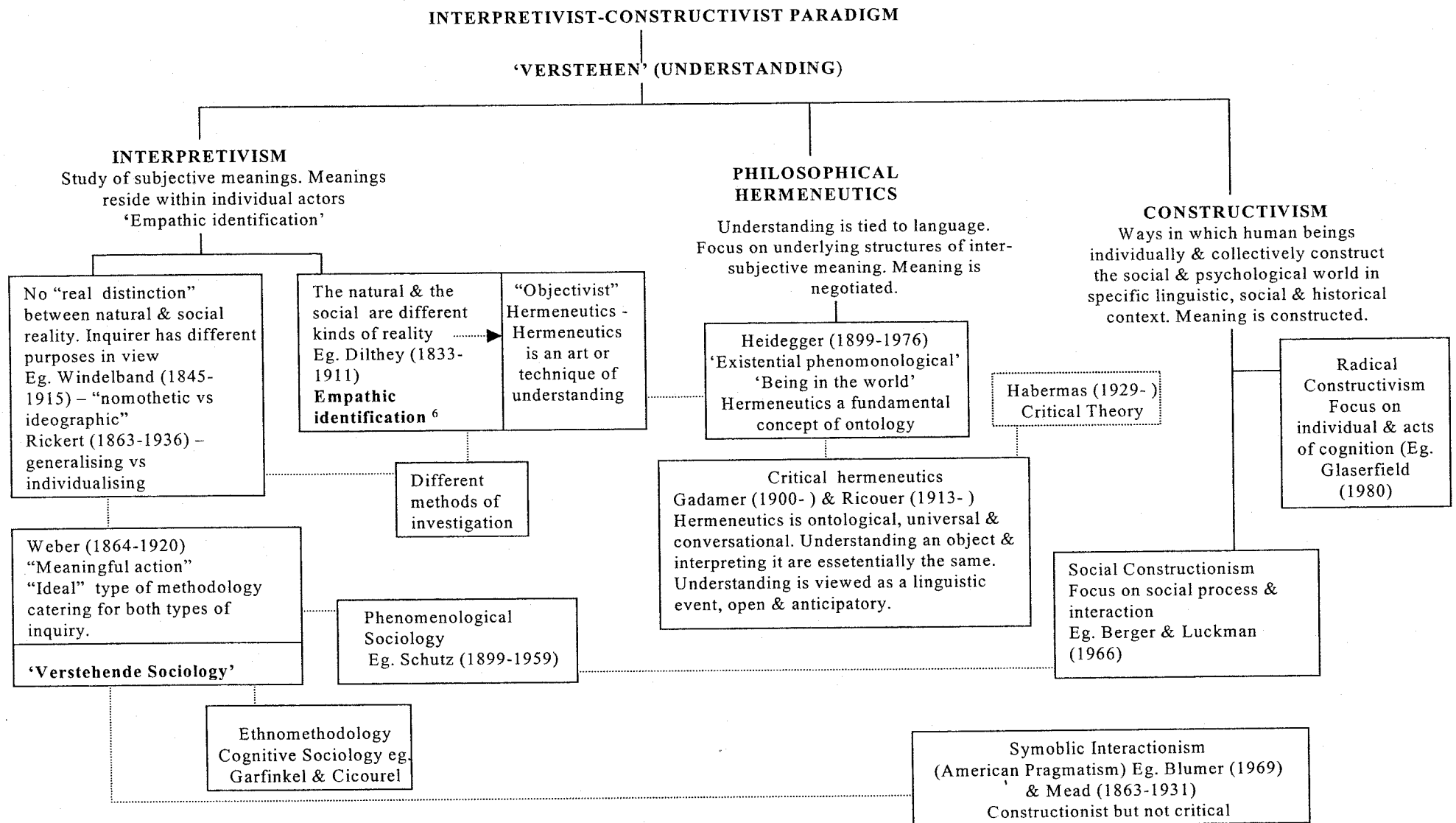
in the lexicon of philosophical and social science methodology literature (Schwandt 1994, 118). While these philosophies share a common intellectual heritage (Schwandt 1994), unified by their opposition to positivism and commitment to investigating the world from the point of view of the interacting individual (Denzin & Lincoln 1994, 100) they embrace different perspectives regarding the aim and practice of understanding human action, ethical commitments and stances on methodological and epistemological issues of representation, validity and objectivity (Schwandt 2000, 190).

It is beyond the scope of this chapter to discuss the distinguishing features of each of these schools of thought in detail, as an attempt to describe and conceptualise makes for a “bewildering array of conflicting considerations” incorporating complicated philosophies that require detailed attention in their own right and their interaction (Schwandt 1994, 130). However, the following discussion provides a brief and dense form of these different philosophical lines of thought which serves to provide a context for reflecting on the epistemological stances embedded in the theoretical perspectives and thereby in the methodology of this investigation discussed in section 4.1.3.

There are a myriad of ways in which to classify and construct major idioms of qualitative inquiry (Gubrium & Holstein 1997; Trauth 2001). The following discussion adopts Schwandt's (2000) classificatory scheme focusing on three key bodies of thought, namely, interpretivism, philosophical hermeneutics and social constructionism. Figure 4.4, provides a skeletal representation of each of these bodies of thought, identifying major writers in the field, and providing some background as to how philosophical positions were developed from and reacted against schools of thought.

Whilst the examination may well be considered by the philosophically minded as incomplete, its purpose is to provide the philosophical grounding for this research. That is, “(a) how to define what ‘understanding’ actually means and how to justify claims ‘to understand’; (b) how to frame the interpretive project, broadly conceived; and (c) how to envision and occupy the ethical space where researchers and researched (eg. subjects, informants, respondents, participants and co-researchers) relate to one another on the socio-temporal occasion or event that is ‘research,’ and consequently, how to determine the role, status, responsibility and obligations the researcher has in and to the society he or she researches” (Schwandt 2000, 200).

Figure 4.4 Key bodies of thought in the Interpretive-Constructivist Paradigm



4.1.2.1 INTERPRETIVISM

From an interpretivist perspective (interpretivism), to understand a particular social action (eg. decision making), the inquirer must understand the meanings that constitute that action, (Schwandt 2000, 191) thereby examining "culturally derived and historically situated interpretations of the social life world" (Crotty 1998, 67). Interpretivism assumes an epistemological understanding of understanding, that is, it considers it to be an intellectual process whereby a knower (the inquirer as subject) gains knowledge about an object (the meaning of human action) (Schwandt 2000, 194). Schwandt (2000, 194) highlighted three key features of interpretivism, namely, empathic identification, phenomenological sociology and language games. Each of these is examined briefly in the course of the following discussion.

4.1.2.1.1 Verstehen and Empathic Understanding

'Verstehen' (understanding) or the interpretivist approach to human inquiry has appeared over time in many guises (Crotty 1998, 71). Interpretivism arose from the reactions of neo-Kantian German historians and sociologists (eg. Dilthey, Rickert, Simmel and Weber) in the late nineteenth and twentieth centuries to the then dominant philosophy of positivism and post positivism. Defenders of interpretivism argue that human sciences were fundamentally different in nature and purpose from natural sciences as the human sciences were concerned with 'Verstehen' (understanding) (Schwandt 2000, 191). There is considerable debate among the neo-Kantians about whether there is a critical distinction to be drawn between the natural and human sciences on the basis of different aims of understanding nested in the human and social sciences with explanation ('Erklaren') (ibid 2000, 191).

Dilthey (1833-1911) believed that natural reality and social reality were in themselves different kinds of reality and therefore required different methods of investigation (Crotty 1998, 67). He argued that 'Verstehen' entailed some kind of **"empathic identification"**⁶ with the actor, that is to understand the meaning of human action requires "grasping the subjective consciousness of intention from the actor inside" (Schwandt 2000, 192), a psychological re-enactment ('Wacherleben') (Crotty 1998).

⁶ In later writings Dilthey de-emphasised the notion of empathic identification and spoke more of hermeneutic interpretation of cultural products (Schwandt 2000, 207). He extended the idea of hermeneutics to the epistemology and methodology of human sciences, which as seen in section 4.1.2.2, was challenged by philosophical hermeneutics. His later position adopted more of a historicist position, accepting that people's speech, writings, art and behaviour were a product of their times (Crotty 1998, 95).

Weber (1864-1920) considered that human action was open and interpreted in terms of the subjective meanings that actors attach to that action (that is “meaningful action”) distinguishing two kinds of ‘Verstehen’ namely “direct observational” understanding (immediately apparent) and “explanatory understanding,” placing action in some intelligible, inclusive context of meaning (Schwandt 1997). Therefore, whilst he agreed with Windelband (1845-1915) and Rickert’s (1863-1936) rejection of Dilthey’s distinction of natural and social reality, he believed that this did not necessitate the use of different methods in researching these two realms of being (Crotty 1998, 68). Weber’s contention was that “Verstehen” had to be substantiated by empirical evidence stressing the need for scientifically valid and social data obtained through an “ideal type” methodology, catering for both nomothetic and idiographic inquiry (pp. 68-70). Crotty (1998) posits that it was this concern that launched the ‘Verstehen’ approach or interpretive sociology (‘Verstehende Sociology’), incorporating several social theories, such as symbolic interactionism, phenomenological sociology and ethnomethodology (Schwandt 1997). These approaches are also often referred to as hermeneutic as they accept the premise that understanding is the fundamental way that human beings participated in the world (ibid 1997, 174). However, as will be discussed in section 4.1.2.2, the philosophical hermeneutic tradition is critical of ‘Verstehende’ sociology.

4.1.2.1.2 Phenomenological Sociology

Phenomenology is a complex multi-faceted philosophy. Generally, phenomenologists reject scientific realism and are opposed to the empiricist idea that legitimate knowledge can only be obtained by rejecting the way we perceive the world of everyday life and “mere appearance” (Schwandt 1997, 114). A principal “architect” of the variant known as phenomenological sociology was Schutz (1899-1956) who built on the transcendental phenomenology of Husserl (1859-1938). Schutz attempted to ground Weber’s “meaningful action” philosophically. This work considerably influenced the social constructionist views of Berger and Luckman (Lee 1991, 348) and the development of ethnomethodology by Harold Garfinkel and Aaron Cicourel (Schwandt 1997, 2000).

Phenomenological sociology is oriented towards describing the experience of everyday life as it is internalised in the subjective consciousness of individuals (Schwandt 1997, 115). The conceptual tools often used in this reconstruction are indexicality and reflexivity (Schwandt 2000, 192). Indexicality signifies that the meaning of a word is dependent on its context of use, while reflexivity directs one’s attention to the fact that utterances are not just about something but are also doing something (p. 192). These two notions are part of the means by which phenomenologists and ethnomethodologists come to understand how social reality is constituted in conversation and interaction.

4.1.2.1.3. Language Games

The third key feature of interpretivism highlighted by Schwandt (2000, 192) is the emphasis on language games (eg, testing hypotheses, giving orders, greetings) constituted in different cultures. Language games are part of the linguistic turn in philosophy (Kvale 1996, 43), which may be traced to the ideas of the language philosopher Wittgenstein (1889-1951) and Peter Winch (1958) who linked the notion of language games to the notion of 'Verstehen' (Schwandt 1997, 81). Each of these language games are considered to have their own rules of criteria, which give meaning to its participants (Schwandt 2000, 192). Understanding such systems of meaning, such as institutional and cultural norms and action-constituting rules, is considered by authors such as Giddens and Habermas as the goal of 'Verstehen' (Schwandt 2000, 193).

Empathic identification, phenomenological sociology and language games all share the following features: (a) human action is viewed as meaningful, (b) there is an ethical commitment in their respect for and fidelity to the life world; and (c) from an epistemological view, they emphasise the contribution of human subjectivity (that is intention) to knowledge without sacrificing the objectivity of knowledge (the neo-Kantian view) (Schwandt 2000, 193).

Interpretive epistemologies may also be characterised as hermeneutic in that they emphasise that the situation in which human actions make (or acquire) meaning need to be considered so as to understand the particular action (Schwandt 2000, 193). This view draws upon the hermeneutic circle, the most fundamental principle of hermeneutics (Klein & Myers 1999) as a method that in order to understand the part (the specific sentence, utterance or act) the inquirer needs to understand the whole (intentions, beliefs and desires, text, institutional context, practice, form of life, language games and so on) and vice versa (ibid 1999, 193). A number of weaknesses have been identified in the "purely interpretive approach" as summarised by Orlikowski and Baroudi (1991, 18)

"First, the interpretive perspective does not examine the conditions, often external, which give rise to certain meanings and experiences. Second, research in this perspective omits to explain the unintended consequences of action, which by definition cannot be explained by reference to the intentions of the humans concerned ... Third, the interpretive perspective does not address structural conflicts within society and organizations, and ignores contradictions which may be endemic to social systems... Finally, the interpretive perspective neglects to explain historical change; that is, how a particular social order came to be what it is, and how it is likely to vary over time."

Myers (1994, 1995) posits that these weaknesses are overcome in the critical hermeneutics of Gadamer and Ricoeur, where the discussion now turns.

4.1.2.2

PHILOSOPHICAL HERMENEUTICS

Originating from the science of biblical interpretation, the work of hermeneutics has migrated to many ideas of scholarship. It has been brought to bear on texts other than theology such as law and literature as well as being extended to discourse and action that is, human practices, human events and human situations in an attempt to “read” these in ways that bring understanding, highlighting the centrality of language (Kvale 1996, 46; Crotty 1998, 87). There are a variety of definitions behind hermeneutics behind which lay complex theoretical disputes (Schwandt 1997, 62) evident by the debates that have unfolded among defenders of conservative or objectivist hermeneutics (eg. the work of Dilthey discussed in section 4.1.1.1), philosophical hermeneutics and radical hermeneutics or deconstructionism (ibid 1997, 63).

The philosophical hermeneutics stream, that traces its roots to Heidegger and Gadamer and developed by social theorists such as Taylor, Habermans, Giddens and Ricoeur are critical of ‘Verstehende’ sociology (Schwandt 1997). It rejects the interpretivists view that hermeneutics is an art or technique of understanding, arguing that it entails a more fundamental question of the meaning of being (Kvale 1996, 47). They argue that understanding an object (a text, human action, etc) and interpreting it, are essentially the same understanding (Schwandt 1997, 115) that is it is not in the first instance a procedure but rather a very condition of being human (Schwandt 2000, 194).

Gadamer argued that hermeneutics is ontological, universal and conversational. It is ontological because understanding is considered our very mode of being in the world. It is universal because understanding underlies all human activity. Finally, it is conversational because the interpretation of an object is always a dialogical encounter – as “interpreters we participate in, open ourselves to, share in and listen to the claims that the object is making on us” (Schwandt 1997, 115). Therefore, while Gadamer accepted Dilthey’s idea that the operation of ‘Verstehen’ is profoundly different from explaining the events of nature, he rejected the view that understanding depends upon a psychological re-enactment of the experiences of human actors (Schwandt 1997). Rather, ‘Verstehen’ is achieved by entering into a conversation or dialogue. Therefore, understanding is considered to be always open and anticipatory that is one never achieves a final complete interpretation as meaning is negotiated mutually in the act of interpretation rather than be simply discovered because we are always interpreting in light of ‘prejudice’ (or prejudgement, preconception) that originates from the tradition which we are part of (Schwandt 1997, 115; Crotty 1998, 101). In the act of interpreting,

sociohistorically inherited bias or prejudice is not considered an attribute or a characteristic that an interpreter must strive to eliminate or manage in order to come to a “clear” understanding (Schwandt 2000, 195). While similar views are held by some constructivists, philosophical hermeneutics sees meaning not necessarily as constructed (that is created, assembled) but as negotiated (that a matter of coming to terms).

Gadamer’s work has been criticised as he believes that cultural tradition needs to be considered in the same light as the exegete considers the Scriptures and the jurist considers the law, that is as a “given” (Crotty 1998, 103). This conservative position is considered problematic by critical analysts such as Jurgen Habermans who has argued for an interlocking of knowledge and human interests (Kvale 1996, 51). As understanding is the setting, the battleground of many interests because of its social, historical and discursive nature, no hermeneutic can be a separate “precinct” from the setting (Crotty 1998, 105). Therefore, the viewpoints from which reality is apprehended are an orientation toward technical control, mutual understanding, or emancipation (Kvale 1996, 51; Crotty 1998, 143). The common ground between the critical theory of Habermas and the hermeneutics of Gadamer, are integrated in the works of Ricoeur laying the ground for a critical hermeneutics methodology (Myers 1994, 1995) discussed in section 4.1.3.

4.1.2.3 SOCIAL CONSTRUCTIONISM

In the constructivist view, meaning is not discovered, but constructed. While the world and objects in the world may be “pregnant with potential meaning” actual meaning is considered only to emerge when consciousness engages with them (Crotty 1998, 43). That is meaning is constructed by human beings as they engage with the world they are interpreting (ibid 1998). Concepts, models and schemes are created to make sense of experience and continually tested and modified in the light of new experiences. Social constructionist⁷ epistemologies aim to “overcome” representational epistemologies in a

⁷ There is a difference in terminology that can become rather confusing, such as constructionism, constructivist and social constructionists. In following Schwandt’s (2000) explanation, the focus is on social versus psychological forms of constructionism as the primary concern is with those philosophies that deal with joining social-political factors with epistemic concerns in their account of what constitutes a public body of knowledge. Some authors divide social constructivists from psychological constructivist, referring to the former group as social constructionists and the latter as constructivists. Crotty (1998, 58, 79) adopts a similar interpretation referring to constructivism as the meaning-making activity of the individual mind and constructionism as the collective generation [and transmission] of meaning. For the purposes of this study, the terms constructionist and constructionism is used in discussing the “social” end of the continuum.

number of ways (Schwandt 2000, 197). While constructionism in epistemology is compatible with a realism in ontology (Crotty 1998, 63) philosophers of social constructionism reject the naive realist view of representation (Schwandt 2000, 1997). Some argue that social constructionism is “agnostic” on matters of ontology, neither “affirming or denying the world out there” (ibid 2000, 198). The term 'constructionism' and in particular 'social constructionism' is derived largely from the works of Karl Mannehim (1893-1947) and Berger and Luckman (1966), which developed into the form of a “sociology of knowledge” the idea itself having a long history in the works of Hegel and Marx (Crotty 1998, 60).

A bifurcation exists within constructionist social science and research emanating from it, reflecting a “tortuous history” regarding issues of conformism and critique (Crotty 1998, 60). A critical ‘spirit’ is found in the traditional phenomenological movement, albeit with none of the economic determinism with which orthodox Marxism is often charged with (ibid 1998, 61). In addition, the early exponents of American pragmatism were constructionist and critical. However, pragmatism became popularised in forms, such as symbolic interactionism, that left it constructionist but obscured its critical character (ibid 1998).

Symbolic interactionism is a social psychological and sociological theory, with roots in American pragmatist philosophy (Schwandt 1997, 148; Crotty 1998, 72). It is difficult to summarise symbolic interactionism as its diversity of applications and orientations places it in different idioms of inquiry (Gubrium & Holstein 1997, 215). However, many of the shared assumptions of symbolic interactionism may be traced to the works of Blumer (1969) who in turn was influenced by the philosopher and social theorist Mead (1863-1931) (Schwandt 1997, 148). Broadly speaking, symbolic interactionists, reject behaviourist psychologies focusing on social behaviourism, therefore taking the contrary position to seeking empathy and identification with the observed people, by searching for and analysing symbolic forces, namely words, images, institutions and behaviours (Lee 1991, 349). To understand the meaning making process, the inquirer must enter the setting or situation of the people being studied to see their definition of the situation, what they consider, and how they interpret this information, by attending carefully to the overt behaviour, speech and particular settings in which interaction takes place (Crotty 1998, 63).

It is here that the dichotomy within constructionist research exists. The world is considered to be inter-subjective, interactive, community and communicative in and out

of which we come to be persons and to live as persons (ibid 1998). This is in contrast to the world of a critical theorist who sees the world as a battleground of hegemonic interests, where there are disparities in the distribution of power; a world "torn apart by dynamics of oppression, manipulation and coercion" (ibid 1998). Therefore research methodologies basing themselves on one or the other of these two envisaged worlds, address different purposes and different methodologies. However, as pragmatism holds commonalities with both phenomenology and critical theory, a "dialectic of this kind is emerging" (ibid 1998, 63) as seen in the constructivist-interpretivist paradigm discussed further in section 4.1.2.4.

Finally social constructionists share with philosophical hermeneutics the broad critique of meaning as an object and endorse expressivist-constructivist theory of language that we are self interpreting beings and that language constitutes this being (Schwandt 2000, 198). However, while philosophical hermeneutics trust in the potential of language (conversation, dialogue) to disclose meaning and truth, constructionists believe there is no truth to the matter of interpretation. Rather they subscribe to a relational theory of social meaning whereby human interaction is considered to give language its capacity to mean and interpretations are historically and culturally effected (Crotty 1998, 64). Therefore, in recognising different people that may well inhabit different worlds which "constitute for them diverse ways of knowing, distinguishable sets of meaning [and] separate realities" description and narration can not be seen as a straightforward representation of reality, that is of "merely mirroring what is there" (ibid 1998).

There are important convergences as well as fundamental differences among the philosophies discussed in the above sections. However, in outlining these philosophies the intention has not been to, as Schwandt (2000) states, "offer a template or typology with which to sort current expressions of qualitative inquiry." To do so would be dangerous, blinding the inquirer to shared concerns and points of tension that weave their way throughout the landscape of the qualitative movement (ibid 2000, 205). The interweaving of such viewpoints for the incorporation of multiple perspectives shapes the researcher's efforts in deciding what to borrow or "bricolage" where borrowing seems "useful, richness enhancing or theoretically heuristic" rather than with concerns of labelling complicated theoretical perspectives (ibid 2000). Therefore, the intention was to describe the varying philosophies, which contribute to conceptualising and reflecting the mode of understanding underlying this research, discussed in the

following section 4.1.2.4. Further, it is to show how these writers bridge different approaches or extend the major idioms in ways that modify, innovate and renew more established frameworks (Gubrium & Holstein 1997, 215).

4.1.2.4 THE CONSTRUCTIVIST-INTERPRETIVIST PARADIGM: FRAMING THE INTERPRETIVE RESEARCH

The underlying premise of this investigation is that reality is constructed rather than “merely experienced” uniting aspects of social constructionsim, hermeneutics, social phenomenology, ethnomethodology and versions of symbolic interactionism (Gubrium & Holstein 1997, 215). The researcher identified with the postmodernists view that knowledge construction converges on the conversational, narrative, linguistic, contextual and interrelational features of knowledge (Kvale 1996, 45), viewing interpretation as a kind of “spontaneous play” that unravels the multiple meaning of such notions as objectivity, subjectivity, self identify, presence, truth and being (Schwandt 2000, 203). However, the researcher also shared some views of the philosophical hermeneutics and some neo-pragmatists that is, identifying with critical reflection at a methodological level (rather than at a substantive level), whereby the study is connected more closely to dialogue and conversation rather than within an emancipatory and transformative agenda (ibid 2000, 202).

Therefore the “constructivist-interpretive paradigm,” possibly best known through the works of Lincoln and Guba (1985, 2000) and Guba and Lincoln (1989), is followed closely in guiding this inquiry as it is a wide ranging eclectic framework, consisting of these philosophical viewpoints (Schwandt 1994, 128), which has attracted “inevitable” discussion for its epistemological stance and methodological strategy (Shaw 1999, 48). The constructivist-interpretive philosophy of Lincoln and Guba (1985) is idealist, pluralistic and relativistic (Schwandt 1994). It embraces the theory-ladenness of facts, the value-ladenness of facts and the interactive nature of inquiry, where the knower and the known are “fused into a coherent whole” (Guba 1990, 26). Lincoln and Guba (1985, 87) assume that what is real is multiple, often conflicting, constructions in the minds of individuals. The question of truth regarding these constructions is socio-historically relative, that is, it is the constructed realities of “constructors” based on available information which has been configured “into some integrated, systematic formulation whose character depends on the level of information and sophistication” of the constructors, that is their “ability to appreciate/understand/apply the information” (Guba & Lincoln 1989, 143).

Constructions are considered to arise through "the interaction of a constructor with information, contexts, settings, situations and other constructors (not all of whom may agree) using a process that is rooted in the previous experience, belief systems, values, fears, prejudices, hopes, disappointments and achievements of the constructor" (ibid 1989, 143). Therefore, the findings or outcomes of an inquiry may be considered a literal creation of the inquiry process as the observer orchestrates and facilitates the process (Schwandt 1994, 128-129). The act of inquiry is considered to begin with issues and/or concerns of participants which unfold through a "dialectic" of iteration, analysis, critique, reiteration and reanalysis eventually leading to a joint construction (between inquirer and respondents) of a case (that being findings or outcomes) (ibid 1994). Constructions may be judged through applying criteria appropriate to the paradigm out of which the constructor operates within. Issues of validity and criteria are discussed in detail in section 4.6.

The next section 4.1.3 examines how the empirical materials were informed by and interacted with the constructivist-interpretive paradigm. Explicating the epistemological integrity, that is the logical and compelling connections between the overall strategy, research questions, design and methods provides the rationale for the genre of the research (Marshall & Rossman 1999, 60). The constructivist-interpretive philosophies are applied to conceptualise and reflect upon issues involving methodological choices in areas such as interview questioning, document analysis, interpreting, validating and reporting. For the purposes of consistency and ease throughout the remaining chapter the term "**interpretive**" will be used in referring to the constructivist-interpretive set of assumptions guiding this research.

4.1.3 THE DESIGN AND THE CONSTRUCTIVIST - INTERPRETIVE PARADIGM: METHODOLOGY AND PRACTICE

With the assumptions underlying the research "unpacked" and clarified, the following discussion embarks upon an examination of the enactment of these beliefs via the inquiry process, that is the methodology (Guba & Lincoln 1989, 183). From the above discussion it can be seen that the methodology of this investigation has a complexes of assumptions buried within it, as it is inevitably interwoven with and has emerged from different philosophies, disciplines and perspectives. The methodology of the

interpretivist-constructivist view is “iterative, interactive, hermeneutic, at times intuitive and most certainly open” described as a hermeneutic/dialectical process (p. 183) or critical hermeneutics (Myers 1994, 1995). The process is considered hermeneutic in that it is interpretive in character developing (joint) constructions and dialectic in that it involves the “juxtaposition of divergent views” with a view of achieving a higher level of synthesis (Myers 1994, 149). The broadened inquiry provided by the hermeneutic/dialectic methodology is suited to the broad based theoretical framework and the emergent design (Guba & Lincoln 1989, 54) of this investigation as it provides principles to guide the interpretation process and a framework for the integration of multiple perspectives (Myers 1994).

Myers (1995, 57) defines dialectical hermeneutics as an integrative approach emphasising both the “subjective meanings for individual actors and the social structuring, which conditions and enables such meanings and are constituted by them”. The researcher analyses the participants understanding which is considered historically constituted and in terms of changing social structures (ibid 1995). Further the researcher seeks to critically evaluate the totality of understanding in a given situation moving beyond the mere acceptance of participants self understanding (ibid 1995). Although the hermeneutic dialectic approach is critical and not purely subjective (ibid 1995) this is in the context of the methodological posture it embraces rather than at a substantive level in the theories and topics of the investigation (Creswell 1998, 82). Therefore, the research does not assume from the outset what the most important conflicts and contradictions are within the organisation, but rather provides a critical analysis of the organisation. It becomes a “dynamic interplay between a hermeneutic analysis and theoretical critique, in which the critique is firmly grounded in social reality” (Myers 1995, 57).

The object of the interpretive effort in this investigation is to make sense of organisations as text analogues, in which “different stakeholders may have confused, incomplete, cloudy and often contradictory views” (Myers 1995, 58) on e-business and its adoption. The aim is to make sense of the whole and the dynamic relationships between the organisation and its adoption of e-business. Therefore, in the context of the case studies conducted in this investigation, the text is considered to be social and political action where case study notes, interviews and documents record the views of the actors.

There are differences between the literary texts of hermeneutics and the texts produced by interviews (Kvale 1996, 50). First, hermeneutics elucidates the dialogues producing the texts to be interpreted and then clarifies the subsequent process of interpreting the oral discourse transformed into texts, which may also be conceived as a dialogue or a conversation with the text (Kvale 1996, 46). The interview text is not a pre-given literary text, as it emerges in the same process as its interpretation, involving both the creation and the negotiated interpretation of the text between the interviewer and the interviewees (ibid 1996, 50). Second, while a literary text is intended as communication outside the situation in which it originated, the interview is tied to a specific interpersonal situation, developed more or less spontaneously. The participants address themselves not only by words but also through non verbal gestures and implicit references to their common situation (ibid 1996). Therefore, transcribed interview texts render an incomplete account of the "wealth of meanings expressed in the lived situation" (ibid 1996). Third, literary texts are "eminent" texts containing well articulated and highly condensed expressions of meaning. Transcribed interviews are often repetitious and have digressions containing "noise" (ibid 1996). An extended process of clarification and condensation may be necessary to derive some meaning. Equally, what may appear as "noise," may actually yield important information requiring a deeper psychological interpretation of non intended meanings as a form of "depth hermeneutics" (ibid 1996, 51).

The way that material is ordered, explained and interpreted to make sense of the case is done according to the researcher's theoretical position manifested in the conceptual framework (Myers 1995, 58). Further the researcher's role as interpreter involves the comparison of one text with another such as statements provided by participants with other documents such as annual reports. The more interviews conducted and more information gathered, the better the understanding of the organisation as a whole and its constituent parts, that is moving from the whole to the part and back to the whole (ibid 1995). The hermeneutic process continues until "the apparent absurdities, contradiction, and oppositions in the organisation no longer appear strange but make sense" (ibid 1995).

The dialectical hermeneutics approach also requires that the researcher develop a critical awareness of the relationships between organisations and e-business. Dialectics

is the study of internal contradictions, between the general and the specific and between appearance and essence (Kvale 1996, 55). From a dialectical perspective, knowledge is intrinsically related to action (ibid 1996, 56). Therefore, it requires the researcher to examine e-business from different perspective achieved through the multiple lenses of the conceptual framework which not only examines the meaning of e-business for various stakeholders in an organisation and associated conflicts, but also the social impacts which are "part and parcel" (Myers 1995, 59) of adopting e-business. In addition, dialectics takes issues with the criterion of truth involved in hermeneutics, which is based on the notion that a "good" interpretation is one that is free of contradictions (Kvale 1996, 57). From a dialectical perspective, social processes are essentially seen as being contradictory, therefore empirical methods based on an exclusion of contradictions are considered invalid for uncovering a contradictory social reality (ibid 1996).

The methodological implications unfolding in the above discussion, draws attention to the interpretive procedures and practices that give structure and meaning to this research. These reflexive practices influenced both the topic of this investigation and provided the resources of the inquiry. That is, the analytic vocabulary used to compose the research questions revealed both "how" social reality is constructed, bringing the social process of e-business adoption decision making to the foreground as well as the "whats" of social life, emphasising substantive meanings, contexts and conditions shaping the action (Gubrium & Holstein, 1997, 15), that is the major drivers or inhibitors of e-business adoption decision processes. This analytic vocabulary was also employed in the practice of this inquiry, that is, in considering "how" the meaning making process unfolds in the interviews for example, as well as in what is substantively asked and conveyed, through to how the narrative is analysed (Gubrium & Holstein 1995, 4). Gubrium and Holstein (1997, 2000) refer to such vocabulary as the "analytics of interpretive practice" interested in the dual concern of both the "how" and "whats" of the social construction process. The term interpretive practice characterises simultaneously the activities of storytelling, the resources used to tell the stories and the auspices (for example organisational influences) under which stories are told (Gubrium & Holstein 1997, 14). These issues are examined in detail in section 4.4 (data collection) and section 4.5 (data analysis).

In moving from the interpretive paradigm to the empirical world, it is necessary for the researcher to consider strategies of inquiry that need to be employed to put the paradigm in motion (Denzin & Lincoln 1998). These strategies connect the researcher to specific methods of collecting and analysing empirical materials. However, before this is discussed, the role of the researcher is examined, as it is important to have a view of one's role in the complex human process involving accessing other people's interpretations, filtering these through the researcher's conceptual apparatus and providing a version of events to audiences (Walsham 1995b).

4.2 POSITIONING THE RESEARCHER IN THE FIELD: PARTICIPATION, NEGOTIATION AND ETHICS

Interpretive researchers bring constructed realities to their research settings and in these human settings find other constructions of reality among their respondents. She enters a relationship with the research subjects who are themselves embedded within a nexus of relationships (Bradbury & Lichtenstein 2000). The process of inquiry becomes one of developing and verifying shared constructions that will enable the meaningful expansion of knowledge (Erlandson et al. 1993; Trauth 1997); an interactive process shaped by the researchers own personal history, biography, gender, social class, race, and those of the participants in the setting (Denzin & Lincoln 1998, 4). These become apparent as the narrative evolves. Accordingly, the researcher's values, assumptions, biases and motivations inevitably influence the choice of the phenomenon, method, data collection and interpretation of findings (Sahay et al. 1994, 251; Trauth 1997, 237) as the researcher becomes inextricably part of the phenomena studied, thereby exhibiting "reflexivity" (Maxwell 1996, 67). The researcher is the "instrument" (Marshall & Rossman 1999, 66), an artist "situating and recontextualising the research project within the shared experience of the researcher and the participants in the study" (Janesick 1998). As the researcher can not be removed from the context she needs to embrace it (Trauth 1997, 238). As far as possible, these influences need to be accounted for in empirical reports, "for to disregard them may mislead the consumer of research into assuming greater objectivity than is warranted" (Sahay et al. 1994, 251).

The researcher takes on a role as an “active learner” telling the story from the participant’s view rather than as an “expert” passing judgement on the participants (Creswell 1998, 18). The researcher’s presence in the lives of the participants invited to be part of the study is fundamental to the qualitative paradigm. Whether the presence is sustained and intensive (eg. long term ethnographies), or whether it is relatively brief but personal (eg. in-depth interview studies), the researcher enters into the lives of the participants raising a number of technical considerations such as “participantness”, and interpersonal considerations such as trust, developing relationships and ethics (Marshall & Rossman 1999, 79). As will be seen below, these issues overlap each other and have reciprocal implications (ibid 1999, 99).

4.2.1 “PARTICIPANTNESS”: THE OUTSIDE OBSERVER

In considering the degree of actual participation in interpretive case studies, Walsham (1995b) identifies two broad categories, the outside observer and the involved researcher through action research or participant observation. Neither of these roles, in interpretive research, should be viewed as an objective reporter, since the collection and analysis of data ultimately involves the researcher’s own subjectivity (ibid 1995b, 77). Further, in-depth case studies conducted over a period of time inevitably influence the interpretations of those people who are being researched. That is, even if researchers view themselves as outside observers, they are to a certain degree performing action research by influencing what is happening in the domain of action, if not only by sharing the concepts and interpretations with the actors in the field site (ibid 1995b).

The outside observer’s role is adopted in this investigation. Deciding which role the researcher would adopt was based on the assessment of the strengths and weaknesses of each role in relation to the nature of the research undertaken (ibid 1995b). The study is focussed on organisational SISP in its social context thereby requiring access to a number of organisations to investigate the social phenomenon integral to the investigation namely e-business adoption decisions in varying situations. Therefore, the primary concern was to maximise the opportunities for gathering data in different contexts to ensure full responses to the research questions thereby requiring an outside observer’s role (Walsham 1995b).

The advantages of playing an “outside observers” role is that the researcher is not seen as having a direct personal stake in various interpretations and outcomes, and so research participants could be more frank in expressing their views (ibid 1995b, 77). Being alien to the culture may assist the researcher in seeing assumptions and behaviours that may be more difficult for those in the culture to observe (Trauth 1997, 241). A major disadvantage is that the outside researcher will not be physically present on many occasions, and so will not be able to get a direct sense of the field organisation from the inside. Data collection may be largely retrospective. Further, the extent to which the researcher is able to identify or fully understand all the cultural nuances that the organisation may be experiencing is limited (ibid 1997, 229).

The researcher developed mechanisms to compensate for these limitations through well developed research questions, ensuring good use of the available time, both for the researcher and the participants (Marshall & Rossman 1999, 80) as well as seeking alternative viewpoints on both the issues under investigation and on the researcher’s interpretations (Trauth 1997, 229) through the multiple lenses of the conceptual framework. Notwithstanding that the research questions were well specified, the qualitative design of the investigation protected the researcher’s “right to follow the compelling question, the nagging puzzle that presents itself once in the setting” (Marshall & Rossman 1999, 80).

A second disadvantage identified by Walsham (1995b, 77) is that the researcher may sometimes be restricted from accessing certain data and issues that are regarded as too sensitive or confidential to be shared with outsiders. In the context of this investigation, this was found to be particularly the case with e-business strategy documents. Despite assurances of confidentiality, participants were not forthcoming with such information. The researcher was uncertain as to whether participants were: concerned about the document becoming public; sensitivities to the general climate of ‘dot.com’ failures and so concerned about the researcher passing judgement; or just sceptical about the usefulness of strategic plans, such as one of the case studies who had “filed it in the garbage bin.” As accessing this information was difficult, the researcher relied upon secondary sources of information, such as financial reports, web sites and “popular” media to narrow gaps in the data.

4.2.2 NEGOTIATING A RESEARCH RELATIONSHIP: TRUST AND ETHICS

The relationship with those in the study is a complex and changing entity, where the researcher is the instrument and the research relationship is the means by which the research gets done (Maxwell 1996, 66-67). Following suggestions made in the qualitative research literature, the researcher endeavoured to build trust between herself and the participants, respecting norms of reciprocity and sensitively considering ethical issues (Marshall & Rossman 1999, 85-99) so as to engage in mutually beneficial research. The following discussion is divided into two sub sections. Section 4.2.2.1, discusses how the researcher negotiated access and built relationships with participants. Section 4.2.2.2, provides an outline of the ethical issues considered. Whilst considered separately, it is acknowledged that they are interrelated.

4.2.2.1 NEGOTIATING ACCESS AND BUILDING RELATIONSHIPS

The first step in negotiating access to the case study organisations, was a letter of introduction, on the institutions letterhead who was sponsoring the research, stating the central purpose of the study, the procedures to be used in data collection, a broad outline of the nature and types of questions to be asked in the interview, and statements about protecting the confidentiality of respondents and the expected benefits to accrue to the participants in the study. The letter was sent to a senior executive identified in the “popular” media or web sites as a key actor in e-business, or was made known to me through social networks (Trauth 1997, 233) such as recommendations from colleagues or others at the institution sponsoring the research. The letter of introduction was followed up with telephone conversations and e-mails to begin the process of cultivating rapport with the participants and negotiating access. Background information from Web sites, financial annual reports and media clippings, was reviewed prior to making contact to become at least minimally aware of the organisational context, thereby speaking with some “indigenous” language to gain their confidence and trust. The time taken and formality in setting up the interviews was considered necessary in indicating very clearly in the early stages how the researcher valued the contribution the interviewee was making (Gillham 2000, 8). As will be discussed further in section 4.3.2 the initial contact for the researcher, or “gatekeeper” led the researcher to other

informants (Creswell 1998, 117). During the preliminary discussions with the contact, information about the following issues were provided: why the organisation was chosen for the study; time and resources required by participants, how the results would be reported; and, what the gatekeeper would gain from the study (ibid 1998).

Whilst the above discussion appears as a concrete illustration of steps the intention is not to suggest that gaining access or negotiating entry was a single event, as it was a continual process of negotiation and renegotiation of relationships with those involved in the study (Maxwell 1996, 66). The major considerations involved in negotiating these relationships was what would enable the researcher to ethically learn the things she needed to learn in order to validly answer the research questions. Securing formal permission to conduct the case study was at time a formidable task for the researcher as she negotiated her way through the maze of people, organisational structures, and questions to first organise an appointment to discuss the research with a senior manager. Whilst it could be argued that the researcher's approach improved over time, there was no set formula for the negotiation process as each organisation presented its own unique set of needs, concerns and people to convince about the value of the research.

The researcher was confronted with questions, not only about the content of the research, but also about her background, whether she was going to be "worthwhile" to talk with, why they were chosen, and whether there was anything that the researcher had to offer about the adoption of e-business that the manager did not already know. While some people were friendly and interested, others appeared suspicious and sceptical. The research process turned from its own separate identity to challenging the researcher's identity regarding what she was doing and why. Whilst the researcher had addressed similar questions in designing the research, being confronted with these issues by a third party made the researcher feel her "identity break into pieces" and then mend itself again as she confronted each "alien culture" (Czarniawska 1998, 42).

Such feelings were not isolated to the start of the 'access' process but continued throughout the whole study as there was "no such felicitous moment when the study [could] continue without hindrance" (Czarniawska 1998, 33). For example, the location of the organisations and in some cases the mobility of participants necessitated the mobility of the researcher to different and unfamiliar locations. Getting to an unknown

place on time was symbolic of more than an organising failure should the researcher not get to the right place at the right time. There was also a sense of entering an “alien landscape” (ibid 1998, 37). Even when access appeared secured with a date and place, it was always precarious. Moments of cancellation were met with feelings of doubt as to why they agreed to talk with the researcher in the first place, was it because they couldn’t refuse as their supervisors had asked them to? Did they not really want to meet with me or was it really due to unforeseen circumstances? Follow up calls to reschedule and secure another meeting were moments of anticipation as the researcher re-entered the negotiation process again trying not to appear too ‘forceful’ thereby jeopardising the relationship.

During the course of discussions with potential participants, the issue of reciprocity was also considered within the constraints of the research and maintaining one’s role as a researcher (Marshall & Rossman, 1999, 90). The researcher was sensitive to the fact that senior managers of these organisations had adjusted their priorities and routines to assist the researcher. Reciprocity in this research consisted of following the interview up with an e-mail thanking the participant for their time together with a copy of the transcript for their verification and an undertaking to provide a copy of the results once finalised.

4.2.2.2 ETHICAL ISSUES

Punch (1986, 20) posits that trust, deceit and dissimulation are realities of fieldwork thereby raising certain obligations for the conduct of the research. Underlying every aspect of the research design were ethical concerns. That is, it was relevant to the: purpose of the research; selection of research questions; validity concerns; and, critical assessment of theory. It therefore had implications with regards to the kind of research relationship that the researcher created with the participants (Maxwell 1996, 7). In identifying ethical issues, the researcher worked within the ethical standards and guidelines of the sponsoring institution of her research, considering ethical theories as well as her own moral reasoning (Kimmel 1988, 42). Whilst there are no definitive answers about the rules of appropriate behaviour in every situation (Trauth 1997, 238), the researcher believed that the five ethical risks identified by Lincoln and Guba (1989) were sufficiently compelling enough to be given attention to in this investigation as they

reflect concerns about proper conduct in relation to the processes, procedure and consequences of research (Kimmel 1988, 40). Following is a brief outline of each risk area to set the context for the methodological issues faced by the researcher.

The first risk related to the issue of face-to-face contact, which normally provide for intensive and fragile relationships, which are subject to violation of trust, shading the truth and misunderstandings regarding the purposes or relationships with other respondents on site (Lincoln & Guba 1989, 132). In both negotiating relationships with participants, as discussed above, and conducting the interviews (see section 4.4.2) the researcher ensured that the participant was clear in regards to the purpose of the research and how it would be conducted.

The second risk identified is that of maintaining privacy and confidentiality (ibid 1989). The heavy reliance on natural language, direct quotations and the continuous hermeneutic feedback loops, on the participant's constructions often means that persons and/or positions and/or the role of the participant may become apparent. In addressing this issue, the researcher gave assurances to the participants that their conversation would remain confidential and that alias names would be used in the case study write up, unless they gave her permission to identify them. Further, participants would receive a copy of the case study report once completed for an opportunity to correct what they believed erroneous information or to have direct quotations removed if they believed it may be too obviously attributable to them. As it transpired, all participants requested confidentiality primarily because of the sensitivities surrounding e-business initiatives in their earlier stages when the case studies were conducted. Further, distinctive information regarding the interviewees themselves could not be provided because of perceived tensions in them being easily identifiable in the story. The restricted use of contextual data is acknowledged as a limitation of this study.

The third risk area identified was that of violation of trust (ibid 1989, 134). As the researcher was present for a short period of time in each setting, building trusting relations had to proceed in conjunction with gathering good data (Marshall & Rossman 1999). Therefore, as discussed above there was a need to ensure that participants were clear about the intent and purpose of the research. The fourth risk area concerns the need for open negotiations (Lincoln & Guba 1989, 134). Therefore negotiations of

concerns, issues, claims and constructions were considered mandatory and conducted with “attention to egalitarian concerns and with attention to requirements of human dignity, self-esteem and self-agency” (ibid 1989, 135). How much of this achievable in short time periods was something that Guba and Lincoln (1989) posited that they could not give a “wholly satisfying answer” but offered advice, which was adopted by the researcher. That is, being conscious of your own motives and spending time examining and reflecting upon interactions with persons so as to discover whether during the course of the meeting that one has been as honest and straightforward as “humanly possible” and whether there are any occasions that can be identified where the participant may have been misled (ibid 1989, 135).

The fifth area identified by Guba and Lincoln (1989) relates to the risk inherent in framing case studies. As this issue is addressed in detail in sections 4.3.1 and 4.5, it is not discussed further here. The following section of this chapter turns the discussion to the second objective of this chapter that is examining the methodological conduct of the investigation. The examination begins with a discussion regarding how the researcher established the design, followed by the strategy of inquiry adopted, namely the case study approach.

4.3 ESTABLISHING THE RESEARCH DESIGN: AN “EVOLVING MOSAIC”

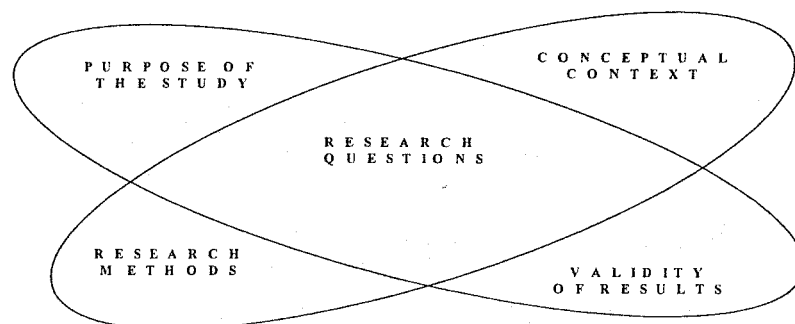
The qualitative research design situates the investigator in the empirical world. It is to use Janesick’s (1998, 2000) metaphor of dance, an interpretive art form, an event, a process where the interpretation and representation of different forms of problematic experiences are connected with different phases. As discussed in section 4.1.2, with studies shaped by the interpretive paradigm, there is less emphasis on well-formulated hypotheses, tightly defined sampling frames, structured interview schedules and predetermined research strategies, methods and forms of analysis (Denzin & Lincoln 1998, xii). Rather, the researcher follows a path of discovery, using a model of qualitative inquiry, with an interpretive, naturalistic approach to the subject matter (ibid 1998, 3).

Conceptualising the study and developing a design that was clear, flexible and manageable was a dialectic and iterative process, rather than one that proceeded in a

linear fashion. The researcher initially “juggled” with concepts and theoretical frames for the study, often entertaining alternative designs, and assessing them for their power to address the emerging questions as she drew upon her tacit knowledge seeking continuously to refine and extend the design as information unfolded during the course of the research (Guba & Lincoln 1989, 180). The researcher’s assumptions, biases and motivations in collecting and interpreting the data were key factors in such decisions (Trauth 1997, 238). As the researcher became more acquainted with what was salient, the research design became more focused (Guba & Lincoln 1989, 180) until the conceptual framework and the specific design features became “more and more elegantly related” (Marshall & Rossman 1999, 54).

Establishing the research design involved focusing on the purpose of the study, the research questions, determining what information would most appropriately answer these questions and the strategies that would be most effective for obtaining the information (Denzin & Lincoln 1998, 28). Therefore, designing involved the entire process of research from conceptualising the problem to writing the narrative, not simply the methods, such as data collection, analysis and findings (Creswell 1998, 3). According to Yin (1994, 28) it is the “logical sequence that connects the empirical data to a study’s initial research questions and, ultimately to its conclusion.” However, within the structure of the research design was an “evolving mosaic” (Trauth 1997), a reflexive and reflective process (Alvesson & Sköldberg 2000) involving the researcher “tacking back and forth between the different components of the design, assessing the implications of purposes, theory, research questions, methods and validity threats for one another” (Maxwell 1996) as illustrated in Figure 4.5.

Figure 4.5 Components of an emerging research design



[Source: Maxwell 1996]

While the wording of the research question determined the focus and scope of the study, in the early stages of the qualitative inquiry, the research questions were left as broad as possible, due to the broad multiple perspectives in the conceptual framework and limited knowledge of the settings. Narrowing the questions would have prematurely delimited the study, distracting the researcher from seeing the whole picture (Morse 1998, 68). Therefore, the questions generated were used to search for patterns and were modified when the researcher entered the field and found other patterns of phenomena, such as the emic issues of the actors who belonged to the case (Stake 1995, 20). As will be discussed in further detail in section 4.4.1 the research questions for the investigation were modified following the pilot case study. This flexible approach allowed the precise focus of the research to evolve during the research process itself (Marshall & Rossman 1999, 53). Further, as will be discussed in section 4.3.3, the process in selecting sites and sampling was also interactive rather than discrete (Erlandson et al. 1993, 61).

At first the researcher's training in positivist thinking and quantitative methodologies served as an obstacle to her work, as she came to terms with the subjectivity that is an inherent part of qualitative methods and hence the degree of flexibility that needs to be incorporated into the design. Therefore, the researcher's learning process became not only about the subject matter of the investigation, but also the methodology and herself, as she questioned assumptions and challenged approaches. The researcher had to accept that she could never be totally objective and judgement free and that the "neat outline" had to be "replaced with an evolving mosaic ... intended to serve the research model, not a predetermined methodology" (Trauth 1997, 238-239). The following section 4.3.1 turns the discussion to how the study was actually conducted, beginning with an examination of the case study approach and why it was appropriate for this investigation.

4.3.1 STRATEGY OF INQUIRY: THE CASE STUDY

As discussed in section 4.1, the strategy of inquiry is comprised of the skills, assumptions and practices that the researcher employs to implement and anchor paradigms in specific empirical sites or methodological practices (Denzin & Lincoln 1998, 29). The richness and diversity of strategies in qualitative research is evident in

the vast literature (see for example Denzin & Lincoln 1998, 2000; Silverman 1998; Marshall & Rossman 1999). Differentiating among the different strategies requires an assessment of the study's central purpose or focus (Creswell 1998, 37). The methods adopted are the specific tools for conducting that exploration (Marshall & Rossman 1995, 40). No specific method can be privileged over any other, and none can be "eliminated out of hand," as the choice of method is dependent upon the questions asked, the context of the questions, what is available in the context and what the researcher is able to do within that setting (Denzin & Lincoln 1998, 3-4).

The case study approach is adopted for the investigation as it stresses the unique strengths of the genre of research that assumes the value of context and setting, typically focuses on society and culture, whether a group, program or an organisation (Marshall & Rossman 1999, 60), is particularly important when theoretical knowledge on a phenomena is limited (Cavaye 1996b, 235), is recognised as a highly versatile research strategy in the IS field (Galliers & Land 1987; Cavaye 1996b) and is a common vehicle for interpretive investigation in IS (Walsham 1995a); key issues in this investigation. Further, the case study's multi-faceted nature enables issues to be investigated from different epistemological standpoints, at various stages of knowledge using various methods (Cavaye 1996b, 235).

According to Yin (1994), a case study is an empirical inquiry that allows for a contemporary phenomenon to be investigated within its real-life context and is particularly useful when the boundaries between the phenomenon and context is not clearly evident. Creswell (1998, 78) posits that nowhere is the context more apparent than in a qualitative case study, as it enables the researcher to study different aspects, examine them in relation to each other, view the process within its environment and utilise the researcher's capacity for 'Verstehen' (Gummesson 2000, 86) resulting in "thick description, experiential understanding" and "multiple realities" (Stake 1995, 43). The critical emphasis in case studies reveals the meaning of phenomena for the participants (Newman & Benz 1998, 65) such as how actors in organisations construct the meanings of technology and how technologies may be redefined through negotiations and conflicts between different groups that may in turn be influenced by the nature of the organisation.

The case being studied, or the unit of analysis in this investigation, is the organisation. A collective case study (Stake 1998, 89) of six organisations was conducted to canvas a range of rich viewpoints of e-business adoption decisions. The use of a multiple-case design provides an opportunity to compare cases, which are different in context, to verify the emerging theoretical model in a variety of different circumstances that is theoretical replication (Yin 1994, 48; Cavaye 1996b, 237). Each organisation was looked at in depth and its contexts scrutinised, to facilitate an understanding of the structures and processes surrounding the adoption e-business. The rationale for selecting six case studies is discussed in section 4.3.2.

4.3.1.1 LIMITATIONS OF CASE STUDIES

While a case study strategy is a well recognised research endeavour, it also has some serious limitations (Yin 1994, 9). One of its major criticisms is considered to be its lack of rigor, allowing equivocal evidence or biased views to influence the direction of findings and conclusions (ibid 1994, 9). However, as discussed in sections 4.1 and 4.2, the paradigm of inquiry and the research design calls for the philosophical assumptions underlying the investigation and the researcher's value judgements to be revealed so that the reader is informed as to what is driving the research and its findings, thereby creating co-constructions of reality. Further, as will be discussed in section 4.6, standards of validity are adopted to ensure the rigor of both the method and interpretation process in this investigation. A second major concern regarding case studies is that it provides little basis for generalisation (ibid 1999). Case studies are generalisable to theories and not to populations (ibid 1999, 10). Further, as will be seen in section 4.6, criteria relating to transferability rather than generalisability are applied, providing the reader with "thick" descriptions to make choices as to the applicability of the case findings to their own situation.

4.3.2 SELECTING THE SETTING AND INDIVIDUALS

4.3.2.1 SELECTING THE CASES

There are two levels at which decisions need to be made about sampling, the setting and the individuals to be interviewed. The first and most global decision is choosing the setting. Qualitative sampling is theoretically driven rather than for statistical reasons (Eisenhardt 1989; Miles & Huberman 1994), influenced by a conceptual question than a

concern for “representativeness” (Guba & Lincoln 1989; Miles & Huberman 1994). Yin (1994, 47-48) posits that applying statistical sampling logic to case studies is “misplaced” because: case studies should not generally be used to assess the incidence of phenomena; as the case spans the phenomenon and the context, a number of potentially relevant variables are generated that would require the investigation of numerous cases to allow statistical consideration of the variables; and if statistical sampling had to be applied uncritically to all types of research it would not be possible to empirically investigate vital issues. Further, Eisenhardt (1989, 537) states that the “random selection of cases is neither necessary, nor even preferable.” Therefore a purposeful sampling strategy was adopted in which particular settings, persons and events were selected deliberately in order to provide the information required to answer the research questions (Miles & Huberman 1994, 27-24; Maxwell 1996, 70; Creswell 1998, 118).

With the sampling strategy decided, the next question for the researcher was what cases should be selected. Pettigrew (1987) argues that “it makes sense” to select cases like “extreme situations and polar types” in which the process of concern is translucently observable as the number of sites that can be investigated are restricted. Paton (1990; cf. Miles & Huberman 1994) provides a typology of purposive sampling strategies. While the investigator may consider any one of the sampling strategies in a case study (Creswell 1998, 118), the underlying principle common to all these strategies is selecting “information rich cases” (Paton 1990; cf. Miles & Huberman 1994) for the investigation.

In this investigation the researcher employed a “maximum variation” strategy to represent diverse cases so as to fully capture multiple perspectives about the cases (Creswell 1998, 120) and provide the “broadest scope of information” (Guba & Lincoln 1989, 178). Guba and Lincoln (1989, 178) identify two characteristics regarding this strategy. Firstly, no sample element is chosen until after data collection from the preceding element has largely been accomplished, that is the sample is selected serially. Secondly, elements are chosen “in the sense” that they serve the particular needs of the inquiry at that moment and that they differ as far as possible from preceding elements, that is, they are selected contingently (ibid 1989).

Considerations regarding the “uniqueness” of the specific setting and characteristics that were compelling and unusual (Marshall & Rossman 1999, 69) were necessary so as to highlight similarities and differences between contexts, “redundancy and variety each having a voice” (Stake 1998, 89). However, while a site may be perfect in its interest at a theoretical level, if access to the site and the groups and activities within it are restricted then the study can not succeed (Marshall & Rossman 1999, 69). Therefore, in addition to their being a high probability that a “rich mix of the processes, people, programs, interactions and structures of interest are present” (Marshall & Rossman 1999, 69) the sampling decision also needed to consider the relationship with study participants and ethics (as discussed in section 4.2) and validity concerns (discussed in section 4.6) so that data quality and credibility of the study could be reasonably assured (Maxwell 1996, 72; Marshall & Rossman 1999, 69).

The researcher adopted the principle of “natural controls” in her research design, remaining flexible on the issue of who and what needed to be considered, arising initially from the researcher’s understanding of what she considered important (Erlandson et al. 1993). These earlier decisions were largely dependent on the conceptual framework and prior theory. The difficulty in specifying what was salient in the earlier phases of the research requires an adaptable instrument, which while not pre-programmed, can nevertheless “ferret out” what needs to be examined more closely (Guba & Lincoln 1989, 177). However, as the researcher became better acquainted with what was salient, the sample became “more directed, the data analysis more structured, the construction more definitive” (ibid 1989, 180). In addition to these issues, the sites needed to be similar to each other in aspects not under investigation in the research, while allowing the possibility for some contrast on aspects that are under investigation (Yin 1994). For example, the researcher was interested in studying interpretations of e-business and related adoption decisions. By focusing on e-business, stronger conclusions about how social interpretations may trigger, or occasion, changes in SIS decisions and vice versa were able to be made.

The final decision in selecting cases was how many should be chosen. In making such decisions, the researcher was guided by Eisenhardt's (1989) recommendation that cases should be added until “theoretical saturation” is reached, that is how much is known about the phenomenon after studying the case and how much information is likely to

emerge from studying further cases. Similarly Lincoln and Guba (1985, 202) recommend that the size of the sample be determined by “informational considerations”, that is sampling is terminated when no new information is forthcoming, that is to the point of redundancy. Therefore, both the research questions and the data collected determine the point in which the researcher has collected sufficient data from cases to facilitate appropriate analysis (Cavaye 1996b, 237). Based on this criterion, six organisations were ultimately selected for the study. The researcher judged them to be rich in information, representing a large variation of cases, consistent with the broad theoretical perspectives in the conceptual framework.

These organisations represented a cross section of industry groups, size, maturity and products and services. The names of the organisations have been disguised to preserve anonymity. In addition, in keeping with the above discussion, each organisation was also selected on the basis of some unique characteristic(s) to ensure maximum variation, which are summarised in Table 4.3 and discussed below.

Table 4.3 Sample of case sites

	Case 1 Retail	Case 2 GovStat	Case 3 Bank	Case 4 InternetCo	Case 5 Transport	Case 6 Egive
Industry	Retail	Government	Financial Services	Business Services	Transport	Publishing/Direct Marketing
Major Product/Service	Books Franchise	Research/Education/Tourism	Financial products & services	Reverse online auctions	Transport	Professional directories, corporate promotions
Size	Large	Small	Large	Small	Large	Small
Unique characteristics	Books identified as one of the major purchases made online. Franchise structure vs 'central' web site	First govt, agency to adopt SET. Commercial vs social agenda	Industry traditionally large user of IT & T	Internet start up company	Recognised for its significant growth over past decade due to a number of strategic initiatives.	Not for profit sector portal - E-giving
No. of interviews	2 (See Appendix 2, C1.1a, 1.1b)	2 (See Appendix 2, C2.1 & 2.2)	2 (See Appendix 2, C3.1a, 3.1b)	2 (See Appendix 2, C4.1)	2 (See Appendix 2, C5.1, 5.2)	1 (See Appendix 2, C6.1)
Other sources (See Appendix 2)	Web site (C1.6) Press (C1.5, 1.7-1.12) Internal documents (C1.2, 1.3, 1.4)	Annual report/ Web site (C2.3)	Annual report/ Web site (C3.3) Press (C3.4-3.19) Internal doc. (C3.2)	Web site (C4.2) Press (C4.3-4.7)	Annual report (C5.3) Web site (C5.4) Press (C5.5-5.11)	Web site (C6.3) Press (C6.2, 6.4)

As shown in Table 4.3, within each case study, a small number of interviews were conducted. While the researcher acknowledges the limited number of perspectives as a limitation of this study, the research questions were aimed at strategic management issues involving a few key participants mostly at senior management levels. While not necessarily the only strategic actors within the organisation, they worked more specifically with e-business initiatives in the earlier stages as discussed further in section 4.3.2.2. Further, the impact of time on the research design was discussed in Chapter Three section 3.5.2.

Case One – ‘Retail’

Case one is a major book retailer in Australia. As will be seen in the following discussion, this case was selected as: (1) its product represents a significant proportion of purchases on the Internet and total retail turnover in Australia; (2) the proportion of businesses in the retail industry with Internet access has experienced substantial growth over the past few years; and, (3) the retail sector is a major industry in Australia. In addition, case one presents an interesting case as it was representative of a franchise structure. As will be seen in Chapter Five, “channel conflict” arose between the franchised network and the centralised web site, making it an interesting case regarding the competition between social structure and virtual space within an organisation.

The Australian retail trade sector in 1998-99 contributed over \$33 billion, or 5.6% of gross domestic product (GDP). It is the largest employing industry, with 1,323,000 people employed or 15.2% of employment in Australia⁸. Total retail turnover for newspaper, book and stationary retailing for the year as at December 2000, was \$4,607.72 million, representing approximately 3% of the total retail turnover in Australia.⁹ Further, as seen in Table 4.4, nearly 10% of Australian adults (1,335,000) used the Internet to buy or order goods or services for their own private use in the year to November 2000, an increase of 4% from November 1999 and 8% from November 1998. Of these purchases, books or magazines are one of the most highly reported purchases, representing 27% in November 1999 and 36% in November 2000.

⁸ Australian Bureau of Statistics, “Australia Now” Publication, “Industry Overview, Output and employment by industry, 1998-1999” <http://www.abs.gov.au/ausstats>

⁹ Australian Bureau of Statistics, December 2000, Publication 8501 <http://www.abs.gov.au>

Table 4.4 Australian Household Internet Access and Purchasing

	Twelve Months to		
	November 1998	November 1999	November 2000 ^a
Use of internet to buy or order goods or services for private use (No. & % of Australian Adults)	286,000 (2%)	803,000 (6%)	1,335,000 (10%)
Books or magazine purchases (No. & %)	na ^(a)	217,000 (27%)	480,600 (36%)
Home Internet access Australian Households (No. & %)	1.3 million (18.6%)	1.7 million (25%)	2.7 million (37%)

(a) na – not available

[Source: Australian Bureau of Statistics Cat. No. 8147 *Use of the Internet by Householders, Australia*, November 2000, and November 1999 <http://www.abs.gov.au>]

The retail industry in Australia has experienced large growth in the use of the Internet over the past few years. According to the Australian Bureau of Statistics (ABS), shown in Table 4.5, the proportion of businesses in the retail trade industry with Internet access has more than doubled from 1998-1999 to 1999-2000 (17% to 42%), while the proportion with Web sites or home pages has increased more than seven times over (2% to 15%).¹⁰ At the end of June 2000, 27% of retail trade businesses with access to the Internet were engaged in activities associated with selling goods or services to customers. This included receiving orders, sending invoices and providing after sales service. Of the retail trade businesses with Internet access, 24% used it for activities associated with buying goods or services such as ordering from supplies, purchasing information on-line or receiving invoices. On-line banking facilities were used by 35% of retail trade businesses with Internet access while 23% of retail trade businesses were using their Internet access only for email and/or information searches.

Table 4.5 Business Internet Use: Retail Trade

	1998-1999	1999-2000
Number of businesses	110,000	112,000
Internet Access (No. & %)	19,000 (17%)	47,000 (42%)
Web Site or Home Page (%)	2	15
Internet Business Active (%)	na	34
Internet Commerce Active (%)	na	5
Selling related activities (%)	Na	27
Buying related activities (%)	Na	24
Banking (%)	Na	35
Email and/or information searches only (%)	Na	23

(a) na – not available

¹⁰ Australian Bureau of Statistics Cat. No. 8129 *Business Use of Information Technology, Australia*, 5 October 1999 and 15 December 2000 <http://www.abs.gov.au>

Case Two – ‘GovStat’

Case two is a statutory corporation, constituted under a State Act, owned by the people living within that State and comes within the administration of a State Government. It is a highly visible statutory body in the general community because of its history, location and the unique nature of its services. The services provided span from social agendas such as research, conversation and education to commercialisation agendas such as tourism and catering. In addition to its unique collection of services, the statutory authority was identified as the first government agency within its state to adopt a secure electronic transaction (SET) facility.

Table 4.6 provides an outline of statistics on Australian government use of information technology and the Internet for the year ending June 1998. Access to the Internet at the end of June 1998 was highest for Federal departments and agencies (100%), followed by State/Territory (85%), local government (77%) and other government (60%). For State/Territory government, 97% of departments and agencies with 20 or more employees used the Internet.¹¹ As seen in table 4.5, while 1,798 (73%) government organisations had access to the Internet, only 898 (37%) had a web site/home page at the end of June 1998. However, of the 1,554 government organisations without a home page/web site, over half of State/Territory and local government organisations (62% and 54% respectively) intended to establish one by July 1999. All Federal departments and agencies without a web site/home page intended to establish one by July 1999. Of the 654 government organisations without access to the Internet at the end of June 1998, intention to acquire it within the next financial year was highest among local government (73%). Of those State/Territory departments and agencies without Internet access, 42% intended to acquire it before July 1999.

Table 4.6 Government use of information technology and the Internet as at June 1998

	Internet Access %	Email access %	Web site/home page %	Number of government organisations
Government Type				
Federal departments and agencies	100	99	89	159
State/Territory departments and agencies	85	85	61	561
Local government	77	76	28	682
Other government organisations	60	60	21	1050
Total	73	73	37	2452

[Source: <http://www.abs.gov.au>]

¹¹ Australian Bureau of Statistics, 1997-1998, Government use of information technology, 8119.0 <http://www.abs.gov.au>

Case Three – ‘Bank’

Case three is one of the largest banks operating in Australia. It was selected on the basis that the finance sector and banks in particular, have traditionally been large users of information and telecommunications technologies (Allen Consulting Group 2000). Further, bank services are recognised as being one of the “easiest” to virtualise (Allen Consulting Group 2000). In 1998-1999, the finance and insurance sector contributed approximately \$39 billion, or 6.6% of gross domestic product¹². As at May 1999, over 300,000 people were employed in the sector, approximately 3.5% of total employment in Australia. Of all Australian industries, the finance and insurance industry had the highest (IT&T) expenses in 1997-1998 with \$4.7 billion spent on new technology or 20% of total Australian IT&T expenditure.¹³

In 1999-2000, 71% of businesses within the finance and insurance sector had Internet access, compared to 39% in 1998-1999, exceeding the total Australian industry average of 56%. Further, 19% had a web site/home page in 1999-2000, compared to 18% in 1998-1999.¹⁴ Fifty seven per cent of businesses within the finance and insurance sector in 1999-2000 were found to be Internet active meaning the use of the Internet, including the Web, to facilitate business processes, but excluding the use of the Internet for e-mail only and/or information searches. Further, 5% of businesses were Internet commerce active, defined by the ABS as “the sale/purchase of goods and/or services conducted over the Internet (including via e-mail, public Web sites or B2B Internet based trading systems), regardless of the ultimate method of delivery or payment for the good or service.”¹⁵ Further, at the end of June 2000, over a third (36%) of businesses with Internet access were using on-line banking facilities¹⁶ The Australian traffic flow on finance institutions as at May 2000 are outlined in Table 4.7.

¹² Australian Bureau of Statistics, “Australia Now” Publication, “Industry Overview, Output and employment by industry, 1998-1999” <http://www.abs.gov.au/ausstats>

¹³ *ibid*

¹⁴ Australian Bureau of Statistics, “Business use of information technology 1999-2000,” Publication 8129, <http://www.abs.gov.au/ausstats>

¹⁵ *ibid*

¹⁶ Australian Bureau of Statistics, “Business use of information technology 1999-2000,” Publication 8129, <http://www.abs.gov.au/ausstats>

Table 4.7 Australian Traffic Flow

Domain	Unique Audience	Reach % (Active)	Visits per Person	Total time spent (min)
commbank.com.au	191,676	5.42	3.47	19.82
comsec.com.au	157,957	4.47	5.44	43.07
westpac.com.au	155,613	4.40	3.60	26.10
anz.com	113,913	3.22	3.20	17.30
national.com.au	112,636	3.19	3.02	17.43
anz.com.au	78,445	2.22	2.73	6.40
stgeorge.com.au	63,885	1.81	2.64	17.35
quicken.com.au	45,450	1.29	3.83	24.65
nextcard.com.au	45,157	1.28	1.26	1.28
sanford.com.au	42,502	1.20	3.06	10.60
Etrade.com.au	42,005	1.19	4.78	52.48

[Source: www.Nielsen-NetRatings.com cf. Bun (2000)]

Case Four – ‘InternetCo’

Case Four is a reverse online auction company that deals in online auctions for businesses, referring to itself as a business service organisation. It was selected because it represented an Internet “start up” organisation founded in the past three years, as opposed to the remaining cases, which were, except for one, founded in the 1800s. Internet auctions are of peak interest on the Internet (Goldsborough 2000) and considered one of the most successful forms of electronic business (Bajari & Hortacsu 2000).

The business services sector covers an array of professional services, including areas such as surveying services, consulting engineering services, computer services, legal and accounting services and marketing and business management services (Allen Consulting Group 2000). At the end of June 2000, 76% of businesses within the Property and Business services industry had Internet access, representing the second highest industry group. Further, 63% were Internet Business Active, 17% above the industry average, with 8% being classified as Internet Commerce Active.¹⁷ The characteristics of the business services sector partly explains the rapid take up of e-business in this sector, such as: many activities conducted in this sector have a high reliance on information; many business services are easily virtualised; there is a need for information to be delivered quickly; and the sector is well supported by information infrastructure (Allen Consulting Group 2000).

¹⁷

Australian Bureau of Statistics, “Business use of information technology 1999-2000,” Publication 8129, <http://www.abs.gov.au/ausstats>

Case Five – ‘Transport’

The transport company selected in this investigation is one of the largest in the Australian transport industry. Over the past decade the company's asset base has increased more than twelve times over due to an aggressive acquisition strategy and is recognised in the business media as an exemplar of success, particularly with regards to its leadership (Kavanagh 2001). The company's record strategic growth was a major characteristic of interest in this investigation because of its experience in successfully managing and implementing strategic change. Further, its commitment to e-business initiatives have also been highlighted in the business media.

In 1998-1999, the transport and storage sector contributed approximately \$33 billion, or 5.6% of gross domestic product.¹⁸ As at May 1999, over 400,000 people were employed in the sector, approximately 5% of total employment in Australia. Further, approximately 1960 million tonnes of freight are transported around Australia each year, and 433 million tonnes of freight are exported.¹⁹ In 1999-2000, 46% of businesses within the transport and storage sector had Internet access, one of the lowest reported in a range from 39% to 70%. However, there had been a 26% increase from 1998-1999.²⁰ Thirty seven per cent of businesses were found to be Internet active while, 9% of businesses were Internet commerce active.²¹ The transport and storage sector were ranked amongst one of the highest in the Internet Commerce active group, where activity ranged from 1% to 11%; wholesale trade being the largest. This may be attributable to the fact that, Electronic Data Interchange (EDI) has been used in the transport sector for many years mostly between larger organisations to streamline purchasing with their major clients.

Case Six – ‘Egive’

Whilst traditionally known as a publishing organisation, case six was selected as it offered insights into an e-business model that was in a not for profit as well as a commercial context. The organisation had extended its service in offering a portal for the not-for-profit sector, including e-giving for charities. The growth in e-giving has stemmed both directly and indirectly from the Internet. The Internet has enabled charities with a special focus to find a global audience, increasing their chance of obtaining funds through a listing on a global not-for-profit portal (Gome 2000).

¹⁸ Australian Bureau of Statistics, "Australia Now" Publication, "Industry Overview, Output and employment by industry, 1998-1999" <http://www.abs.gov.au/ausstats>

¹⁹ Bureau of Transport Economics, Australian Transport Statistics 1998-1999, <http://www.dotrs.gov.au/bte/stats.htm>

²⁰ Australian Bureau of Statistics, "Business use of information technology 1999-2000," Publication 8129, <http://www.abs.gov.au/ausstats>

²¹ *ibid*

4.3.2.2 SELECTING INTERVIEWEES

As discussed above in section 4.3.2.1, the sampling strategy began as a search for information rich cases to study organisations, which manifested the phenomenon of interest (Marshall & Rossman 1999, 73). The question then turned to who needed to be interviewed. The identification of high-salience issues is in part an interaction process between the researcher and participants and depends on an intense study of analysed constructions and reconstructions (Guba & Lincoln 1989, 153). Therefore, the process of selecting these important issues gradually changes the aim of sampling during the course of the research from securing respondents who can add the widest range of information to participants who can articulate the emerging salient themes (ibid 1989, 153). As will be discussed further in section 4.4, the degree to which interviews are structured also changes. Initially the interviews may be unstructured, with the researcher soliciting the participant's emic construction in the researcher's own terms. However, as the emerging construction or constructions become clearer, the researcher is able to ask more and more pointed questions (ibid 1989, 153).

As the focus of the research is on strategic IS decisions, the researcher needed to in the first instance interview a member of senior management, involved in adoption decisions regarding e-business, or what is referred to in generic terms as "elite individuals" (Kvale 1996, 101). Formulating and implementing strategy is "typically a high-involvement activity" for senior management behaviourally and cognitively" (Golden 1992). Therefore, it was considered that these individuals in the upper echelons of the organisations would be able to recall their organisation's past and continuing strategies (ibid 1992, 849) with respect to e-business. The interviewees with whom the researcher made initial contact with acted as a "gatekeeper" (Creswell 1998) identifying other key experts involved in e-business. A senior executive from IS and the general business area were interviewed where available to capture multiple constructions of e-business.

Eleven interviews were conducted in total as at that point informational redundancy had been reached (Guba & Lincoln 1989). For reasons of their formal senior position, access to power and resources the participants interviewed played a critical role in the strategic actions surrounding e-business. Therefore it was considered that they should be able to recall the events accurately due to the importance of e-business to the organisation and/or its personal relevance to them (Golden 1992, 849). Further, at the time the

research was conducted, each organisation had only recently, intentionally or serendipitously begun to alter its strategy as e-business was in its earlier stages of development. Therefore the participants may be “acutely aware of from whence the firm came since the change process is often disruptive, conflict ridden and expensive in the short run” (ibid 1992).

However, even though the participants were purposefully selected and the data itself appeared valid, the researcher acknowledges that there is no guarantee that the informants’ views were typical (Maxwell 1996, 73). In using retrospective accounts of the adoption process there is a risk that past events may be misrepresented due to “hindsight bias” or “people’s needs for achievement, security and social acceptance” (Golden 1992, 849). Further, the number of participants interviewed was limited as e-business was in the earlier stages of its development at the time the research was conducted. Therefore, in addition to sampling the perceptions of actors involved in the strategic adoption of e-business, the researcher also collected certain artefacts that would place the information obtained from the interviews in a larger context such as organisational charts, annual financial reports, web sites and internal documentation, discussed further in sections 4.4.2.6 and 4.6.2.1. With the sampling strategy decided, the following discussion in section 4.4 now turns to how the data was collected.

4.4 DATA COLLECTION PROCEDURES

While considered separately in this discussion, there is a continuous interplay of data collection and analysis occurring as the inquiry proceeds (Guba & Lincoln 1989, 178). There appears to be no defining moment when analysis begins as it is a “matter of giving meaning to first impressions as well as to final compilations” (Stake 1995, 71). Case studies rely on historical and document analysis, interviewing and typically some forms of observation as data collection (Marshall & Rossman 1999, 159). Therefore, as the researcher interviewed the first participant, made the first observation and read the first document, she endeavoured to uncover items of information that appeared to be relevant to the study’s focus, generating more complex and “stable agendas to guide subsequent data collection” (Guba & Lincoln 1989, 178-179). Whilst acknowledging this interactive process, for now, the following discussion will focus on the data collection process. A full discussion of data analysis then follows in section 4.5.

As discussed previously, the researcher wanted to examine the contexts, processes and interactions that shaped organisational e-business adoption decisions. To be able to understand the meanings given to such an event by participants, a dialogue with persons was considered necessary due to its recognised strengths of: providing context information; fostering face to face interaction with participants; usefulness in uncovering participant's perspectives; being able to collect data in natural settings; facilitating immediate follow-up for clarification; usefulness in describing complex interactions; and, facilitating analysis, validity checks and triangulation (Marshall & Rossman 1999, 134). Therefore, the researcher relied on interviews as the primary method of data collection. A detailed discussion of the interview process is provided in section 4.4.2. In addition, documentary material was used to supplement the interviews lending contextual richness to the inquiry as discussed further in section 4.4.2.6. The following discussion begins with how the researcher prepared for data collection.

4.4.1 PREPARING FOR DATA COLLECTION: GUIDES AND REHEARSALS

4.4.1.1 THE CASE STUDY PROTOCOL

As each interviewee is expected to have unique experiences and special stories to tell, the researcher arrives with a list of questions to guide the interview (Stake 1995, 65; Kvale 1996, 129). The purpose of these questions is to gain a description of an episode, a linkage, an explanation (Stake 1995, 65). While a diversity of opinion exists about the use of protocols or guides, the purpose in this study was to provide subject areas within which the interviewer was free to "explore, probe and ask questions that would elucidate and illuminate" the subject area (Newman & Benz 1998, 68); reflecting the emergent character of interview questions (Gillham 2000, 21). The overriding considerations for the researcher in developing the protocol were what questions, for the purposes of the research, could only be answered by asking people and how those questions could be posed or presented most efficiently in order to collect information relevant to the research questions (Gillham 2000, 5).

At the centre of the protocol was a research-question based set of questions (Stake 1995, 65), under different topic headings (Gillham 2000, 21), reflecting the actual inquiry (Yin 1994, 69). When considering the content of these questions, the researcher was mindful that she was interviewing managerial groups, whose "voices" were likely to be

literate and eloquent, speaking in similar “languages” of the researcher (Czarniawska 1998). The main purpose of these questions was to keep the researcher focussed on the major themes of the study as data collection proceeded. Further, specific questions also served to prompt the researcher in asking questions during the interview (Yin 1994, 69). Such an approach contrasts with a survey interview, as each participant was not asked the same questions, because they were expected to have had some unique experience, and special story to tell (Stake 1995, 65) about the adoption of e-business. Each question was accompanied by a list of probable sources of evidence, such as the names of individual interviewees, documents or observations.

The interview questions were trialled on neutral persons such as colleagues and reviewed by supervisors of the institution sponsoring the research. This was distinct from the pilot studies, discussed in section 4.4.1.2, where the interview questions were in an advanced stage of development and tested in an actual setting (Gillham 2000, 22). At this stage of the research the researcher was endeavouring to refine the questions as opposed to the interview process.

The case study protocol proved useful in collecting the data, as it allowed the researcher to build a conversation whilst specifying important issues in advance to best use the limited time available in the interview situation (Newman & Benz 1998, 68). In addition to directing the interview, it also served as a validity check, in ensuring that the questions were consistent with the purpose of the study (p. 67). Validity issues are discussed in detail in section 4.6. A copy of the case study protocol is provided in Appendix One.

4.4.1.2 THE PILOT CASE STUDIES

In the final preparatory stages, two pilot case studies were conducted to cover both substantive and methodological issues. The pilot case studies were used to test the logistics of the field inquiry, such as the intended data collection plan and the time needed to collect data, as well as assist the researcher in refining lines of questions and providing some conceptual clarification for the research design. The pilots were chosen from the travel and transport industries, recognised as major users of e-business (Allen Consulting 2000). Convenience, access and geographical proximity were also key criteria for selecting the pilot cases (Yin 1994, 75). The lessons learned for both

research-design and field procedures after conducting the pilot case studies are discussed below.

Trialling the questions in pilot form alerted the researcher to a range of factors that would give interviews flavour and direction, assisted the researcher to focus on what it was about questions that made them productive and stimulating, or the contrary, and highlighted key questions, indicating those that were redundant and needed rethinking (Gillham 2000, 22). For example, “support for implementation” was identified as a relevant issue during the pilot studies. The researcher had characterised the adoption of e-business in the protocol questions as a totally separate and independent stage before implementation. It became apparent that this was more from the way the interview guide had been designed and the way questions were asked rather than from empirical observation. Therefore, questions were modified, added and deleted from the protocol.

Following the pilot “rehearsals” was a protracted process for the researcher. New questions, revisions, reorganisation of topics, question order, all needed to be reconsidered, as the researcher endeavoured to “untangle” herself from the “controlling” positivistic influences of the past. In addition, aspects of the interview process, other than the questions themselves, needed to be focused upon. For example, ways in which the researcher could encourage people to talk other than by asking direct questions, steering the interviewee so as to keep him or her on the topic without controlling the discussion too tightly and moving in the right direction. Such considerations required attention to: the structure of the interview; sensitivity to what interviewees communicate in a non verbal context; what is communicated to the interviewee by the setting and preparation of the interview; the “style” adopted by the researcher; and an awareness of how she “appeared” in the interview, the last point particularly important as the researcher is uniquely the research instrument (Gillham 2000, 23).

In addition to the lessons learned regarding the research design were certain logistical issues. First, rehearsing the questions made the researcher aware of the importance in maintaining eye contact, and providing appropriate verbal transitions from one question to the next so that the conversation flowed and the participant remained interested. Second, the need to not schedule interviews too close together. The two pilots had to be scheduled within twenty four hours of each other. This made it difficult to analyse the results and experiences from one setting before moving on to the next. A major drawback identified of fleeting site visits was that the researcher became overwhelmed with the volume of information, occasionally losing concentration and thus finding

loose threads in interviews, which should have been followed up earlier. By not reviewing the interview material and making notes as close as possible after the interview, meant that the need to follow up on information may not become evident until it is too late. This also raised the researcher's awareness for the need to collect as much precise information at the time of the interview, as the opportunity to return to settings may be limited mainly due to participant's availability. A third, and related issue was the time required to conduct and review the interviews. The researcher soon became aware that interview transcripts are voluminous requiring a substantial amount of time for transcription, editing, and analysis, especially given that the researcher was a novice in conducting qualitative research.

The following section 4.4.2, moves the discussion from the preparation phase to the interviewing phase. While different aspects of the interview process are discussed in separate sections, this is for the purpose of ease of reading, as they are interrelated.

4.4.2 DATA COLLECTION METHODS: THE INTERVIEW PROCESS AND COLLATION OF DOCUMENTS

The purpose of the interviews for this investigation was to have senior management reflect on recent action regarding e-business strategic decisions. As these organisations were undergoing e-business adoption and implementation, the issues surrounding e-business were fresh in their minds and, thus, the reconstruction of events was possible. The researcher was particularly interested in their accounts of events, their responses to and interpretations of those events and how they negotiated sources of change and amongst themselves to create an e-business orientation. Interviews with multiple informants at each site allowed the research to triangulate findings across sources and test issues of validity, discussed in detail in section 4.6.

The following discussion regarding interviews is divided into five sections. However, the intention is not to portray a "methodologically correct theoretical idealisation of the interview and a set of behavioural principles" that upon the interviewers compliance "relevant data" will be produced (Hester & Francis 1994, 642). No standard rules exist for an interview investigation, creating an open ended field of opportunity for the researcher's skills, knowledge and intuition, making it more like a craft "closer to art than to standardised social science methods" (Kvale 1996, 84). Interviews are "locally

managed” and “practically accomplished” as they are interactional events (Hester & Francis 1994, 675).

4.4.2.1 THE INTERVIEW: STRUCTURE AND FLEXIBILITY

While the interviews were typically more like conversations than formal events with predetermined response categories, the researcher is cautious in classifying the structure of the interview along the structured-unstructured continuum to avoid the “moribund corner” of the methodological literature on method driven debates such as the “supposed opposition” between structured and unstructured approaches (Pawson 1996, 295). The case study protocol was prepared to keep the interview focused, however, it was non directive, and used flexibly according to what emerged (Gillham 2000, 4). In using a dramaturgic metaphor, the “production is spontaneous, yet structured – focussed within loose parameters” provided by the interviewer (Holstein & Gubrium 1995, 17).

Participants developed their own views rather than having their experiences “forced” into pre-established categories (Sabherwal & Tsoumpas 1993). The researcher explored a few general topics to help uncover the participant's views but otherwise respected how the participant framed and structured the responses, allowing the participant's perspective on the adoption of e-business unfold as the participant viewed it, thereby remaining focused on the purpose of the interview (Pawson 1996, 295). That is, not to dictate interpretation but provide an environment which is conducive to the production of a range and complexity of meanings that address relevant issues whilst not being confined by pre-determined agendas (Holstein & Gubrium 1995, 17). In asking questions, the researcher was aware of not revealing the source of external materials, such as for example saying “The literature on strategic planning shows that ...” as documentary data, literature analects (that is selections from the relevant literature), or the researcher's own construction may appear to participants to be beyond “reproach” (Guba & Lincoln 1989, 154). On different occasions, additional questions were asked or some questions from the protocol were deleted, based on the information collected earlier. Further, the participants were encouraged to illustrate general observations with more specific comments. For example, the researcher would use the problematic nature of the proposition to solicit information, by asking questions such as “Would that work here?” (ibid 1989, 154-155).

During the earlier phases of the interview process, the researcher was struggling with the fact that complete control over the qualitative data collection process was never going to be achievable. To generate facts, opinions and insights (Yin 1994) "open unstructured" questions were needed to explore different perceptions, meanings, interpretations and cultural nuances (Marshall & Rossman 1999, 137). However, in allowing the flow of the discussion to guide the researcher rather than the interview protocol, the researcher became concerned as to how she could ensure that questions were not left unasked, as there were limited opportunities in accessing organisations. The initial reaction of the researcher was to establish a priority among the list of questions in the interview protocol and rigidly adhere to them so as to ensure that all the topics during each interview were covered. However, the researcher found that by controlling the responses too much, the data was being directed too closely by what she was asking signalling the desirability or expectation of a particular answer (Gillham 2000, 40), thereby not providing the information needed and missing opportunities for gaining unplanned insights.

The researcher learnt that "unobtrusive control" was necessary to steer the direction and to ensure that key areas were covered (Trauth 1997, 232), without being over-controlling by working relentlessly from a list of questions (Gillham 2000, 4). The interview had to be characterised by certainty but with a quality of "naturalness" (Gillham 2000, 25). The fact that the interviewer is being purposive and is technically practised should not detract from the dimension of naturalness (ibid 2000), as the researcher is the research instrument, as discussed in section 4.2 and further below in section 4.4.2.2.

4.4.2.2 THE INTERVIEWER AS THE RESEARCH INSTRUMENT

The researcher saw the interviewee's statements more as "co-authored" rather than what was collected (Kvale 1996, 183). The researcher targeted what was covered in the interview (Stake 1995, 66) as the research questions influenced the aspects of e-business addressed. In addition, the researcher's active listening and follow up on answers co-determined the "course of the conversation" (Kvale 1996, 183). The researcher had to not only develop a good understanding of the interview topic, but also a sensitivity to the context, in "order to entertain an informed conversation" (Kvale 1996, 101) with senior management and respond to exigencies of the particular situation (Trauth 1997).

As far as possible, 'indigenous' interpretive resources were incorporated into the interview to assist participants explore and describe their circumstances, actions and feelings (Holstein & Gubrium 1995, 45).

How the researcher appears to another person in the social interaction of an interview, has not only verbal but also non verbal dimensions (Gillham 2000, 34). Therefore in addition to the use of voice and listening skills, non verbal aspects such as facial expressions, eye contact, gestures and physical proximity were also considered in conducting the interviews as the "reverse image of a mirror tells us nothing of how we appear to another person" (ibid 1995, 4).

4.4.2.3 ORGANISING AND MANAGING THE INTERVIEW

In determining the type of interview, such as a telephone interview, a focus group interview, or a one-on-one interview, issues of practicality and what would net the most useful information to answer research questions were considered (Creswell 1998, 124). During the course of the investigation each of these types of interviews were used. For example, a telephone interview was conducted for one of the interviewees in the Bank case study as the researcher did not have direct access to the individual at the time because of the participants geographical location, coupled with the short notice provided of his availability. A focus group type interview was conducted at two locations. The "gatekeeper" at the government statutory authority organised to have in addition to herself, as the IT manager, the general manager of business and finance present at the same time, because of his involvement in developing business strategy and implementing the enterprise wide planning system; which turned out to be a major driver of e-business in this organisation. The "gatekeeper" at the online auction company organised to have the managing director as well as himself at the interview, to provide both a business and IS perspective. However, this also appeared to the researcher as a means of "guarding" against the accidental release of sensitive information. The remaining interviews were conducted one-on-one at the offices of the interviewees with the exception of the second interviewee at the bank, who felt more comfortable in conducting the interview outside of the office.

The researcher gave the participants the choice as to where they wanted to meet, as while there is a common assumption that people talk more freely on their own ground, familiar contexts can also be inhibiting and distracting (Gillham 2000). The researcher found this situation with the second interviewee at 'Bank' who preferred to meet on

neutral ground in a nearby café because of its implied confidentiality and to free him from office constraints and distractions. A practical problem with meeting in the café was the sound quality and background noise in recording the interview.

While the previous discussion in section 4.4.1.1, highlighted the development of the case study protocol, the following discussion focuses on its use in organising and managing the interview process. Figure 4.6 is illustrative of a framework adopted by the researcher to shape the conduct of the interview. While not central to what the interview was about these elements assisted the researcher in organising thoughts on starting the interview, concluding ideas, ending the interview and thanking the respondent (Creswell 1998, 126). As seen in Appendix One, the protocol, contained several features such as: using a header to record essential information about the case study, a prompt to discuss the purpose of the study with the interviewee; spaces between the questions to make notes about the responses of the interviewees and where they did not respond directly to the questions being asked (Creswell 1998, 126) and writing out the closing comments that thank the individual for the interview and request follow-up information, if needed, from them (Creswell 1998 126; Gillham 2000, 38).

Figure 4.6 Interview Framework

<i>ORGANISATION</i> <i>Introductory Stage</i>	<i>SKILLS/PROCESS</i> <i>Non-verbal behaviour</i>
<i>Opening up/opening out phase</i>	<i>Listening/encouraging</i> <i>Questioning/Probing</i>
<i>Summary and closure</i>	<i>Reflecting</i>

[Source: Gillham (2000, 37)]

The researcher found that the first and last of these phases in Figure 4.6, were particularly important. At the start of the interview, introductory remarks and statements were made to facilitate communication between the researcher and the participant. By explaining not just the purpose of the interview, but the purpose of the research, allowed the interviewee to raise any questions and concerns before the interview began, creating an empathic understanding between the researcher and the participant. Participants were asked at this point of the interview if it could be taped and advised that the tape would be transcribed by myself ensuring at all times that confidentiality would be maintained.

The researcher found that the time taken in fostering good relationships, paid off in the participants contribution towards the research. For example, participants often extended the time of the interview voluntarily after initially advising the researcher at the start of the interview that time was very limited.

The closing phase of the interview served two main purposes, pulling together the content (cognitive) and the social element (Gillham 2000, 40). By summarising what the researcher had believed she had learnt from the interviewee, provided an opportunity for the participant to provide feedback on the researcher's summary impressions. Often important additional material emerged. From a social perspective, the time taken to acknowledge the contribution the participant had made to the research and the researcher's appreciation, further strengthened relationships making follow up contact easier.

4.4.2.4 THE USE OF PROMPTS AND PROBES

While unique or peculiar elements may arise in each interview, prompts were incorporated in the protocol so that common components that every interviewee needed to address were moved through relatively quickly (Gillham 2000, 45). For example, in asking about annual IT expenditure, participants were asked to respond within a range of dollar values. In addition to the use of prompts, probes or supplementary questions were used to encourage participants to expand on their response, or part of it. As the need to use a probe, and precisely what kind, depends on what the interviewee is saying anticipating exactly when a probe will be necessary, and its form was difficult as it has to 'fit' the kind of development the researcher was seeking at that moment (ibid 2000, 46). Further there is the danger that a specific probe may elicit information about a specific point hence channelling the interviewee's "specific performance" (Munro 1995). There are several different kinds of probes that were utilised in this investigation, namely reflecting, clarification, relevance, extending the narrative, and accuracy (Gillham 2000, 47-49).

The one most often used in this research was "reflecting", involving offering back essentially in the words of the interviewees, the essence of what they had just said so as to encourage them to focus on and expand that element (ibid 2000, 47). "Clarification", and "justification" probes were needed when judgemental statements were used, for

example “management are not concerned with what IT does”. To understand such statements requires the meaning that lies behind it to be “unpacked and examined” (ibid 2000, 48). People can be elliptical in an interview, that is, making leaps from one thing to another which whilst connected in their minds may be slightly bewildering to an outsider (ibid 2000, 49). Therefore, a “relevance” probe such as “you’ve lost me there” was needed to further explain the issue being discussed with the researcher. Sometimes after having embarked on a narrative, interviewees may cut it short as something else has occurred to them. The researcher needed to encourage them to further reflect on the issues by “extending the narrative”, such as “Tell me a bit more about that planning meeting”. Finally an “accuracy” probe was necessary to ensure the correct sequence of events, such as “let me see that I have got these in the right order” (ibid 2000, 49). Establishing an accurate account of events is difficult as people don’t always understand their motives and feelings. Further, what they may affirm may be in contradiction to their behaviour. This is a limitation of interviews, which is further discussed in section 4.4.2.5.

4.4.2.5 LIMITATIONS OF INTERVIEWS

While a strength of interviews is their usefulness in collecting large amounts of data relatively quickly (Marshall & Rossman 1999, 108), there are weaknesses associated with interviewing such as the dependency on the openness and honesty of participants (ibid 1999, 134). Interviews are “provoked accounts” and “representations” collected and retold by the researcher (Czarniawska-Joerges 1992; cf. Silverman 1998, 8). They involve personal interaction whereby cooperation is essential (Marshall & Rossman 1999, 110). There are some drawbacks associated with the use of retrospective accounts incorporating attempts by individuals: to reconstruct past decisions so as to project a “socially desirable image”; and, misrepresent the past as a result of “hindsight bias” or to maintain their self esteem relating to for example past achievements (Golden 1992, 849). These factors may affect the likelihood that individuals may “accurately recall past events – which is conceptually different from accurately reporting past events” (ibid 1992).

As the presence of the researcher may influence the data collected (Trauth 1997, 229) it was a concern of the researcher during the interviews whether the participants were

simply telling the researcher what she wanted to hear. Whilst acknowledging that interviews tell us about what people say in interviews the researcher argues that this is, in the words of Czarniawska-Joerges (1992; cf. Silverman 1998), “true but exaggerated”. While naturally occurring talk and interaction appear to be more spontaneous than an interview, it may be argued that this is true to the extent that such interaction is “staged” by persons other than an interviewer (Holstein & Gubrium 1995, 17). Therefore, resulting conversations may not necessarily be more “realistic” or “authentic” as they “simply take place in what have been recognised as indigenous settings” (ibid 1995, 18).

In endeavouring to minimise these limitations various remedies²² were adopted, such as: conducting the interview fairly freely, avoiding hypothetical questions, asking about what people actually do and why (Silverman 1998, 8); conversing with participants so that “alternate considerations are brought into play” (Holstein & Gubrium 1995, 17); and triangulating accounts (Silverman 1998, 8) in order to ensure multiple perspectives of the topic were considered, to telling a ‘story’ of the e-business adoption process. Further, as will be discussed in section 4.6, triangulation was used between interview data and documents in order to ensure multiple perspectives of the topic were considered.

4.4.2.6 DOCUMENTS

In order to place the information obtained from the interviews in a large context (Trauth 1997, 227), information about e-business was also collected by means of documentary analysis, such as the use of documents, web sites, financial reports (see Appendix Two) and the researcher’s journal. As a supplement to interviews, such unobtrusive measures are useful for offering an historical understanding and different perspectives on the phenomenon, elaborating its complexity and advancing or verifying emerging themes (Marshall & Rossman 1999, 129). As it transpired, the lack of strategy documents available either due to confidentiality issues or their non existence told the researcher something about the context itself. The documents were evaluated in terms of insights relevant to the research questions. There are limitations with documentary data as it has

²² Such remedies provide practical solutions but can not resolve the analytical problem about the status of interview accounts (Silverman 1998). A discussion of such issues is beyond the scope of this chapter.

not been developed for the purposes of the research and so may contain biases that the researcher was not aware of (ibid 1999). However, as the documents supplemented interview data and were used as part of the process of inductively building categories and themes, in addition to verifying findings, their "fit" with pre-established concepts is less of a concern (ibid 1999).

4.4.3 MANAGING AND RECORDING DATA: FROM SPEECH TO TEXT

Concomitant with choosing appropriate strategies for data collection, are decisions regarding the complex processes of managing, recording and analysing data (Marshall & Rossman 1999, 140) involving systems of discourse and technical languages (Denzin & Lincoln 2000, 637). Rather than discrete, sequential events, these processes occur dialectically (Marshall & Rossman 1999, 140) to build a coherent interpretation of the data (p. 149) as part of the "artistry" of case studies (Stake 1995, 66). For the purposes of the discussion to follow in this section and section 4.5, these processes will be separated. The following discussion in sections 4.4.3.1 and 4.4.3.2 examines how interviews were recorded and transcribed in this investigation and the use of qualitative research software.

4.4.3.1 RECORDING AND TRANSCRIBING INTERVIEWS: THE RECORD AND THE DIALOGUE

The approach to storing information reflects the type of information collected, varying by traditions of inquiry (Creswell 1998, 133). Therefore, in considering techniques for recording observations, interactions and interviews, the researcher was sensitive to not intrude excessively in the flow of information (Marshall & Rossman 1999, 149). Interviews were audio taped with the consent of the participants. Pre-fieldwork mapping of organisations and notes taken were recorded on the case study protocol to minimise interference or inhibit the participant in some way (ibid 1998, 149). Following each interview transcribed field notes of the audio taped conversations were completed.

While reading the transcripts, the researcher made contact summaries asking the following questions: What actors, events, or situations were involved? What were the main themes or issues in the contact? Which research questions did the contact bear on most centrally? What new questions, speculations, or hunches about the field situations were suggested by the contact (Miles & Huberman 1994, 51). Writing findings in the

form of memos and reflective notes was an initial sorting-out process (Creswell 1998, 140).

Whilst emphasising transcription the intention is not to “promote a reifying analysis” whereby the text is reduced to a collection of words of single meanings (Kvale 1996, 182). Rather the researcher adopted Kvale’s (1996, 182) definition where the transcript is described as a “hybrid between an oral discourse unfolding over time, face to face, in a lived situation where what is said is addressed to a specific listener present and a written text created for a general distance public.” Coates and Thornborrow (1999) posit that the transcription of audio tapes “can never be more than a research tool designed to illuminate some but not all aspects of the data.” Therefore, rather than interview conversations disappearing into “endless transcripts only to reappear butchered into fragmented quotes” the researcher enters into a dialogue with the text, an “imagined conversation” where she seeks to develop, clarify and expand what has been expressed in the text, asking herself

How do I analyse what my interviewees told me in order to enrich and deepen the meaning of what they said? (Kvale 1996, 183).

While some meanings were manifestly expressed in the text others had to be “uncovered” in keeping with a hermeneutics of seeking to find meaning hidden in the text (p. 183). Combining transcriptions of interviews with the literature review, previous data, and earlier analytic memos in mind, became a useful part of data analysis rather than merely performing an administrative function as it assisted in building a coherent interpretation of the data and moving the study forward without threatening the exploratory value of the qualitative research or to data quality (Marshall & Rossman 1999, 149-151). For the researcher, the process of spending endless hours reading and re-reading interview transcripts, having quotations constantly sifting through her mind, was found to be a valuable process in developing a rich and thorough familiarity with the data. The following section 4.5, examines how the data was analysed and interpreted.

4.5 DATA ANALYSIS STRATEGIES AND INTERPRETATION

No consensus exists for the analysis of the forms of qualitative data, as different authors advocate many similar processes, as well as different ones in the analytic phase of qualitative research (Creswell 1998, 140). Data analysis is considered by Huberman and Miles (1994) to be "choreographed" where qualitative researchers "learn by doing" (Creswell 1998, 142). While some may criticise this for being "intuitive, soft and relativistic," the advantages of such analysis is that it preserves the unusual and serendipitous, allowing the writer to "craft each study differently, using analytic procedures that evolve in the field" (ibid 1998). The researcher moves in analytic circles rather than using a fixed linear approach, entering the spiral with data and text and exiting with an account or a narrative (p. 142). The following discussion begins with how the researcher selected the data analysis strategies and techniques followed by how the analysis was actually conducted.

4.5.1 SELECTING THE ANALYSIS STRATEGIES

Data analysis is the process of bringing order, structure and interpretation to the mass of collected data (Marshall & Rossman 1999, 150). It can be a "messy, ambiguous, time-consuming, creative and fascinating process" as the researcher brings meaning and insight to the words and acts of the participants in the study (ibid 1999, 150-152). The interpretive act remains mysterious in both qualitative and quantitative data analysis, as it is a process of bringing meaning to raw data whether the researcher's language is standard deviations and means or rich descriptions through the written report (p. 153). What became apparent to the researcher was that there was no "magical tool" for uncovering the "treasures of meaning" hidden in the jungle of opaque interview transcripts (Kvale 1996, 187). The technique of analysis rests with the researcher and the research questions which follow through the designing, interviewing and transcribing processes (ibid 1996), relying heavily on the researcher's intuitive and interpretive capacities and the conceptual template (Marshall & Rossman 1999, 151). Because of the broad based perspectives adopted in this investigation, the researcher had to ensure that neither the breadth nor depth of treatment was privileged over one another. Therefore, the researcher needed to engage the text searching for segments to

generate and illustrate categories of meaning, whilst teasing out the unusual and the serendipitous (Marshall & Rossman 1999, 151). The editing and immersion strategies for analysis were thus complex, ambiguous and creative (Marshall & Rossman 1999, 151).

While there are a number of alternative perspectives and strategies for interpreting qualitative data (Gubrium & Holstein 1997, 14; Feldman 1995) the “interpretive practice” proposed by Gubrium and Holstein (1997) was useful in guiding the analysis as it has a broad conceptual bases ranging from social phenomenology and ethnomethodological programs of talk and interaction to the studies of institutional and historical discourses of Michel Foucault (Gubrium & Holstein 2000, 488). While not arguing the sanctity of this “interpretive practice” it provided the researcher with an orienting procedure for focusing on the “whats” and “hows” in order to “assemble both a contextually scenic and a contextually constructive picture of everyday language in use” (Gubrium & Holstein 2000, 500) addressing the question of

How can I reconstruct the original story told to me by the interviewee into a story I want to tell my audience? (Kvale 1996, 184)

The following discussion, which examines how the analysis was conducted, is divided into three sections following Maxwell’s (1996, 78) categorisation of analytic options, namely, memos, categorising strategies (such as coding and thematic analysis) and contextualising strategies (such as narrative analysis). Whilst outlining these strategies separately below, the intent is not to suggest that it was a linear process, as it was an iterative process, between data, theory and the researcher.

4.5.2 CONDUCTING THE ANALYSIS

4.5.2.1 READING AND MEMOING

The initial step in the qualitative analysis was reading the interview transcripts, observational notes and documents (see Appendix Two). The researcher transcribed the tapes herself, as it provided an opportunity of analysis by writing notes and memos on what she had seen in the data and developing tentative ideas about categories and relationships (Maxwell 1996, 78). Memo writing is an essential technique for qualitative

analysis (Miles & Huberman 1994, 72-75), as it documents the researchers reflections on method, theory and the purposes of the research, capturing and facilitating analytic thinking about the data and stimulating analytic insights (Maxwell 1996, 78).

The researcher's own etic constructions were introduced for critique (Guba & Lincoln 1989, 154). While these formulations did not have any particular privilege, the researcher was the only person who had moved extensively between participants, and therefore, had the benefit of having heard a more complete set of constructions than what was likely to have been heard from others in the setting (p. 154). The researcher continually questioned herself, as a source of data, querying her own assumptions, thereby developing a posture of "self conscious" (Trauth 1997, 230).

From the reading and memoing loop, the researcher moved to the description, classifying and interpreting loop of the data spiral. Here the researcher provides detailed description, develops themes or dimensions through some classification system, and provides an interpretation in light of her own views and perspectives in the literature (Creswell 1998, 144).

4.5.2.2 DESCRIPTION, CATEGORIES, THEMES AND PATTERNS

For a case study, part of the analysis consists of making a detailed description of the case and its setting (Creswell 1998, 153). Detailed description means that the researcher describes what she has seen, that is the adoption of e-business, highlighting the major players, sites and activities. Multiple sources of data are analysed to determine evidence for each step or phase in the evolution of the case. Further, this detail is provided in 'situ'. That is, information is analysed to determine how the event fitted within the context of its setting (ibid 1998).

Categorising analysis involves taking the text or qualitative information apart, looking for categories, and sorting the data into broader themes and issues (Maxwell 1996, 79). It is a process of pulling the data apart and putting them back together in more meaningful ways. The researcher seeks a collection of instances from the data, hoping that issue-relevant meanings will emerge (Stake 1995). Databases of information were scanned to identify major organising ideas. In reviewing fieldnotes, interview data, and documentation (see Appendix Two), predetermined questions were disregarded to

“hear” what interviewees said (Creswell 1998, 144). The researcher reflected on the ‘large’ thoughts presented in the data and formed ‘initial’ categories. These categories were few in number and the researcher looked at multiple forms of evidence to support each.

The classification schemes developed during the course of analysis, trialing conceptual levers from existing theory or the vernacular as well as from the interviewees own idioms (Kvale 1996, 192; Marshall & Rossman 1999, 154). The categories were grounded in the data and tailored to the understanding of the particular data being analysed (Maxwell 1996, 79). These categories then became buckets or baskets into which segments of text were “placed” (Marshall & Rossman 1999, 154). Categories and memos were “linked” by cross-referencing them to the data that gave rise to them so as to not “strip” the context (Maxwell 1996, 79). Analysis began to take shape as themes were identified, the deeper structures of the social setting became clearer, and as consequent modifications were made in the initial design.

The process of category generation involved noting patterns evident in the setting and expressed by participants. Diagrammatical displays for each case were used to visualise the information representing it by case (Creswell 1998, 140). Time-ordered displays and concept maps were used to assist in making ideas and analysis visible, facilitating the researcher’s thinking about relationships. In addition they served two other key functions, data reduction and the presentation of data or analysis in a form that allowed it to be grasped as a whole. While the researcher was guided by Miles and Huberman’s (1994) presentation of these analytic tools, they were employed less systematically and explicitly (Maxwell 1996, 80). The researcher was not searching for the exhaustive and mutually exclusive categories of the statistician but, rather instead identifying the salient, grounded categories of meaning held by the participant in the setting (Marshall & Rossman 1999, 154). While this process may be subject to the “legitimate charge of imposing a world of meaning on the participants that better reflects the observer’s world than the world under study” (Patton 1990, 398), the categories generated were grounded in the data (Marshall & Rossman 1999, 154). Further, the researcher was cautious not to allow these classification schemes to lead the analysis but instead to generate sensitising concepts to guide further exploration (Creswell 1998, 140).

As the categories and themes were developed the researcher began the process of evaluating the plausibility of her developing understandings and explored them through the data. This entailed a search through the data during which the researcher challenged the understanding and searched for negative instances of the patterns. During this phase the researcher evaluated the data for its usefulness, determining how it provided insight into the questions being explored and how central it was to the story that was unfolding about e-business adoption decisions.

This analytic phase demanded a heightened awareness of the data, focusing attention and an openness to the subtle, tacit “undercurrents” hidden within the text (Marshall & Rossman 1999, 154). Identifying salient themes, recurring ideas or language, and patterns of belief that linked people and settings together was one of the most intellectually challenging phases of the analysis for the researcher and one that integrated the entire endeavour. The categories were generated through prolonged engagement with the text as the researcher questioned the data and reflected upon the conceptual framework. Through questioning the data and reflecting on the conceptual framework, the researcher engaged the ideas and the data in significant intellectual work (ibid 1999).

Comparisons of emerging concepts were made with the extant literature detailed in Chapters Two and Three, to discover what was similar, what was contradictory and why (Eisenhardt 1989). The juxtaposition of conflicting results presented opportunities for the researcher to gain deeper insights into both the emergent theory and the conflicting literature (ibid 1989, 544). Similar findings allowed ties to be made to phenomena, which may not have normally been associated with each other (ibid 1989, 544). As a coherent interpretation with related concepts emerged from analysis, negative instances lead to new data collected and analysis that served to strengthen the interpretation. This interpretation solidified as major modifications occurred less often and concepts fell into established categories that is theoretical saturation was reached (p. 544). The analysis was considered sufficient when the critical categories were defined, the relationships between them established and they were integrated into an “elegant, credible interpretation” (Marshall & Rossman 1999, 152).

4.5.2.3 CONTEXTUALISING STRATEGIES: NARRATIVE STRUCTURING AND MEANING INTERPRETATION

Case studies rely on both categorical strategies as well as contextualising strategies in understanding data (Stake 1995, 74). Determining which strategies should be followed is dependant on the nature of the study, the focus of the research questions and the curiosities of the researcher (ibid 1995, 77). Both strategies depend greatly on the search for patterns (ibid 1995, 78). Sometimes the patterns are known in advance, drawn from the research questions, thereby serving as a template for the analysis, while at other time the patterns emerge unexpectedly from the analysis (ibid 1995, 78).

The purpose of this study is to assist organisations in the successful adoption of e-business by comparing current practice with existing SISP models and, to the extent that existing models may be considered incomplete, devise models, which can assist organisations to effectively utilise e-business. Therefore, the goal of analysis is to build theory through understanding the adoption of e-business in organisations and the factors and processes shaping such decisions.

The identification of connections between categories and themes may be seen as a contextualising step in analysis, but a broader one that works with the results of a prior categorising analysis. This step is necessary for building theory (Maxwell 1996, 79). However, while this strategy is able to identify similarities and differences across settings or individuals, it cannot recover the contextual ties that were lost in the original categorising analysis. How individuals thought about e-business, their theories about how different issues such as planning, decision making, and technology were connected and the relationships they saw between their thinking, actions and results requires a contextualising analysis that elucidates these connections. However, a purely contextualising analysis is limited to understanding particular individuals or situations and cannot develop a more general theory of what is happening. Therefore, the two strategies are needed to provide a well-rounded account (p.79). Strategies, such as composite sequence analysis (Miles & Huberman 1994, 204-206), used in this study explicitly integrate categorising and contextualising analysis (Maxwell 1996).

Contextualising strategies, operate differently from categorising strategies. Instead of fracturing the initial text into discrete elements and re-sorting it into categories,

contextualising analysis attempts to understand the data (interview transcript or other textual material - see Appendix Two) in context, using various methods, such as narrative and discourse analysis, to identify the relationships among the different elements of the text (Maxwell 1996, 79). What these methods have in common is that they do not focus primarily on relationships of similarity, to be used to sort data into categories independently of context, but look for relationships that connect statements and events within a context into a coherent whole (Maxwell 1996, 79).

A narrative approach treats interview data as accessing stories or narratives through which people describe their world (Holstein & Gubrium 1995, 1997). This approach emphasises the temporal (patterns of happenings), social (telling something to someone) and meaning structures (a plot) of texts (Kvale 1996, 200). Therefore, it assists in the “ongoing project of creating, clarifying, sustaining, and modifying our version of reality” and highlights “the need to be self-reflexive” (Brown 1998). During analysis the researcher alternates between being a “narrative finder” that is searching for narratives contained in the interview as well as a “narrative creator” when “moulding” different occurrences into coherent stores (Kvale 1996, 200).

Meaning interpretation goes beyond structuring of meanings manifested in a text, to a more extensive interpretation influenced by hermeneutical philosophy (Kvale 1996, 201) emphasising a hermeneutic, iterative journey of discovery of social and organisational contexts (Heracleous & Barrett 2001). While the researcher’s perspectives influence what is investigated and then interprets the texts from these perspectives, the interpreter goes beyond what is directly said (ibid 2001, 201). Rather, structures and relations of meaning hidden in the text are deciphered. This requires a certain distance from what is said and achieved by a theoretical stance, “reconceptualising what is said in a specific conceptual context” (ibid 2001, 203).

The analysis was not a “neat” progression of standard procedures but an interplay of different techniques. The researcher read through the interview transcripts to gain an overall impression, returning to specific passages to make deeper interpretations of specific statements, casting parts of the interview into a narrative and considering metaphors to capture the material (Kvale 1996, 204). These processes assisted the researcher in identifying connections and structures significant to the investigation that were not apparent from the initial reading.

The following section 4.5.3 discusses writing about the qualitative data. While discussed separately, the writing process can not be separated from the analytic process. It is central to that process, as the choice of particular words to summarise and reflect the complexity of the data represent the interpretive act that the researcher has engaged in, lending shape and meaning to the large amounts of raw data (Marshall & Rossman 1999, 157, 162).

4.5.3 WRITING THE SOCIAL CONTRUCTION: THE CASE STUDY FINDINGS

The final product of the multiple iterations of the hermeneutic dialectic circle is a case report that represents the joint construction that has emerged as a result of the hermeneutic dialectic process (Guba & Lincoln 1989, 180). The constructions of a variety of people who have been purposefully chosen to uncover a widely variable viewpoint, are “elicited, challenged and exposed to new information and new, more sophisticated ways of interpretations, until some level of consensus is reached” (ibid 1989, 181). The case report is a major vehicle for the dissemination, application and (individual) aggregation of knowledge, as it assists the reader in not only developing an awareness of the situation believed to exist by constructors but also provides insight into the underlying motives, feelings and rationales leading to those beliefs (ibid 1989).

Faced with writing reports for six case studies, the researcher asked herself how she was going to tell ‘her’ story and the voice most appropriate for the ‘tale’ to be told (Kvale 1996, 268-269) in a way that encourages dialogue as opposed to rhetorical arguments that “closes down alternate interpretation” (Bradbury & Lichtenstein 2000). In considering how to proceed with the writing, the researcher was mindful of Richardson’s (2000) views that the best writing is its own “undecidability.” All writing has “subtexts” that “situate” or “position” the material within a particular historical and locally specific time and place (Creswell 1998, 172). No writing has “privileged status” (Richardson 2000) as the research report is itself a social construction in which the researcher’s “choice of writing style and literary devices provide a specific view on the subjects lived world” (Kvale 1996, 253).

Writing the 'story' was a reflexive process for the researcher. It began as a realistic tale (Kvale 1996, 269), narrated in a third person voice with the researcher absent from the text. The participant's points of view were produced through quotes regarded by the researcher as the documentation of basic facts identified in the interview. However, the case study reports became long, obtuse, verbatim quotes, interspersed with comments, not making for interesting reading. The participant's stories had become "butchered into atomistic quotes and isolated variables" (ibid 1996, 254). The researcher's style of reporting had been influenced by a "qualitative hyper-empiricism" (ibid 1996) from her past positivistic research experiences of controlled analysis and writing procedures. The researcher had encountered one of many "teachable moments" in the research process in which her understanding of the research developed. Rather than rendering a story through quotes, bypassing the technical and conceptual issues of constructing the text, the researcher needed to provide an impressionistic tale (ibid 1996, 269), focusing on the activity of knowing, bringing together the known (narrated in the third person) and the knower (narrated in the first person). The impressionistic tale highlights the episodic, complex and ambivalent reality studies, which unfold event by event, indicative of a learning process (Van Maanen 1988 cf. Kvale 1996, 268-269).

The process of writing passages and reviewing them opened new questions and issues whereby subsequent writing was affected by what already had been written. Many hours were spent 'gazing' at the computer screen, reading a paragraph and then choosing to alter it, creating diagrams to condense and represent information as a visual image so as to enhance the reading process by breaking up lines and lines of text, or merely changing the typographical style. At times the researcher was left wondering whether such activities contributed to or distracted her from the "evocativeness of the text" (Richardson 2000).

As will be seen in Chapter Five, the researcher provides a narrative story of each case within its context. Crafting the narrative involved "picturing" through concrete details, the basic scenes, settings, objects, people and actions, while writing "lushly" to convey a complete description (Emerson et al. 1995, 69), selecting excerpts from the interview transcripts on the basis of their "evocative and persuasive qualities" (ibid 1995, 75). This is followed by a separate section at the end of each case description titled "Reflective notes and interpretive commentary" where the researcher provides insight

into her conceptualisation and understanding of the research process. The researcher's interest in including her evolving thought processes arouse out of the underlying paradigm of this inquiry (Marshall & Rossman 1999, 162). Placing analytic memos and methodological notes in the report makes these processes transparent, serving as stories within the story, intended to allow the reader to participate not only in the story of e-business adoption decisions, but also in the discovery process of the researcher. By recording her own introspection and ruminations along with the interview data, the researcher is making known her own biases and answers (Trauth 1997, 242) bringing a more probing glance to further observations and descriptive writing (Emerson et al. 1995, 100).

Writing creates a particular view of reality through literary and rhetorical structures (Richardson 2000), raising questions of criteria for evaluating a text (Kvale 1996, 269). The following section 4.6 of this chapter, examines the "authenticity" and "trustworthiness" of the investigation guided by the interpretive paradigm. In this discussion the researcher considers the following questions posed by Lincoln and Guba (1985, 290): How can the researcher persuade her audience (including self) that the findings of the study are worth paying attention to, worth taking account of? What arguments can be mounted, what criteria invoked, what questions asked, that would be persuasive on this issue?

4.6 THE SOCIAL CONSTRUCTION OF VALIDITY: TRUSTWORTHINESS, AUTHENTICITY AND VERIFICATION

As discussed in section 4.1, for those schooled in positivistic methods, reliable research is considered that which is achieved through objective, value-free data collection and analysis that can be repeated by subsequent researchers with consistent results (Trauth 1997, 242). Positivists "promote" a "consensualist" conception of truth in that interpretation or observation is considered reliable only if it can be repeated by everyone (Kvale 1996, 181) and that scientific knowledge can ultimately be reduced to a logical system that is securely grounded in "irrefutable sense data" (Maxwell 1996, 86).

For those from the constructivist - interpretive tradition, producing results that are trustworthy, meaningful and interesting to the reader is of more concern (Maxwell 1996, 87; Trauth 1997, 242). The researcher's aim is to stimulate further reflection, optimising the reader's opportunity to learn rather than "veridical representation" (Stake 1995, 42). Validity is seen as a goal rather than a product, in that it is never something that can be proven or taken for granted. It has to be assessed in relationship to the purposes and circumstances of the research, rather than a "context-independent property of methods or conclusions" (Maxwell 1996, 86). Therefore, as different paradigms make different knowledge claims, the criteria for what is regarded as significant knowledge also varies from paradigm to paradigm (Guba & Lincoln 1985, 301).

Creswell (1998, 193) posits that both standards of quality or criteria and approaches to verification need to be examined when considering the question of whether the qualitative investigation is trustworthy and accurate. Therefore, the discussion in section 4.6.2, examines the criteria used in this investigation that "stand in a more logical and derivative relation to the naturalistic axioms" (Guba & Lincoln 1985, 301). This is followed in section 4.6.3 with an examination of the verification process for this study. However, before these issues are discussed, an overview of threats to understanding and validity in qualitative research is provided to set the context for the discussion.

4.6.1 THREATS TO UNDERSTANDING AND VALIDITY

Validity threats are generally dealt with as particular events or processes that could lead to invalid conclusions, rather than as generic variables that need to be controlled. (Maxwell 1996, 90). Maxwell (1996, 89) posits that each main type of understanding, namely, description, interpretation and theory, have distinct threats to validity. A fourth type, generalisation, is examined in section 4.6.2. The main threat to valid description is that a complete picture of what the researcher saw and heard is not provided thereby questioning interpretations or conclusions drawn from these descriptions (ibid 1996). To minimise this type of threat procedures such as audio recordings of interviews and verbatim transcription of these recordings were checked by the interviewee for their authenticity and accuracy, as discussed previously in section 4.4.

Interpretations need to be unprejudiced, non-judgemental portrayals of observed reality, supported by the data gathered as an inquirer (Sahay et al. 1994). As discussed above, while the interpretive paradigm maintains the mutual influence that the researcher and participants have on each other, there are threats of reactivity and bias as the researcher must be involved in the relevant matters of human activity (Erlandson et al. 1993). However, the dangers of being insulated from the relevant contextual data are greater for the interpretive researcher. Therefore, the researcher needs to control biases without inhibiting the flow of important information (ibid 1993, 15).

Imposing the researcher's own framework or meaning, rather than understanding the perspective of the people studied and the meanings they attach to their words and actions is a major threat (Maxwell 1996, 89). However, the goal in qualitative research is not to eliminate the actual influence of the researcher but to understand it and use it productively (ibid 1996, 91). Reactivity is a powerful and inescapable influence in interviews as responses are a function of the interviewer and the interview situation. Therefore, it is important for the researcher to understand how she is influencing what the participant is saying and how this affects the validity of the inferences being drawn from the interview (Maxwell 1996, 91). In this investigation the researcher was aware of: listening for the participants meaning; being aware of how participants made sense of what was going on, rather than pigeonholing their words and actions in the researcher's own framework and assumptions; and not asking leading, closed, or short-answer questions that did not give the participants the opportunity to reveal their own perspective. The strategy known as member checks, discussed in section 4.6.2, below is one of the main ways of avoiding this threat.

Not collecting or paying attention to discrepant data, or not considering alternative explanations or understandings of the phenomena being studied is one of the most serious threats to the theoretical validity of an account (Miles & Huberman 1994, 263; Maxwell 1996, 90). Selecting data that fits the researcher's existing theory or preconceptions and data that "stands out" to the researcher (Miles & Huberman 1994, 263) are important threats to the validity of qualitative conclusions. However, it is the inherent reflexivity of qualitative research (Hammersley & Atkinson 1983; cf Maxwell 1996, 91) that makes it impossible to deal with these problems through eliminating the researcher's theories, preconceptions, or values. Qualitative research is

not primarily concerned with eliminating variance between researchers in the values and expectations they bring to the study, but with understanding how a particular researcher's values influence the conduct and conclusions of the study. Therefore, a key task of the research process (Maxwell 1996, 91) is to explain possible biases and how the researcher proposes to deal with these issues, the goal being to remove bias rather than the value judgement (Erlandson et al 1993, 15).

Marshall and Rossman (1999, 191) posit that developing a logic that will solidly defend the empirical findings of the study entails three large domains: (a) responding to criteria for the overall soundness of the project, (b) demonstrating the usefulness of the research for the conceptual framework and research questions, and (c) showing the sensitivities and sensibilities to be the research instrument. The researcher gave careful consideration to each of these domains in developing a logic in support of the study. The following discussion in section 4.6.2 focuses on the criteria adopted in this investigation whilst, section 4.6.3 discusses the verification process. As the last of the three domains, the researcher as research instrument, was discussed in detail in section 4.2, it is not discussed further here.

4.6.2 STANDARDS OF CRITERIA

The concept of validity and the language used to discuss it are not well established or agreed upon in the IS literature (Klein & Myers 1999). This is not surprising given that there are multiple perspectives, definitions, procedures and debates for establishing verification in qualitative research (Creswell 1998, 197; Lincoln & Guba 2000, 178) as the notion of truth is itself problematic because it is a social construct, idiosyncratic and situationally specific (Newman & Benz 1998, 45). Qualitative research is constantly devising alternative strategies for judging the soundness of research (Marshall & Rossman 1999, 192). Valid inquiry must demonstrate its "truth value," provide the basis for applying it, and allow for external judgements to be made about the consistency of its procedures and the neutrality of its findings or decisions (Erlandson et al. 1993, 133).

While both positivists and constructivists-interpretivists are concerned with the "trustworthiness" of an inquiry, the conventional criteria of internal validity, external validity, reliability and objectivity are inappropriate to the interpretive paradigm (Guba

& Lincoln 1985, 294). In establishing the “truth value” to which research needs to respond, Lincoln and Guba (1985) propose four questions: First, how credible are the particular findings of the study? By what criteria can we judge them? Second, how transferable and applicable are these findings to another setting or group of people? Third, how can we be reasonably sure that the findings would be replicated if the study were conducted with the same participants in the same context? And fourth, how can we be sure that the findings reflect the participants and the inquiry itself rather than a fabrication from the researcher’s biases or prejudices? The following discussion examines the four constructs proposed by Lincoln & Guba (1985, 133) namely credibility, transferability, dependability and confirmability, as their work is foundational to, much of the researcher’s thinking. These criteria are “paralleled” to the “conventional” criteria used within the positivists paradigm in Table 4.8, to assist following the examination of each construct.

Table 4.8 Validity Constructs

Criterion	Conventional Term	Interpretive Term
Truth value	Internal validity	Credibility
Applicability	External validity	Transferability
Consistency	Reliability	Dependability
Neutrality	Objectivity	Confirmability

[Source: Erlandson et al. (1993, 133)]

4.6.2.1 TRUTH VALUE – INTERNAL VALIDITY VS CREDIBILITY

The credibility criterion is parallel to internal validity in that the idea of isomorphism between findings and an objective reality is considered from a constructivist's perspective as isomorphism between constructed realities of participants and the reconstructions attributed to them (Guba & Lincoln 1989, 237). Therefore, the requirement in interpretive research is to demonstrate that the descriptions of the different social interpretations have been derived in a credible manner. To operationalise these terms, Guba and Lincoln (1985) propose techniques such as prolonged engagement in the field, persistent observation, peer debriefing, negative case analysis, progressive subjectivity, and member checks to establish credibility. In this investigation, member checks and progressive subjectivity were the key techniques adopted as they complemented the research design.

Stake (1995) posits that participants should play a major role directing as well as acting in case study research. They should be asked to examine drafts of the researcher's work and to provide alternative language, critical observations or interpretations, as the inquiry must be "credible to the constructors of the original multiple realities" (Lincoln & Guba 1985, 296). This interpersonal process may be seen to increase the validity and reliability of the research and brings the researcher into closer contact to the organisation she is studying (Bradbury & Lichtenstein 2000). Member checking can be formal and informal (Guba & Lincoln 1989, 239). The researcher employed member checking in a looser sense in this investigation. That is, while the researcher sent the transcript of the interview and follow up questions to participants for their review and feedback, her interest in member checking was not so much to have the participants agree with her perceptions, as to have "those more knowledgeable" evaluate her interpretations (Trauth 1997, 242). Participants did provide feedback from the transcripts and preliminary interpretations. However, subsequent contact via phone and e-mail to review further interpretations were hindered due to the availability of the senior managers, which the researcher acknowledges as a limitation of this study.

The combination of multiple methodological practices and theoretical perspectives underlying this research added rigor, breadth, complexity, richness and depth to the inquiry (Flick 1998; cf Denzin & Lincoln 2000, 5). Further, inherent in the methodological and theoretical framework was a "healthy dose of scepticism" with respect to interpreting the retrospective data (Golden 1992) from the interviews. In addition, triangulation was employed to build confidence in the researcher's interpretations as well as to understand anomalies. In some cases the anomaly was understood, however, at other times contradictions simply needed to be acknowledged (Trauth 1997, 242). Data items such as transcripts and web site information were cross checked to assess for example discussions of e-business strategic initiatives (see Appendix Two, C3.2, C3.3, C5.3 and C5.6). The use of triangulation, reflects an attempt to secure an in-depth understanding of the phenomenon in question, rather than as a tool or strategy for validation (Denzin & Lincoln 2000, 5). However, the researcher

acknowledges the limitations with respect to the use of retrospective accounts as discussed in section 4.4.2.5.

4.6.2.2 APPLICABILITY - EXTERNAL VALIDITY VS TRANSFERABILITY

Unlike positivist strategies, the accumulation of generalisable knowledge is not adopted in interpretive research as generalisation across social settings depends on aggregation of data; a practice that ignores the context-specific interrelationship that gives data meaning (Guba & Lincoln 1985, 297; Erlandson et al. 1993, 16). Transferring understanding across social contexts “depends on the degree to which thick description of one set of interrelationships in one social context allows for the formulation of ‘working hypotheses’ that can direct inquiry in another” (Erlandson et al. 1993, 16). Therefore, transferability of a particular interpretation may be assessed by comparing it with interpretations constructed in other contexts (ibid 1993, 17).

While the researcher could not specify the external validity, she provided rich, thick descriptions allowing the reader to make decisions regarding transferability (Erlandson et al. 1993; Lincoln & Guba 1985) because the writer describes in detail the participants or setting under investigation. With such detailed description, the researcher enables readers to transfer information to other settings and to determine whether the findings can be transferred “because of shared characteristics” (Erlandson et al. 1993, 32). Further, the researcher explicitly stated the theoretical parameters of the study to show how data collection and analysis were guided by concepts and models so that the reader or user of the research could see how the research ties into a body of theory (Marshall & Rossman 1999, 193). Further, designing a study in which multiple cases, multiple informants, or more than one data gathering method are used can greatly strengthen the study’s usefulness for other settings (Marshall & Rossman 1999, 194).

A further strategy adopted was progressive subjectivity which involved monitoring the researcher's own developing constructions (Guba & Lincoln 1989, 238). As the construction that emerges from an inquiry, to be true to constructivist principles, must be a joint one, the researcher's construction can not be given privilege over those of the participants, except insofar as to introduce a wider range of information and a higher level of sophistication (ibid 1989, 238). Therefore, prior to entering the site the researcher recorded her thoughts about what she expected to find and at regular intervals throughout the study. This assisted the researcher during the course of analysis

as for example, if the researcher was only finding what she expected to find, or became "frozen" on some intermediate construction, she was prompted to look further, as to not to do so could threaten credibility (ibid 1989).

4.6.2.3 CONSISTENCY – RELIABILITY VS DEPENDABILITY

Key concepts underlying the conventional definition of reliability are those of stability, consistency and predictability (Lincoln & Guba 1985, 298). Within positivist studies reliability is typically demonstrated by replication. However, replication in this sense is based on an assumption of naive realism that there must be something tangible and unchanging "out there" that may serve as a benchmark if the notion of replication is to make sense (ibid 1985, 299). Hence positivist notions of reliability assume an unchanging universe where inquiry could, quite logically be replicated. The assumption of an unchanging social world is in direct contrast to the constructivist assumption that the social world is always being constructed. Therefore the concept of replication itself is problematic (Marshall & Rossman 1999, 194). From a constructivist perspective, reliability is part of a larger set of factors that are associated with observed change and therefore substitute the criterion for reliability with dependability (Guba & Lincoln 1985, 299). This construct takes into account both factors of instability and factors of phenomenal or design induced change (ibid 1985, 299).

In interpretive inquiry the research instrument is the researcher, and so the objective is to demonstrate that the researcher's judgement is dependable. Since there can be no credibility without dependability, some of the techniques outlined in relation to credibility in section 4.6.2.1 also served to establish dependability. However, in dealing with dependability directly, another technique that was adopted in this investigation was of peer review (Creswell 1998, 202). Supervisors, academic colleagues and fellow students in postgraduate presentations acted as a "devils advocate," asking questions about methods, meanings and interpretations providing a "cathartic" experience for the researcher to reveal her feelings, impressions, and concerns about the research.

4.6.2.4 NEUTRALITY – OBJECTIVITY VS CONFIRMABILITY

The final construct, "confirmability" captures the traditional concept of objectivity (Marshall & Rossman 1999, 194). The emphasis is moved from the inherent characteristic of the researcher to the data itself (Lincoln & Guba 1985, 300). Thus, the criterion assesses whether the data confirms the general findings and leads to the

implications. In contrast to the audit inquiry for dependability, the “auditor” examines the product of the research that is the data, findings, interpretations and implications, and attests to whether it is supported by data and is internally coherent (ibid 1985, 318). In this investigation, experienced researchers who had knowledge of the phenomena (Sahay et al. 1994, 255) critically questioned the researcher’s analysis, such as supervisors and participants in academic presentations.

4.6.2.5 VALIDITY: METHOD AND INTERPRETATION

While the trustworthiness analogues of Lincoln and Guba (1985) are seen as a significant advance on conventional validity criteria (Shaw 1999, 67), controversy surrounds the use of these “alternate” constructs in that the premise of arguing for a kind of rigor in the application of a method, is founded in positivistic assumptions (Guba & Lincoln 1989, 245; Lincoln & Guba 2000, 178). Therefore, a second argument within the literature argues that it is not just method that promises to deliver “some set of local or context-grounded truths, but also the processes of interpretation” (ibid 2000, 178). Therefore, both a community consent and a form of rigor are argued for in ascribing salience to one interpretation over another (ibid 2000).

In adopting the validity constructs discussed in sections 4.6.2.1 through to 4.6.2.5, the intention was not to prescribe how the inquiry should be “judged”, as it is doubtful whether “perfect” criteria will ever emerge (Lincoln & Guba 1985, 331), some wanting to “farewell criteriology” altogether (Lincoln & Guba 2000, 179). However, validity constructs are not easily dismissed as questions of whether findings are sufficiently authentic, that is trustworthy, isomorphic to some reality, or related to the way others construct their world, need to be answered in some way or another (ibid 2000, 178). Whilst acknowledging that two forms of rigor exist, and that methods and procedures do not guarantee validity, the methodological criteria used for this investigation are considered useful for a variety of reasons (see Marshall & Rossman 1999, 191; Lincoln & Guba 2000, 178), not the least of which is that they provide checkpoints for the researcher to ensure that the research process is “attended to with some seriousness” (Lincoln & Guba 2000, 179), ruling out validity threats and increasing the credibility of conclusions (Marshall & Rossman 1999, 191).

The researcher's emphasis on methodological criteria was partly driven by the influence of her positivistic background regarding "rigor" and partly because of her concern with the multiple, sometimes conflicting, mandates found in radical reconfigurations (Lincoln & Guba 2000, 178), for determining rigorous research. However, notwithstanding, the usefulness of the criteria the researcher acknowledged that they were not "entirely satisfying" (Guba & Lincoln 1989, 245) and turned her attention to what could be considered interpretively rigorous, raising a central question embedded in validity: "How do we know when we have specific social inquiries that are faithful enough to some human construction that we may feel safe in acting on them, or, more important, that members of the community in which the research is conducted may act on them?" (p. 180). Lincoln and Guba (2000, 180) state that while there is no final answer to this question, there are versions of validity that may be useful in making professional and lay judgments about the research, some of which were considered in this research.

Guba and Lincoln (1989, 245-251) propose an authenticity criteria, incorporating fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity. Only fairness is discussed here, as the remaining criteria do not relate to the purpose and design of this research. Fairness related to a "quality of balance" whereby the views, perspectives, concerns and voices of all stakeholders involved in the inquiry effort have a chance to be represented in the text and to have their stories treated fairly (Guba & Lincoln 1989, 246). In this investigation, the voice of the researcher as well as the participants is found in the case reports as discussed in section 4.5.3 so as to minimise bias.

Richardson (1994, 1997; cf. Lincoln and Guba 2000, 181) proposes a "transgressive" form of validity, the "crystalline." Crystallisation deconstructs the traditional idea of validity, as it is considered that there is no single truth, rather, the focus is on how texts validate themselves. The central imagery is the crystal "which combines symmetry and substance with an infinite variety of shapes, substances, transmutations, multidimensionalities and angles of approach" (Richardson 1997, 92; cf. Lincoln & Guba 2000, 181). Therefore, what we see depends upon one's "angle of repose" (ibid 2000, 181). Validity is achieved by examining the properties of a crystal in a metaphoric sense, to assist writers and readers in seeing the interweaving of processes in the research. Whilst used in a pragmatic sense, the properties of the crystal as metaphor

was useful in reviewing the text, through the multiple lenses of the conceptual framework, watching patterns emerge, change, and alter eventually giving shape to the meanings and processes of e-business adoption decisions, as crystals are not amorphous (ibid 2000).

Ethical relationships are also identified as a form of validity (ibid 2000, 182). That is, poststructural forms of validity bring ethics and epistemologies together, as the way in which we know is considered to be tied up with both what we know and our relationships with research participants (ibid 2000). Lincoln and Guba (2000, 182) identify seven standards in the epistemology/ethics nexus: positionality, or standpoint, judgements; specific discourse communities and research sites as arbiters of quality; voice, or the extent to which a text has the quality of polyvocality; critical subjectivity (or intense self-reflexivity); reciprocity, or the extent to which the research relationship becomes reciprocal rather than hierarchical; and, sacredness or the profound regard for how science can contribute to human flourishing; and sharing the perquisites of privilege that accrue to our positions as academics with university positions. As the issue of ethics and the relationship of the researcher with the research participants is discussed in detail in section 4.2 it is not discussed further here.

4.6.3 VERIFICATION AND VALIDITY

Verification is a process that occurs throughout the data collection, analysis and report writing of a study (Creswell 1994, 194), which requires drawing upon the craftsmanship, knowledge and interpretive skills of the researcher (Kvale 1996, 181). Discovery and verification are considered to be interactive and continuous processes, whereby information identified as being salient in the local situation, such as through an interview, becomes subjected immediately to scrutiny in subsequent interviews as well as in connections with other data sources, such as observations or document analysis (Guba & Lincoln 1989, 182). Therefore, while a positivist would have little difficulty in responding to the question regarding whether he or she was in a discovery or verification phase, the constructivist would find the question meaningless (ibid 1989, 183).

Issues of validity in qualitative research are a much more amorphous topic contrasted with the classic criteria of validity in quantitative research (Newman & Benz 1998, 27).

The research question guides what methods are selected, therefore, the methods used to answer the research questions must be legitimate if the research outcomes are to be of any value (ibid 1998, 27). Case study methodology has the potential for increased validity. As multiple data collection techniques are used (eg. interview and documents) the weaknesses of each can be counterbalanced by the strengths of the others. Therefore, conclusions related to a certain aspect of a phenomenon under study need not be based solely on one data source. Further, as case study knowledge is concrete, contextual and interpreted through the reader's experience, it may be argued that it has epistemological similarity to a reader's experience (ibid 1998, 65).

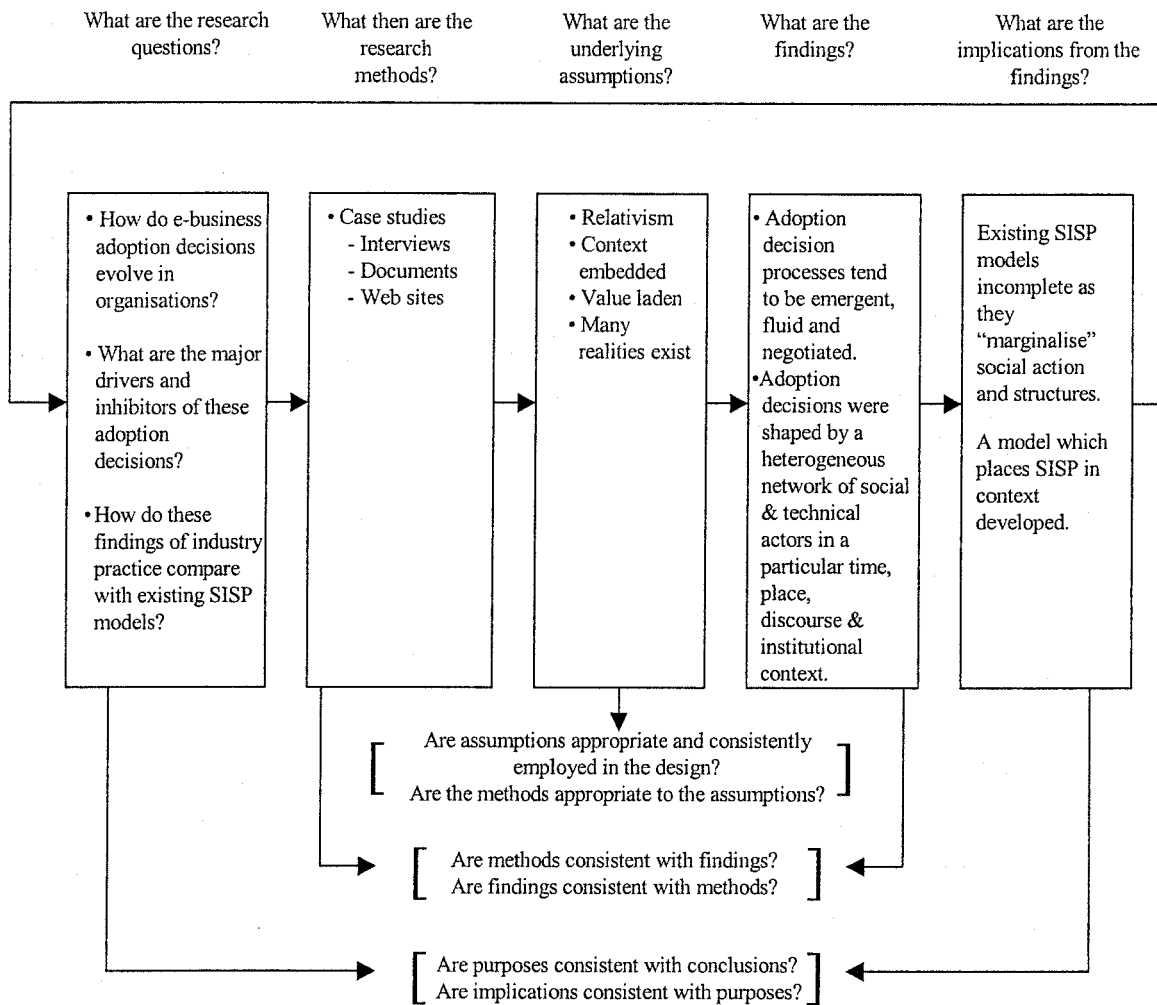
While the design decisions are "emergent" in good qualitative research, the conceptual linking of question, method, and "truth value" must be linked, defensible and predetermined (ibid 1998, 27). These linkages in the context of this investigation shown in Figure 4.7 are illustrative of the verification process that the researcher followed in conducting the investigation. As seen in Figure 4.7, validity is a continuous process that is integrated with theory, requiring the researcher to continuously assess her assumptions, examine her findings and implications and re-appraise the limitations of the study (Gummerson 2000, 93).

4.7 CONCLUSION

The research approach adopted in the proposed study is grounded in the constructivist-interpretive paradigm, using a case study strategy of inquiry and qualitative analysis to capture participant's constructions of e-business adoption decisions and the mechanisms that shaped these social constructions. The proposed research design may be criticised by extreme relativists for building a theoretical model that is transferable to other contexts, arguing that comparisons across sites are meaningless. Alternatively, extreme positivists may disagree with the value of conducting research in a manner allowing respondents to define the elements of theory as they are interviewed. However, the goal of the study was not to declare allegiance to any extreme position, but rather contribute to a practical understanding of SISP for e-business and develop a theoretical model to assist in guiding such decisions. Interpretive research affords valuable insight into the complexity of such phenomenon. The following Chapter Five provides a "rich"

description of each case study, providing insight into the meaning of e-business and the adoption process.

Figure 4.7 Linkage of questions, methods, assumptions, findings and implications



[Source: Adapted from Newman & Benz (1998, 91)]

**STRATEGIC INFORMATION SYSTEMS PLANNING (SISP) FOR
THE ADOPTION OF E-BUSINESS: HETEROGENEOUS
NETWORKS, SOCIAL PRAXIS AND CONTEXT**

VOLUME II

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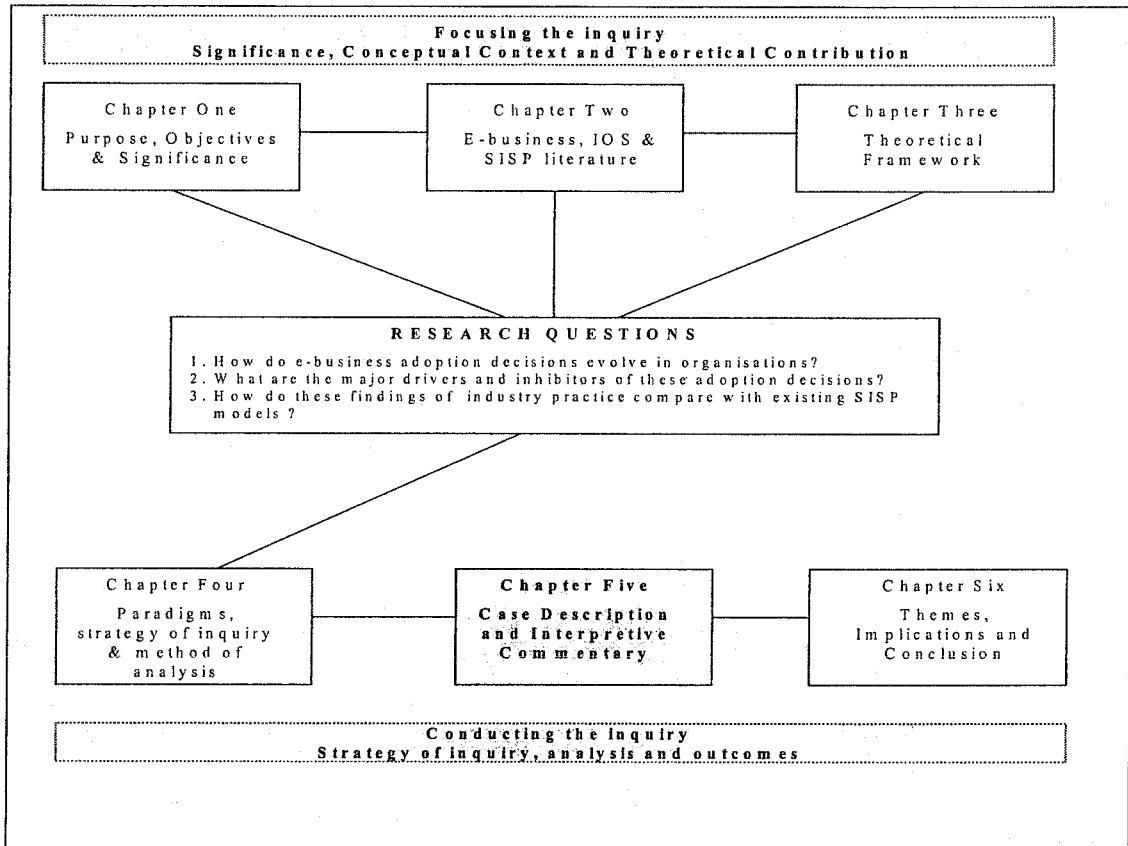
CHAPTER FIVE

CASE DESCRIPTIONS AND INTERPRETIVE COMMENTARY

5.0 INTRODUCTION

The purpose of this chapter is to provide a “lush” “deep” and “thick” (Geertz 1973) description of each case and its context, a body of relatively uncontested data, creating a narrative for the reader to follow the empirical outcomes detailed in Chapter Six, as illustrated in Figure 5.1. For reasons of clarity, the cases are portrayed separately. In order to gain a better understanding of the broader context of the organisational events in the case studies, the first subsection of each case study provides a brief background to locate the history of each case study within the context of the major issues and changes faced by its particular industry with regards to e-business. The second subsection provides a description of the organisation and organisational field and an overview of the events and actions during the adoption decision making period, incorporating aspects of the decision making context and content as viewed by the senior management involved in the study. The remaining subsection provides a reflective and interpretive commentary of the case study, using the theoretical framework developed in Chapter Three. The purpose of this final subsection is twofold. Firstly, to facilitate reflection and analytic insight, assisting the reader in understanding the complexity of the case, built through references to other research and/or the writer’s understanding of other cases. Secondly, to provide a link between Chapter Five and Chapter Six where the research questions are answered and the theoretical and practical implications of the research addressed.

Figure 5.1 Schema of Chapters: Chapter Five



To assist in following the case narratives, an outline of the participants, their roles and a schedule of when the interviews were conducted is provided in Table 5.1.

Table 5.1 Summary of participants, positions and interview schedule

Case	Type	Participant (Alias)	Position	Interview & follow up schedule	Documentation
Retail	Book retailer	BM	Internet Business Mgr	April 2000	<ul style="list-style-type: none"> Interview transcripts Org structure diagram Web site/Press
		MM	Marketing Mgr	July 2000	
GovStat	Gov Statutory Authority	TP	IS Manager	May 2000	<ul style="list-style-type: none"> Interview transcripts Annual reports Web Site/Press
		FL	Mgr Finance & Legal Services	May 2000	
Bank	Bank	GM	General Mgr E-Commerce	May 2000	<ul style="list-style-type: none"> Interview transcripts Annual reports Web site/Press
		IB	Project Mgr Internet Banking		
InternetCo	Online Reverse auction	MD	CEO	July 2000	<ul style="list-style-type: none"> Interview transcripts Web site Online forums
		AD	Supervising auction administrator		
Transport	Transport	GM	General Mgr Operation	October 2000	<ul style="list-style-type: none"> Interview transcripts Annual reports Web site/Press
		ED	Director Development	November 2000	
EGive	Charity portal	MD	Managing director	February 2001	<ul style="list-style-type: none"> Interview transcripts Web site/ Press

5.1 THE RETAIL FRANCHISE CASE STUDY

5.1.1 ELECTRONIC BUSINESS AND THE RETAIL INDUSTRY IN AUSTRALIA

The size of the retail market in Australia is small compared with Asia, Europe and North America, with existing retailers fairly entrenched (McCallum 2000). With the advent of e-business, social norms and structures of the retail market have been challenged. A study funded by the National Office of the Information Economy (NOIE)¹ into the impact of e-business on Australian industry has predicted that as a result of e-business, there will be a negative change of 5.89% in the size of retail trade by the year 2007. The issues and challenges of e-business in the Australian retail industry identified in the NOIE report together with the findings of a survey conducted by The Australian Centre for Retail Studies (ACRS), Monash University, published in November 1999 are briefly outlined in the following discussion.

For most retailers the focus of e-business was found to be on information and brand building (ACRS 1999). However, it was predicted by 2002, that the two most important application areas envisaged for e-business technologies would be providing information to customers and selling to new types of customers. Second tier applications would be focused on promoting the brand, selling to existing customers and extending into new geographic markets. The major barriers identified by retailers in the adoption of e-business were principally relating to areas of customer knowledge and acceptance, lack of an e-business culture and other business issues rather than technology. Further, while half of all retailers surveyed believed that they had to develop technology platforms to enable them to conduct e-business, there was more concern with the lack of management capability, appropriate organisational structures and supplier capabilities. The Allen Consulting Group (ACG) Report (2000) highlighted four areas of impact for the retail sector, each considered separately below: Internet shopping; B2B e-business; new business models; and external influences and pressures.

¹ Allen Consulting Group. 2000. *E-Commerce, Beyond 2000*. Report funded by the National Office for the Information Economy (NOIE), Commonwealth Government.

The total active Internet market has increased 5.3% between June 2001 and November 2001, with an increase in the total online shopping market, that is those who visit a shopping site, of 9.7% during the same period. The number of visits to secure shopping areas that is transactional areas has also increased by 21.2% since June 2001 (Thomson, 2001). During the Christmas period in 1999, online shoppers in Australia spent approximately \$150 million, more than doubling in 2000 with approximately \$320 million being spent (Thomson 2001). Internet shopping has been a major challenge for the retail sector because of the position retailers occupy as the interface between product suppliers and the end customer (ACRS 1999) raising three major issues: dis/reintermediation of retailers; fulfilment; and customer demographics. Retailers are also considered to be facing a double problem in that they need to handle B2B transactions with their suppliers as well as meet an increasingly demanding and informed consumer market (Gates 2000).

Whilst Australia has witnessed a number of new electronic intermediaries, the number of cases of disintermediation has occurred to a lesser extent. Factors that have been presented as barriers for manufacturers selling directly over the Internet are a lack of retailing experience and the difficulty and expense of fulfilling customer orders (a barrier identified also for electronic intermediaries) and channel conflict with traditional retailers (Howarth 2000). In the period 1999-2001, "start-up" electronic intermediaries have also struggled or failed, the first mover advantage in winning customers falling victim to "Internet fatigue" (Hale 2000). Optimistic revenue projections have not been met. Shareholders are looking towards Internet companies to demonstrate that they can generate sustainable profits, to support the growth of the business and to defend it against competitors (Hale 2000).

It is considered that the widely held belief that Internet companies would replace "bricks and mortar" is no longer the case, but rather that the future lies with hybrids or multi channel selling environments (Hale 2000; Gates 2000) to retain customers and cater for different types of online behaviour and needs (Hannen 2000; Forsyth et al. 2001). Creating an e-business presence, has generally occurred through three means. First, building their own e-business division. Second, forming a strategic alliance or partnership with an existing "start-up" (Hannen 2000). Alternatively, investing in an electronic intermediary (Hannen 2000). Third, acquiring an online retailer to gain access to the customer database, technology, call centre and fulfilment capability (Stensholt 2000).

The second area of impact identified in the ACG Report (2000) was the use of B2B, to reduce or remove costs associated with the retail business's supply chain, resulting in economic savings in traditional retail activities. However, savings, such as labour costs, was considered to correspond with a loss of value for the sector itself (Gates 2000). Further, new costs arise, in that retailers and their customers generally have to obtain access to the Internet or other networks in order to participate in e-business, involving purchasing from new intermediaries. Communication costs in Australia are considered a serious deterrent to small to medium businesses (Gates 2000).

The third area of impact identified in the ACG report was the evolution of new business models. One business model proposed for retailers (and manufacturers) was the creation of new value through the delivery of existing products digitally such as software, information and music. A second model proposed for retailers was the use of e-business technologies to provide new, or better services to customers such as monitoring consumer behaviour and real time price testing that produces instant customer responses. Further, retail inventory and point-of-sale systems are heading towards Web integration, not only for customers but also for the supply chain, joining stores together for general communication, price changes and sales reports.

A final factor identified in the ACG report was described as 'external dimensions', that is, the transfer of value overseas, particularly for non-perishable items, and for luxury or unusual items that are not readily available in Australia. Three major issues were identified here. First, many of the online shopping sites may not be based in Australia, which may increase the amount of goods and services purchased from overseas. Second, tax regimes may also affect the price of purchases, for example, the Goods and Services Tax imposed on books in Australia, making an item cheaper to purchase offshore even with the cost of transport included (Lloyd 2000). However, the fall in the value of the Australian dollar has eroded the price advantage of US based sites. Further, consumer behaviour research has indicated that price may not be the only issue. Customer service is also driving Australians to local online retailers, for example, if people want to exchange a book, they can do so at a bricks and mortar store (Dempsey 2000). AC Nielsen research (cf. Dempsey 2000) showed that Australian traffic to popular foreign retailing sites such as Amazon has climbed from 6.5 million page views in April to 7.5 million in September. Over the same period, traffic to Australian online retailing sites has boomed, jumping from 12.5 million to 19 million (Dempsey 2000).

The following section 5.1.2 provides a description of the retail case study. For the purposes of confidentiality the organisation will be referred to as Retail, the Internet Business Manager as BM and the Marketing Manager as MM.

5.1.2 CASE DESCRIPTION

5.1.2.1 THE ORGANISATION AND ORGANISATIONAL FIELD

Retail is a privately owned book retailer and franchiser founded in Sydney in 1879, with an annual turnover as at January 1999 of approximately \$150 million. It is represented in 96 physical locations, including Australian mainland capital cities, New Zealand, and parts of Asia. Retail is one of the top three major book retailers in Australia, which bases its success on trust, honesty, customer loyalty and simplicity

“... We are a very old business, we are a trustworthy business, a very honest business, so our marketing strategies need to continually reinforce that in our customers minds...” [MM]

Retail offers the broadest and deepest range of any bookseller in Australia, and so is not as price competitive as other players in the market

"The components of products such as range, depth and currency of stock, topicality all those types of things we certainly try to be dominant in the market place ... We do not compete on price ... We compete on quality and service and we think we are quite competitive in those two aspects." [BM]

The organisation has a network type structure, comprised of franchised sales outlets arrayed around a central head office. The head office is located in a major capital city, in a building which houses one of its largest franchise stores on the ground floor. This franchisee was a major actor in the e-business initiatives within Retail, as will be seen during the course of the discussion in section 5.1.2.2. The management structure consists of a board of directors, a managing director and senior managers overseeing nine functional areas. Whilst formalised structures of responsibility existed, prior to 2000 no strategic planning had occurred since 1996. Compared to the past when planning was conducted, the horizon had changed from five years to one to two years, influenced by the “web environment” as it, according to BM,

“...is so changeable, traditionally ... looking at five years out ... is a waste of time. So I am only looking to say what I think our position should be in a couple of years.”

The franchises run their own businesses but are part of the franchised organisation. Retail provides its franchises with support in selecting the site, training, store fitouts, product selection and merchandising, advertising and promotions, and information on areas such as sales trends and product mix. While Retail negotiates with major suppliers for best prices, franchise owners purchase, take delivery and organise returns directly with suppliers. Its franchising background was recognised as a key influence in its motivation behind seeking out market opportunities and forming alliances

"...because of our franchising background ... we actively are always talking to other parties in the market place and looking for opportunities and certainly alliance opportunities..."

[MM]

The budget for IS, including e-business, in Retail is approximately 1% of total sales revenue, with the IS function outsourced. A decision had been made in early 2000 to outsource all IT functions in Retail, including the web site operations, as according to BM,

"...they ... had two [IT] managers in about one year and the thought is that with such a small organisation there is really only three people in IT [so] to try to keep an IT manager in house is almost impossible because there is nothing to offer them in terms of career progression ... and ... for someone to keep their skills up to date and have a broad experience base..."

Therefore, it is dependent upon technology suppliers and consultants for direction and advice regarding IS in general and its relationship with e-business in particular. The organisation that maintains and develops the Web site is located in another major capital city. The site is built from Active Server Pages (basically HTML pages that include Vbscript to query databases) and an SQL database is used. The web service runs on Microsoft Internet Information software that carries out all the requests users send and all the application service provider functions. There are no integrated systems between franchisees and head office, with each franchise store free to choose its own applications with the exception of the common sale and inventory system prescribed by head office.

In 1997 the bookselling business in Australia was depressed, considered to be in the "dark ages" compared to the US and UK markets (Lloyd 2000). Book retailers were faced with having to "reinvent" themselves, especially given that Australians had begun to take notice of the online bookseller Amazon.com during this period. Retail became

active in expanding its chain of stores in both Australia and Asian markets, increasing the average size of its store and locating them in large retail centres where possible. This followed a 'Superstore' concept (adopted from the United States of America) where features such as coffee shops and Internet facilities are incorporated to project an image of a destination where customers can sit down and review a book rather than just a retail outlet (Lloyd 2000). In response, Australians are buying more books. However, concomitant with the growth and expansion in its store network are concerns of competition from similar strategies followed by other major book retailers putting pressure on margins and pricing, as well as within its own franchise environment

"Opening new stores that are in a fairly tight trading circle, that may take business away from another store ... the normal emotive issues that you need to deal with on the retail side" [MM]

As will be seen in section 5.1.2.2, these "emotive issues" were also evident with the channel conflict that arose between the web site and the franchise network.

5.1.2.2 OVERVIEW OF EVENTS AND ACTIONS

The idea of online retailing was first brought to the attention of Retail with the advent of Amazon.com in 1995 selling books around the world and particularly into Australia. At the time there was a general concern within Retail that they would need to develop their own Web shopping services or risk losing market share, in an already depressed market, where buyers could purchase their books cheaper from Amazon than from a local retail store. These concerns were further compounded with the government policy to introduce a goods and services tax from July 2000, which would further increase the price of books.

In late 1995, early 1996 the general manager of retail, with the "support and push" from the "downstairs" franchise store, approached the managing director about the Amazon.com phenomena. The downstairs franchise identified it as an opportunity to be a key actor in the online environment as it had

"... the infrastructure to provide the stock and has the staffing and all the logistical support necessary to run an e-business." [BM]

The managing director was seen as a key advocate and supporter of technological initiatives in general and had been following what was occurring with the web shopping service provided by Amazon.

At this point in time, the focus was on using the Internet to provide an electronic marketing business model, so that it would have an Internet presence. In contrast to the full cybermarketing business model of Amazon, Retail proposed a partial cybermarketing model (Turban et. al 2000) to sell books not only through the Internet but also through its existing physical stores. The initial site was to be an advertising channel, which was to be followed with an online ordering capability and distribution channel. At this point in time there was no formal plan and no anticipation of making any money from the online initiative. Rather, it was seen as a learning exercise due to the large amount of uncertainty.

The proposal was presented to the Board of Directors. The managing director's process of persuasion and salesmanship together with his personal credibility were weighted similar to financial and strategic criteria. There was considerable uncertainty and ambiguity regarding how to measure the value of e-business. Using traditional accounting control criteria, such as profitability, was problematic,

“... we are struggling like other retailers to come to terms with the concept of break even with electronic business ... Where their profit horizon is I have no idea ... The traditional concepts of ROI, ROE, even simple break even concepts don't relate to the web, because your variable costs increase at the same rate as your sales, so where profit is we do not know ...” [MM]

Creating the online site was described by MM as a “hurried exercise”, occurring in 1997. The e-business capability for online ordering and payment followed approximately twelve months later (1998) after the web site was launched.

A consequence of the online shopping initiative was that conflict arose within the franchise network as the centralised web site was perceived to be in competition with the franchisee stores. Franchise owners were concerned that they had received little information about the web site, nor the rationale behind its wide-scale adoption and implementation. In addition, franchise owners contributed to a central advertising fund, which was used to establish the web site. These funds were used to develop and create

the web site without any clear aims, objectives, purpose or direction. Management did not see a problem in using this central pool of funds, considered by them strictly as a vehicle for collecting funds. Their rationale was that any surpluses could be returned to the advertising fund to help pay for future advertising. This decision turned out to be a major mistake resulting in litigation. One of the more significant and costly exercises arising from this was a court decision in May 2000 requiring Retail to pay an undisclosed sum to three franchisees that had disputed ownership of Retail's online retailing. MM saw channel conflict and ownership as a major challenge and a key issue missing from the adoption decision,

"Probably the major one was having to deal with ... because we are a franchise business, ... the ownership issue ..."

MM joined the organisation in July 1999 as the marketing manager, having come from a background in operations and retail in various sized organisations. MM was tertiary qualified with a graduate diploma in marketing and finance and a Master of Business Administration. He described his management and leadership style as "participative". MM became a member of the Internet Committee, a local network mobilised to consider e-business initiatives, consisting of the managing director, and the IT manager plus one of the category buyers who was a book expert. His principle role was to review, from a marketing perspective, Retail's Internet shopping site in conjunction with other marketing programs and its relationship with the physical stores program. The market as well as technology providers and suppliers were key influences in his attitude towards e-business, which was focused predominately on merchandise and marketing. MM's direct involvement with e-business continued until

"...we made the decision to appoint an Internet business manager to further progress that work and to concentrate solely on developing that channel of business." [MM]

In January 2000 an Internet Business Manager was appointed and a separate strategic business unit formed consisting of BM and an IT person whose main role involved providing support for the web site. BM has a Master of Business Administration, coming from a marketing and publishing background. The appointment was seen as a defining moment in Retail to further progress e-business in Retail. According to BM

"... [before] ... my appointment ... there was no focus and there was no one person anyone could talk to easily about the web site. So my appointment was really seen as the technology and the web site going somewhere ..."

Understanding the customer transaction and responding to customer queries was seen by BM as a key area of her role, together with articulating and implementing a strategic plan for e-business. BM had a business focus rather than an IT focus with regards to e-business initiatives, which was influenced by her personal interest in technology as it relates to business and believed that the web held "huge potential."

Despite the ownership problem within the franchise environment, the B2C model is considered to have been successful for Retail, with its market share ranked higher in the online environment, than in the physical environment

"... it is an interesting phenomenon at the moment that in bricks and mortar [we are] probably number two ... On the web we are consistently number one on the Australian site. So in a sense we probably have more market share on the web than we do in a physical sense." [BM]

Limited resources were identified by BM as a major barrier for further development in B2C e-business. However, she was optimistic that with the re-introduction of strategic planning within Retail during 2000, such issues would be addressed in the plan that she was at the time of the interview working on.

The next but interrelated phase for e-business in Retail is the B2B e-business. However, compared to the earlier periods, there appeared to be less urgency for decisions to be made. The threat posed by Amazon.com appears not to have materialised in the sales of books within Australia with online ordering in 1999-2000 at \$20 million compared with size of the retail book market estimated to be between \$1.2 billion and \$1.5 billion in the year to June 30, 2000. While online sales facilities are considered necessary, they are no longer considered the most important element (Lloyd 2000). Further, in contrast to the B2C area, applying financial criteria to measure value was not seen as complex in decisions surrounding B2B, as the latter was not considered to be strategically driven. Further, there were a number of technology providers willing to enter into partnerships,

"... there are the supplier initiatives to doing B2B with the suppliers that's the easy decision because you can see the productivity improvements you can gain out of doing that. So far as continuing to invest in the web site that is strategic driven because you need that presence you need that distribution channel but you just do not know what is going to happen. But as time goes on we have to be in the market in a strong way now, strategically it would be a very poor decision to lessen our exposure to e-business retailing." [MM]

While developing e-business was the key responsibility of BM, decisions surrounding its adoption and implementation were considered to be by MM more of a group decision making exercise as it was now “just day to day business.” In terms of its relation to routine activities, BM considered, that e-business was

“... probably not very significant. The focus is still on bricks and mortar What it will become more quickly is a significant marketing tool ... and it is important in the overall positioning of [Retail] of it being up there with the technology.”

A schema of the events, actions and actors discussed above are provided in the following Table 5.2. Following the terminology in Actor Network Theory, the “global network” is a network that is built deliberately or otherwise, which generates a space, a period of time and a set of resources in which innovation may take place (Law & Callon 1992, 21). It refers to the set of relations between an actor and its neighbours on the one hand, and those neighbours on the other. Within this space (negotiation space), the decision making process may be treated as the extension of a “local network” (ibid 1992, 22). That is, a heterogeneous set of actors that are closest to the e-business adoption decisions. The adoption decision process is treated as balancing acts in which heterogeneous elements from both “inside” and “outside” the e-business initiative are juxtaposed.

5.1.3 REFLECTIVE NOTES AND INTERPRETIVE COMMENTARY

In April 2000 and July 2000 interviews were held with the Internet Business Manager and the Marketing Manager. The interview with the Internet Business Manager was the first interview conducted by the researcher. Despite the researcher’s preparation for the interview, upon entering the building, a sense of anticipation was mixed with apprehension as to how the next ninety minutes was going to go. The researcher had collected as much background information concerning the organisation as possible, but realised as she introduced herself to the interviewee that she really knew nothing about this person’s experience or their position in the organisation.

Table 5.2 'Retail': Events, Actions and Actors

Events/Actions	Local Network		Global Network	
	Actors	Choices &/or Consequences	Actors	Choices &/or Consequences
Decision to establish web site (1997)	"Downstairs" franchise owner Managing Director & General Mgr Retail	Control warehouse and distribution functions Create online presence initially as an advertising channel so as to have a "web presence" using central advertising fund to resource project.	Amazon.com Board of Directors Franchise network	Virtual competitor established in 1995. Approved e-business proposal Contribute to central advertising fund
Establishment of online ordering capability (1998)	"Downstairs" franchise owner Managing Director, General Manager Retail, IT manager	Control warehouse and distribution functions Develop partial cybermarketing model.	"Other" franchise owners Board of Directors	Dispute over "ownership" of web site - channel conflict. Review and accept/reject proposals.
Appointment of Marketing Manager (1999)	Marketing Manager Internet Committee - (Managing Director, GM Retail, Marketing Mgr, Category Buyer)	Review Internet shopping site in conjunction with other marketing programs. Make decisions about web site functions and capabilities.	Board of Directors	Review and accept/reject proposals
Damages awarded to three franchise owners over "ownership" dispute (2000)	Internet Committee	Establish "clear ownership of the web site so that other initiatives as far as strategy and capital growth can be taken advantage of".	Board of Directors	Review and accept/reject proposals.
Appointment of Internet Business Manager and trialling of B2B systems (2000)	Internet Business Manager "Downstairs" franchise owner B2C business model	Articulate and implement strategic direction for online retailing and e-business Control warehouse and distribution function Driver for B2B initiative	Senior Management group (including managing director) Board of Directors Technology provider and suppliers	"Group decision making exercise." Review proposals from functional areas and make recommendations to board of directors. Approve/reject proposals. Provide IS and web support – partnerships.

The interviewee led the researcher through an open workstation area into a long corridor with offices on either side where senior management were located. When we reached the interviewee's office and finished with the introductions, the researcher was asked about her background and the research being conducted. The interviewee seemed to find the subject of interest as she was new to this position and was searching for as much information as possible regarding e-business, particularly empirical research. With the introductions over, and my awareness of the time, I reached for the tape recorder which resisted me when I went to take it out of my bag. I was still trying to settle my nerves and was concerned about the interviewee's reaction of me taping the interview. With my introductory comments about the code of conduct surrounding this research, I embarked upon negotiating the usage of the tape. The interviewee was relaxed about the interview being taped and keen to move on with the interview, but was unsure as to how much she could contribute given her recent appointment.

The interviewee described her experiences willingly and happily and responded to questions, not necessarily in the order in which they were asked. This was a teachable moment for the researcher as she realised by letting the interviewee talk freely, a lot of valuable information was forthcoming, but this needed to be balanced within time constraints and the data that needed to be collected. As I moved through the questions, ideas for more questions arose. At times the interview stalled as the interviewee had only joined the organisation in January 2000, and so questions relating to the earlier strategic decisions had to be referred to another individual that I would have to organise to meet at a later point in time as he was currently on leave.

Access to the second interviewee took three months to arrange, as the researcher had to wait for his return from leave, and then a suitable time to fit into his schedule. As he had to travel quite often, his availability was made known at short notice so the interview had to be conducted over the phone. The gap in time between interviews meant the researcher had to re-orient herself with the organisation. The marketing manager was

able to provide more information about events in the past, such as how the Internet committee operated. In addition, because of his marketing position, he provided further information about the relationships between products, customers and e-business.

The second interview filled gaps from the first interview and confirmed two major thoughts that the researcher had left the first interview with. The first related to how strategic decisions about e-business were actually being made, as this was a key research question. During the first interview the researcher listened intently as to how events unfolded over time, but there appeared to be no formal strategic plan or decision process based on any clear economic rationale. Rather, things appeared to happen in more of an ad hoc fashion. The researcher began to think she was not asking the right questions, as she kept hearing about the impact of Amazon.com. This was a teachable moment for the researcher. What the researcher was hearing was an inscription of the organising that went into producing the decision. My constructivist reflection and conceptual framework would tell me that the decision to adopt e-business was not necessarily going to be a neatly packaged linear process. Further, my account was yet to be added, a “novel reading” a “meaning added” a second semiotic reading of the question posed at the outset, by the researcher who was not “socialised into the same system of meaning”, but is familiar enough with it to recognise that deciding what strategic decision making is, was going to be “exactly telling grey round pebbles from white square ones” (Czarniawska 1998, 30).

The second key issue was the channel conflict arising from the franchise network and central web site structure and the problems caused by using a central pool of advertising funds. What became apparent to the researcher was the impact that the different dimensions of structure, namely the social, physical and virtual had on actions and vice versa. The following Table 5.3, summarises the researcher’s interpretation of the case study, using the conceptual framework as a lens through which her analysis was conducted.

Table 5.3

Case 1, 'Retail': Influential structures: The social, the physical and the virtual

Vignettes	Interview Extracts
<p>Decision Making Content</p> <p>There was no specific organisational, IS or e-business strategy. The image of e-business within Retail was initially shaped by the "Amazon.com" phenomenon, a reaction by senior management to concerns of losing market share in an already depressed market and uncertainty as to the impact of virtual retailers. For the downstairs franchise owner, it was an opportunity to control the warehousing and distribution functions for the web services. Creating an online presence was seen as an opportunity to learn about the web environment. More recent motivations are seen as providing a multi-channel environment. Whilst building trusting relations was part of the existing belief system, it was considered a key criteria for the successful adoption and implementation of online services, as the customer forms all the impressions about atmosphere, service, quality and products from the user interface as the technology is the store itself (Jin & Robey 1999). The B2C model has also acted as a driver for B2B initiatives where productivity gains were identified for franchise back office systems. B2B adoption decisions were considered to be "easier" to make as its value could be measured using traditional financial criteria more successfully than B2C; and, there were opportunities to form cooperative and collaborative relationships with technology suppliers and trading partners because of the nature and variety of technology available and mutual benefits to be derived, such as cost savings.</p>	<p><i>"I think basically that the feeling was that if [Retail] did not put up their own web site someone else would. ... [Retail] got up there pretty early to establish its presence." [BM]</i></p> <p><i>"... need to integrate bricks and mortar with the Internet, they need to make the most of both avenues into market. I don't see [how] you can do one without the other." [BM]</i></p> <p><i>"... a consumer will dictate the success of our operation... You can have all the fancy technology in the world, but if the consumer does not want it, then it is a waste of time." [BM]</i></p> <p><i>"...We really want to move into as much electronic ordering, order processing as possible through our stores ... we anticipate we will be able to start sharing [costs] with our suppliers as well and so we should be able to improve our margins ... " [MM]</i></p> <p><i>"... there is a heap of technology around and plenty of people wanting to partner in on that." [BM]</i></p>

Decision Making Context

The major product of Retail is books, recognised as one of the most popular purchases made online and a contributing factor as to why Amazon.com had a significant influence on Retail in the earlier periods. The mimetic pressure of 'Amazon.com' was a result of the threat posed by another competitor in an already depressed market and the change in spatial and temporal boundaries as a result of online retailing. The managing director was recognised as a "champion" for the adoption of e-business within Retail both because of his position and his attitudes towards the Internet and IS in general. Spatial factors were key issues in adoption decisions. Firstly, channel conflict arose as incompatibilities between Retail's virtual and franchised network structure were not considered. Secondly, the location and size of the "downstairs" franchise from head office. Locations near to influential elements of the environment offer an entity advantages in terms of managing critical dependencies. Further, because of its size it had the necessary infrastructure to support the web site.

"... there is only one web site for [Retail]. And, I suppose there is a challenge with the franchise environment, to work in with that. But that is part of the overall plan to make sure that we can integrate that as much as possible." [MM]

"While the [downstairs] store manages the web site as far as day to day operating goes, the support office manages the strategy and the going forward of the site...it provides significant opportunities to the main store, that is increases its turnover..." [BM]

"...[it]is a separate site ...[that] ... works intrinsically with the store downstairs because they actually provide the fulfilment ... The store downstairs is providing our database and our stock, they are also our warehouse." [BM]

"Well in this company, the managing director was instrumental in e-business being adopted..." [BM]

Decision Making Process

The e-business adoption decision process within Retail in the earlier stages appeared to be both unsystematic and political. The decision began as a random stream of events, in the presence of a random set of individuals at a random point in time. The emergence of the Internet and the Amazon business model presented new mediums and business approaches for traditional retailers together with high levels of uncertainty and ambiguity as to its implications. Initially there were three key actors involved in the decision making, the managing director, the general manager of retail and the “downstairs” franchise store owner. The ‘coalition’ negotiated behind the scenes before approaching the Board, uniting interests and proposing alternatives that were collectively beneficial to themselves. A verbal presentation was made to the Board, who had limited understanding of e-business, effectively “rubber stamping” the proposal. Following this period, an Internet Committee was formed to make decisions regarding e-business, prior to the appointment of the Internet Business Manager who is now responsible for setting the strategic direction of e-business. Reviewing such proposals is now considered a collective type decision.

“.. prior to me coming on board the managing director, the IT manager and the marketing manager were all trying to run it. So I think given that there is such an unwieldy situation they did a fantastic job...I would prefer more of a structured approach to the adoption and implementation of a project. I understand why it happened as it did because time was of the essence ...” [BM]

"There is quite a bit of interaction between myself and the marketing manager, the managing director and there was when the IT manager was here. Those people were the main people or have been the main people involved in the Internet strategy." [BM]

“...it is now a more group decision making exercise, it is now just day to day business.” [MM]

5.2 THE STATUTORY AUTHORITY CASE STUDY

5.2.1 GOVERNMENT AND E- BUSINESS

E-business in the public sector involves a broad area of administrative processes and documents (Andersen et al. 1998). Introducing e-business technology in the public sector is viewed by some as a “means of expanding the functionality and efficiency of a country’s administration leading to a higher standard of living for its citizens” (Themistocleous et al. 1998). The Australian Commonwealth Government (the Commonwealth) sees its role as reinforcing the benefits of the traditional economy, as well as guiding Australia’s “seamless transition to the information economy.” The legal and regulatory aspects to this transition have emerged as critical challenges being addressed by national governments worldwide (Mougayar 1998). Further, the Commonwealth sees the information economy playing a seminal role in the growth of regional and rural Australia by providing better access for businesses to markets and market information, and enabling more efficient marketing and distribution of products and services (NOIE 1998).

The areas and responsibilities for e-business lie within the Commonwealth Department of Communications, Information Technology and the Arts (DCITA). The DCITA incorporates both the National Office for the Information Economy (NOIE) and the Office for Government Online. NOIE is primarily responsible for strategic advice to government in its e-business, IT priorities and strategies and to raise awareness within the Australian business community. The Office for Government Online is responsible for the government’s own use of IT and e-business to improve the quality and cost effectiveness of its services. In addition to the Commonwealth initiatives, most state (eg. purchasing and procurement) and local governments (eg. local council portals) are also developing e-business models.

The following section 5.2.2 provides a description of the government case study. For the purposes of confidentiality the organisation will be referred to as GovStat, the IS manager as TP and the manager responsible for finance and legal services FL.

5.2.2 CASE DESCRIPTION

5.2.2.1 THE ORGANISATION AND ORGANISATIONAL FIELD

Founded in 1881, GovStat is operated by a statutory corporation, constituted under a State Act, owned by the people living within that State and comes within the administration of a State Government. As at 30 June 1999, GovStat held public assets exceeding eighty million dollars, had annual revenue in excess of twenty two million dollars and employed over 300 people. GovStat is a highly visible statutory body in the general community because of its history, location and the nature of its services, incorporating conservation, education and tourism. As part of the state government sector, it has statutory requirements imposed upon it relating to financial and non financial areas. Whilst government provided some of GovStat's funding, according to TP

"We are not government funded, we are to an extent with regards to capital goods, but for what it is worth there is no money to speak of ... The rest we are expected to make and earn for ourselves a bit through the gate the web, or however we do it, commercially."

While GovStat offered both commercial (eg. entertainment and tourism facilities) and non commercial services (eg. education and research), as the later formed the largest part of its operations, the organisation operated under tight financial constraints. Therefore, heavy reliance was placed on corporate sponsors and volunteer community groups for resources. In return sponsors, such as technology suppliers, see GovStat as a "good reference site" [TP] due to its high visibility within the community. Loss of community support and goodwill was considered by FL to be a bigger threat than insufficient funds,

"...maybe if there was a community perception that [GovStat] and other organisations were not fulfilling their charter in terms of conservation and education and were purely entertainment facilities, I think a lot of that goodwill, and the capacity for us to impart important messages would go."

The organisational structure of GovStat consists of seven management functional areas, reporting to a senior management team and the chief executive director (CEO). The CEO, who is also a director, reports to a statutory board that in turn reports to a minister of the state. The organisation is characterised by strong subcultures, namely the

“traditional” scientific domain and the more recent commercialisation agenda; the latter raising the profile of IS but not in a strategic context. According to FL

“It is almost like an implied thing that the IT would be up to speed to handle those things.”

The IS department is situated within the management division associated with strategic development and human resources. There are four staff members including TP with an annual budget of \$250,000 for hardware, software and human resources. The budget represents approximately 0.8% of total revenue and has remained consistently at this level for the past five years. There was some confusion regarding the organisational structure, specifically where the IS department belonged within the organisation. TP commented that at some points the IS department were left off the organisational structural chart, which did not create concern as it did not bring attention to them and they were left to do as they pleased,

“...for whatever reasons they keep leaving us off and we chose not to bring it to their attention.” [TP]

TP was recognised as a key decision maker with respect to IS and e-business within GovStat. She had worked for GovStat for a number of years, covering different management positions including human resources and corporate services. Her appointment to the IS manager position came about five to six years ago. Whilst she had minimal experience in the IS area, she believed that she

“... got the hat because I knew more than the next person up there and made all the appropriate noises for IT what we needed to do.” [TP]

TP is an expert source of power because of her knowledge, expertise and network contacts of technology providers. She was able to exercise power over the users in a variety of ways including the use of technical knowledge and procedures and the symbolic shaping of user needs and values

“With regards to me and my department, they do not know what we do. I mean my boss and I speak to each other ... [but]... I don't tell him a lot unless it is good news and he can understand it.” [TP]

The Board of Directors is the ultimate decision making authority within GovStat. They were described by FL as “a high profile board,” consisting of actors who had prominent positions in the private and public sector. Until more recently, there was limited

knowledge and understanding of IS issues within GovStat. According to TP, IS were not seen as a major objective within the organisation,

“... they just don’t quite have the vision, to see the full potential, they can’t even see the beginning, unfortunately.”

However, with the appointment of a new CEO, chairman and board member (1998), there were signs that changes were beginning to occur in management’s enthusiasm and commitment towards IS and e-business as these actors came with knowledge and experience in the strategic use of IS from their senior positions held in other organisations. TP stated that

“Our new CEO is not afraid of using technology. So yes, there is a little bit of a change. He is not afraid to embrace technology... [The new board member] and the chairman of our board ... are technically minded, they are very much aware...”

5.2.2.2 OVERVIEW OF EVENTS AND ACTIONS

The origin of the e-business adoption process may be traced to an audit conducted approximately five years ago (1995) whereby the management of GovStat received an audit report from the government auditor recommending a new computerised ticketing system; a critical system in recording admissions into the recreational facilities. The recommendations made about the existing ticketing system were not new to GovStat as TP recalled they

“... were always getting audit reports back saying that there were too many rooms for error, it [involved] a lot of cash [and that] we had to tighten the controls.”

The computerised ticketing system represented different things to different actors within GovStat. For the board of directors and senior management it meant that some funds needed to be allocated to a new system because of governance and accountability requirements. For TP it was seen as an opportunity to extend the network so that in the future GovStat would be able to network their computers,

“...we managed to talk the people into extending the network and get some fibre off cuts, you know, wrap it around the [place] so eventually at one day in the future, we would be able to put computers on the network, we would be able to talk to each other ...” [TP]

The incongruence in the interpretive schemes of the role of IS within the organisation meant that only limited funds were allocated by senior management, symbolic of the knowledge and attitude toward IS, the dominance of the scientific tradition and the

availability of resources in general. TP approached a corporate sponsor (technology supplier) with a

“...\$50,000 budget, that is to buy hardware as well... And after the coughing and spluttering and chuckle, they said leave it with us.” [TP]

The financial resources devoted to the computerised ticketing system project, the set of specifications, the technology provider and the system itself, provided TP with the resources to undertake further changes to legacy systems within GovStat. The project had created for itself a time and space within which it deployed the resources it had borrowed from outside the organisation. It had accordingly achieved a degree of autonomy, a “negotiation space.” The computerised ticketing system became the impetus for the adoption of an enterprise resource planning system (ERP) and the naissance of the IT department as the existing finance system was a

“...a legacy system that was dying and it could not be upgraded ... so that was the driving force behind that change.” [TP]

The negotiation space for TP was limited. Generally speaking limited capital funds were available, with each piece of development being fought for through the supplier network. A range of resources were mobilised in forming a global network. Specifically the IS area, and in particular, TP mobilised, with a limited sum of money, the powerful group of corporate sponsors to bring about the project and to shape and form the system as a substantial network. The group of technology suppliers played a major part in the adoption of e-business within GovStat providing physical resources such as hardware and software as well as technical expertise. FL stated that

“...we rely on the kind of support of a lot of these companies here. We do not have the resources to buy these sorts of systems for ourselves...”

The first stage involved TP seeking the assistance of external parties in implementing the ERP. The choice of who to use was dictated by existing government relationships with technology providers and corporate sponsors. The ERP provider was the first organisation approached by GovStat. The process of giving shape to the project continued, however, the focus of the project map had now turned inward whereby they started to elaborate a network of design teams, features and contractors. The ERP project had a core group of six people, three from the IT department, and three from finance “and around” including FL. They were the main team who, according to TP

“...made the decisions on the run, we had it in within three months...”

The ERP system was launched in 1997. During the course of the ERP project, a web project was also initiated, influenced by the global attention towards the Internet. A local network was mobilised in the form of a working party consisting of a representative from each division of GovStat. As TP was involved with the ERP project, a person from another management division in a different geographic location, was nominated to coordinate the web project. The planning process was very time consuming as

“...everybody had different ideas what it was going to be ... what it was not going to be, what their involvement was going to be ... [because]... they all had their [different] reasons for being there.” [TP]

Reaching an agreement for the web site according to TP was “an absolute nightmare” and when information was required from each of the parties “it just did not happen and the thing fell apart.” To overcome this obstacle, the working party decided that as there was general agreement on what the major web pages would be, basically one relating to each division, then the people within the division would be responsible for “pulling together the information.” However, the co-ordinator of the web site left the organisation. As a result, the project laid dormant after approximately twelve months from its inception.

During the same period, the new CEO, appointed in 1998, implemented a strategic planning process in 1998/1999 to provide the organisation with according to FL “a robust map for the future” as far as ten years into the future. Strategic planning had not been conducted within GovStat for a number of years, which according to FL created “a gap.” The new CEO was considered to be more focused on strategic positioning, engaging a consulting group to facilitate the process. TP was sceptical about the value of the consultants, considered to be “merchants of meaning” (Alvesson 1993) in direct competition for limited funding,

“They talked about things like Business Process Reengineering, but that did not mean ‘Jack’ to us ... With consultants they ... rush off to training school and come back with these great little templates and models ... until you try to examine it in plain English and it does not mean anything except that it has cost you \$50,000 for it so it must be good.” [TP]

According to TP, there were two IS strategic stories. One that was initiated by the organisational strategic planning process, which used according to TP “all the

'jargonise' possible, all the garbage" to give it strategic credibility. The second was the one initiated by TP for IS, which "took on a life of its own" and effectively "eighteen months later" when the formal strategic planning process had been completed, the IT department "had already done everything in IT." TP considered that the planning document was more symbolic of power and politics within GovStat than providing a strategic direction

"... it had all the right words, and everyone was happy, and no one understood it which was good we would just do what we wanted to do, as plans go... It met all the political requirements like government blueprints and stuff ...It does not get things done, but what it does is ties someone down for days and weeks answering rubbish that means nothing to anybody, to justify some 'number crunchers' job, and for what. It hasn't served a purpose ... there was no value adding at all..."

In 1999, the web development was put back "onto the agenda" by a corporate sponsor, who was a web site developer. TP had been approached during the ERP project by this web site developer to develop a web site for GovStat. At that time the website developer was asked by TP to wait until the ERP system was "up and running" which they agreed upon. Upon their return, TP described it as an

"... open licence to do whatever" [and provide the organisation with] a website at very little cost [and so] it [was considered] that whatever [TP] could get was great."

Unlike the previous web site development project, the local network consisted of TP, a representative from the web site developer organisation and TP's manager. Between TP and the web site developer they

"... managed to pull it all together and by that stage [decisions were made] on the fly ...[Whilst] ... they all had some input up to that stage, none was the wiser as to who did or who did not have a say so it was kept that way..." [TP]

Notwithstanding, that the web development in total took over eighteen months (1997-1999) TP considered that wider involvement was necessary in the earlier stages

"... because it was a resource intensive job both with respect to physical and material resources." [TP]

Online ordering and payment capability for the purchase of products and for making sponsorships occurred in 1999. In July 1999 a Secured Electronic Transaction (SET) facility was implemented involving the web developer, credit card merchant and

GovStat's bank. For the BOD, the implementation symbolised entrepreneurial initiatives at minimal cost

"... the board were thrilled when we launched it because we were the first government site with e-business and last year we launched as the first site in Australia with SET transactions...[However the] ... fan fair and notoriety ... that is pretty much it." TP]

The next phase of e-business was considered by both FL and TP to be in the area of B2B as this represented an area where efficiencies could be gained. Further, a centralised e-procurement model (buyer centric), administered by the State government's office of technology, was being established for government procurement and was recognised as a key influence in government agencies and statutory authorities adopting B2B e-business. According to TP

"...The improvement e-business is going to have is this government procurement, once that is established you can see inherit in that there is a lot of savings because the government contract will be at a cheaper rate that will be passed on the savings to the organisation as you purchase through."

Reflecting upon the e-business adoption process and the support for implementation, TP believed that she perhaps should have been more political in her approach so that the BOD would develop an appreciation of the resources required in implementing these systems

"Whilst that was a fantastic implementation the big mistake is that the top level now thinks that things can just happen ... they did not have any concept of what was involved. So in hindsight that was a mistake ..." [TP]

TP's earlier experiences, consisting of both technical and political aspects have influenced her decisions regarding the next phase of B2B e-business,

"... it will be more business driven ...we do not necessarily jump now because the technology is there." [TP]

A schema of the events, actions and actors discussed above are provided in the following Table 5.4.

Table 5.4 'GovStat': Events, Actions and Actors

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Decision to implement new computerised ticketing system (1995)	IS Manager & Systems administrator (mgr of admissions) Technology supplier	Articulate design with technology supplier. Opportunity to extend the network. Provision of system and technical expertise.	Government Auditor Board Of Directors (BOD) and Senior Management	Produced audit report - Reduce errors in cash handling and tighten accounting controls Resource the project.
Decision to adopt enterprise wide planning system (ERP) (1996)	IS manager General Manager Legal & finance	"Naissance" of IS Department Improve reporting and create efficiencies.	Computerised ticketing system "Legacy" accounting information system BOD & Senior Mgt	"Undermined" accounting information system. Not up-gradable. Person who had developed & modified the system had left GovStat. Need to improve quality & timeliness of accounting information.
Appointment of technology supplier for ERP (1996)	IS Manager Corporate sponsor (technology supplier)	Secure technology provider – "the technocrats." Provide and implement ERP with limited budget in return for publicity.	BOD & Senior Management	Limited resources available
Design and develop web site (1996)	Web project coordinator Representatives from divisional areas	Mobilisation of working party team Responsible for "pulling" together divisional information	Internet Senior divisional managers IS Manager	Promote services of GovStat and accessibility to information. Increased politicisation of project. Appoint project co-ordinator.
Departure of web project coordinator and "death" of web site (1997)	Working Party Team	Agreement on web site "absolute nightmare." No information forthcoming, hence project dissolved.	IS Manager	Website project left "dormant" while working on ERP project

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Planning, design and launch of ERP (1997)	IS Manager + 2 IT dept members, GM Legal & Finance + 2 from "finance and around" Corporate sponsor (planning consultant) Corporate sponsor (technology supplier – commercial ERP system)	"Made decisions on the run." System implemented within three months. Assist in planning and design of ERP. Technical expertise to update and integrate systems.	"New" CEO Corporate sponsor (planning consultant) Corporate sponsor (technology supplier – web design)	Implement strategic planning for organisation. Assist with organisational strategic planning for GovStat, including IS dept. Design web site for GovStat.
Development of web site (1997-1999 eighteen months)	IS Manager Corporate sponsor (web design)	Provide web site at minimal cost. Provide human resource and technical expertise in return for publicity.	BOD & Senior Mgt "Boss" of IS manager	New board appointments outside of scientific discipline. Minimise intervention from divisional areas.
Website "e-business enabled." Secure electronic transaction (SET) facility implemented (1999)	IS Manager + IS Dept Corporate sponsor (web design) Bank of GovStat Credit card merchant	Sponsorship and sales conducted electronically with SET facility.	BOD & Senior Management	"Notoriety" for first government site with SET facility.
Integrate web site with ERP system (2000)	IS Manager + IS dept. Corporate sponsor (ERP supplier)	Integrate web site with back office systems	BOD & Senior Management	Increased efficiencies.
Planning for the adoption of B2B e-business (2000)	IS Manager Corporate Sponsor (ERP supplier) Corporate Sponsor (Web Design) Corporate sponsor (hardware supplier)	Slower mobilisation of facilities. Identify system issues in return for publicity. Identify issues associated with web site integration in return for publicity. Identify hardware requirements in return for publicity.	State Government Manager "users" within GovStat BOD & General Manager Legal & Finance	Government e-procurement 'buyer' centric portal. Identify user needs. Cost savings and efficiencies.

5.2.3 REFLECTIVE NOTES AND INTERPRETIVE COMMENTARY

During May 2000, interviews were conducted with the manager responsible for information systems (IS) and planning and the general manager responsible for finance and legal services. In contrast to the first interview conducted with Retail, the researcher felt more at ease with conducting this interview as she had learnt from the earlier interview and looked forward to entering this “alien” landscape which had unique characteristics both with respect to its charter involving a scientific tradition and commercial agenda as well as its physical structure.

Upon arrival the researcher went to the reception area of the main administration building. A call was made by reception to the IS manager who came to greet me and show me to her office. We left the main building and walked down a winding path to a small demountable building located at the back of the administration offices. The area was cluttered with computer screens, cables, hard disk drives, boxes and small offices. The IS manager’s office was located at the end of the building. We sat at a small round table in front of her office where meetings within the IS group were held and where the interview was conducted. She was apologetic for the confusion and cramped space. However, as I was to find out during the course of the interview, this was symbolic of the IS culture within GovStat, in that limited attention and resources were provided to the department.

This interview was a learning exercise for the researcher in that, amongst other things, it was going to be a group interview as the IS manager had organised to have the General Manager of Legal and Financial Services present because of his involvement in the implementation of the enterprise wide system and some web development. The interview began just with the IS manager as the General Manager had to attend to some other detail because of a visit later that day by the State Premier.

The IS manager was very open and forthcoming with information. She responded to questions freely, recalling in detail the efforts “her team” had invested in the e-business

initiatives with minimal resources. With the arrival of the General Manager, the interview took on a different set of dynamics. FL was open about the contribution that the IS manager had made with respect to e-business and the “constraints” she worked within, but he seemed to feel uneasy about the candid comments being made by the IS manager in regards to strategic planning and the lack of IS resources within GovStat. At one point when the IS manager had to leave to attend to a systems issue, FL made counter arguments about some of TP’s claims and was concerned about the sensitivity of some of the statements she had made. The researcher felt a sense of uneasiness regarding her ethical obligations in revealing or not revealing these comments to the IS manager upon her return, as well as confidentiality issues and whether the general manager trusted me. I took the opportunity to discuss the purpose of my research and the code of conduct under which I was conducting the research, as the general manager had not been present at the start when I went through such information. The general manager appeared to feel more comfortable as to where the interview was heading at this point.

Firstly, the conflict in achieving commercial as well as non commercial objectives and the dual role for the Internet in creating and facilitating communities of people to share information and interests as well as creating efficiencies in business processes. Secondly, the mutual resource dependency between corporate sponsors (eg. technology suppliers) and GovStat because of its unique nature and media attention. Thirdly, the “serendipitous” nature in which events unfolded beginning with audit recommendations about poor cash control. In contrast to the first case study of the retail organisation where the hype surrounding the Internet had a large impact in the earlier decision making periods, the events here were dominated by regulative pressures and resource dependency issues. The following Table 5.5, summarises the researcher’s interpretation of the case study, using the conceptual framework as a lens through which her analysis was conducted.

Table 5.5

Case 2, 'GovStat': Multiple Discourses and Resource Dependencies

Vignettes	Interview Extracts
<p>Decision Making Content</p> <p>There was no e-business strategy nor was it part of any organisational strategy. It may be considered more a reconstruction after the fact rather than a rationally intended plan due to limited resources and the lack of an IS culture that existed within GovStat. The IS manager and technology suppliers/providers were key influences in the way that e-business was shaped, which was largely based on what resources the technology sponsors were prepared to provide. While the IS manager recognised a number of areas for e-business to match the multiple realities of conservation, education and commercialisation, e-business and IS in general is not recognised as being strategically important due to limited resources and the dominance of the scientific tradition within the organisation.</p>	<p><i>"... there was no time frame in the plans it was just whatever came up because there was no money...[instead] ... an offer was made and it sounded good at the time so we took it up."</i> [TP]</p> <p><i>"There is a resources issue ... obviously it was not made a high priority for a number of different people and I think it probably needs to be. Because there is a whole lot of opportunities that can be exploited from the web site..."</i> [FL]</p>

Vignettes

Decision Making Context

GovStat is a statutory authority with a diverse set of agendas incorporating conservation, education and commercialisation. The organisational geography of GovStat is a major part of its identity, considered an icon of tourism, recreational and educational facilities for the community. Because of limited government funding it relies heavily on community and corporate sponsorships for resources. Whilst a power/dependence relationship exists between GovStat and resource providers such as technology suppliers, there is also a counter-dependence because of its unique profile. The organisational values regarding IS, may be seen to be manifested in the lack of IS infrastructure, the 'lack' of identity of the IS department within the organisational structure and the attitudes of senior management with respect to IS. The IS manager was an expert source of power, because of her knowledge and expertise of both business processes and IS within GovStat. She also had referent power, due to her ability to get things done in spite of resistance. Knowing who the central actors were in the organisation, coalitions and the origin of their support enabled her to anticipate resistance and mobilise support for action or change.

Interview Extracts

"...we rely on the kind of support of a lot of these companies here. We do not have the resources to buy these sorts of systems for ourselves." [TP]

"...we are a very good reference site. We make for a very interesting article so the media have proven, because we are a little different and that puts a different slant on what otherwise is a pretty boring story." [TP]

"I could show you other annual reports, but for whatever reasons they keep leaving us off and we chose not to bring it to their attention." [TP]

"I would say historically we've always looked at things in terms of objectives ... and I would think that things like IT and finance as tooled in that process, but certainly they are not with the key objectives..." [FL]

"They are probably not really informed at all with what we do. I use to do presentations for them and show them what we were doing and even report to the board once or twice with what we had achieved, who was brought in. I now work on a need to know ... "
[TP]

Decision Making Process

The adoption of e-business within GovStat may be described as the serendipitous result of a wide variety of different organisational routines, such as the recommendations made by the government auditor. While the BOD are the key decision making authority, they play a 'rubber-stamping' role with regards to IS and e-business decisions. Concomitant with the serendipitous process was a political process as the choice to adopt e-business was made by relatively few individuals who possessed power and technical expertise, namely TP and her department, influenced largely by chance, opportunism and technology providers. During the course of the adoption process, decisions regarding the conditions necessary for implementation were made by the IS department incorporating technical, financial and social factors.

"...[decision making] becomes a nightmare when you get [too many] people involved." [TP]

"We had to identify what we would need in the way of hardware, software and physical resources. And if there was to be any cost, what that was going to be ... We talked with the owners of the information, and so once we had all that identified and even then it wasn't quite clear, then we needed to know what was involved in actually maintaining it, because it is very important to us because the dollar is just not there. So, that's what we had to plan and be pretty clear on, as much as we could be at that point." [TP]

5.3 THE FINANCIAL SERVICES CASE STUDY

5.3.1 AUSTRALIAN FINANCIAL SERVICES AND E-BUSINESS

The Australian financial services sector is comprised of financial intermediaries, such as deposit taking banks, credit unions, insurance companies and superannuation funds, and financial market institutions, such as the Australian Stock Exchange. There are four major national banks, (including this case study organisation) and many other financial conglomerates with national operations offering a full range of financial services as well as a number of smaller regional institutions and niche players. Australia is a small country, with significant barriers to relationship building given the extent of market concentration and regulation. It is considered to have a unique market setting, with strong incumbents consisting of longstanding relationships, legacy systems, and physical barriers to entry that create hurdles for new entrants, local or foreign (Bun 2000). In addition, the Australian payment system is dramatically different in style and cost to countries such as the United States of America (ibid 2000, 7).

During May 2000, seven American sites were part of the top ten overall websites visited by Australians. Exposure to cross-border offerings in the finance space is considered to be significant (ibid 2000, 7). Therefore the sector is under increasing pressure to provide new and effective financial products and services to meet the needs of businesses and other consumers.²

Information technology and telecommunications (IT&T) are critical to the finance industry to both enable the development of new financial products and services as well as facilitate penetration of the markets for these services.³ Of all Australian industries, the finance and insurance industry had the highest (IT&T) expenses in 1997-1998 with \$4.7 billion spent on new technology or 20% of total Australian IT&T expenditure.⁴

Business and personal financial services are provided through a network of "traditional" physical branches and electronic distribution channels. Over the past decade, the

² Australian Bureau of Statistics, "Financial System, Special article – Information Technology and Telecommunications in Australia (1999-2000)" Publication 5611,
<http://www.abs.gov.au/ausstats>

³ ibid

⁴ ibid

traditional physical branch network in the Australian financial services industry has been undergoing a transformation with branches being replaced with financial service centres, automatic teller machines, electronic point of sales, telephone and Internet banking (Allen Consulting Group 2000). E-business technologies and associated business models have been promoted as enhancing customer service through for example, increased access to services, and cost efficiencies for banks in service delivery. However, community hostility has crystallised around branch closures which have been perceived as a decrease in customer service, increased bank fees, and a loss of employment opportunities, particularly in rural and regional areas of Australia, resulting in low consumer confidence. Further, technology in particular has dehumanised what has traditionally been perceived as a “very human business” (Morgan 2000). There is a community perception that banks not only have an economic responsibility but also a social responsibility to its customers (ibid 2000, 6). While it is a valid argument that technology has dehumanised services, it has also empowered the community and interest groups. For example buyers, particularly through the Internet, have the ability to quickly and easily compare prices for a whole range of products and services. Through e-business, power is changing hands from suppliers to buyers and markets are becoming more customer based.

Although still in the embryonic stage of development, the e-market or digital marketplace is emerging into predominately two different forms, vertical – designed to meet industry specific needs – and horizontal – designed to meet common needs (KPMG Consulting 2001). Whilst there has been little work done in this space to date in Australia, the development of e-market places gives rise to a number of important roles for banks in terms of not only their own businesses per se, but also their customers’ business (O’Connell 2000). As they evolve, e-market places are predicted to add new capabilities such as integrated financial services, logistics and data mining transaction information (ibid 2000, 13).

The use of e-business appears to be shifting demand and supply in the financial services sector to different service delivery channels. The distinction between banks and other traditional financial service roles is becoming blurred more so then when the sector was deregulated (Allen Consulting Group 2000). Non bank players, are keen to offer bill presentment and payment capabilities as part of their broader service offerings.

Traditional carriers of information and agencies for banks such as Australia Post, and telecommunication companies, such as Telstra, are re-intermediating themselves into the payment space, by playing on the 'trusted party' concerns of consumers (KPMG 2001). Further, direct competitors with little or no bricks and mortar costs, are a potential growing threat to the big four banks as they "cherry pick" customers and product opportunities (O'Connell 2000), a factor raised during the course of one of the interviews with the General Manager of Electronic Commerce within Bank, who stated

"... the first threat is the continuing erosion of margins, because essentially since deregulation, it has meant that banks are under continual pressure as the barriers to entry are not limited and it takes little time to set up a financial service ... E-business has exacerbated things slightly because barriers are even less because someone can just set up a web site for distribution for example e-mails to banks from brokers asking for the lowest interest rate."

There are many potential direct and intermediary roles for banks, at one end of the spectrum using electronic means to do business with their own suppliers, through to the other end of the spectrum creating bank hosted e-market places to bring buyers and sellers together. Participation by banks is considered part of a defensive strategy so as to maintain their control of the payment space whilst at the same time allowing a broadening of service offerings (KPMG 2001).

Initially banks were slow to meet the payment processing requirements of the dot.com market space, characterised by B2C offerings from both new start-ups and existing bricks and mortar businesses, thereby providing an opportunity for other companies to secure a position in the payments system (KPMG 2001). However, despite much hype transaction numbers remain low, with all the major banks in Australia offering a solution in some form, as they have the infrastructure to support the payment network,

"... Some of the barriers relate to the necessary EFTPOS infrastructure, clearance infrastructure, links to banks for exchanges. Internet technology has made these links easier but it is still very expensive unless you are a Telco." [IB]

Before the payment systems can be fully integrated into the e-market place, the KPMG (2001) report concluded that the finance industry needs to address the key issues of security, authentication, interoperability and transaction format standardisation.

The following section 5.3.2 provides a description of the financial services case study. For the purposes of confidentiality the organisation will be referred to as Bank, the

General Manager of Electronic Commerce as GM and the Project Manager of Internet Banking as IB.

5.3.2 CASE DESCRIPTION

5.3.2.1 THE ORGANISATION AND ORGANISATIONAL FIELD

Bank is an international financial services group, founded in the 1800s. It is one of the major financial services institutions in Australia, with representation across four continents and fifteen countries. As at September 2000, it had assets in excess of \$250 billion, interest income exceeding \$17 million, and over 45,000 employees. Bank is not only large in terms of the scale and complexity of its operations, but it is also a highly visible financial institution in the Australian financial market.

Following the deregulation of the Australian financial market, many competitors for the four major banks have arisen in niche market areas, such as mortgage brokers. Because of government policy restricting the major banks from merging, there has been a period of acquiring other financial intermediaries such as insurance and fund management organisations, so as to maintain their competitiveness and grow

“...brokering financial services are essentially the most threatening to banks because they are changing the intermediary role, which feeds back down the value chain ...” [GM]

Bank has a highly formalised global matrix structure, consisting of managers of geographic regions and of product groups. That is, local units are organised both by interests in corporate effectiveness related to serving a particular region of the world and by interests in developing the corporation's knowledge and efficiency in regard to services across regional markets. Three tiers of senior decision making bodies exist, namely the Australian leadership team, the group leadership team, with the Board of Directors being the ultimate concentration of authority. Strategic decisions are highly centralised, with final choices being made almost exclusively at high levels. Work-related decisions tend to be decentralised but with strict rules and procedures. Its controlling culture is manifested in these hierarchical structures and impersonal processes, perceived to be associated with the “old economy business,” of conservatism and bureaucracy. Success is seen in terms of dominance and being the “biggest.”

The current organisational structure was implemented in 1998 as part of Bank's strategy to optimise its existing activities, whilst positioning itself to take advantage of "emerging and new economy businesses" [GM]. The retailing business segment, represents Bank's customer facing functions, and the majority of the revenue generating activities for Bank. Service activities are operated along customer segment rather than geographic lines. Bank offers core retail banking services, similar to its competitors, such as savings accounts, credit cards, investments, personal and home loans, as well as other services such as financial planning, insurance, superannuation and other managed investment funds. However, Bank saw itself differentiating itself from its competitors through its management of customers based on segments, such as rural business, rather than the product.

The customer rather than product focus, followed through to e-business initiatives. It is considered that in targeting customers with various products, the relationship between product complexity and the selling process matters the most (Bun 2000). Simple products that are regularly purchased such as general insurance were considered strong contenders for online momentum, especially given the cost savings that may be achieved through migrating selling fulfilment processes to websites (ibid 2000, 11). It is also considered that products involving heavy selling (as opposed to off the shelf buying) have more scope for B2B initiatives, in that incumbents with disproportionate exposure to complex selling chains and products will cement and leverage relationships through connectivity (ibid 2000, 11).

Bank viewed itself as competitive with respect to price, quality and customer service. The value of brand and customer loyalty were considered key factors in Bank's competitive position and long term sustainability. Being a trusted party is also considered particularly important in the "faceless nature of the Internet" (O'Connell 2000). However, high quality was perceived by GM to be challenging in using the Internet to deliver products and services because of technical issues, such as system security, compatibility of software and hardware, speed, navigation and functionality and non technical issues such as privacy, convenience, reliability and the customer's propensity to pay,

"... With our brand we do not want to do anything to take away from it, there is kind of a 'trustability' element. [Bank] does not really position as lowest cost, but it positions as highest quality and I guess flexible. So we would have to be competitive on price but we would not have to be lowest priced, we have to be high quality, which is a big challenge on the Internet." [GM]

The IS department within Bank is located in the 'shared services' business segment of Bank, which consists of centralised common business unit functions such as technology, operations and processing. Its organisational location is in contrast to the e-business department which is part of the retail business segment, as discussed further in section 5.3.2.2. IS, is the largest of the activities categorised under the shared services business unit, responsible for the majority of the technology infrastructure, software, support and technology research and development in Bank. The IS "enterprise" is managed by a chief information officer (CIO) and employs in excess of 2000 people, or approximately 5% of the total number of employees. It is charged with "driving greater value and improving the efficiency of what is one of the largest cost components of any financial service company." Bank has a long tradition of using information and telecommunication technologies, consistent with the financial services industry as a whole,

"Well it is very experienced, especially in older technologies. Things like systems integrations especially with mainframes and processes around project life cycles, particularly implementing and testing, going live and managing high transaction volumes, very reliable IT environments, they are very experienced." [GM]

At a strategic level, GM considered that there was not enough technical leadership from the IS enterprise with regards to e-business. However, IB considered that it was not a question of technical leadership but the attitude of senior management and controlling culture that impeded change and IT initiatives

"IT keeps raising options for the business, and says this is what's happening and at times IT has tried to drive the agenda around some of this stuff. But the nature of the bank, [well] typically if the business does not have ownership of it, and ownership of driving it, then it does not have it ..." [IB]

Planning within Bank is a highly formalised and comprehensive process. Strategic planning is conducted on an annual basis by divisional and heads of department. Plans are submitted to the major decision making bodies. The use of procedures and documented criteria for evaluating alternatives is heavily emphasised. The rigorous process was in place because of market perception regarding corporate governance and responsibility to shareholders and customers

"...because we are a public company, and the market and analysts want to see a nice regular growth and they want to see a nice regular dividend income stream and any surprises to the owners as a direct impact on the share price, so we have a very rigorous planning process." [GM]

Funding for business proposals was extremely competitive and challenging as Bank is “capital starved.” The process of approval was described by GM as frustrating and time consuming, controlled by “the finance people”

“Basically what tends to happen in the investment planning phase of the bank, there are hundreds of projects of investments that get put up, and they reject them all or nearly all of them ... the finance people get into it and everything gets clamped down really badly ...”

5.3.2.2 OVERVIEW OF EVENTS AND ACTIONS

While the dates are a “bit hazy”, e-business initiatives were “born” out of a larger strategic initiative, which occurred during 1996-1997. The managing director of Bank during this period recruited a number of individuals from outside of the organization, including other industries as he was of the view that financial services were going to change dramatically as a result of deregulation and a change in market forces. These individuals were given a brief to review the bank’s strategy and evaluate how applicable it was for the current and future financial services environment. The group ran a strategy process, called for the purposes of this document ‘Strategy 1’ and ‘Strategy 2’ which was seen as a global initiative. ‘Strategy 1’ was focussed on what the bank should be doing, traditional business, core revenue stream areas. ‘Strategy 2’ was focussed on building new business areas, involving such things as the Internet. At this point in time, according to IB

“...the Internet was pretty new, but it was the different delivery models and [that] maybe the bank would pursue a model of potentially being a supplier of services to brokers rather than direct retail.”

The ‘Strategy 2’ work was conducted for approximately six months out of which a number of projects were created including the e-procurement project, Internet Banking, online payments such as cyber cash and Mondex and intrabusiness projects. An e-business strategy team was formed in response to the ‘Strategy 2’ work, consisting of, amongst others, GM and IB, to develop an e-business framework for Bank. GM had an engineering role with a Telecommunications company for five years prior to joining Bank. He had worked in the communications area of the IT department in Bank, moving into an architectures and IT strategy role before moving to his current position of e-business strategic development, whilst completing “an MBA along the way.” GM described himself as a consultative type leader as well as a visionary,

"I am into sort of developing ideas independently but then have a process of consultation ... Especially in e-business, there is a lot of kind of specialists, or experience based learning that people who aren't across it day to day don't get ...".

IB's background was in IT, spending more than 18 years in an IT technical role before joining Bank eight years ago undertaking technical, architectural and strategy roles before his current project management role. IB described his role and the function of the e-business strategy team as

"...develop[ing] the e-business strategy for the bank and I was essentially the IT representative on that ... And were charged with going away and identifying the opportunities for the bank in e-business and what the priorities should be."

While the e-business projects originated from a business perspective, the e-business strategy team was predominately made up of people from technology backgrounds. According to GM

"... nearly all the e-business people in the place are ex technologists. So the actual project that we were doing was a business project ... like I was leading it (an ex technology person) and we seconded a couple people out of technology to help. So it was not people who had come up through business."

The e-business strategy team is situated within the 'channel management' business unit of the retailing segment of Bank. Channel management is involved with managing business delivery channels such as the Internet, telephone and the physical branch network. Notwithstanding there is a separate IS division, GM described channel management as "probably the most IT related part of the business."

The e-business department did not have a separate budget, its funding coming from various business units with e-business responsibilities,

"...there are people with budgets for Internet Banking, there are people with budgets for Business Service type areas, which we sort of try and get business units for a lot of this work. So it is more their budgets that the money comes out of." [GM]

The funding arrangement was consistent with how e-business was perceived and the role of the e-business department, which is to review and inform Bank about e-business from a strategic perspective. The responsibility for implementing strategic decisions was situated within the business unit.

During 1997-1998 Bank was approached by a number of third parties with e-business proposals, with varying motivations mainly consisting of accessing its customer base or capital. The majority of proposals were “purely” technology based. While senior management were considered to be well informed about e-business, as it was perceived predominately as a business issue, its knowledge of IT was considered by GM to be declining, making it easier for

“...consultant type merchants to wander in and sort of start saying we can deliver you the world in six weeks, all you have to do is sign a blank cheque for us.”

Reviewing each proposal became a learning process for Bank, as it assisted the group in distinguishing between business opportunities rather than just new technology. One unsolicited approach by a third party in the later part of 1998 was an electronic procurements business model proposal. While Bank decided that the model proposed was not the “best one to proceed on” it “inspired” the e-business strategy work that led the group into thinking in terms of supply chains and “packaging” financial services.

“...upstream ...it is kind of e-procurement, internally it's ASP services [eg. accounting systems], and downstream it is web shop fronts. So each of those sort of generic services has the potential to be integrated with a whole set of financial services, not just payments, but various funding types of services, credit, insurance and all that type of stuff.” [GM]

In March 1999, an e-business strategic directions document was prepared by GM's team, during the routine strategic planning cycle of Bank. The document outlined the top ten e-business priorities for the financial year, one of them being e-procurement. The directions document was circulated widely and gained acceptance. By July 1999 GM's team had designed a detailed investment plan for e-procurement. GM's team then prepared a detailed investment plan incorporating resource requirements and time frames. The investment proposal was rejected by the 'Leadership Team,' because of other competing strategic priorities. Meeting Bank's financial criteria of breaking even within eighteen months and the need for “extraordinary rates of return” was considered by GM as a major obstacle in an e-business context.

During the first half of 1999, an e-business executive committee was also formed, which was a subset of the 'Leadership Team.' The sub committee was allocated some funds to spend on e-business generically. GM's team

“... thrashed around with them for a few months and then finally they gave some money to do a pilot.” [GM]

During the same period, a consultant company was briefed by senior management, to work intensively on a totally separate project to create a separate entity, which was to be a cross between an in-house commercial business unit and a venture capital company to focus on new business ventures. Whilst there was a degree of scepticism about the value of consultants, such groups were perceived to have symbolic value in that markets perceive the organisation as acting strategically and responsibly thereby providing positive market responses through increased share prices and network contacts,

“... some of the times we relate it to the issue around analysts and market expectations and the value of having some one like [major consulting companies], to be named in the project and the effect that has on the share price. ... It's not necessarily the concrete outcomes that allow you to judge whether it was a good idea or not, there are a lot broader issues that you need to take into account.” [IB]

The venture capital company was established in June 2000 to identify and accelerate Bank's involvement in “new economy capabilities and businesses.” According to IB

“... the aim was to put aside a group of people with a pool of money to say you focus on trying to find these opportunities and get it to a position where the rest of the bank essentially comes on board.”

The e-business strategy team mobilised the support of the consultant company to find “an appropriate people approval process” [GM] as their experience in seeking approval for the proposal had shown them that it could not be subjected to the “normal gauging processes” [GM] of Bank.

Whilst the e-business department was located in the head office building, the venture company set up its office in the same capital city but in a separate building, with a separate board of directors and a separate business plan. The managing director of the newly established venture company was motivated by the need to create a separate identity from the parent organisation, thereby creating its own culture and processes. He did not want the company to be encumbered by the legacy processes of the old business.

In the later part of 2000, the venture capital company made an investment in and formed a “strategic distribution affiliation” with an Australian Internet group. Partnering was seen as a way to enable Bank to offer services such as e-procurement to its customer base as well as being able to “bundle” its financial services with the offer

“... we would almost certainly in these areas partner to actually offer like a web shop front service or something. We are not going to go buying software or developing web shop fronts we would partner with someone who had a service up and running.” [GM]

From a resource dependency perspective the implied motive appeared to be to extend Bank's domain of control by vertical links, risk sharing and integrating its financial services. From an institutional perspective, establishing and maintaining those partnerships was considered to be "new territory" as the prevailing culture was

"... buy outright, own outright, run outright. We are not a good alliance partner, and this is a weakness that the bank recognises ... Our history is very much own, control, we are not a good alliance partner and our behaviour shows that." [GM]

Value adding and "bundling" of financial products and services was identified by GM as the key in differentiating Bank's e-business offerings. This approach was consistent with Bank's underlying philosophy of customer rather than product focus. However, because of the speed at which e-business was moving and the uptake by Bank's competitors, it was considered crucial by GM for Bank to provide

"...a "vanilla" offering and then differentiate it. There are two ways we can differentiate our service offerings. One is through value adding them, especially through adding financial services, so ... [with] ... an e-procurement offering ... the second way is through bundling. So bundling an e-procurement service into an overall business services offering makes it differentiated ..."

The Internet Banking project was also being undertaken during the same period that the e-procurement project was being developed, which took "around six months to get up and approved" [IB]. Internet banking was perceived as not bringing any fundamental change to the IS infrastructure, but rather the next step, following the ATM and EFTPOS revolution. Further, the technology for Internet banking was to be leveraged for other e-business initiatives,

"...the focus [is] on getting out a solution to a broader area than our current solution in terms of quote 'market rechannel and functionality' ... Now that's tied to the e-business strategy of the bank. It's putting in place a lot of infrastructure in terms of web servers, routers, firewalls, database servers, application servers, all the IT infrastructure and the intention of that is that it will be leveraged for a number of e-business initiatives." [IB]

The decision processes were, described by IB as explicit and formal, following a loose kind of sequence of detailing specifications for the type of system needed, an analysis of how the new technology would fit into current operations and financial estimates. The Internet Banking project was part of a bigger project, which was focussed on "customer transaction migration", to reduce costs. Bank was searching for alternative avenues, than the traditional 'face to face' branch network, that customers could conduct their

banking, as this practice was considered to be extremely expensive. The Internet, together with other mediums such as telephone centres, EFTPOS and ATMS, was identified as an alternative means. However, because of the political sensitivity surrounding branch closures and possible loss of customers,

"... the philosophy behind [the project] is a "pull" philosophy rather than "push" philosophy to make the alternative channels more attractive to customers so that they naturally move across to them, rather than shutting down branches and saying well now you have got no choice." [IB]

While cost savings was identified by GM as a reason for adopting Internet Banking, IB described the motivation as the result of a report prepared by a consulting group, that highlighted a loss in customer base due to competitors already offering Internet banking services. Therefore, customer retention rather than cost savings was, according to IB, the major impetus in adopting Internet Banking

"... the whole predication of the business case ... has been driven by competitive retention of those customers, not by any benefit that you can actually drive from increased revenue; ... the reduced cost argument is fallacious in the extreme ..."

The other key steps in the Internet Banking proposal involved selecting a vendor and establishing a project team to manage the project. The technology vendor played a major role in decisions regarding the adoption and implementation of Internet Banking. The technology decisions made according to IB were later found to cause problems with "customer reach"

"...there were some fundamental issues that were made very early on essentially ... I think the vendor gave us some advice that was self serving rather than for our interests and to be frank we were not aware enough to deal with that"

Reflecting upon what Bank may have done differently date, GM was of the view that Bank had learnt a lot more about what is important to customers, such as "ease of use, speed of load, use from anywhere," versus what they thought might be important, such as "security, speed once the application loaded, and flexibility." GM was of the view that notwithstanding that the Internet Banking project was "a long torturous process," he believed that the product itself was "not too bad" and were at that point considering whether they would take the existing system forward or go with a "different platform altogether."

A schema of the events, actions and actors discussed above are provided in the following Table 5.6.

Table 5.6 'Bank': Events, Actions and Actors

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Develop 'Strategy 1' (core business areas) and 'Strategy 2' (new business areas) documents (1996/1997)	Strategic Group Team	Review and evaluate Bank's strategy and articulate strategic direction	Chief executive officer Internet	Recruit members for strategic group to design strategic direction "New" delivery channels
Creation of project areas from Strategy 2 document and e-business strategy team (1997/1998)	Strategic Group Team E-business strategy team	Consolidate and operationalise ideas Develop an e-business framework for Bank to work within	Board of Directors Consultants/ Third parties	Review proposals Provide technology, partnering initiatives, obtain capital and/or access to customer base.
Internet Banking Project – establish project team and vendor selection process (1998) E-procurement business model concept raised (1998)	E-business strategy team	Need for competitive retention of customers – establish project team "Inspired" thinking around the concept of supply chain	Group Leadership Team "Finance people" Technology vendors Consultants Third party	Review business case "Keepers of the money" "Self serving" Report on Internet Banking and competitors Partnering opportunity with Bank/Access to customer base
Identification of e-business generic services (1998-1999)	E-business strategy team	Integration of e-business with financial services and products	Tele -communication companies and other non bank organisations	Strategic move into bank's customer relationship and payment space

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Preparation and circulation of e-business strategic directions document (March 1999)	E-business strategy team	Articulate e-business priorities and prepare detailed investment plan during the course of strategic planning cycle for e-procurement proposal.	Group 'Leadership Team'	Rejection of e-business procurement proposal
E-business Executive Sub Committee of Leadership team formed (1999/2000)	E-business strategy team E-business sub committee	Access capital for pilot project Consider proposals and provide "limited" funding for e-business projects	Group Leadership Team Consultant	Identify and isolate funding for E-business initiatives Engage consultant to create mechanism to exploit opportunities in "new economy businesses" Articulate and design venture capital company concept
Proposal for e-procurement re-designed (December 1999/January 2000)	E-business strategy team	Seek advice from consultant for "alternative approval process." Work with consultant to ensure e-procurement proposal was part of their recommendations	Consultant	Provide advice on "appropriate approval processes"
Venture capital company created (June 2000)	E-business strategy team Venture capital company board of directors & senior management	Mechanism for adopting e-procurement. Identify "new economy" capabilities and businesses	Group Leadership Team and BOD Internet and application service provider	Review and approve/ reject proposals Provide online services in affiliation with venture capital co.

5.3.3 REFLECTIVE NOTES AND INTERPRETIVE COMMENTARY

In May 2000 an interview was conducted with the General Manager of Electronic Commerce and the Project Manager of Internet Banking. The interview with the General Manager of Electronic Commerce had to be conducted over the phone due to his location and the short notification period given to the researcher. This was the first telephone interview conducted by the interviewer. The researcher had concerns about the quality of the recording for the interview. Her request to test the recording was asked somewhat nervously after being told about the limited time available. However, after preliminary discussions the interview progressed well. The general manager recommended that I talk with the project manager of Internet Banking as this had been up and running for a few years compared to the e-procurement project, which at the time of the interview was yet to be approved, and the person concerned had also been a major player in the e-business strategy team.

The second interview with the project manager was conducted in a café near to the head office building. The researcher arrived early and so waited outside the security doors of the floor where the project manager was located. The café venue was chosen by the interviewee as he wanted to “escape” interruptions as well as to be able to speak freely about his experiences on “neutral turf.” Once again this raised another logistical issue for the researcher in recording an interview where there was a lot of background noise. I could not become too pre-occupied with the quality of the recording however, as the interviewee was looking at me, his expression inscrutable.

During the introduction he expressed his concern with respect to confidentiality and how we needed to keep within strict time limits. He began to talk about himself, his role in Bank and how he did not have any formal qualifications, “dropping out” of university. At this point of the interview, his behaviour appeared to become more apparent to me, in that the researcher and the institution she represented was symbolic of something that the interviewee appeared sceptical of for reasons not discussed. This was a “teachable moment” for the researcher regarding how she and her research was perceived by the interviewee. Was he only willing to participate because the general manager had asked him to? The researcher turned the conversation back to the

organisation and stressed the value of the interviewee's experiences with the e-business strategy team. Once we had passed this point in the discussion, the interview appeared to flow more easily, with the interviewee describing his experiences willingly and happily, exceeding the time limit to such an extent that the researcher had to end the interview because of another commitment.

This case study was the largest organisation the researcher had investigated so far in her research journey. Unlike the previous case studies, this organisation was a highly regulated corporation, with strict corporate governance requirements, which partly explained the dominant control culture, manifested in the formalised structures and planning processes. These processes were identified as creating barriers for the adoption of e-business initiatives. Whilst initially there was only an e-business department to identify and develop e-business strategy, a separate legal entity was also created to, amongst other ventures, identify opportunities and invest in e-business initiatives, largely for the purposes of managing risk. Another key issue that the interview left both interviews with was how e-business was described as a business innovation, yet the composition of the e-strategy team was predominately people with IT backgrounds. This made the researcher further reflect on the comments made about senior management's limited IT knowledge as well as the problems that occurred with the Internet Banking project due to the recommendations of the technology provider. I was left wondering whether the problem was because the project was driven by technology people, or whether it was a lack of IT knowledge.

The following Table 5.7 summarises the researcher's interpretation of the case study, using the conceptual framework as a lens through which her analysis was conducted.

Table 5.7

Case 3, 'Bank': Control, Structure and Image

Vignettes	Interview Extracts
<p>Decision Making Content</p> <p>The image of e-business within Bank was predominately about customers and their online relationship with Bank. The online relationship was considered in terms of the bank's direct and intermediary role. The strategic orientation of e-business followed two major streams, namely those providing revenue opportunities and those deriving cost efficiencies. The most immediate implication and 'earliest' version of e-business related to banks using electronic means to sell their products and services to their individual, business and institutional customers online, or B2C, such as Internet Banking. The second, relates to B2B2C providing business offerings, such as web-posting payment options (eg. online credit card payments) for customers such as small businesses. The third, relates to the B2B market where in addition to payments, e-procurement and application service provider offerings are made. That is the use of electronic networks to facilitate trade between businesses. In this context, Bank uses its resources and a combination of brand and trust, to create bank hosted e-market places to bring buyers and sellers together. The second major strategy area had a cost focus, with two components, namely, "customer transaction migration" and deriving efficiencies through Bank's internal processes.</p>	<p><i>"E-business is a really broad term, especially in banking, there are lots of things that we do can be classified generally as e-business... We think about our customer and ... their online relationship with us, but we also think of the customer going online in the context of their supply chain, with their suppliers upstream and their customers downstream and their internal processes..." [GM]</i></p> <p><i>"... essentially at the end of the day it is all about enhancing our existing payments business and financial services business surrounding financing transactions." [GM]</i></p> <p><i>"... the two internal ones which are cost focussed ...one of them is ... looking at customer transaction migration. By that we mean trying to persuade customers to interact with us, rather than face to face over the counter ... through the Internet, ATMs or telephone centres which are less expensive And there is another project ... which is more internally focussed and that is using Internet technology internally to get cost savings." [GM]</i></p>

Decision Making Context

Bank has a global matrix structure, which consists of managers of geographic regions and of product groups. It has high levels of complexity, centralisation and formalisation. Three tiers of senior decision making bodies exist, with the Board of Directors being the ultimate concentration of authority. The structure is symbolic of the control culture built on models of order, logic and conformity. There are three separate but related areas responsible for e-business, which evolved over time. First, the e-business department. Second, the various divisions within Bank. Third, the venture capital company, a separate legal entity, which was identified as an avenue for overcoming “bureaucratic” structures. Bank operates within an information intensive industry, which has traditionally been a large user of IT&T technology, its services considered easily virtualised. There are three dominant actors in Banks’ organisational field. First, the customers and their propensity to pay. Second, competitors, both traditional and non bank players keen to offer bill presentment and payment capabilities. Third, third parties such as consultants, technology vendors and alliances, each with varying relationships and motives shaping the decision process.

“... we have being doing online payments, we’ve had dial up banking packages for our business customers for years, none of this is new... We have a long long corporate history you know, we have been through the ATM revolution, the EFTPOS revolution, you know e-business was just the next one of the same ...” [IB]

“...brokering financial services are essentially the most threatening to banks because they are changing the intermediary role, which feeds back down the value chain. That was the biggest threat we saw two to three years and it is a big threat but essentially a big threat in the real world as much as it is in the e-business world ...” [GM]

“I think it’s probably that loss of that customer relationship through other parties developing, sort of developing the face to face customer relationship, the online customer relationship and us being relegated to a commodity service provider in the background.” [GM]

Decision Making Process

Decision making is made within highly formalised structures and comprehensive processes. Decisions to accept or reject strategic proposals, are made by relatively few individuals who possess power and status, such as the Board of Directors. The use of procedures and documented criteria for evaluating alternatives is heavily emphasised. The e-business adoption decision process consisted of several interacting sub-processes, different in nature, themselves nested in and interacting with other strategic issues: the 'strategic commitment' decision for the strategic direction and types of business models to adopt; the 'operational' decision, concerning the specific systems and technology to be acquired; and the financial justification decision by authority structures to provide the resources necessary to implement the strategy. The multiplicity of issues surrounding e-business, meant that the e-business department experienced difficulties in applying the repertoire of procedural routines associated with what was considered entrenched planning structures and accounting control. The earlier strategic commitment process mirrored in parts a non deterministic course of action, shaped by a heterogeneous network of human and non human actors. However, in the later periods financial justification and accounting control criteria dominated the adoption decision making process. The financial justification process became a political process because the structures and criteria by which proposals were judged did not always correspond with the rationale for the project, causing the e-business strategy team to seek out alternative approval processes, which in the case of the e-procurement project happened serendipitously through another project.

"... it took a long time to convince, particularly the financial people and the sort of 'keepers of the money' that that was actually going to happen and that therefore they should free up the funds to do this." [GM]

"... it is quite hard, because, it is not so much planning for the individual initiatives, it is how do you incorporate the B2B e-business plan into the bank's overall business plan in a way that lets this prioritisation process take place effectively. Because, the key thing I see is not so much figuring out what we want to do but actually being able to get on and do it as the planning process tends to get in the way..." [GM]

"... It was almost by accident that that was happening and it fitted ... we worked with, the people we had in to develop this [venture capital company] business model, to make sure e-procurement was part of what they ended up recommending ..." [GM]

5.4 AN INTERNET AUCTION COMPANY- THE BUSINESS SERVICES CASE STUDY

5.4.1 BUSINESS SERVICES AND ELECTRONIC BUSINESS

The Australian business services sector is one of the fastest growing sectors of the economy (Allen Consulting 2000). Combined with property service, business services sector expenditure in 1998-1999 was \$61 billion, or approximately 10.3 per cent of Australia's gross domestic product and employed 954,000 people or approximately 10.9% of total employment.⁵ While Internet and technology companies contributed to a large part of the growth in this sector, since April 2000, they have been scaled back or collapsed both in international and local markets raising scepticism of their place in the post-dot-com era (Quinlivan 2001).

Internet auctions are of peak interest on the Internet (Goldsborough 2000) and considered one of the most successful forms of electronic business (Bajari & Hortacsu 2000). The business-to-business auction market in the US according to the market research group Forrester Research was expected to generate \$60 billion in sales in 2001 (cited in Goldsborough 2000). Currently there is no data enumerating the volume of business conducted in Australia. There are two major types of online auction models. First, the traditional seller centric auction model where buyers bid on items that interest them. Second, the reverse auction, where buyers have sellers bidding on their needs. When a qualified list of suppliers has been finalised, an online bidding session is held to allow suppliers to offer competitive bids. Following the close of the auction, the buyer chooses the supplier that best meets its requirements. In reverse auctions it is considered that buyers are able to take cost out of the supply chain (Anonymous 2000).

The following section 5.4.2 provides a description of the online auction case study. For the purposes of confidentiality the organisation will be referred to as InternetCo, the Chief Executive Officer as MD and the Supervising Auction Administrator as AD.

⁵ Australian Bureau of Statistics, "Industry Overview, Output and employment by industry" 1998-1999," Australia Now Publication, <http://www.abs.gov.au/ausstats>

5.4.2 CASE DESCRIPTION

5.4.2.1 THE ORGANISATION AND ORGANISATIONAL FIELD

InternetCo is a public listed company, founded in the later part of the 1990s as an online reverse auction company. Whilst not the biggest in a global context, InternetCo has no real major competitor in Australia, with auction value turnover in a “range up to \$200 million dollars,” [MD] offices in four locations (three international) and 35 employees as at 31 July 2000. Recruiting and maintaining human resources was identified as a major difficulty, as

“There is a perceived risk in going to a start-up. A lot of people are leaving, they are choosing or otherwise leaving more stable perceived secure environments and it is a risk... I spend a huge amount of my time worrying about skill sets balanced with recruitment. We do not have an HR function, and it is a huge factor.” [MD]

InternetCo’s provides a procurement service, seen as its “core offer” together with enhancements incorporating

“... two generic streams. Different transaction models ... having types of transaction which are tailored to different industry segments ... The second broad generic stream is for value add services ... ranging from technical advice and support, commercial advice, process re-engineering, market research, accreditation, transaction based financing, logistics, etc ... The important thing is they are all narrowly defined on the transaction. So we are not selling the system, we are not attempting to be an Oracle, or an IBM. It is on the procurement service.” [MD]

While the company structure was simple, described as “very traditional,” with for example, support functions such as finance, marketing and IT, the relationships between areas and employees was considered flexible. Therefore while tasks are determined mainly by the managing director, they are open to direct and informal coordination and supervision, described as a “participative management culture” [MD]. Such practises extended to the planning processes. That is, while planning is the responsibility of the board of directors and the managing director, all employees were encouraged to contribute. MD described the process as detailed but less formal than traditional structures found in large organisations

“It is probably more informal than traditional because of the nature of the participants. It is more meeting oriented, more detailed discussion papers are prepared and circulated.”

Planning was considered an important process in articulating and implementing a sustainable business model, particularly because of the pace of change. The planning horizon was no more than two years, the process metaphorically equated to a military operation,

“Military planning is always described as fluid. Because in battle everything changes, so you have to be fluid.” [AD]

There is no separate IS department within InternetCo. Whilst there was two full time IT professionals the majority of hardware system support was outsourced.

“We have tended to outsource a lot of our systems at the moment in terms of setting up LANs, software we have kept very much in house because that is where our competitive advantage lies.” [AD]

The proprietary development language used to run the electronic auctions, was according to AD “used quite widely for e-business solutions.” The competitive advantage was identified in its application and the value added services associated with the online auction. IT&T expenditure was estimated “somewhere around \$200,000 - \$300,000 per annum, with an expectation of it growing. Technology plays a major part in the day to day activities of the organisation. Disruption to IS was seen as a major threat with respect to losing credibility with its customers and its impact on the organisation’s image

“... it is a huge threat. It is probably less of a threat to the actual transaction because the systems can be backed up. But it is more of a threat to credibility dealing with this new technology, if it goes down ...” [MD]

InternetCo’s customer demographics varied in size and market segments, incorporating construction, industrial, automotive, mining and energy. It describes itself as having a “matrix approach to the market” because of its mix of products and market segments,

“... there is dual representation where a client is say in an industrial category has a broad range of industrial procurement which includes energy which is quite a specific input ...” [MD]

MD described one of InternetCo’s major strengths as its “nimbleness” and “flexibility to carve out” market niche areas. However, this was not meant to imply

“...that by flexibility we are all over the place. It is quite a structured and careful approach to the market place ...” [MD]

While the organisation did not perceive any major threat from local or international competitors at this point in time,

“...it is the emergence of the business model, which makes our value proposition attractive. And by that I mean in this frenzied space if there is some combination of capabilities that is fundamentally got better leverage than that could be a big threat.” [MD]

Establishing the nature and type of competition in a virtual context was considered difficult to ascertain, MD describing the market as

“...a seething mess ... that know one quite knows what is going to happen.”

InternetCo was focused on positioning itself away from a "dot.com" because of the market perception of Internet start up companies who had failed or were performing poorly

“... we have got a business model which is founded outside of dot.com fever and its realistic ... we have bent over backwards in trying to position ourselves anything but a dot com company ...” [MD]

5.4.2.2 OVERVIEW OF EVENTS AND ACTIONS

During early 1999, a group of three people, “according to corporate mythology” were having a cup of coffee “saying ‘we can do this’ after reading about trends in the US” [MD] regarding online reverse auction houses. That is, offering, for a fee, a competitive bidding environment on the Internet, with the idea of reducing transaction costs in procurement and buying related costs. Buyers place their specification on the Internet and the intermediary (InternetCo) invites suppliers to register their interest on their web site. The Internet was identified as providing the necessary infrastructure for executing auctions more efficiently.

The "three founding fathers" of InternetCo had

“...known each other for many years but had diverse backgrounds in management consulting, e-business, building construction and IT. So they were probably the skill sets that were brought to the table. And they were a good blend, and certainly fleshed out a bit of a vision that enabled the business to get going.” [MD]

Five to six months passed between the “twinkle in the eye” to the company registration in June 1999. This was followed by approximately four months of trying to establish the business incorporating the recruitment of human resources, design and implementation

of the technology, identifying marketing opportunities and talking to potential buyers and suppliers.

AD joined the organisation in November 1999, when the first auction occurred, as the supervising auction administrator, coming from a biomedical research background. His role is to oversee the various aspects of the auction process, which consisted of

“... a business development manager who is responsible for a particular market segment presiding over the key auctions, they will be liaising with the buyer. You will have customer service personnel, who are for example, taking calls from the suppliers, advising them of registration, helping them through the technical process of registering and bidding. Sometimes the other staff will be taking phone bids or passing the fax bids to the supervising administrator.” [AD]

MD joined the organisation in April 2000, having come from an engineering, sales, marketing and general management background. He was a member of the board of directors, the major decision making group, together with the "three founding fathers", and two external parties who had

“... joined the organisation without any prior involvement ... they come from very different perspectives. One has got a background in finance the other one in global expansion and strategic development.” [MD]

From its first inception to now, InternetCo has identified that there is a demand for providing value added services, rather than just the e-procurement auction itself. For example, assisting the customer with tender specifications. This requires InternetCo identifying customer organisations that “fit” with their business model,

“... understanding buyer organisations and their place, their fit in the e-business curve, their organisational issues, which are often the most significant.”

A schema of the events, actions and actors discussed above are provided in the following Table 5.8.

Table 5.8 'InternetCo': Events, Actions and Actors

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Early 1999, "three founding fathers" meet to discuss online reverse auction business models adopted in the United States of America	"Three founding fathers"	Feasibility of reverse online auction company.	Internet	"New" delivery channels
Formation of company in June 1999	"Three founding fathers"	Invest in and establish company to provide reverse auctions online.	Internet Buyers and suppliers Technology suppliers	"New" delivery channels Establish market opportunities Provide technology platforms
Supervising auction administrator joins organisation in November 1999 when first online auction conducted.	Supervising auction administrator "Three founding fathers"	Manage online auctions and participate in decision making Manage organisation	Technology suppliers	Provide technology platforms
Chief Executive Officer appointed in April 2000	Chief Executive Officer Supervising auction administrator	Manage organisation and identify strategic opportunities Supervise online auctions and provide feedback to chief executive officer	Board of Directors (three founding fathers, CEO and two external parties) Technology suppliers Customers	Decision making body Provide platform Assist in shaping systems

5.4.3 REFLECTIVE NOTES AND INTERPRETIVE COMMENTARY

In July 2000 interviews were held with the chief executive officer, who, subsequently left the organisation in December 2000, and the supervising auction administrator, with whom the researcher had made the initial contact. The researcher approached this organisation with a degree of intrigue as this was an Internet start up company compared with the more established organisations she had visited to date. With all the hype surrounding "dot.coms" and their subsequent demise, the researcher was keen to see what this organisation was like, how it came to be, and what was installed for its future.

Compared to the stately head office building the researcher had entered for the previous interview with the bank, the building was small, "tucked" away about a block from a suburban railway station. The office space was small and cluttered, with workstations lined up one after the other. This was not the image I had envisioned, of where the virtual and the physical collide, but then I was uncertain as to what I actually did expect.

The receptionist asked me to take a seat on a small lounge located at the front of the office, whilst she went to advise AD. He arrived from around the corner, together, with MD. I was not aware that MD was going to join us prior to this point. Following our introductions, the two interviewees went to find some chairs as the interview had to be conducted in the small reception because there was no other room available. The researcher had a few minutes to mentally rehearse how she would now conduct the interview given that she was not prepared for the group interview.

MD was apologetic about the office space, which appeared to set the tone for the interview regarding "image"

"The fact that we are still here is only a reflection of the difficulty of finding suitable premises to move to because we are "stuffed" in here ..."

MD tended to dominate the interview, almost as though he was there as a 'watchdog' to oversee what was said. The researcher was not sure whether AD's silence in the earlier parts of the interview was because of his concerns with MD's presence or whether he agreed with all the statements being made. I had to encourage AD to talk so as to

establish the validity of statements being made without putting him in a difficult situation where he may be confronted with having to refute something being said. I turned the interview dialogue to the role of AD within the organisation and his general perception about e-business. This appeared to work well as AD began to speak freely.

I left the interview thinking about the Internet start up company, wanting to project an image as far as possible away from a "dot.com." The "dot.com" hype experienced not less than eighteen months before had turned to a marketing nightmare. Another ironic issue, was that during the course of the interview the managing director had identified the difficulty in recruiting and maintaining human resources. I subsequently found during the course of a follow up conversation with AD, that MD had left the organisation, less than twelve months from when he started there.

The following Table 5.9, summarises the researcher's interpretation of the case study, using the conceptual framework as a lens through which her analysis was conducted.

Table 5.9

Case 4, 'InternetCo': Physical and virtual images

Vignettes	Interview Extracts
Decision Making Content	
<p>The meaning attached to e-business within InternetCo was shaped by the "three founding fathers" based on a model and trends in the USA. The strategic discourse consisted of "delivering value," "relationships with clients" and "positioning" the organisation away from the dot.com image. The use of technology, such as the Internet was seen as a support function, to automate business processes, so as to gain efficiencies. Notwithstanding technology's major role, the organisational image that InternetCo wanted to project was as a "clicks and mortar business" which is people driven, incorporating employees and customers, rather than technologically driven. As a "start up company" its image was influenced by the high level domain name of "dot.com." It was actively trying to disassociate itself from the "dot.com" rhetoric. The poor performance and market valuation associated with 'dot.com' companies, seen as frozen discourse in the high level domain name standard of dot.com.</p>	<p><i>"...we are a clicks and mortar business. People who learn about the business for the first time often think of us having a room full of ... propeller heads, very technologically driven organisation. It is very much not that at all. Yes, we have technology back end, but it is really people business, it is about relationships, value propositions, service ..."</i> [MD]</p> <p><i>"Our customers have helped shape the direction of our systems, where we obviously have to develop them in the direction of our customers."</i> [MD]</p> <p><i>"... if there is a spectrum then we are right at the bottom end of the "dot comish" fad, we are very much more a bricks mortar business that just happens to have a smart engine that relies on the Internet."</i> [MD]</p>

Vignettes

Interview Extracts

Decision Making Context

InternetCo has a simple structure, with low levels of complexity and formality, characteristic of newly formed organisations. The structure consists of flexible relationships between members of staff. The nature of power and authority within InternetCo is based on a participative management style, an extension of the personal relationships of the "three founding fathers." The layout and limited space in the offices, was also a key influence in the informal communication processes between staff. Status and rank were not perceived as important as encouraging interaction, ideas and concepts. Collective contribution to common objectives was considered more critical than adherence to a particular function.

"..., we often say it is exciting and scary, there are no precedence here, there are no rules, we are really making it up as we go along." [MD]

"... "It is a bit hard to avoid departmental interaction in a place this size. It's a pretty special place, it's part of its appeal in that we are so much on top of each other and it is a very "buzzy" sort of place... I have not written a memo in three months. E-mails get a bashing but normally it is face to face." [MD]

"We are young and new, in the last few months we have just had the opportunity to put into practice the statement that the workplace is what people get out of it, it is a major determiner of our success." [MD]

Decision Making Process

The decision making process surrounding the creation of InternetCo was, shaped by an informal conversation between the "three founding fathers." The choice opportunity arose from a set of individuals' observations of similar business models and practices in the United States at a random point in time. The early decisions were a collective type decision, which has continued within the organisation subsequent to its creation. Decisions are currently made by the Board of Directors which is made up of the "three founding fathers", the managing director and two external parties. The decision making group's communication exchanges are described as people driven, trusting and emotional.

" ... I guess you would probably have to say the major input in terms of strategic planning, has been visionary stuff, trying to interpret trends and trying to establish where the viable business models may be." [MD]

"A lot of communication a very involved participative management culture." [AD]

".... What are the words? Hot, honest, open and trusting." [MD]

5.5 THE TRANSPORT CASE STUDY

5.5.1 TRANSPORT, LOGISTICS AND ELECTRONIC BUSINESS

Transport services may be final consumption in their own right, such as passenger services, or they may be intermediary services, such as freight services. The case study below relates to the latter of these two. The Australian transport sector is comprised of providers of four major modes of transport, namely, road, rail, water and air transport. In addition, there are providers of associated services, which include stevedoring, freight forwarding, port operations for water and air transport and customs agency services (Allen Consulting 2000). Further, while a competitor may be in competition so far as providing a transport service, they may be operating in different market segments, for example, automotive or grocery. There are many competitors in the market from sole truck owners to large companies offering inter modal services. In recent years there have been a number of acquisitions and takeovers by larger organisations, to capture more market share and economies of scale, as the industry is

"... a tough industry, low margin industry, so therefore the greatest threat is if [you] do not capitalise and seize the opportunities....we operate on low margins, 1-2c in the dollar..."

[ED]

Proponents for reducing the number of carriers see it as having a favourable impact on logistics performance and customer/supplier/carrier relationships. That is, in selecting a few preferred carriers, shippers would be able to enjoy service and productivity through better service, less loss and damage and more reliable (on-time) delivery through the increased knowledge in the transportation requirements of the customers and suppliers (Larson 1999). However, success is also dependent upon the relationships, requiring time to build trust and communication with the core carriers (p. 40). Naturally, the extent to which one may favour carrier reduction will be dependant upon whether the carrier is successful in gaining the business or not. As the majority of physical services provided in the industry are similar, transport organisations are looking towards areas to differentiate themselves from their competitors, such as through IS innovations.

As discussed in Chapter Four, the transport and storage sector are ranked amongst one of the highest in the Internet Commerce active group, which may relate to the fact that,

Electronic Data Interchange (EDI) has been used in the transport sector for many years mostly between larger organisations to streamline purchasing with their major clients. With the connectivity advantages associated with the Internet, B2B trading is now seen as being within the reach of virtually any organisation large or small as barriers such as significant initial investment, long start-up time, multiple standards and the complexity associated with usage have been removed (Turban et al. 2000).

One of the major changes to the industry identified in the Allen Consulting Group's (2000) report was the replacement of physical goods with digital goods that can be transferred electronically, such as e-mail or the distribution of software by downloading from a website. These changes were offset by the opportunities in the delivery of Internet-purchased physical products and the transportation of people. Further, in general, electronic forms of lodgement, for things such as regulatory matters, or bookings, may provide opportunities for transport to be organised from a head office, typically in a major city, rather than on location, such as Customs Declarations (ibid 2000, 160). Additional value may also be built into customer relationships, for example by the tracking of goods/people in transit through online booking services (ibid 2000).

While improvements in supply chains may generate efficiencies, possible disintermediation may also lead to decreased demand for labour. For example, the use of in-vehicle technology by road transport operators may replace skills and experience of driver and loading staff (ibid 2000, 158). The report also indicated that there was no consensus that e-business would result in significant cost savings for the industry. The major inputs to the industry include chemicals and petrol, machinery and equipment and finance and insurance. The workgroup for the report could not identify how e-business could reduce these costs. For example, savings in machinery may be masked by increased expenditure in computers and other technologies and increased communications input costs (ibid 2000, 156). Finally, at the time that the report was collated, it was assumed that this sector would not face greater international competition or experience a significant boost in exports from e-business, a fact that was reiterated by one of the interviewees in the case study that follows.

The following section 5.5.2 provides a description of the Transport case study. For the purposes of confidentiality the organisation will be referred to as Transport, the Divisional Director of Development as ED and the General Manager of Operations as GM.

5.5.2 CASE DESCRIPTION

5.5.2.1 THE ORGANISATION AND ORGANISATIONAL FIELD

Transport is a publicly listed company. It is one of the largest in its sector, with assets in excess of four hundred million dollars, annual revenue exceeding one billion dollars, over 250 different locations, predominantly in Australia, and over 7000 employees and sub-contractors as at 30 June 2000. Over the past decade the company's asset base has increased more than twelve times over due to an aggressive acquisition strategy and successful contract tendering. Transport's size and growth has made it a central actor in its organisational field.

Its growth has been attributed to the managing director (MD) and his two business partners, the Chairman of Transport and his son (DT) who is an executive director of Transport and the CEO of the e-business venture company (TechCo) discussed further below. All three were formerly executives of a major competitor. They were well respected as visionary leaders both within the Transport groups as well as the transport sector at large,

“... our MD, is gaining enormous credibility in this industry as [Transport] has grown. And ... DT is extremely strategic in his position, very strategic as is ED and [all senior management]. We have sort of a group of senior managers who are very experienced in the industry and very strategic in their view of the industry and where they need to take [Transport] as well.” [GM]

Transport is a major operator,

“...parading in different modes, but in essence we are an intermodal forwarding business, railroad, sea, full load to pallet to parcels, warehousing, ports, wharfs.” [GM]

The physical location of depots, wharves, etc are considered a critical element in the success of Transport's business, for competitive advantage, because of long distances in Australia and low population density.

The organisation may be described as a multi-divisional structure, segmented into three business units, excluding TechCo, some “service related, some industry related and some are product mix” without as ED described “the bureaucracy.” Each functional structure is responsible for managing its day to day internal operations, while the head office staff are primarily responsible for monitoring and managing the organisation's relationships with its environment and for formulating strategy.

In addition to TechCo, there is an information systems department, who reports to the chief financial officer, that collaborates with TechCo on technological issues that relate to e-business. Traditionally, Transport has not been a big user of information and telecommunication technologies. However, during the early to mid 1990s Transport became a user of electronic data interchange systems (EDI), influenced by large corporate retailers and manufacturers who were its customers. According to ED

"We have been electronically communicating with our customers for years ... we have been transferring data between orders between some of our [larger customers] ... We've actually been online with their computers and downloading into our own warehouse management systems ... So that's been EDI ... a mechanism for the means for communication."

However, traditionally the use of technologies had been limited largely due to the number of legacy systems that the organisation had inherited through the acquisition process. The frequency and size of the acquisitions, had meant that IS had not been the major priority,

"... well technology was always going to be high priority at the appropriate point in time. [However] as the potential acquisitions came up, [Transport] could see that the value of IT, it wasn't forgotten ... But the management focused I suppose more on getting the acquisitions, getting it bedded down, getting a stable base." [ED]

As will be further discussed in section 5.5.2.2, Transport has recently implemented a common core freight management system to overcome the problems associated with incompatible legacy systems. In addition, their infrastructure consists of,

"... state of the art warehouse management systems, we use routing systems, we use planning and optimisation software, we use bar coding technology in our warehouses..." [ED]

Disruption in the information system was considered by GM to be an increasing concern for Transport as it became a bigger user of technology, particularly in the customer service area,

"... We now have online visibility to some extent, which will increase dramatically. For the online visibility and interaction it just makes things more difficult... So if the systems go down customers are impacted." [GM]

Planning within Transport is a "structured" process conducted on an annual basis, involving the managers of the key divisional areas, together with others identified by senior management. Each one of them develops and review their plans annually. The

planning process did not emphasise the use of documented rules and procedures for planning, rather emphasis was placed upon ideas and interpretations for “diagnosing” issues. ED described the process as

“... not ingrained, not ingrained at all. New, developing...[Transport] is not that culture...”

As the majority of physical services provided in the industry are similar, Transport differentiates itself from its major competitors in three areas, knowledge, customer relationships and IS innovations. Building relationships with customers and suppliers through collaboration and cooperation was seen by Transport as important processes in ensuring that they became the “preferred carrier,” requiring a

“... careful planned approach understanding the commercial reality, understanding the dynamics of both the customers and the suppliers and how they play the game.” [GM]

Providing an integrated solution not only required knowledge of the client’s transport requirements but also the supply chain management system, such as inventory management, (eg. just-in-time (JIT) manufacturing) and cost accounting systems (eg. Activity Based Costing). This in turn requires a mutually reliable inter-organisational systems to electronically link all three parties, reducing order processing and inventory costs, and coordinating the logistics system. The unique characteristics of the Australian transport and logistics market, largely geography and population density, impacts on IS decisions

“...One of the issues with the IT, is the functionality required in Australia, the breadth of it is far greater than overseas... The size of the market in North America and Europe in particular you can have very large companies focusing on say ... a less than full truck load (LTL) in a palletised market ... In Australia we need the lot, we need road, we need rail, we need sea, we need parcel, we need LTL, we need full load.” [GM]

Following more than sixteen years in the resources sector, GM joined the transport and logistics sector approximately six years ago (1994) working for a major competitor before moving into Transport, where he is now responsible for operations in TechCo, the subsidiary company created for e-business. While not formally qualified in accounting, GM has predominately worked in finance and accounting positions. He has spent sixteen years within the oil industry before joining the transport and logistics sector approximately six years ago, where he worked for a major competitor before joining Transport. It is from these past positions that GM credits his IT knowledge from.

ED joined Transport in 1999, having come predominately from a transport and logistics background and a senior executive position with a major competitor. He is tertiary qualified in accounting, with approximately fourteen years experience in the transport and logistics sector. Before joining this sector, he had a mixed background in retailing and managing franchises. ED's primary responsibility in Transport was to identify and analyse strategic opportunities for Transport so that it could grow and develop. This involved three key areas: acquisitions, mergers and joint ventures; electronic business (now to a lesser extent); and, group marketing (to coordinate organisational and brand image). ED's understanding of IT evolved from his experience with dealing with systems in the logistics area

“[In] ...a logistics culture ... you are thinking about managing the whole supply chain ... so that is probably ... where my IT understanding comes from, comes from understanding the warehouse management systems, or systems or route trade, or transport planning type systems, customer management systems, telemarketing, telesales, all those types of things and how they integrate.” [ED]

5.5.2.2 OVERVIEW OF EVENTS AND ACTIONS

The origin of the e-business adoption decision process can not be traced to a single event but rather to a number of social, economic and technological events. Less than three to four years ago (1996-1998), senior managers from Transport began observing e-business models evolving in North America and Europe. Investigating international trends was considered common practice for senior managers because of customer expectations and a culture of learning. With the increasing global attention towards the Internet and e-business, GM believed that it was

“... almost a natural evolution that [Transport] would be looking at what was happening particularly in those geographic areas.”

During the same period, Transport identified the need for a core freight management system, as there were four to five disparate systems because of a number of legacy systems acquired through previous acquisitions. Further, the company recognised that

“... it needed to be a player providing appropriate systems for its business... So it sent a team overseas in search of a system ... and they identified a new system.” [GM]

The new freight management system also highlighted e-business “connectivities or applications” for Transport “to build on” [ED]

At the local level, around the same time the core freight management system was purchased (1998-1999), the e-business "wave," occurred when there was much "hype" [ED] surrounding the innovation. As Transport occupied a central position within the inter-organisational network due to its size, access to all major modes of transport, resources and its control over technical know how, it was approached by a number of consulting groups incorporating business strategy and technology providers

"... [you get] a few consultants banging on the door, as you do, they want to make money. And they said you need your e-business strategy and you need to do this and that and we can help you and that's how that process started. So a few consultants came presented, went away, came back... with business development ideas or investment proposals." [ED]

Initially there were three key actors involved in reviewing e-business proposals, OD (Director of Operations), GM, (who both subsequently became the divisional director and the general manager of Tech Co respectively) and ED, with senior managers called upon depending upon the nature of the proposal. ED recalled that

"... the three of us were really seeing all the initiatives as there were many walking in the door at that time. And the CFO, was involved because he would be seeing some of the initiatives. And we would pull on our General Manager IT if it was an initiative that was heavily technology oriented...and [the divisional director of logistics]... if it was more home delivery, route trade type concepts."

Over the ensuing six to twelve months Transport reviewed a number of proposals which were "carved up" amongst five to six of the most senior managers who had particular related interests or responsibilities to assess their commercial viability. This approach was consistent with the way in which Transport approached strategic decisions,

"[Transport] tends to not create enormous project teams. It tends to create a coordinator and then pick the brains of the people who really know the business well. [ED]

The perceived uncertainty of e-business, created the need for Transport to manage its attention across a large number of stakeholders, particularly major customers and suppliers, and an increased information processing burden,

"... they spent a lot of time reviewing the literature, reviewing what was going on overseas, spoke to the major customers, ... spoke to some of the major suppliers... spoke to a lot of the consultants around town, you know trying to get a feel for what was going on." [GM]

The managing director of Transport believed that Transport had made mistakes during this period of time as it was not selective in the products and systems it considered.

However, this early period of reviewing information and proposals from many different sources was considered necessary by both ED and GM to gain an understanding of what e-business meant for Transport and “cut through the hype” [GM]

Reliance on consultant's advice was heavier in the earlier decision episodes when Transport was making sense of e-business. However, whilst remaining open to new ideas, as time moved on and knowledge increased Transport became more mindful about the nature of the input and motives of the consultants. Central to Transport's ideas of e-business was its knowledge of its services and business markets and the impact of e-business in its offering and position in the market. Thus while these third parties did not necessarily guide them as to what to do and where to go, they directed their thought to what they had and hence the power they held, principally in the form of industry knowledge and customer base.

Transport worked with its major customers over three to six months, which was described by GM as a “fairly iterative process.” The cohesiveness between itself and its major clients, incorporating “traditional retailers” and the strength of their relationship meant that there were mutual benefits to be derived in working together on a strategy for adopting e-business

“... while opportunities could crystallise, they needed a lot of collaboration between a lot of our customers and industry participants to make things happen.” [GM]

The B2C delivery market, in particular e-fulfilment, was considered challenging as there was the need to keep delivery costs down with few customers spread across a wide geographic area

“...home delivery has been a buzz and everyone thinks it is a great industry and we have been very slow to get on it ... We identified two networks, there was an open network and there was a closed network. The closed network is a network where there is more perishable goods and that the customer has the ability to pay ... they need to ensure integrity of the product ... An open network is when somebody [is] trying to do buy a CD, buy a book, ... I don't think Australia will have the volume or the critical mass to be able to achieve that and we did not want to play in that network without the mass without the customers' ability and willingness to accept the logistics side of it.” [GM]

While new e-business initiatives, such as home delivery, was a collaborative exercise between Transport and existing major customers, Transport's experience with e-tailers

was not the same. According to ED, e-tailers did not understand the transport and logistics market, nor, the collaboration and cooperation required in building a mutually beneficial relationship

“[While]... the last mile, was the most important thing, they ... don’t want to work together to ... design and deliver a solution that would be most effective and efficient for everybody in the long run... These people in our view did not understand how the industry works ... I don’t think they actually understood logistics...and so their willingness to participate and work together probably wasn’t there from our perspective...” [ED]

The structural holes within the network between Transport and particular e-tailers, together with Transport’s central position within the organisational field meant that Transport was under no pressure to comply with their demands. Likewise, the e-tailers position within the inter-organisational network, meant that the extent to which they could make demands were limited because of their lack of knowledge in the fulfilment area and market visibility.

While an e-business strategy was being worked on over this twelve month period, the three months between the later part of 1999 and early 2000, was seen by GM as a concentrated period of e-business strategy development. During this period of time, a General Manager of Electronic Commerce was appointed that GM believed

“... was always going to be an interim role ... [to coordinate the] ... development of the strategy with a couple of the people who are on the steering committee now...”

The General Manager of Electronic Commerce has since moved to head an online exchange, which is an alliance of Transport.

Following this "sense making" [GM] period, the senior management group were able to work towards specifying some criteria and guidelines so that the acquired information could be condensed into a meaningful summary. The guidelines were used and built upon to design an e-business strategy document, which was distributed to senior management for review. As GM recalled

“...it was a fairly comprehensive review that they collapsed into a formal document for [Transport].”

Once senior management had “almost got to a strategy” it was presented at an internal senior management conference, a forum for facilitating multi-level strategic conversations. Approximately forty different senior managers from Transport were

present. The conference was seen as a good communication process for key people within the organisation as there was a lot of scepticism about the need for Transport to move out of an "old-economy" business into a "new-economy" area. When the e-business strategy was presented GM recalled that

"...of the forty senior managers there, thirty nine all interpreted the strategy differently ... So the way it was presented was quite simply and then we broke away and went through it and interpreted it in different ways, then we all got back together and had further people ... speak to us and clarify matters. So it was actually quite a good communication process with all the key influencers in the company."

Whilst organisational restructuring was already on the agenda, the e-business strategy required a change in structures to "drive it forward." According to GM

"It was probably quite fortuitous the restructure was probably brought forward because of e-business. We had an e-business strategy ... and that required certain structures to drive that forward. "

In February 2000, a separate e-business entity was formed, with its own Board of Directors, called for the purposes of this case study TechCo, to oversee developments in e-business initiatives. According to GM

"... we set up [TechCo] because we did not want to distract the bricks and mortar business if you like from what they needed to do ..."

DT was made CEO of TechCo and is a director on the board of both Transport and TechCo. The subsidiary was formed to act as a "conduit between technology, e-business and core capabilities," as well as for risk management. In 2000, twenty five million dollars was committed to technology expenditure over three years (or approximately 1% of turnover per annum). In addition, fifty million dollars in investment funding was committed to TechCo for e-business initiatives, with twelve million being budgeted for the first year (or approximately 1% of annual turnover). TechCo has an operations director (OD) located at the head office of Transport, who is in charge of operations and new virtual business acquisitions. GM heads the operations area for OD in another major capital city. In 2000, TechCo contributed to 2% of revenue and had 93 employees. As e-business becomes further part of Transport's routine operations, GM considered that e-business decisions may need to become more integrated with the parent company,

"...that's one of the things we have to grapple with internally... one thing we are very much aware what we have to do, we have to broaden or widen the net at some stage if you like to bring more of the key influences into the group." [GM]

Following the creation of TechCo a steering committee was formed to oversee e-business initiatives consisting of DT, OD, GM and ED, with GM acting as the coordinator of the committee. The e-business steering committee, was described by ED as the “champion” for e-business, considered an essential factor in the successful adoption of strategic initiatives,

“What you do need is a champion within the business to take something and make it work ... You need a business champion at the end of the day to engage and accept it and run with it. So that was the [steering committee] team as such. And we have been very inquisitive and inquiring and wanting to know.” [ED]

During February 2000, TechCo acquired a virtual company (A), identified by ED as an e-business “capability business” which took “quite a bit of convincing” for senior management to approve an acquisition of an organisation that held no “physical assets,”

“... there was a bit of influencing and convincing about the capability of being a broker, which had capability... predominately [to run] information management [as that is] where the capabilities or opportunities were.” [ED]

The virtual business model provided a template for Transport to customise and learn from for future developments.

In March 2000, TechCo provided seed capital and bought shares in an online exchange. The strategic alliance was seen as a mechanism for learning

“... [that] helped us to sort of understand a little about e-business capabilities and opportunities out there.” [ED]

Transport also saw competitive strengths through vertical linkages in the alliance. The online company was seen as providing the expertise in the content area, the technology provider with the technology requirements and Transport providing the B2B enabled supply chain systems, including specialised warehousing. Further, Transport is to create a virtual logistics business to provide specialised fulfilment and assist in securing further content for the online company by drawing upon its existing relationships with existing suppliers in the industry of content area, thereby endeavouring to shape its competition.

In July 2000, TechCo acquired a controlling interest in a third virtual organisation (B) in a similar business to its first virtual acquisition (A). TechCo is also considering the

development of an industry portal using their freight management system as the core base platform. From an economic perspective, having another intermediary controlling the supply chain management system would impact upon Transport's competitive advantage defined by Porter (1990) as a "function of how well a company can manage this entire [industry value] system." According to ED

"A lot has been said about having a portal and that is where we have been very careful to understand what that actually means. Being in the supply chain end of transport end of e-business people have either been wanting to use the portal to beat up suppliers, have what they do in the US, a matching process... There is the view that e-business transport hubs and portals will commoditise the transport industry to such an extent our margins will continue to dwindle ..."

Transport's acquisition and investment in two virtual businesses has enabled it to become a virtual logistics provider,

"...we are suring up both private and business communities, we segment that market between government, the public mums and dads and the private and we have very much progressed down that path ...[We]... identified early on that is how we needed to progress in this [sector]... to capitalise on what we had there already, being a virtual logistic provider." [ED]

Transport also intends to establish alliances with content providers for its proposed industry portal. The same technology supplier used in the online exchange alliance is also being used in the portal initiative to support its technology requirements. A schema of the events, actions and actors discussed above are provided in the following Table 5.10.

Table 5.10 'Transport': Events, Actions and Actors

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Observation of industry trends in US & Europe including e-business models (1996-1998).	Senior Management	Investigate international trends.	Internet Customers	"New" business models. Expectation of knowledge of current international practices.
Core freight management decision (1996-1998)	Senior Management	Mobilisation of team to identify new system.	International companies	Technologies being used.
The e-business "wave" (1998-1999)	Senior Management	Assess commercial viability of e-business proposals.	Consultants	Provision of technology and business services - "make money."
	Core freight management system	Highlighted e-business "connectivities or applications."		
Appointment of general manager electronic commerce (EC) (Later part of 1999)	General Manager EC	Facilitate e-business strategy development.	Customers/ suppliers	Participation in strategic development.
	Senior Management	E-business strategy development and approval.		
Strategic management conference (Early 2000)	Senior Management	Articulate strategy proposal and seek acceptance.	Managers of divisional areas	Learn about and discuss e-business proposals.
Subsidiary company (Tech Co) formed (Feb 2000)	Steering committee	Conduit between technology, e-business and core capabilities.	Board of Directors (Transport parent company)	Capitalise on e-business opportunities, minimise risks and threats.
			Board of Directors (TechCo)	Approve/Reject e-business initiatives.
			CEO of TechCo (DT)	Cross board membership between subsidiary and parent company.

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Acquisition of virtual company (A) (Feb 2000)	Steering committee	Acquire existing virtual business model - public sector market. Convince senior management of commercial viability.	Transport parent company divisional management Board of Directors (TechCo) Internet	Concerns regarding acquisition with no physical assets. Approve proposal and recommend to parent company. Provide "connectivity."
Investment in virtual business (online exchange) (March 2000)	Steering committee	Provision of capital and logistical and specialised warehousing capabilities - learning through an alliance.	Board of directors (TechCo) Managing Director of alliance virtual business (ex General Manager of e-business in Transport)	Approve investment. Acquire resources.
Acquisition of virtual business (B)	Steering committee	Acquire controlling interest related to virtual business (A) - private sector market.	Transport parent company senior management Board of directors (TechCo)	Approve acquisition and increased acceptance of e-business. Approve proposal.
Development of industry portal	Steering committee Core freight management system	Control portal rather than being controlled. Provision of base platform for portal.	Customers Board of directors (TechCo) Technology provider	Track movement of goods along supply chain. Provide efficiencies and cheaper tenders. Review proposal. Provision of technology requirements.

5.5.3

REFLECTIVE NOTES AND INTERPRETIVE COMMENTARY

During October/November 2000, interviews were conducted with the Divisional Director of Development, ED, and the General Manager of Operations, GM. The interviews were held in two separate major capital cities. My experiences in both locations were very positive, with the interviewees forthcoming with a lot of information, providing insight to many dimensions of the organisation. It appeared to be more of a network of “mates” rather than a multi million dollar organisation. However, while there was an appearance of informality, the organisation was very aware of its market position and the power it held and how it needed to move forward as it had done so methodically and successfully in the past.

What was highlighted on both occasions was the amount of energy that went into ‘socialising’ managers within the organisation with respect to how they thought about e-business. In contrast to Bank who also had structured strategic planning, the process was seen as facilitating strategic decisions rather than acting as a barrier. While Transport was focused on creating synergies, learning, and sharing information, Bank emphasised control processes. However, Bank was still a much larger organisation and more bureaucratic, a concern highlighted in a discussion about future growth in the size of Transport. Whilst the researcher was not there long enough to be indoctrinated, she felt at times she was probably heading straight for it.

The following Table 5.11, summarises the researcher’s interpretation of the case study, using the conceptual framework as a lens through which her analysis was conducted.

Table 5.11

Case 5, 'Transport': Relationships, synergies and learning

Vignettes	Interview Extracts
<p>Decision Making Content</p> <p>The meaning attached to e-business cannot be attributed to any one determining factor or to the influence of one particular individual or social group. Rather it depended on a variety of actors, some social, some technical that together shaped the e-business models adopted. The strategic discourse in Transport is centred on concepts of growth, success, opportunism, relationships, quality and reliability. These concepts are reflected throughout the organisational, IS and e-business strategic stories. Strategic intent within Transport went beyond the boundaries of the organisation to encompass the organisational field in which they were embedded. The e-business strategies are based around information technology management, innovation, relationships, integration and investment. These strategies are described as "building on" the technology plan, and consisting of "a multi-pronged attack" built on knowledge and infrastructure. The focus was on aligning business objectives with technological capabilities to enhance the service offering. Further, it appeared as knowledge of such capabilities increased within Transport, issues of "power" and "control" became central issues.</p>	<p><i>"...connecting up our core systems with our customers and suppliers to better provide an integrated logistics solution ... through the management of information and data." [GM]</i></p> <p><i>"the e-business strategy for [Transport]... to be very much aligned with our core competencies which is what we know, what we are doing and ... to improve the offer and add value." [ED]</i></p> <p><i>"... whole group initiative" of "suring' up our base, our core platform, ... getting that across our business and it will be the base where we will add EC, throughout our businesses, and therefore give us an application that is capable of extending into new technology applications." [GM]</i></p>

Vignettes

Interview Extracts

Decision Making Context

Transport is a central and powerful actor in its organisational field, differentiating its services based on its size, network and preparedness to invest in strategic infrastructure. Transport may be described as a collaborative culture where creating synergies and engendering positive business relationships are recognised as key factors for success, both within and outside the organisation. Customer partnering was described as “long term dialogue.” The senior management team are seen as visionary leaders, enthusiastic and committed to IS and e-business as evidenced by Transport’s strategic intention, culture and deployment of resources. These normative beliefs were considered major motivators in making decisions about IS and e-business specifically. This “team of people” generated the negotiation space that is the space, period of time and set of resources, for e-business initiatives in anticipation of a future return. Transport matched its internal arrangements to reflect the perceived environmental array of conditions and exchange partners that had arisen in the e-business environment, through the creation of the subsidiary company, TechCo. In addition, the creation of an e-business steering committee “championed” e-business initiatives.

“...What differentiates Transport is its size and its networks, and its willingness to invest in strategic infrastructure [and], its industry knowledge that it does play in...” [GM]

“... it is much more collaborative solution to some things, it is very hard to be a one man band standing out.” [ED]

“...senior management is fairly young, aggressive and it quite inquisitive and it’s a learning culture from the senior management team prepared to learn and understand and get into it.” [GM]

Decision Making Process

In the earlier periods (1998-1999), the decision making process may be described as a random stream of events that were intertwined, in the presence of a random set of individuals at a random point of time, namely: international practices, the applications and functionality of the core freight management system and the unsolicited approaches by consultants during the "e-business wave." In the earlier periods, senior management experienced difficulties in specifying their information needs in a precise and comprehensive manner as there was a limited knowledge base regarding e-business. Routing queries to areas of expertise within the senior management group assisted in managing the information processing burden. This earlier period of time represented a reflexive period where senior management were translating information regarding e-business and evaluating the consequences of particular choices. Following this "sense making" period, the senior management group were able to work towards specifying some criteria and guidelines so that the acquired information could be condensed into a meaningful summary. The guidelines were used and built upon to design an e-business strategy for Transport to assist in managing large volumes of information whilst remaining open to new ideas. The strategy evolved by the planning group focusing their attention upon the various interpretations proposed by different members, testing out each interpretation, developing an understanding and shaping decisions through an iterative, trial and error learning process. In keeping with the social and cultural processes investment opportunities were analysed in terms of a "logical business case" incorporating both economic criteria and creating synergies.

"... we just split up you know you can see this one and you can see this one, and maybe because I have an interest because I have an understanding of the route trade and the retail trade and things like that..." [ED]

"There has been so much hype ... and so many people knocking on the door that although we have had quite a focussed strategy which generally we are keeping to fairly well ... it is very easy to get distracted, put it that way. And it has ... probably taken us a couple of months to say well yes it could be interesting but it is not what we want to focus on." [ED]

"...the e-business strategy ... helped crystallise ... the capabilities of e-business within certain industry segments and what was happening out there." [GM]

"...if we think there is e-business that we think can have a synergy etc we will invest in that. That's once again in boosting up the [TechCo] expertise and credibility and critical mass in the market place." [GM]

5.6 THE E-GIVING CASE STUDY

5.6.1 E-GIVING AND THE NOT-FOR-PROFIT SECTOR

The growth in e-giving has stemmed both directly and indirectly from the Internet. The Internet has enabled charities with a special focus to find a global audience, increasing their chance of obtaining funds through a listing on a global not-for-profit portal. Secondly, in the US the growth in e-giving was considered to partly stem from the guilt over the easy money made by "new-economy" entrepreneurs and concern over the divide between the technically literate and illiterate (Gome 2000). Thirdly, Web site developments in the not-for-profit sector have been driven by venture capitalists and entrepreneurs, who build virtual businesses to provide services and information for the not-for-profit sector (ibid 2000, 65), such as the case study below.

A report by the W K Kellogg Foundation (cf. Gome 2000) identified eight categories that have emerged in the e-giving marketplace, namely: e-business shopping/profit sharing (giving a small percentage of the purchase price to charity); fund-raising and advertising; philanthropy and donor services; knowledge and capacity building for the not-for-profit sector; volunteering and service (match volunteers with not-for-profit organisations); social advocacy and action; events and auctions; and, portals/full spectrum of services. Several e-giving sites have emerged in Australia, predominantly supported by traditional philanthropists rather than Internet entrepreneurs (Gome 2000).

As a proportion of gross domestic product, the Industry Commission estimated in 1995 that Australians gave 0.49%, compared with 2.17% for Americans and 0.88% for the British (cf. Gome 2000, 65). A 1997 ASSIRT research report found that 60% of donors would give more if they had more information on charity effectiveness, and 79% would donate more if they had assurances that money was going to the right cause.⁶ The Internet has been identified as a way to facilitate the dissemination of such information and enable donations using e-business technologies.

⁶ Source: <http://www.givewell.com.au/statistics.asp>

The following section 5.6.2 provides a description of the e-giving case study. For the purposes of confidentiality the organisation will be referred to as EGive, and the Managing Director as MD.

5.6.2 CASE DESCRIPTION

5.6.2.1 THE ORGANISATION AND ORGANISATIONAL FIELD

EGive is a privately owned company comprised of three major divisions, information, direct marketing and corporate (consisting of corporate gifting and promotional products). The organisation was formed in the late 1980s, following the purchase of part of a business established approximately thirty years ago by MD's mother. The company has approximately six million dollars in turnover and 12 employees as at June 2000. The company is located in a major capital city of Australia.

MD joined the organisation in 1989, taking over the publishing division, and adding a direct-marketing arm, corporate gift business and the EGive division the latter being the focus of the interview and the area that MD is now predominantly involved in. She has over fifteen years experience in marketing and advertising with an economics degree majoring in visual arts. MD believed that her positive attitude towards technology, in particular the Internet, was influenced by her professional background and her position within the organisation, which gave her access to resources

"I could see the potential and I think I could see the potential because of my direct marketing background. Because of my background I don't particularly see technology as being a scary thing. Being in a position I guess where you could have some financial resources to play with a little bit. Being in a position where I was not reporting to anyone else so I could play with it, those types of factors."

5.6.2.2 OVERVIEW OF EVENTS AND ACTIONS

With the advent of the Internet MD identified the potential of the Internet for direct marketing. In 1994, the organisation approached a web designer so as to promote some of the publishing division's products consisting mainly of middle to up market diaries for professional groups such as lawyers and accountants,

"It was really early days, and we decided, well because we came from direct marketing ... we were in quite a good position in terms of seeing the opportunities that the Internet gave particularly in terms of e-mail."

It was one of the first organisations in Australia to have a web site, which received some publicity. However, MD considered the exercise as a failure from a business perspective because of the limited orders received, one a fraud and the geographic location of the others, making the cost of fulfilment excessive. At this point, MD decided to be an observer of technology rather than an adopter

"...we were quoted on news programs ... and we got four orders, one was in Israel, one was in Germany, one was fraudulent, and one never sent their credit card details through so it was an absolute disaster and so at that point I decided to be a technology lagger."

Following these earlier periods, EGive became more informed about the technology and services being offered online. In the years following, the proposal for the e-giving portal arose from three major sources. First, international practices provided a guide for a model. Second, a hard copy directory publication of not-for-profit organisations, that EGive began producing in 1991. The database is the largest directory of not-for-profit organisations in Australia with a circulation in excess of forty thousand. It is used, for example, as a reference by solicitors, who want to find a charity for a client to bequest their money. MD considered that with the Internet "it was a natural step to put the directory online." The third influential source was a consultant who had been working with EGive for a number of years

"We had a consultant, ... that had been working with us for eight years on computers and computer systems. He knew us very well, he knew our requirements, he knew our decision making processes and he, as a business direction, wanted to go into developing web sites."

The EGive web site occurred in its first form in November 1999. In contrast to the first web site in 1994, which took a number of months to create, the EGive portal took a number of years to be created and is still changing. This was due to a number of factors identified by MD. Firstly being prepared to learn from implementations that have not worked. MD stated that

"We have changed direction a number of times because in fact the things that we thought would work have not worked."

Secondly, engaging and forming relationships with web site developers and technology providers, who identified with the organisational goals, to minimise conflict. EGive ended their relationship with the first group of developers because of a lack of symmetry with respect to the purpose and design of the e-giving model,

"We fell out with the designers and developers, because they could not understand what we wanted and we thought they were taking too long to understand what we wanted and to do what we wanted. They saw us as being simplistic in what we expected them to do, and we saw them as being confused."

Following the departure of these developers, EGive assessed the services of five other developers based on "cost, process, design, qualifications, ideas, compatibility." They engaged a developer who met these criteria, but who was also introduced to them on an informal basis through an existing employee.

Thirdly, recruiting the right team of people within the organisation. MD recalled that in the second round of discussions with the developer, Publish had recently recruited an editor for the EGive directory whom

"... had experience with an Internet start up in England...The way she processed it, she is much more detailed than I am too, so she wrote down more detail, so maybe the first time, [well] that may be a lesson. And so it seemed to proceed step by step and she followed it at a detailed level step by step and it tended to go rather smoothly."

Finally, understanding the needs of and the intermediaries that translate a common understanding within the community assembling around the portal. MD stated that they had

"... learnt along the way what are powerful, for example, our e-newsletter is definitely powerful as a spearhead to getting it to different organisations ...And with the online and offline component, and understanding that not everybody is going to get online so rapidly, you know that whole kind of deflation of the emphasis on how much time people will be spending online and what that meant."

Reflecting upon the adoption decision regarding the EGive portal, MD was of the view that they would not change the way events proceeded,

"... we have done it slowly but surely."

A schema of the events, actions and actors discussed above are provided in the following Table 5.12.

Table 5.12 'E-Give': Events, Actions and Actors

Events/Actions	Local Network		Global Network	
	Actors	Choices & Consequences	Actors	Choices & Consequences
Advent of Internet raises possibilities for online direct marketing (1994)	Managing Director	Identify potential for marketing products.	Internet Web site developer	New marketing channel. Create web site
Decision to become a "technology lager" (1994)	Managing Director	Web site a failure because of limited orders, fraud and cost of fulfilment.	Internet	New marketing channel.
E-Giving Business Model Proposal (1998 – 1999)	Managing Director Directory database	Focuses her attention away from direct marketing to online directories and e-giving concept. Creates new division. "Natural" progression to online environment.	Internet International practices. Professional associations and government agencies.	Connectivity, marketing & creating communities. E-giving models. Greater access to directory in online environment.
Design and establishment of web site (1998–November 1999)	Managing Director and e-give division Technology providers	Create business vision Conflict with first technology providers engaged due to lack of symmetry between objectives.	Internet Professional associations and government agencies Not for profit organisations	Connectivity, marketing & creating communities. Input into creation of portal concept. Input into creation of portal concept.
Not-for-profit portal (December 2000)	E-Give team Technology providers	Develop and promote portal. Technical support.	Internet Professional associations and government agencies Not for profit organisations	Connectivity, marketing & creating communities. Provide feedback and payment for use of portal. Provide feedback and use of portal.

5.6.3 REFLECTIVE NOTES AND INTERPRETIVE COMMENTARY

In February 2001 an interview was held with the Managing Director, MD. The organisation presented a number of interesting issues, as it was a private company that had created a portal for the not-for-profit sector. Revenue is derived from fees paid by organisations for entries in both the printed and online directories, banner advertising and commission on goods and services sold.

Whilst this was my last case study, I remember standing on a street corner with my map in hand, people swarming in all directions, thinking an unfamiliar city, a new interview, the recurring research nightmare of getting to an unknown location on time. EGIVE was located on the outskirts of the central business district. I allowed myself a generous amount of time to get there, and so arrived early. As I sat in the reception area, I observed a very informal but busy atmosphere, which was later confirmed during the course of the interview.

The managing director came to reception to meet me. Whilst I knew she was a woman, I still had some stereotypical vision of meeting with a man in a three piece suit. She was a woman in her late thirties, dressed casually, who led me to her office upstairs. As with the majority of my interviews, the question regarding the length of the interview was one of the first things discussed. But in contrast to the others, her motivation in asking was due to the fact that she needed to pick up her children from school. The interview proceeded very easily, with MD speaking freely of her experiences. The unusual combination in her undergraduate degree of economics and visual arts at first intrigued me, but later became more obvious in my understanding about her. She was a very successful business person, turning unprofitable areas into viable business units, but also a very creative and innovative person always in search of new avenues to pursue. Before the interview was concluded, MD asked me about my experiences with other organisations. It was not so much because she felt that her approach was flawed, but rather to find out how other organisations had dealt with the uncertainty, whether there were any “magical” models or formulas that were followed, rather than the ‘ad hoc’ way things had occurred.

The following Table 5.13, summarises the researcher’s interpretation of the case study, using the conceptual framework as a lens through which her analysis was conducted.

Table 5.13

Case 6, 'EGive': E-Giving and the Not-for-profit sector portal

Vignettes	Interview Extracts
<p>Decision Making Content</p> <p>The interpretive schemes of e-business within EGive were influenced by a heterogeneous network of technical and social elements. The managing director's predisposition to "new things," experience with databases of information, direct marketing and the capability and functionality of the Internet were key influences. There are no explicit strategies in EGive. However MD's vision for the e-giving initiative was centred around becoming a portal for the not-for-profit associations in Australia, to increase the level of Philanthropy in Australia and to give not-for-profit organisations the resources they need, both technical and business, to run effectively. MD believed that for the vision to be realised the mission of the model needed to become widely known. The e-giving initiative is centred around three broad concepts, development of products, financial sustainability, and social responsibility.</p>	<p><i>"... because we came from direct marketing ... and we are familiar with databases and the way they connect and one to one marketing, the concepts behind the Internet connecting up lots of different people and the necessary bases for that being a database for people to connect to ...[meant that]... we were in quite a good position in terms of seeing the opportunities that the Internet gave."</i></p> <p><i>"... its about development of products. The idea behind [it] is to make it financially sustainable as a socially responsible, and philanthropic organisation, so what [EGive] is doing is developing products and services around it that would make it financially self sufficient."</i></p> <p><i>"Most people still can not see the vision behind it is, or what it could be, a lot of people still have real difficulty with it, but it can't be unless it becomes widely known amongst charities at least."</i></p>

Decision Making Context

EGive is a small privately owned company owned by MD who is a key decision maker, a major driver of cultural processes, a charismatic leader, a maker of meaning, who enlivens and harvests talent. Her management and leadership style was relaxed yet attentive manifested in the organisational structures and planning processes. Time horizons are considered in terms of concepts and 'clock' time. EGive has traditionally been a user of IT particularly with respect to managing databases of client information. One of the major product areas is directories which was considered to be a "natural" product for the online environment. Through its publishing of the directory service, EGive had developed relationships with key professional groups. Its relational proximity within its inter-organisational network influenced the development of the e-giving portal, through joint initiatives such as matching professionals for volunteer services with charity organisations. While technical providers had a certain degree of influence, they were not the key drivers of the E-giving model, as it was important for there to be congruence with EGive's vision.

" We are a small organisation, which has its good and its bad sides. Good being change can be implemented very quickly ... Bad in that we have got limited resources and if you are an ideas person that can be very distracting to people implementing ideas, going on a certain direction. The thought of changing course is pretty distracting."

"... I've got the ideas but I am a pretty consultative type person, not hierarchical, fair, I think my leadership style is probably seeing the person more than the organisation ..."

"Concept wise very far. Time wise not so sure ... we have taken it very slowly and we have changed direction a number of times because in fact the things that we thought would work have not worked."

Vignettes

Interview Extracts

Decision Making Process

Decision making processes were informal and people driven, committed to innovation and change. Determining what value the innovation brings to the organisation was a key issue in the decision making process, yet a difficult one to define because of its technological, social and economic dimensions. The choice to accept or reject proposals are collective decisions shaped by trial and error learning processes where the group of decision makers engaged in a succession of limited small decisions that over time developed into a plan of action for the E-giving portal. Understanding value in terms of economic criteria was seen by MD as one of the biggest challenges that EGive was confronted with in their decision making because of the nature of the technology itself and the speed of change.

"Creative, but fairly informal, very informal..."

"...We do have a staff meeting every week where we discuss what is going on, what's happening, where the meeting is formal but the process is informal."

"I see where the revenue comes from as a big challenge. As a direct revenue from the Internet, I still don't see where it comes from a lot of the time and the pace of change."

"...For me the major question is what is the value, where is the value. To me, the Internet is another distribution mechanism and your products can be offered online or offline, depending on who your market is and how connected they are."

5.7 CONCLUSION

The above discussion sets out the empirical outcomes of six case studies. While the focus was on how adoption decisions were made, the aspects of context and content were intertwined in the analysis, both in terms of being drawn on in discourse and action, and in representing the outcome of intentions and actions providing a rich picture of the structures, processes and actors involved in e-business adoption decisions. The findings from these case studies are recaptured in Chapter Six to address the research questions, form conclusions and ground the theoretical and practical implications of the study.

CHAPTER SIX

THEMES, IMPLICATIONS AND CONCLUSIONS: ITERATIVE DECISION EPISODES AND DIVERSE INFLUENCES

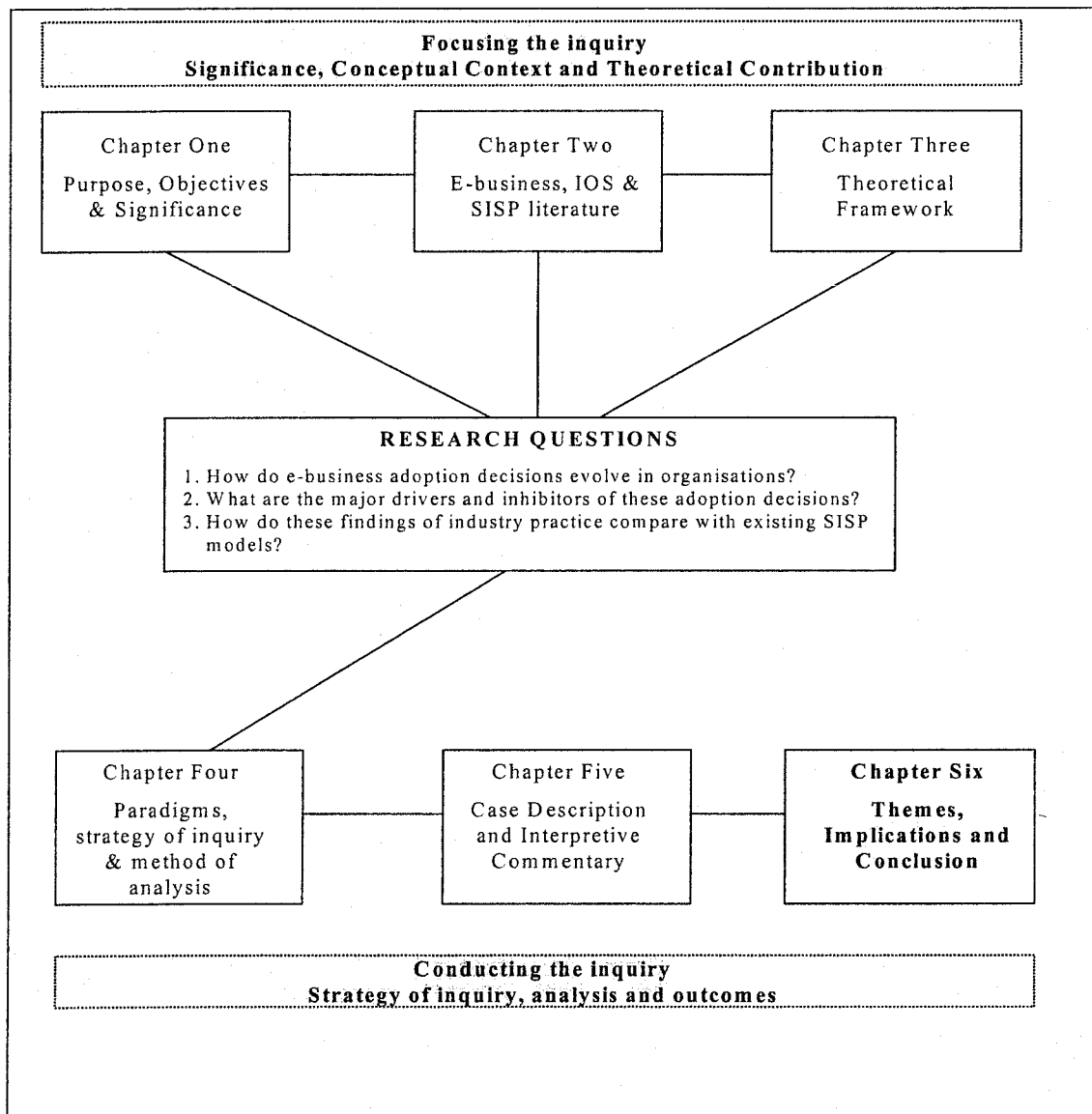
6.0 INTRODUCTION

The purpose of this final chapter, as seen in Figure 6.1, is to draw together the experiences of the organisations investigated and other findings of the study so as to provide a framework to assist in understanding the adoption of e-business in organisations. The discussion brings together interpretations of e-business adoption decisions arising directly from the analysis of the case studies in Chapter Five. While interpretations on e-business adoption decisions were provided at the end of each of the case studies in Chapter Five, this chapter provides a fuller and more integrated discussion based around the theoretical framework and research questions, namely: (1) How do e-business adoption decisions evolve in organisations? (2) What are the major drivers and inhibitors of these adoption decisions? (3) How do these findings of industry practice compare with existing SISP models?

The chapter is divided into six sections. The first section 6.1 provides an interpretation of the decision making content, context and process for each case study, with the objective of addressing the research questions so as to provide a conclusion from the findings of this investigation. As discussed in Chapter Three, while the decision making content, context and process are discussed separately this is for ease of analysis as they are in reality interrelated. Section 6.2 draws together experiences of how e-business adoption decision making processes evolved in organisations. In section 6.3 key influences of these adoption decisions are discussed. Incorporated at the end of sections 6.2 and 6.3 is a discussion of the implications of the findings. Section 6.4 considers areas where existing SISP models converge and diverge with the research findings. The purpose of section 6.5 is to consider the theoretical and empirical implications of this study and synthesise a view of SISP for the adoption of e-business arising from the preceding discussion. This section accumulates experiences from the organisations

examined on how adoption decisions evolved, what the key influences are in these decisions and integrates these factors and processes into a conceptual model for SIS adoption decisions. Further developments are identified throughout this discussion. The limitations of the study are considered in section 6.5. The final section 6.6 reaches conclusions on e-business adoption based on this study and considers directions for future developments.

Figure 6.1 Schema of Chapters: Chapter Six



6.1 E-BUSINESS ADOPTION DECISION

CONTENT, CONTEXT AND PROCESS:

INTEPRETATIONS OF THE CASE STUDIES

6.1.1 E-BUSINESS ADOPTION DECISION MAKING

CONTENT

The following discussion examines the content of the e-business adoption decision involving changes to products, processes and systems and associated changes in the computer-based information systems involving computer hardware, software, operating systems and related technologies (Walsham 1993).

6.1.1.1 THE BOOK RETAILER (RETAIL)

There was no specific organisational, IT or e-business strategy. Rather, the decision to adopt e-business emanated from the Amazon.com phenomenon and associated competitive pressures. The emergence of the Internet and the Amazon business model presented new distribution channels and business models for book retailers, as well as high levels of uncertainty and ambiguity as to its implications. Creating an online presence was seen as a necessity to maintain market share and an opportunity to learn about the online marketing and selling of products to the general public, namely B2C. For the downstairs franchise owner, it represented an opportunity to control the distribution and warehousing functions of Retail's virtual environment. The virtual space of Retail was modelled on Amazon.com using the downstairs franchise infrastructure. From an actor network perspective, it can be argued that the technology (inventory database) and space (the "big store downstairs") were used to stand in and speak for or be delegates for, particular viewpoints of the franchise owner to maintain a particular network of alliances with the managers of the web site in Head Office (upstairs). However, as this ignored the views of other franchisees, channel conflict issues arose resulting in litigation.

The B2C model acted as a driver for B2B initiatives, as it was seen as the next logical step in deriving efficiencies for the franchise network in its back office functions, "centred around purchasing,"

“We define it as literally being able to order electronically from our suppliers and do business with them as paperlessly as possible and share in the margin opportunities that the cost reductions tend to have. That’s our principle version of B2B e-business...” [MM]

In contrast to the B2C model, B2B is seen as a way of enhancing profitability in franchises through cost savings, and easy to implement as there were “numerous opportunities” [BM] to partner with technology providers. The benefits of the B2C model were considered difficult to define in terms of economic criteria such as cost benefit analysis. Over time, e-business became part of a series of strategic initiatives within Retail, integrated with core business “bricks and mortar” strategies,

“ ... we see the web site integral to doing business and we see it fitting very well to the bricks and mortar strategy and vice versa ... reinforcing each other.” [BM]

6.1.1.2 THE GOVERNMENT STATUTORY AUTHORITY (GOVSTAT)

Within GovStat were incongruent interpretive schemes (Orlikowski & Gash 1994) of e-business and IS in general. That is, there were differences in the expectations around the role of technology in business processes and the type and frequency of support and maintenance between senior management and the IS department. The e-business strategy may be thought of as a reconstruction after the fact, rather than a rationally intended plan. There were no separate e-business strategies for GovStat, nor were they part of the organisation’s strategy, it was more of what became available through the resources provided by corporate sponsors. The IS manager offered a general vision of what e-business would do for GovStat. However, in looking towards the future, the IS manager distinguished between what the organisation should be doing as opposed to what it will be doing.

E-business was interpreted at a number of different levels. Firstly, the relative advantage of automating transaction processes in the collection of sponsorship money, a major revenue source for GovStat, and expanding the B2C offering to include purchasing admission tickets in remote locations. Secondly, from a social perspective, e-business would facilitate: the reduction in the use of paper, what the IS manager described as the “green” factor; less bureaucracy, by reducing the “paper warfare;” [TP] online education and; the sharing and accessibility of information within and between organisations. Third, from an economic perspective there would be efficiencies to be gained from control of stock levels and procurement. For senior management, the value of e-business was what the IS manager had managed to negotiate and implement at

minimal cost, together with the symbolic value of being an early adopter within the government sector. For the corporate sponsors (technology suppliers), it was an opportunity for marketing because of the potential customer reach through the web site of GovStat.

The strategic discourse in GovStat consisted of a simultaneous presence of multiple, interlinked realities of conservation, education and commercialisation. The commercialisation agenda had become increasingly important due to limited funds within the public sector. Therefore, a dialogical authorship (Barry & Elmes 1997) was required whereby the different logics of commercialisation and conservation could coexist, inform and shape one another. However, while the IS manager had a vision for IS and in particular e-business covering both of these logic areas, the IS department was not successful in mobilising the board of directors in its attempts to define a socio-technical content for the project. It was not that the projects presented a technically insurmountable problem or that it was actively resisted, but because of the dominant scientific traditions within GovStat. E-business and IS in general were not seen as strategically important.

Whilst, IS was identified in the strategic text as part of the business enterprise and a means of enhancing "organisational capacity" through "developing and implementing superior, consistent systems," the IS manager stated that there were two IS strategic stories within GovStat. The first was considered by the IS manager as "their plan not our plan." The organisational strategic planning process initiated this strategic story. The IS strategies developed were "cloaked in the drab garments of business plans" (March 1995, 436), conducted by "merchants of meaning" (Czarniawska-Joerges 1988 cf. Alvesson 1993) that is consultants who were in direct competition for limited resources. The second plan was the one initiated by the IS manager "for IT." There appears to have been no clarity among senior managers with regard to the composition of an appropriate strategic script with which to direct the actions of the IS area. This provided little assurance to the IS manager, that the organisation was clearly focused on strategic goals that the IS area could identify and to which they could consensually bind their productive efforts. Instead, competing demands on scarce resources in the face of major external changes led to IS strategies being "taken for granted" at the organisational level.

6.1.1.3 THE BANK (BANK)

For Bank the strategic orientation of e-business followed two major streams, namely those providing revenue opportunities and those deriving cost efficiencies. The predominant image of e-business was about “customers and their ... online relationship,” [GM] in terms of both a direct and intermediary role. The loss of customer relationships through other parties developing these relationships was of concern in that Bank was apprehensive of being “relegated to a commodity service provider in the background” [GM]. However, such interpretations of e-business were considered by the Internet Banking Project manager as being influenced largely by consultant groups and the IT industry who were promoting the view of technology “shifting intermediaries” and online providers threatening the payment space. Approaches by third parties were perceived to be motivated by the need for Bank to be a partner, capital provider, or to gain access to its large customer base.

The first model adopted relates to the bank using electronic means to sell their products and services to their individual, business and institutional customers online, or B2C, such as Internet Banking. These e-business models were perceived by the Internet Project Manager as not only providing services to customers, but also as providing the infrastructure to leverage other e-business initiatives. The second model relates to B2B2C providing business offerings, such as web-posting payment options (eg. online credit card payments) for customers such as small businesses. The third, relates to the B2B market where in addition to payments, e-procurement and application service provider offerings are made. That is the use of electronic networks to facilitate trade between businesses. In this context, Bank uses its resources and a combination of brand and trust, to create bank hosted e-market places to bring buyers and sellers together. This latter concept required Bank to partner with other organisations; a weakness identified by Bank because of its controlling culture. The second major strategy area had a cost focus. The first related to persuading customers to interact with the bank electronically to save on costs associated with face to face counter service. The second related to cost savings from the use of Internet technology for intra-organisational processes.

6.1.1.4 THE REVERSE AUCTION 'START-UP' COMPANY (INTERNETCO)

The meaning attached to e-business within InternetCo was shaped by the “three founding fathers” based on a model and trends in the USA, and the high level domain name of ‘dot.com.’ The strategic discourse consisted of “delivering value,” “relationships with clients” and “positioning” the organisation away from the “dot.com image.” The values and opinions associated with failing dot.com companies, may be seen as frozen discourse in the high level domain name standard. InternetCo was actively trying to disassociate itself from the dot.com rhetoric because of the poor performance and decline in market valuations of many online businesses. Actor network theory uses the concept of immutable mobiles to describe network elements that display strong properties of irreversibility and are mobile across time and space (Walsham & Sahay 1999). The idea of a domain name as an immutable mobile suggests that distancing itself from the dot.com image may be difficult. The use of technology, such as the Internet was seen as a support function, to automate business processes, so as to gain efficiencies. The organisational image that InternetCo wanted to project was as a “clicks and mortar business” which is people driven, incorporating employees and customers, rather than technologically driven.

6.1.1.5 THE TRANSPORT COMPANY (TRANSPORT)

The meaning attached to e-business cannot be attributed to any one determining factor or to the influence of one particular individual or social group. Rather it depended on a variety of actors, some social, some technical that together shaped the e-business models adopted. The strategic discourse in Transport is centred on concepts of growth, success, opportunism, relationships, quality and reliability that were well communicated within the organisation. Strategic intent within Transport went beyond the boundaries of the organisation to encompass the organisational field in which they were embedded. The scope of the technology strategy includes the organisation as well as its customers. The substance of the technology strategy for Transport is framed around competitive positioning, the “winning edge,” the value chain, and “integrated solutions.” Technology is seen as one of the major “drivers for growth” by “extending the reach

and core solutions to customers, pursuing new business opportunities and maximising return for shareholders." The strategic text defined efficiency in terms of "technology and innovation."

Transport's e-business vision is to "strengthen and enhance client relationships through the aggregation of value adding services and to enhance the value of customers, systems, people and network assets." Hence, the interpretive schemes of e-business were based around business relationships (customers and suppliers), technology and innovation, information management, integration and investment. The first strategy relates to "leveraging the power of the Internet." There were two elements to this strategy. Firstly, building an integrated and fulfilment capability for the business to business segment and interfacing that into Transport's operational management system. The second, and a related strategy to the above, is associated with developing a transport and logistics information network ("portal"). The widespread growth of similar exchanges in North America, enabled by web technology, have directed Transport's attention to whether there is a need for similar exchanges in Australia. The third strategy area relates to forming technology and content alliances with global partners such as technology suppliers, "to develop the necessary information networks." In being able to develop industry and customer specific solutions, Transport identified the need for partnering with technology providers. The final strategy relates to investing in e-business opportunities, with a "logistics flavour."

These strategies are described as "building on" the technology plan, and consisting of "a multi-pronged attack" built on knowledge and infrastructure. The focus was on aligning business objectives with technological capabilities to enhance the service offering. Themes of integration and synergies were apparent in the organisational strategic text with expressions such as "the marriage of e-business and ... core activities." Further, it appeared as knowledge of such capabilities increased within Transport, issues of "power" and "control" became central issues. Transport's strategic thinking capability was complemented with the capacity for acting, making decisions and providing the resources needed to conduct the entrepreneurial "experiments" at the local level.

6.1.1.6

THE PUBLISHING/E-GIVING COMPANY (EGIVE)

The interpretive schemes of e-business within EGive were influenced by a set of heterogeneous network of technical and social elements. The managing director's predisposition to new things, experience with databases and direct marketing and the capability and functionality of the Internet were key influences, the degree to which varied over time. There are no explicit strategies in EGive. The e-giving initiative is centred around three broad concepts, development of products, financial sustainability, and social responsibility. The managing director's vision for the e-giving initiative was centred around becoming a portal for not-for-profit associations in Australia, supporting them with technical and business resources. To realise the vision, the managing director considered that the mission of the model needed to become widely known.

The model consists of a web site that provides industry news and information about charities, e-business facilities allowing donations, products and services that can be sold to not-for-profit organisations, a section through which people can volunteer, and a recruitment section. Revenue for the site is derived from fees paid by not-for-profit organisations for entries in both the printed and online directories, banner advertising and commission on goods and services sold. Corporate and government entities are expected to pay to provide information to the sector. The value of e-business to the organisation was considered in terms of social and economic criteria. In addition to the broader social agenda, success and value were judged in terms of visitation and the functionality of the site. Understanding value in terms of economic criteria was considered by the managing director to be one of the biggest challenges.

6.1.2

E-BUSINESS ADOPTION DECISION MAKING CONTEXT

The decision to adopt e-business takes place from a background provided by the historical context of any previous systems, together with wider aspects such as the organisation's history and past performance (Walsham 1993) and its location within the organisational field (Scott 1995). The following discussion examines the context in which these decisions were made.

6.1.2.1 THE BOOK RETAILER (RETAIL)

At the time when public attention was rising regarding the Internet and Amazon.com, the book market was in a depressed state and senior management were concerned about losing further market share. The managing director was considered a champion within the organisation both with respect to his positive attitude towards IS generally and e-business in particular and so not surprisingly was a major advocate for the adoption of e-business. Further, the proximity and size of the “downstairs” franchise store, appeared to support the interactions between the franchise owner and the managing director as locations near to influential elements of the environment offer an entity advantages in terms of managing critical environmental dependencies (Hatch 1997). The spatial form of Retail’s B2C model was in part an isomorphic effect of Amazon.com. Retail responded in a mimetic fashion as Amazon was trading in exactly the same products as Retail and was able to operate without the overhead that physical space requires. Further, the book industry as a whole at the time was losing market share, and so Retail was searching for ways to “position itself” in the turbulent market by offering a web shop front in addition to its physical retail outlets. Sahlin-Andersson (1996) posit that an organisation's identity is derived from its reference to and relationships with others in the organisational field which may lead to imitation and interaction with organisations that were previously seen to be of a distant kind in times of identity crises. However, the virtual model had implications for Retail as it was in conflict with the organisational network structure creating ownership disputes between franchises. Developing and maintaining an organisational identity and sense of purpose notwithstanding loosely coupled interests and activities and geographic diversity is considered one of the biggest challenges in managing network relationships (Hatch 1997, 192), such as found in Retail.

The lack of common goals within the network structure regarding e-business resulted in conflict. The different views of the various franchises with respect to where the web site “fitted” within the network structure, and their lack of resolution into a common purpose, were key factors in the litigation problems that arose. The next stage involving B2B is being heavily influenced by technology suppliers and consultants, particularly given that the IS function has been outsourced. However, the value of the outsourced IS relationship was questioned in terms of Retail being “proactively assisted.”

6.1.2.2 THE GOVERNMENT STATUTORY AUTHORITY (GOVSTAT)

GovStat is characterised by strong subcultures (Hauser 1998). Three major logic areas existed, namely the “traditional” science and research domain, the more recent commercialisation agenda and the IS subculture, which appeared to straddle the other two. The ideological inequities that existed between these subcultures were encouraged by the strong emphasis that has been traditionally placed on the bureaucratic principle of organisational differentiation (Bate 1998) traditionally found within the public sector. GovStat was based on networks of people, supportive of coalitions and independent groups working in multiple constituencies, particularly in the scientific domain and IS department. These organisational subunits formed their own subcultures, based on common experiences and knowledge. The different subcultures created a diverse knowledge base, resulting in a divergence of attitudes within the organisation. The relations between the IS subculture and the other subcultures appeared neutral in that it did not interfere positively or negatively with one another, but rather a lack of understanding of each department area, particularly regarding IS.

For GovStat, organisational values regarding IS, may be seen to be manifested in the lack of IS infrastructure, the failure to identify the IS department within the organisational structure, its physical location and offices, and the attitudes of senior management. Prior to the computerised ticketing and enterprise wide system implementations there was limited technical knowledge and user experience, no cabling in place to network computers, many incompatible systems, and no IS manager and IS department. The IS manager was a key driver of technological change within GovStat, who relied upon technology suppliers for hardware, software and technical expertise. She also had referent power, due to her ability to get things done in spite of resistance. Knowing who the central actors were in the organisation, coalitions and the origin of their support enabled her to anticipate resistance and mobilise support for action or change.

GovStat’s high visibility and profile within the community, was an important factor in its negotiations with external parties for resources, in particular, hardware, software and technical expertise. GovStat’s, geography is a key factor in its organisational identity. It is located on prime real estate in a major capital city and has been long considered an

icon of tourism, recreational and educational facilities for the community. Therefore, while there was a resource dependency on technology suppliers for IS infrastructure, a counter dependence existed as GovStat was seen by third parties as a good reference site because of its visibility within the community. The community is recognised as a key actor in its organisation field, explaining the communitarian characterisation within its strategic discourse. Loss of community support and goodwill was considered to be a bigger threat than insufficient funds and hence a key consideration in all initiatives within the organisation, such as e-business.

6.1.2.3 THE BANK (BANK)

In contrast to the other case studies, Bank exists within what has traditionally been an information technology and telecommunications intensive industry, where services are considered to be more easily virtualised. There is tight competition within the finance sector because of its market size and government policy restricting mergers between the four major banks. Competition was further intensified with “start up” organisations. However, the IS infrastructure and experience of “traditional” financial providers enabled them to secure the payment space. Further, the structural equivalence shared between the four major banks within the organisational field, meant that establishing what competitors are doing, is fairly predictable, such as the case with Internet banking.

While the services of Bank are easily virtualised, there was conflict with respect to how services were being delivered. The built space, namely the traditional branch network, may be seen as a physical manifestation, a cultural artifact, carrying meaning or ideological content of customer service and social responsibility. Therefore, Bank needed to respond not only to the new technology but also the new culture, which e-business technologies are creating. By culture, one means what people value and what they expect from a bank. The value of a brand and customer loyalty were considered key factors in Bank’s competitive position and long term sustainability particularly with information so easily accessible through the Internet. Being a “trusted party” is considered an important factor in the faceless nature of the Internet (O’Connell 2000).

Strategic decisions are made almost exclusively at the most senior levels of general management and the board of directors. From a symbolic interpretive perspective, Bank’s social structure is reflective of a control culture built on models of order, logic

and conformity. Planning within Bank consists of highly formalised structures and comprehensive processes. The use of procedures and documented criteria for evaluating alternatives is heavily emphasised driven largely by corporate governance requirements and shareholder responsibilities. Accounting control plays a major part in the investment appraisal or capital budgeting process based on the deployment of a range of appraisal techniques, such as rate of return, cost-benefit analysis, payback periods and net present value. In addition, competition for funds is very high, as Bank was described as being “capital starved.” Such processes and criteria acted as a major obstacle in having e-business initiatives approved and so alternative paths of approval were sought. Notwithstanding these barriers, planning was considered both necessary and useful in providing a mandate and clarity upon which to base the strategic initiative. However, alternative frameworks such as a portfolio approach were perceived as beneficial in the context of IS investments.

The IS “enterprise” (as it is called within Bank) is charged with “driving greater value and improving the efficiency of what is one of the largest cost components of any financial service company,” and is responsible for the majority of the technology infrastructure, software, support and technology research and development in bank. However, the IS “enterprise” was located in a separate division to the e-business strategy team. Notwithstanding its contribution to e-business issues, the IS department was considered by the e-business strategy team to be lacking in technical leadership and needed to be more “proactive.”

6.1.2.4 THE REVERSE AUCTION ‘START UP’ COMPANY (INTERNETCO)

The Internet start up company had a simple organisational structure, characteristic of newly formed organisations (Hatch 1997). The structure consisted of flexible relationships between members of staff. The tasks are determined mainly by the managing director, and are open to direct and informal coordination and supervision. There is no separate IS department within InternetCo. Whilst there was two full time IT professionals the majority of hardware system support was outsourced. The proprietary development language used to run the electronic auctions, was according to AD “used quite widely for e-business solutions.” The competitive advantage was identified in its

application and the value added services associated with the online auction. Technology played a major part in the day to day activities of the organisation. Disruption to IS was seen as a major threat, particularly with respect to customer service and the organisation's image. Customers were considered a major actor in the organisational field. Understanding their needs and providing value added services was identified as the major growth area.

The physical presence of InternetCo was perceived to be more important than the virtual presence. The layout and limited space in the offices, influenced communication processes. As it was a new organisation, there were no precedence as to how things should occur, nor any particular rules, "we are really making it up as we go along" [MD]. This may be partly explained by the size, maturity, culture and type of organisation. While the board of directors and the managing director conducted strategic planning, the process was described as detailed but less formal than traditional structures found in large organisations. The planning process was described as a "military operation" because of its need to be fluid with the pace of change.

InternetCo's leadership focus was on team building and bringing in the right mix of talent. Status and rank were not perceived as important as encouraging interaction, ideas and concepts. Collective contribution to common objectives was considered more critical than adherence to a particular function. The nature of power and authority within InternetCo was based on relationships, which originated from the personal relationships of the "three founding fathers" as they were able to draw upon the capabilities and experiences of each other. Further, the decision making group's communication exchanges were considered to be trusting but forthright.

6.1.2.5 THE TRANSPORT COMPANY (TRANSPORT)

Transport is a multi-divisional structure, where each functional structure is responsible for managing its day to day internal operations, while the head office staff are primarily responsible for monitoring and managing the organisation's relationships with its environment and for formulating strategy. The structure is divisionalised on the basis of its services, both industry and product related, without "the bureaucracy," where ideas are freely exchanged. Transport had recently undergone a restructure, where e-business, while not the cause of, was a catalyst in changing the organisational structure sooner

than expected. It matched its internal arrangements to reflect the perceived environmental array of conditions and exchange partners that had arisen in the e-business environment, through the creation of the subsidiary company to focus on e-business initiatives, TechCo.

Transport is a central and powerful actor in its organisational field, differentiating its services based on its size, access to all major modes of transport, control over technical know how and preparedness to invest in strategic infrastructure, where the physical feature of distance and the human feature of population density are unique considerations for the Australian market. The cohesiveness between itself and its major clients, and the strength of their relationship meant that there were mutual benefits to be derived in working together on new innovations and technology. The extent to which these clients are able to make demands and the degree to which Transport needed to comply with such demands, depended upon its commercial viability. As an actor in an industry that is undergoing considerable change (Condon 2002), its aggressive acquisition strategy has seen it become one of the biggest transport companies within Australia. The acquisition process was perceived by senior management as a learning experience, developing risk, network and alliance management skills, which have enabled them to recognise opportunities and understand "synergies" with their existing business, such as the acquisitions of the virtual businesses.

Traditionally, Transport had not been a big user of information and telecommunication technologies. However, during the early to mid 1990s Transport became a user of electronic data interchange systems (EDI), influenced by large corporate retailers and manufacturers who were its customers. However, the use of such technologies was considered limited largely due to the number of legacy systems that the organisation had inherited through the acquisition process. Finding and implementing a freight management system to provide one core system, to replace a number of legacy systems, became a key factor in raising e-business capabilities. The rate at which technology changes in the transport industry occurred was considered to be traditionally slow due to limited financial resources being available for development. However, with the changing face of the industry, technology was seen as a key factor in allowing transport companies to provide an integrated solution for their customers; a market characterised by low population density and large geographical distances.

Transport may be described as a collaborative culture where creating synergies and engendering positive business relationships are recognised as key factors for success, both within and outside the organisation. Customer partnering was described as “long term dialogue.” The senior management team are seen as visionary leaders, enthusiastic and committed to IS and e-business as evidenced by Transport’s strategic intention, culture and deployment of resources. These normative beliefs were considered major motivators in making decisions about IS and e-business specifically. This “team of people” generated the negotiation space that is the space, period of time and set of resources, for e-business initiatives in anticipation of a future return. An e-business steering committee was created to “champion” e-business initiatives, which became part of the separate venture capital company created.

6.1.2.6 THE PUBLISHING/E-GIVING COMPANY (EGIVE)

EGive is a small privately owned company owned by MD who is a key decision maker, a major driver of cultural processes, a charismatic leader, a maker of meaning, who enlivens and harvests talent. Her management and leadership style was relaxed yet attentive, which were manifested in the organisational structures and planning processes. Time horizons are considered in terms of ideas and concepts and ‘clock’ time. EGive has traditionally been a user of IT particularly with respect to managing databases of client information. There is no separate IS department with all technology needs provided by external parties.

One of the major product areas is directories, which was considered to be a “natural” product for the online environment. Through its publishing of the directory service, EGive had developed relationships with key professional groups. Its relational proximity within its inter-organisational network influenced the development of the e-giving portal, through joint initiatives such as matching professionals for volunteer services with charity organisations. While technical providers had a certain degree of influence, they were not the key drivers of the E-giving model, as it was considered important by the managing director for there to be congruence with EGive’s vision.

6.1.3 E-BUSINESS ADOPTION DECISION MAKING PROCESS

6.1.3.1 THE BOOK RETAILER (RETAIL)

The e-business adoption decision process in the earlier stages appeared to be both unsystematic and political. The decision began as a random stream of events, in the presence of a random set of individuals, at a random point in time, motivated primarily by the Amazon.com phenomenon and its associated impact on market share. The purposive social action of the “downstairs” franchise owner, the general manager of retail and the managing director, produced the spatial form of Retail’s e-business model. The coalition negotiated behind the scenes before approaching the Board, uniting interests and proposing alternatives that were collectively beneficial to themselves. A verbal presentation was made to the Board of Directors who ‘rubber stamped’ the proposal, as they had limited understanding of e-business. No financial terms or performance criteria formed the basis of the decision, the Board relying on the credibility of the managing director. The decision to accept the proposal may be described as an authority innovation type decision (Rogers 1995, 372), in that it was made by relatively few individuals who possessed the power, status and technical expertise.

There were unanticipated consequences of this purposive social action. Conflict with other franchise owners arose over the ownership of the virtual space and the use of a common central advertising fund to resource the site. The marketing manager saw this channel conflict and ownership issue as a major challenge and a condition missing from the adoption decision resulting in litigation. The unanticipated consequences of the action taken by Retail is illustrative of how social actions are not context free, their outcomes being shaped by the setting in which they occur (Scott 1995). E-business decisions are now, like all other strategic decisions within Retail, a group exercise made by the senior management group.

6.1.3.2 THE GOVERNMENT STATUTORY AUTHORITY (GOVSTAT)

The e-business adoption decision process within the government statutory authority (GovStat) was the serendipitous result of a wide variety of different organisational routines (Mohr 1987). The audit recommendations made by the government auditor regarding the lack of control within the cash collection system and the subsequent implementation of the computerised ticketing system and finance system, with the assistance of corporate sponsors, was the impetus for e-business. Concomitant with the serendipitous process was a political process as the choice to adopt e-business was made by relatively few individuals who possessed power and technical expertise, namely the IS manager and her department, who seized upon opportunities as they presented themselves from technology providers. The board of directors played a “rubber stamping” role. The IS manager’s technical knowledge, as well as her understanding of “bureaucratic” decision making processes and the small financial cost of the project, enabled her to persuade senior management. While the political approach was successful in getting the systems implemented, it failed in that senior management remained unaware of the actual resources required with such implementations

“Whilst that was a fantastic implementation the big mistake is that the top level now thinks that things can just happen. They had not concept of the work involved, we did not get any extra staff, we did it in our own time, we worked around the clock and dropped and fell apart at the end of it but they did not have any concept of what was involved ...” [TP]

6.1.3.3 THE BANK (BANK)

For Bank, the e-business adoption decision process consisted of several interacting sub-processes, different in nature, evolving over time, which were part of and interacted with broader strategic issues. The initial e-business strategic commitment process arose out of a broader organisational initiative to re-evaluate Bank’s strategic positioning and growth. An e-business strategy team was formed, charged with developing Bank’s e-business strategy. The strategy team were influenced by different sources and institutional pressures, which eventually led to activities and decisions dealing directly with one or more specific e-business projects being considered simultaneously.

Similar to Langley and Truax’s (1994) technology adoption model, each project appeared to incorporate three different types of decisions occurring in parallel and

including the “strategic commitment” decision for the strategic direction and type of business model to adopt, the “operational” decision, concerning the specific systems and technology to be acquired, and the “financial justification” decision by authority structures to provide the resources necessary to implement the strategy (ibid 1994). Further, the impact of each process differed according to the meaning attached to e-business. The operational decision and the financial justification processes were also temporally embedded within the strategic commitment process (ibid 1994). The processes were also parallel rather than sequential because they took place at least partly simultaneously and were interlocked interlocking because of the information flows between them, that is, the development of one may constrain or accelerate the development of others. Finally, the processes are different in nature because while the operational choice and financial justification processes were explicit and resource consuming, such as defining technological requirements and applying accounting criteria, strategic commitment may be considered a psychological process in the minds of senior management (ibid 1994) influenced by a heterogeneous network of actors over time.

The initial strategic commitment process was shaped by a multiplicity of issues and a lack of agreement about the goals to be pursued because of the uncertainty, complexity and diversity surrounding e-business, particularly in the earlier periods. The e-business strategy meetings were unstructured and did not progress very far, with varying opinions regarding e-business. It was not until a framework was created that some rational debate began to occur and a range of project areas arose.

“Let me tell you there was blood on the floor. People had very different opinions and because there were not a lot of facts available, people were driven by opinions ... The early meetings ... were very unstructured, didn’t really go anywhere, and it was just a whole lot of people with quite loud voices and opinion. The main work we did as a team ... was we put a framework in place that everybody could start and think about it in a rational way and then they could start to have some real discussions and take the opinion out of it. It was a very stressful period ...” [IB]

To forge interest, gain acceptance and enhance knowledge, the e-business strategy team facilitated strategic development for other business units within Bank, such as through their strategic conferences. From a power perspective, this may be described as a means

for the strategy team to gain support for their e-business strategy document, through involving individuals and groups to create proposals that were collectively beneficial to themselves as the relative power position of the strategy team appeared weak because e-business budgets were housed in various business units and/or project areas.

The commitment to and approval of the Internet Banking project investment was the result of mimetic pressures, rather than deliberate strategic initiatives. Internet banking was perceived as not bringing any fundamental change to the IS infrastructure, but rather the next step, following the ATM and EFTPOS revolution. Therefore, it was not seen as strategic in terms of delivering new business models. When rival institutions started massively investing in the technology, bank had to revise its position and hastily implemented Internet banking to maintain market share. The underlying logic of Bank's adoption decision was one of orthodoxy due to the associated threat of losing customer base to its competitors, rather than through some deliberate strategic action. The operational decision process was intensive in the context of this initiative, involving discussions with a technology vendor. It appeared that the feasibility activity implicitly embedded a supplier choice as the supplier was engaged to provide detailed specifications of the type of system needed. The system actually implemented proved to be a mistake because of compatibility issues with the customer interface; perceived by Bank to be driven by the self interest of the technology vendor.

The strategic commitment process for the e-procurement initiative mirrored a non deterministic serendipitous course of action, due to an unsolicited approach by a third party. However, the financial justification process dominated the adoption decision making process as there were difficulties in applying the "repertoire of procedural routines" (Sambamurthy et al. 1993). Mapping the e-procurement project onto the existing configuration of resource utilisation was seen as ineffectual as infrastructural innovations such as e-business represent more than just an incremental shift in resource commitments. The financial justification process became a political exercise over the way e-procurement was interpreted and enacted, to enable the e-business team to mobilise their capacities to change existing justification practices in ways that released them from prevailing forms of domination in the form of accounting control criteria. The general manager of e-business mobilised support from the consultant company who had been engaged to assist in shaping attitudes towards "new economy" businesses in

Bank into a much more receptive and strategic orientation through the creation of a venture capital company. The consultant had an influence in supplying a necessary language of decision making. But these were not new “strategic” techniques of investment appraisal, rather a negotiation between strategic pressures and conventional techniques,

“... venture capital oriented, they have return on investment thresholds, funding profiles and “gateing” that you have to get through which is sometimes not financial like business planning and results from pilot projects and that sort of thing... So we have actually done it by going outside the internal system.” [GM]

Decisions to accept or reject strategic proposals, in Bank are made by relatively few individuals in Bank who possess power and status, referred to by Rogers (1995) as authority innovation decisions. The decision making criteria within Bank was based on strict accounting control techniques, influenced by an authority structure dominated by “traditional bankers” and accountants, the “keepers of the money,” its perception of risk and returns, its perception of long versus short term considerations, and institutional pressures from government regulatory agencies.

6.1.3.4 THE REVERSE AUCTION ‘START UP’ COMPANY (INTERNETCO)

The decision making process surrounding the creation of InternetCo consisted of an informal conversation between the “three founding fathers.” The choice opportunity arose from a set of individuals’ observations of similar business models and practices in the United States at a random point in time. The early decisions were a collective type decision, which has continued within the organisation subsequent to its creation. Decisions are currently made by the Board of Directors, which is made up of the “three founding fathers”, the managing director and two external parties. The decision making group’s communication exchanges are described as people driven, trusting and “emotional.”

6.1.3.5 THE TRANSPORT COMPANY (TRANSPORT)

The decision making process in the earlier periods, may be described as a random stream of events that were intertwined, in the presence of a random set of individuals at

a random point of time, namely: international practices, the applications and functionality of the core freight management system and the unsolicited approaches by consultants during the "e-business wave." In the earlier periods, senior management experienced difficulties in specifying their information needs in a precise and comprehensive manner as there was a limited knowledge base regarding e-business. Routing queries to areas of expertise within the senior management group assisted in managing the information processing burden. This earlier period of time represented a reflexive period where senior management were translating information regarding e-business and evaluating the consequences of particular choices.

Independent interpretations of senior managers were translated into a network of shared meanings through a translation process of proposing and building sets of relations between separate interests and goals. This process involved the use of intermediaries (Callon 1991) or "genres of communication" (Orlikowski & Gash 1994) in the form of e-business strategies and the internal management conference, as the strategy had to be "sold" from the board to junior management. The strategic conference enabled managers to sort through any paradoxes raised by interpreting e-business decisions through their cognitive frames (Liedtka & Rosenblum 1996, 148), rather than those of the senior management thereby creating a coherent institutional intention. Participation in the strategic conference, "invited" individuals into a learning process in which they came to discover a new set of possibilities that they could shape in a way that created a personal commitment worth investing in (ibid 1996, 147). A shared position was reached because the managers were able to critically examine the e-business strategy proposed by senior management and then test the validity of alternative positions through constructive problem solving before reaching a consensus. Transport was experienced in confronting or enacting new sources of change and differing interpretations, as the organisation had undergone significant change during the past decade with its aggressive acquisition processes.

Following this "sense making" (Weick 1995) period, the senior management group were able to work towards specifying some criteria and guidelines so that the acquired information could be condensed into a meaningful summary. The guidelines were used

and built upon to design an e-business strategy for Transport to assist in managing large volumes of information whilst remaining open to new ideas. The strategy evolved by the planning group focusing their attention upon the various interpretations proposed by different members, testing out each interpretation and developing an understanding. Senior management moved cautiously, engaging in a succession of limited small decisions that fitted together over time into a full plan of action. Decisions were shaped through an iterative, trial and error learning process. As the e-business strategy began to take shape, the local network was mobilised and included social actors, such as the e-business steering committee and major customers and technical actors, such as the core operational and freight management system. The strategies found their way into text as strategic plans, media releases, and as part of the annual financial report following consensus amongst management.

Consistent with other strategic decisions, made within Transport, choices to accept or reject e-business initiatives were made by a consensus among the senior management team, and then referred to the board of directors to make the final decision. The board of directors are active in the decision making process, as some members of the senior management team are also members of the board. The processes of choice within Transport may be described by what Rogers (1995) refers to as a collective innovation decision, consistent with the organisational structures and cultural processes. The board assessed the e-business initiatives using traditional accounting control criteria, such as return on investments, as well as the “logic” of the business case. Because of the uncertainty surrounding e-business, the criteria used to assess e-business was not as definitive as the “bricks and mortar” business, but this was not to suggest that decisions were made in a similar fashion to “going to the races and punting on various horses.”

6.1.3.6 THE PUBLISHING/E-GIVING COMPANY (EGIVE)

For the publishing company, decision making processes were informal and people driven, committed to innovation and change. Determining what value e-business was

going to bring to the organisation was a key issue in the decision making process, yet a difficult one to define because of its technological, social and economic dimensions. The choice to accept or reject proposals were collective decisions shaped by trial and error learning processes where the group of decision makers engaged in a succession of limited small decisions that over time developed into a plan of action for the E-giving portal. Understanding value in terms of economic criteria was seen by the managing director as one of the biggest challenges that EGive was confronted with in their decision making because of the nature of the technology itself and the speed of change.

The following Table 6.1 provides a summary of the preceding discussion and sets the context for section 6.2. The purpose of the discussion in section 6.2, is to provide a synthesised evaluation of the actions and structures relating to the e-business adoption decision process and draw some broader implications from this evaluation by addressing the three research questions.

TABLE 6.1: DECISION EPISODES AND INFLUENCES

TABLE 6.1: DECISION EPISODES AND INFLUENCES												
Influence during	SHAPING E-BUSINESS ADOPTION DECISIONS									MAKING/TAKING E-BUSINESS ADOPTION DECISIONS		
	Identification, sense making & commitment episodes			Knowledge integration and development episodes			Evaluation, justification & judgement episodes			Choice/final judgement episodes		
	Type of influence	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Decision making unit	Choice behaviour
Description	Local and global network of human and non human actors	Structures or actions stimulating, sensitising or facilitating awareness of e-business	Structures or actions inhibiting interest in or consideration of e-business	Local and global network of human and non human actors	Structures or actions facilitating or accelerating understanding and/or support of e-business	Structures or actions inhibiting understanding, support or progress of e-business	Local and global network of human and non human actors	Structures or actions facilitating or influencing evaluation, choice, and/or justification of e-business	Structures or actions inhibiting evaluation, choice and/or justification of e-business.	Formalised vs Actual decision making unit	Making – optional, collective, authority & contingent Taking – rubber stamp	
Retail	<ul style="list-style-type: none">• Amazon.com• Internet• Managing Director• GM retail• ‘Downstairs’ franchise owner	<ul style="list-style-type: none">• Discourse – e-business rhetoric• Mimetic pressures• Change in spatial & temporal boundaries• Translation & enrolment processes• Location & size of ‘downstairs’ franchise owner• Attitude of managing director towards IS & e-business		<ul style="list-style-type: none">• Managing Director (t2)• GM Retail (t2)• IT Manager (t2)• ‘Downstairs’ franchise owner (t2, t3)• Marketing manager (t2, t3)• Franchise network (t2)• Internet Committee (t2)• Internet Business Manager (t3)• Marketing manager (t3)• Technology supplier (t3)• B2C e-business (t3)	<ul style="list-style-type: none">• Interpretive schemes (B2C & B2B) (t2)•	<ul style="list-style-type: none">• Resistance – dispute over ‘ownership’ of web site (t2)• Franchise network structure (t2)• Outsourced IS function.(t2)	<ul style="list-style-type: none">• Managing Director (t1)• Internet Committee (t2)• Internet Business Mgr (t3)• Technology supplier (t3)	<ul style="list-style-type: none">• Interpretive schemes (B2B & B2C)(t1, t2, t3)• Credibility of managing director (t1, t2, t3)• Discourse–economic & political (t1, t2)	<ul style="list-style-type: none">• Measuring the value of B2C (t2, t3)	<ul style="list-style-type: none">• Board of Directors• ‘Coalition’ (MD, GM Retail & franchise owner) (t1)• Internet business mgr & senior mgt group (t3)	Taking Authority Collective (t3)	

Note: t1, t2, t3 represents different time periods

TABLE 6.1: DECISION EPISODES AND INFLUENCES

	SHAPING E-BUSINESS ADOPTION DECISIONS									MAKING/TAKING E-BUSINESS ADOPTION DECISIONS	
<i>Influence during</i>	Identification, sense making & commitment episodes			Knowledge integration and development episodes			Evaluation, justification & judgement episodes			Choice/final judgement episodes	
Type of influence	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Decision making unit	Choice behaviour
Description	Local and global network of human and non human actors	Structures or actions stimulating, sensitising or facilitating awareness of e-business	Structures or actions inhibiting interest in or consideration of e-business	Local and global network of human and non human actors	Structures or actions facilitating or accelerating understanding and/or support of e-business	Structures or actions inhibiting understanding, support or progress of e-business	Local and global network of human and non human actors	Structures or actions facilitating or influencing evaluation, choice, and/or justification of e-business	Structures or actions inhibiting evaluation, choice and/or justification of e-business.	Formalised vs Actual decision making unit	Making – optional, collective, authority & contingent Taking – rubber stamp
GovStat	<ul style="list-style-type: none"> • Government auditor • Technology suppliers • IS manager • Internet • Computerised ticketing system 	<ul style="list-style-type: none"> • Serendipitous process arising from audit recommendations 	<ul style="list-style-type: none"> • Lack of IS culture • Limited resources 	<ul style="list-style-type: none"> • IS manager & IS dept. • GM Legal & Finance • Technology suppliers • ERP system • Strategy consultants 	<ul style="list-style-type: none"> • Interpretive schemes • Informal network interactions • Resource dependency • Attitude of IS manager to IS & e-business 	<ul style="list-style-type: none"> • Lack of IS culture • Loss of key manager • Strategic discourse & planning exercise 	<ul style="list-style-type: none"> • IS manager & dept. • Technology suppliers 	<ul style="list-style-type: none"> • IS mgs & dept. technical expertise • Political processes • Resource dependency 	<ul style="list-style-type: none"> • Senior mgt's knowledge & attitude of IS 	<ul style="list-style-type: none"> • Board of Directors • IS mgr & dept. 	'Rubber stamp' proposal Authority
Bank	<ul style="list-style-type: none"> • Global strategic group team • E-business strategy team • Consultants • Senior executives & BOD 	<ul style="list-style-type: none"> • Strategic orientation – market growth • Translation & enrolment processes 	<ul style="list-style-type: none"> • Organising structure – e-business framework 	<ul style="list-style-type: none"> • E-business strategy team • Third parties/ technology vendors • Customers • Competitors (financial & non financial) • Venture capital company (t2) 	<ul style="list-style-type: none"> • Interpretive schemes • Mimetic & time pressures • Network position & interactions • IS infrastructure • Product type 	<ul style="list-style-type: none"> • Cultural processes – control • Organising structures - planning • Customer interface 	<ul style="list-style-type: none"> • E-business strategy team • "Keepers of the money" • Venture capital company (t2) • Customers • Technology providers 	<ul style="list-style-type: none"> • Serendipitous & political processes • Strategic orientation of venture capital company 	<ul style="list-style-type: none"> • Cultural processes - control • Decision criteria – financial • Limited resources - capital 	<ul style="list-style-type: none"> • Board of Directors 	Authority

TABLE 6.1: DECISION EPISODES AND INFLUENCES

	SHAPING E-BUSINESS ADOPTION DECISIONS									MAKING/TAKING E-BUSINESS ADOPTION DECISIONS	
<i>Influence during</i>	Identification, sense making & commitment episodes			Knowledge integration and development episodes			Evaluation, justification & judgement episodes			Choice/final judgement episodes	
Type of influence	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Decision making unit	Choice behaviour
Description	Local and global network of human and non human actors	Structures or actions stimulating, sensitising or facilitating awareness of e-business	Structures or actions inhibiting interest in or consideration of e-business	Local and global network of human and non human actors	Structures or actions facilitating or accelerating understanding and/or support of e-business	Structures or actions inhibiting understanding, support or progress of e-business	Local and global network of human and non human actors	Structures or actions facilitating or influencing evaluation, choice, and/or justification of e-business	Structures or actions inhibiting evaluation, choice and/or justification of e-business.	Formalised vs Actual decision making unit	Making – optional, collective, authority & contingent Taking – rubber stamp Collective
InternetCo	<ul style="list-style-type: none"> • Three founding fathers • Internet • Reverse auction business models overseas 	<ul style="list-style-type: none"> • Choice opportunity • Individual relations • Interpretive schemes • Translation & enrolment processes 		<ul style="list-style-type: none"> • Three founding fathers (t2) • Auction adminis – trator (t2) • Managing director (t2) • Technology suppliers (t2) • Buyers & suppliers (t2) 	<ul style="list-style-type: none"> • Interpretive schemes (t2) • Organising structure – little formality and complexity (t2) • Communication exchanges (t2) • Physical layout of offices (t2) 	<ul style="list-style-type: none"> • ‘dot.com’ image (t2) • limited human resources (t2) 	<ul style="list-style-type: none"> • Three founding fathers • Managing Director (t2) 	<ul style="list-style-type: none"> • “making it up as we go along” • social discourse 		<ul style="list-style-type: none"> • Board of Directors (consists of three founding fathers) 	

TABLE 6.1: DECISION EPISODES AND INFLUENCES

	SHAPING E-BUSINESS ADOPTION DECISIONS									MAKING/TAKING E-BUSINESS ADOPTION DECISIONS	
<i>Influence during</i>	Identification, sense making & commitment episodes			Knowledge integration and development episodes			Evaluation, justification & judgement episodes			Choice/final judgement episodes	
Type of influence	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Decision making unit	Choice behaviour
Description	Local and global network of human and non human actors	Structures or actions stimulating, sensitising or facilitating awareness of e-business	Structures or actions inhibiting interest in or consideration of e-business	Local and global network of human and non human actors	Structures or actions facilitating or accelerating understanding and/or support of e-business	Structures or actions inhibiting understanding, support or progress of e-business	Local and global network of human and non human actors	Structures or actions facilitating or influencing evaluation, choice, and/or justification of e-business	Structures or actions inhibiting evaluation, choice and/or justification of e-business.	Formalised vs Actual decision making unit	Making – optional, collective, authority & contingent Taking – rubber stamp
Transport	<ul style="list-style-type: none"> • Senior mgt • Internet • Core freight mgt system • Consultants • Major customers • Literature, journals 	<ul style="list-style-type: none"> • Strategic discourse & e-business rhetoric • Technological & innovative capability • Cultural processes • Translation & enrolment processes 	<ul style="list-style-type: none"> • Specifying information needs 	<ul style="list-style-type: none"> • Steering committee • E-business subsidiary company • Senior management • Major customers 	<ul style="list-style-type: none"> • Leadership processes • Organising structures – strategic mgt conference, e-business guidelines/ strategy • Network position & interactions • Attitudes of senior mgt towards IS & e-business • Cultural processes - synergies 	<ul style="list-style-type: none"> • Time pressures – balancing major projects 	<ul style="list-style-type: none"> • Steering committee • Senior mgt 	<ul style="list-style-type: none"> • Decision criteria – financial & ‘logical’ business case • Social relations 	<ul style="list-style-type: none"> • Knowledge of physical vs virtual assets 	<ul style="list-style-type: none"> • Board of Directors 	Collective

TABLE 6.1: DECISION EPISODES AND INFLUENCES

	SHAPING E-BUSINESS ADOPTION DECISIONS									MAKING/TAKING E-BUSINESS ADOPTION DECISIONS	
<i>Influence during</i>	Identification, sense making & commitment episodes			Knowledge integration and development episodes			Evaluation, justification & judgement episodes			Choice/final judgement episodes	
Type of influence	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Heterogeneous Network	Facilitating structures/ actions	Inhibiting structures/ actions	Decision making unit	Choice behaviour
Description	Local and global network of human and non human actors	Structures or actions stimulating, sensitising or facilitating awareness of e-business	Structures or actions inhibiting interest in or consideration of e-business	Local and global network of human and non human actors	Structures or actions facilitating or accelerating understanding and/or support of e-business	Structures or actions inhibiting understanding, support or progress of e-business	Local and global network of human and non human actors	Structures or actions facilitating or influencing evaluation, choice, and/or justification of e-business	Structures or actions inhibiting evaluation, choice and/or justification of e-business.	Formalised vs Actual decision making unit	Making – optional, collective, authority & contingent Taking – rubber stamp Collective
EGive	<ul style="list-style-type: none"> • Managing Director • Internet • Web Site Developer 	<ul style="list-style-type: none"> • Discourse – e-business rhetoric for marketing • Managing Director's attitude towards IS 		<ul style="list-style-type: none"> • Managing Director • EGIVE Team/ Division • Internet and Database systems • Technology consultants • Not for profit organisations • Professional Associations 	<ul style="list-style-type: none"> • Leadership • Network position & interactions • Cultural processes – commitment to change and innovation • Previous experience in using databases – creating communities • Directory products – “natural progression” 	<ul style="list-style-type: none"> • Aligning business & IT goals 	<ul style="list-style-type: none"> • Managing Director • EGIVE team 	<ul style="list-style-type: none"> • Social and economic values 	<ul style="list-style-type: none"> • Understanding value in terms of economic criteria 	<ul style="list-style-type: none"> • Managing director & EGIVE team 	

6.2 HOW E-BUSINESS ADOPTION DECISIONS EVOLVE IN ORGANISATIONS: ITERATIVE AND OVERLAPPING EPISODES

The following discussion addresses the first research question, that is “How e-business adoption decisions evolve in organisations?” The examination of e-business adoption processes generally revealed a nested set of processes, intertwined with other processes within and between organisations and influenced by a set of contextual elements (Langley & Truax 1994). Using strategic/non strategic labels are avoided as the “inductive exercise” was found to be socially constructed by social and institutional processes of classification (Scarbrough 1996). For example, not all organisations defined e-business in terms of it being strategic, nor was the process necessarily initiated in some rational form of perceived need or recognition of some value for the organisation, such as the case with the government statutory authority. Further, if there is a possibility of bottom-up, middle-out or top down strategy formation, then “almost any activity taking place in an organisation may (or may not) be part of strategic practice, whether or not it bears a strategic label” (Hendry & Seidl 2003). Rather this study conceptualises the e-business adoption process as interacting and reflexive processes that relate to “dramatic episodes” (Laroche 1995) or “decision streams” (Kriger & Barnes 1992), namely, “identification, sense making and commitment” episodes, “knowledge integration and development” episodes, “evaluation, justification and judgement” episodes and decision taking and making episodes. Choo’s (1998) information use model of sense making, knowledge creation and decision making, Langley and Truax’s (1994) technology adoption model of strategic commitment, technology choice and financial justification and McNulty and Pettigrew’s (1999) model of shaping decisions and making/taking decisions assisted in labelling the decision episodes arising from the case study data. These models are grounded in organisational decision making models, enactment theory and adoption models extensively discussed in Chapter Three.

¹ Pettigrew et al. (2001) distinguishes between “episodic change” which groups organisational changes that tend to be infrequent, discontinuous and intentional and “continuous change” that treats change as a continuous, nonepisodic phenomena with small uninterrupted adjustments, created simultaneously across units, which create cumulative and substantial change. In the context of this study the purpose in using the term ‘episode’ is as an analytic conception to describe sequences observed with the organisations, in keeping with writers such as Giddens (1984). However, in doing so providing a clear distinction from the term ‘stages’ which denotes some type of linear sequencing.

For ease of analysis, each of the episodes will be discussed separately. However, in reality they are iterative and overlapping, where continuous adaptation, editing, improvisation, learning and changes in response repertoires (Pettigrew et al. 2001) occur, varying in different social and temporal contexts.

6.2.1 IDENTIFICATION, SENSE MAKING AND COMMITMENT EPISODES

The identification, sense making and commitment episode, relates to the processes by which the organisations developed some sort of cognitive “commitment” to e-business. It was preceded by streams of ongoing events that provided an “occasion for sense making” (Choo 1998) or signalling the need for action (Nutt 1984) where, broadly speaking, organisations went about generating answers to the question “What’s going on here?” (Weick 1995). The heterogeneous networks of e-business tended to be less convergent, as information was “scarce, contradictory, asymmetrical, and difficult to interpret” where “uncertainty rules the day” (Callon 1991, 154). Making sense of e-business was “equivocal” (Weick 1990) as it was interpreted in multiple and in some cases conflicting ways. E-business provided unusual problems in sense making as it was poorly understood in these earlier periods and continuously reinterpreted in the process of adopting it to a specific social and organisational context. Further, it linked disparate entities thereby engaging in joint sense making in the process of mediated interaction (Fulk 1993). Therefore, the central problematic situation in this episode generally involved “crafting solutions” (Day & Schoemaker 2000) to reduce uncertainty or resolve ambiguity regarding e-business and determining how to develop some “shared” meaning so that the organisation may act collectively (Choo 1998, 70).

The identification, sense making and commitment episode was the most difficult of all the episodes to identify as it was largely an “informal incubation process” for the organisation that had no clear beginning or end, wefted together with a number of change agendas in other areas of the organisation, fluctuating with changes in time, information and contextual conditions (Langley & Truax 1994). For example, in the banking organisation, e-business was embedded in a global strategic transformation initiated by the managing director to reorient the organisation in dealing with deregulated and global financial markets, that is it was largely “planning” driven. In

EGive e-business was more 'tactically' linked to other organisational issues where technological change raised opportunities in using its existing directory database. For the transport company, the strategic decision to implement a core freight management system because of incompatible legacy systems acted (rather unpredictably) as a contextual element in making sense of e-business because of the system's e-business capabilities.

The identification, sense making and commitment episode was inherently a fluid, open, and disorderly, process, involving developing some agreement on a set of meanings or "plausible" interpretations of e-business, influenced by "sense making triggers" (Griffith 1999) that constitute the process of noticing or identification such as its perceived novelty or institutional pressures, and what is perceived as its salient features (for eg. core versus tangential). The highly idiosyncratic sequence of events and decisions influencing this episode reflected in many cases a serendipitous process. However, the extent to which the choice behaviour remained random and disconnected was determined by factors such as how actors were enrolled in the heterogeneous network (Callon 1991), the interpretive schemes (Giddens 1984) of e-business and existing decision contexts (Choo 1998). For example, it was the government audit recommendations in the government statutory authority case that acted as the impetus for implementing a computerised ticketing system that had flow on effects with regards to technology vendors (corporate sponsors) providing e-business capabilities. GovStat had limited resources and a weak IS culture, but was perceived by these third party providers as a valuable marketing tool through its web site because of its identity within the community. Therefore, adoption decisions remained a fairly serendipitous process throughout all the episodes, as it was "just whatever came up" with the corporate sponsors. In contrast, for the transport company, the random set of events and time which, initially raised e-business issues, turned into a experiential learning exercise involving senior management as e-business became part of the broader strategic agenda. For the bank, while the e-procurement project was initiated by an unsolicited approach by a third party, the Internet banking project arose through mimetic pressures from competitors.

Making sense of e-business involved processes such as experiential learning, comprehension, understanding, explanation, attribution, extrapolation, and prediction where organisations made sense of their experience and modified behaviour in terms of

their interpretations (Choo 1998, 67) and the information available. However, while the perceived uncertainty surrounding e-business in the earlier stages was driven largely by a lack of information, this soon turned into issues of ambiguity because of the volume and equivocality of the information that became available, from the heterogeneous network of actors. The lack of clarity raised questions for the organisation regarding what information, amongst the "flood of signals" were important and needed to be focused on (Choo 1998).

This was a problematic situation in that e-business was subject to multiple and sometimes conflicting interpretations embedded in organisational values, history, experiences and ambivalent information (Choo 1998). Latour (1987, 131) describes this problematic situation as the "problem of the builder of fact," and "objects", that is, "how to convince others, how to control their behaviour, how to gather sufficient resources in one place, how to have the claim or the object spread out in time and space," requiring the enrolment of allies in the creation of the "black box" or in this context e-business. While those fully enrolled may accept the "initial" solution by those at the centre of translation, others in the network may not be so cooperative. Certain types of information may be deemed legitimate by some and not by others (Parkin 1996) as organisations consist of people and stakeholder groups with different views on what factors are relevant to particular decisions (Walsham 1994). Hence, discourse was a major mode of this episode "as it is through talk that organisational members find out what all others think, and it is through talk that people persuade, negotiate and reshape their points of view" (Choo 1998).

For example, the managing director of the transport company was critical of the earlier periods, where he saw the organisation had wasted time in reviewing all the proposals that had come before them, as they did not have clarity regarding their information needs. However, determining information needs in these earlier periods was perceived by the executive director of strategy and the general manager of operations as difficult and was not possible until "cognitive gaps" about e-business within the organisation were narrowed through dialogue between senior managers. The goal of the initial investigations was to achieve a degree of certainty that would allow the organisation to engage in action at minimal cost and minimal risk. Incomplete, but tentative understandings of e-business were used as a means to engage different members of

senior management in a dialogue of the situation and use the feedback of this action to further enhance the value of e-business, especially as senior managers came to terms with acquiring virtual rather than physical assets.

Initial attempts to reduce the ambiguity was to try and fit the information with existing assumptions, beliefs and expectations, that in themselves in some cases were contested and contradictory, to construct the most reasonable interpretation that made sense of the available information (Choo 1998, 90). Therefore, decisions were based on what appeared more "plausible" than what was most accurate (Weick 1995) or in terms "convenient to the most powerful actor" (Parkin 1996), an "organising vision" (Swanson & Ramiller 1997) arising from tentative insights and experimentation (Iedema 1999). Weick (1995, 61) posits that the reason for this is that "in an equivocal, postmodern world, infused with the politics of interpretation and conflicting interests inhabited by people with multiple shifting identities, an obsession with accuracy seems fruitless, and not of much practical help, either." From an actor network perspective, to be able to maintain the hegemony of the definition and retain control over the other network actors requires a "skilled ongoing act of manipulation" where only those enrolled into an "alliance" with the key actor are "deemed qualified to speak on the issue" which is "always prone to failure as other powerful interests become associated with the problem" (Parkin 1996).

As organisations were responding to events that had already taken place, organisations made sense of e-business from a specific point in time, so that what the organisation was experiencing at that moment was likely to affect what the organisation noticed as it cast "a backward glance" (Choo 1998, 69). In looking back, normative aspects of justification and legitimation are likely to play a key role in the retrospective interpretations (Laroche 1995) and in revealing plausible configurations, as human actors choose meanings by overlaying past interpretations as templates to the current experience (Choo 1998, 69). For example, at the time of the "e-business wave" the transport company was actively investigating a core freight management system to replace the incompatible legacy systems that had been acquired during takeovers of other companies. The e-business capabilities of the freight management system became a factor in the decision to adopt e-business and in later considerations of establishing a portal. For the book retailer, at the time that the online book retailer Amazon.com

became worldwide news, the Australian book industry was losing market share and was looking for a new image and channels of distribution. The mimetic isomorphic effect of Amazon.com became part of an overall change strategy involving the image of the book retailer. Ironically, at the same time the book retailer was examining the "superstore" concept used in Europe and the United States, whereby the physical size of stores were increased to offer a "total recreational" experience. However, considerations of how the virtual model would fit within the existing franchise network structure were omitted causing disputes regarding ownership.

The formulation of some guiding theme or "plausible interpretation" of e-business is linked to the organisation's technical, managerial and organisational knowledge and assumptions (Pitt & Clarke 1997), "cognitive frameworks" (Scott 1995), "sectoral recipes" (Child 1997), "dominant logic" (Laroche 1995), "interpretive schemes" or "stocks of knowledge," which actors draw upon in order to make sense of their own and others action and in doing so produce and reproduce structures of signification or meaning (Walsham 1993, 61). Therefore, from the identification and sense making episodes, organisations developed "a reasonable and socially credible rendering of what was taking place" (Choo 1998, 20), identifying areas where it lacked some knowledge or capability to respond to the situation, such as exploiting an opportunity or pre-empting a threat.

Whilst not necessarily reaching total agreement, the sense of commitment to the goals and behaviours implied by the overarching understanding served as a meaningful context for the knowledge integration and development episodes. From an actor network perspective, the development of e-business up to this point may be viewed as a process in which organisations first struggled to position the project within the global network from which resources would emanate and then set about creating and stabilising a local network (Lea et al. 1995) as the organisation moves towards conducting formal activities, such as feasibility studies. While the costs involved in conducting such activities, may appear to make reversing decisions more difficult (Brockner 1992), it does not necessarily mean that the organisation would eventually adopt (Langley & Truax 1994). For example in the banking case study, following the preparation of a detailed plan regarding the e-procurement initiative and general agreement, the project was rejected when it "entered" another episode involving evaluation and justification because of the limited availability of capital and its failure to meet "traditional" accounting control criteria.

The discussion now turns to the knowledge integration and development episodes, in which deliberation, formality and sequence became more evident. However, as stated previously, this is not to suggest that the next episode happened in some timely linear sequence. The ill-defined and ambiguous component of the decisions made in the identification, sense making and commitment episode may involve long periods of “gestation” prior to the beginning of a more “deliberate process” (Langley & Truax 1994).

6.2.2 KNOWLEDGE INTEGRATION AND DEVELOPMENT EPISODES

While the previous episode was predominately concerned with how views were exchanged and negotiated to arrive at a ‘common’ and ‘plausible’ interpretation, the knowledge integration and development episode examines the activities and decisions dealing with how this understanding of e-business is converted into specific projects, leading to the development of solutions to problems or the elaboration of opportunities (Choo 1998). The control, possession or utilisation of knowledge is an important aspect to the appropriation of IT based innovations (Hislop et al. 2000) as well as “executive” decision making (Earl 2001) involving the utilisation and integration of “new” knowledge and artefacts with existing organisational structures, practices and knowledge.

The episode may be described as what Stinchcombe (1990, 167-168) refers to as determining the social requirements, which include social, technical and economic issues, that is, (1) what is technically involved in the design of the innovation; (2) what are the risk and profits that justify the innovation; (3) technical costs of the innovation; (4) the market of benefits, or who will want the goods, at what price, and how can the organisation reach them; (5) how benefits are to be distributed and what promises of future returns can attract investors; and (6) what are the levels of competence, trustworthiness, motivation and so on of the people involved. These considerations are embedded in evaluation routines, which are discussed further in section 6.2.3. Deciding on the social requirements in some cases were embedded with other project decisions, such as in the banking case study where there were multiple e-business initiatives, competing against other projects within the bank for funding.

The uncertainty surrounding e-business began to ebb for organisations as the heterogeneous network became temporally more stabilised, and so some kind of focus was able to be formulated or a guiding idea to steer further search and design cycles (Mintzberg et al. 1976), or what Nutt (1984) describes as “detailing.” That is, the search for and modification of ready made solutions or design custom made solutions for e-business initiatives. Such considerations involved system implementation and design issues, which in the context of this study, are those that shape the adoption decision, rather than the detailed decisions made in each of the respective periods following the decision to adopt e-business.

As discussed previously, the formulation of some guiding theme was the outcome of knowledge sharing, participative dialogue and collective reflection by the decision makers of the information thus far (Choo 1998). Orlikowski and Gash (1994) found that inconsistencies in interpretive schemes often occur when technological frames are not articulated and reflected on. For example, following the initial episode and a number of meetings, the bank e-business strategy team developed an e-business framework. It was considered that it was not until this framework was developed that some “coherent” discourse could continue,

“Let me tell you there was blood on the floor. People had very different opinions and because there were not a lot of facts available, people were driven by opinions ... The early meetings ... were very unstructured, didn’t really go anywhere, and it was just a whole lot of people with quite loud voices and opinion. The main work we did as a team when we worked on strategy was we put a framework in place that everybody could start and think about it in a rational way and then they could start to have some real discussions and take the opinion out of it. It was a very stressful period.” [IB]

The e-business team established a unified mandate for interpretation and action in relation to the changing technological environment. That new mandate was simultaneously reflected in the various e-business projects and fostered a “strategic” identity to define the team's role in the bank's affairs. Intuition, ‘gut instinct,’ ‘blind faith’ or what is sometimes “euphemistically replaced by the term strategic insight” (Bannister & Remenyi 2000) also plays a significant role in such situations or when a guiding theme does not readily crystallise (Choo 1998; Khatri & Ng 2000). Intuition, may also be influenced by the decision makers attitudes towards and past experience with IS. For example, despite the lack of an organisational “guiding theme” within the

government statutory authority the IS manager was able to capitalise on the serendipitous events because of her "vision" for e-business which in turn was influenced by her attitude towards IS.

The guiding theme or intuition, may also reveal gaps in the organisation's existing knowledge and/or capability, such as expertise, skills, hardware and software, customer databases, maps and blueprints, standards and specifications, which may inhibit solving problems or taking advantage of an opportunity (Choo 1998). For example, while the EGive company recognised the potential of the Internet quite early, because of its experiences in managing customer databases, it had no experience in web design, which initially delayed the EGive project because of problems in articulating and aligning the requirements with third parties engaged to design the web site.

Gaps in the organisation's "knowledge domain", understanding or capability may be narrowed by, locating expertise or experience within the organisation, by learning or developing the desired capabilities, or by transferring knowledge from outside the organisation (Hatch 1997). Choo (1998) posits that knowledge may be created by knowledge conversion, knowledge building and knowledge linking. In converting knowledge, the organisation moves between tacit knowledge of individuals who produce creative insight and its shared explicit knowledge. Nonaka and Takeuchi (1995) posit that it is through the activities of "sharing tacit knowledge" and "creating concepts," such as words, expressions, metaphors and analogies, that initial feelings of uncertainty and ambiguity subside to a better sense of direction as to what is desirable and achievable. For example, the transport company used the metaphor of different football codes and their relevance to particular contexts in deriving some direction regarding e-business,

"I think the biggest challenge is actually being aware of development so that you don't lose sight of the game. And that is really what we are trying to do. Like you could be the Australian champion of rugby league but if the rest of the world is playing rugby union it doesn't do you much good. I think that it is a challenge, there are so many balls in the air, so many announcements that I still think it is still quite embryonic in terms of the broader e-business ..." [GM]

Further, the extent to which the interpretation of e-business related to existing organisational and technological routines assisted in integrating knowledge, without the need for either extensive communication or to acquire specialised knowledge.

An organisation builds knowledge through identifying and nurturing activities, which strengthen the organisation's distinctive core capabilities, enabling them to grow over time such as through shared problem solving and experimenting (Choo 1998). For example, through its strategic management conference, the senior executive of the transport company was able to share its interpretation it had created and gather feedback about its implications with other senior management levels. Shared problem solving was part of its cultural processes to create synergies.

Knowledge is also transferred into value not only within the organisation but also through interactions with third parties (Choo 1998), such as customers, suppliers and technology vendors or what Ciborra and Andreu (2001) refer to as inter-organisational "learning ladders." The way organisations "unpack" (Newell et al. 2000) knowledge from these third parties depended upon factors such as the actors involved, how it was being managed and the underlying knowledge base. For example, the transport company reviewed the proposals by engaging the expertise of its various senior managers, which was coordinated by a few key actors as part of strategic development to determine its value for the company. Further decisions were made in regards to forming learning alliances with other organisations in order to share knowledge situated in specialised relationships, cultures and operating styles of partner organisations (Hatch 1997). For example, the strategic technology alliance for the e-procurement offering in the banking organisation, to fuse complementary skills, covering different aspects of the know-how needed (Glaister & Buckley 1996) and "internalise knowledge and capabilities that are at least partially exogenous to them" (Hagedoorn & Duysters 2002). From a resource dependency and economic perspective, the implied motive may be to bring together complementary assets to defray costs and share risk, alter its competitive position by extending its domain of control and exploit each parties strengths at different stages of the value chain (Stuart 2000).

Network technologies themselves are also influential in changing the way knowledge is acquired, classified, distributed and used, bringing about social transformations (Hatch

1997; Earl 2001), such as the e-market place. The power of these technologies “brings a shift in emphasis from the ends of action to its mean” in that the “rhetoric of efficiency that pervades modern organisations may be seen as an artifact of new technologies, that leads to a redefinition of knowledge and thus of technology itself” (Hatch 1997, 157). For example, moving away from the physical branch structures of customer service and providing such banking services electronically has been marketed by banks as providing a better service to its customers, whilst reducing its transaction costs. Whilst met with some opposition as to the quality and accessibility of such banking services, the Internet is considered to be shifting the power from suppliers to buyers, thereby making markets more customer based, whereby buyers have the ability to quickly and easily compare prices for a range the banking offerings. In addition, the development of the e-market place questions the boundaries of a bank’s intermediary role. As discussed previously, this was identified as a major threat for the banking organisation.

Therefore, in contrast to the identification, sense making and commitment episode, the processes in this episode were usually explicit, purposeful and formal, “leaving concrete traces in the form of documents” (Langley & Truax 1994). The tasks were often delegated to a project level, team, some type of steering committee or third parties such as consultants or technology vendors. For example, arising from the global strategy team agenda, the bank formed an e-business strategy team, who divided the e-business strategies into revenue deriving and cost reduction streams, incorporating various projects such as the Internet Banking and e-procurement project. The Internet Banking project was managed at a project level. It was considered to be an extension of existing services rather than a new business model, its adoption being influenced primarily by mimetic pressures from competitors. The e-procurement project was managed by the e-business strategy team and was considered a totally new business model. In later episodes cycles it was subsumed by the venture capital company with the assistance of the consultants engaged to examine the viability of a venture capital company. The preceding example is also demonstrative of how the “distribution and range of knowledge enlisted by each project is a uniformly important factor in constructing a strategic system of classification” (Scarbrough 1996, 210)

The knowledge integration and development episode involved considerations such as the feasibility and impact of e-business based on the organisation’s initial interpretation.

The tasks usually involved detailed specifications of the type of system needed, and an analysis of how e-business would fit into current operations, requiring what Feeny and Willcocks (1998) refer to as "business systems thinking." In contrast to the nature of the relationship with third parties such as technology vendors in the first episode, where they acted more as a random source of information or influence, in this episode, contacts with such third parties intensified and became less passive. In some cases, such as with the bank, the feasibility study for Internet Banking implicitly embedded a supplier choice as the technology vendor was hired for technical advice with respect to this project. That is the issues surrounding how the bank would implement Internet banking, were translated into their software by a technology vendor. The use of the current technical and strategic rhetoric, legitimised by its reputation, was sufficient to enrol the bank into radically expanded problem definition. The consultant was perceived as the expert and was deemed to speak legitimately on behalf of the technology. Therefore, the bank was enrolled into the consultant/technology network with the technology vendor acting henceforth as the "obligatory passage point" (or stronghold in the network) through which all legitimate interactions had to pass. The technology advice and software provided subsequently proved flawed.

The knowledge integration and development episode tended to consume a lot of time and resources as it was iterative, going through multiple search and design cycles (Choo 1998, 178). While this was the case for the larger organisations, such as the bank and transport company, due to cultural and institutional influences, the book retailer, skipped this episode entirely when making decisions regarding the business to consumer model. The organisation moved from the identification episode to making the decision, because of competitive and time pressures, which subsequently resulted in conflict and litigation within the franchise network. Later decisions regarding business to business suggest that this episode is forming part of the overall adoption decision process with the appointment of the Internet Business Manager and her associated responsibilities regarding designing and implementing strategies for conducting business electronically.

The processes associated with the knowledge integration and development episodes tended to be more formal and visible than those associated with the previous episode, and followed a loose kind of sequence. However, contextual elements continued to intervene to affect these processes, such as the heterogeneous network surrounding

these decisions, levels of expertise and attitudes towards IS, institutional pressures, and major decisions occurring in other areas of the company. The knowledge integration and development episodes also served to confirm (or disconfirm) prior commitments as well as to specify the systems required and technology vendors. The following section turns to the episodes involving how organisations evaluated, justified and judged e-business proposals.

6.2.3 EVALUATION, JUSTIFICATION AND JUDGEMENT EPISODES

The selection, justification and judgement episode relates to the activities involved in choosing among available options or capabilities (Choo 1998). Activities included the processing and analysis of information of various alternatives in order to weigh their relative merits, or “screening” type routines (Mintzberg et al. 1976), which were guided by evaluation choice routines (Mintzberg et al. 1976), IS investment evaluation methodologies (Bannister & Remenyi 2000) or what Parkin (1996) refers to the “dominant social values.” These social values have sources within the organisational field (Scott 1995) and with particular interests in the heterogeneous network (Parkin 1996).

The heterogeneous network at this stage of the decision episodes tended to be more convergent, that is, the actors “became agents with precise objectives and instruments for calculating costs and measuring returns, the trail is cold and the story is economised” (Callon 1991, 154). The collective or individuals in the network come to their own judgements on the proposed solution based on their fundamental interests (eg. technical, social, personal) and their role language (Parkin 1996). This also included actor networks in the form of other projects, such as in the case of the bank, where the e-procurement proposal had to compete with other proposals as it was part of the bank’s overall strategic planning process. These judgements were expressed to other members of the network in what Parkin (1996) describes as judgemental arguments, using “whatever data is appropriate to their case, but generally using language appropriate to the problem definition” or what is determined by the dominant structure.

In some cases the “social values” were not considered effective, as the evaluation criteria and method did not correspond with the rationale of the project. Therefore, a

salient part in the justification process, involved large amounts of emotional and cognitive attention to integrate the decision process into the ongoing stream of organisational actions (Kriger & Barnes 1992) largely involving political processes. Parkin (1996) posits that it is the role of the judgemental arguments to demonstrate "how close any particular judgement is to the dominant social values of the actor-network and therefore how much coercive power (and reaction) will be generated by the resulting action." That is, power makes decisions possible when the social values are considered not "appropriate" by members of the network. For example, the "keepers of the money" in the bank made judgements using accounting control criteria, whereas the e-business strategy team considered that these criteria did not correspond with the rationale of the e-procurement project,

"... the trouble with using that traditional NPV approach is because it is based on cash flows. But a lot of things you are doing around the Internet are actually around pulling together a community for example which gives you all these strategic options with what you do with that community. And so it is the value of those options that is sort of reflected in the stock market valuation of the companies that have created those communities ... I mean, you do not have to go away from the NPV approach if you are not willing to try and value options but that is normally a bit 'papery' for a hard nose banker." [GM]

Further, the e-business strategy team considered that the bank's strategic planning and budgeting processes did not align with IT investment decisions requiring a different approach,

"... a portfolio model for IT investment, where you say strategic IT, and informational IT and transactional IT and infrastructure. And you basically as a company you sort of say, this is our IT budget but this is the portfolio, this is the amount we want to spend in each of these areas of IT and then you can go okay that is what we are aspiring to next year or over the next few years so let's target that." [GM]

Notwithstanding the recognition given to the e-procurement project during the strategic planning process, the limited capital available within the organisation created a competitive environment for funding, and so the project was rejected by the Board, "well it did not get rejected it just did not get accepted." Further, having to apply the strict accounting criteria, meant that the e-business strategy team had to search for alternative approval processes. It was serendipitous that the consultant company, who had been engaged by the bank to work on a venture capital company project, was able to be mobilised providing an appropriate "approval" language. Therefore, while this is

the final 'shaping' episode, it did not necessarily mean that new cycles back to the development or identification episodes did not occur, for a redefinition of the decision situation or a better alternative (Langley & Truax 1994; Choo 1998), especially if too much power is deemed to be required to have the decision accepted (Parkin 1996). Laroche (1995) posits that "no choice is ever standing alone in the light of their detached judgement" as the process of constructing decisions through a social representation is a continuous movement of developing cycles of action.

The evaluation, justification and judgement episode, interacts with the other two episodes in several different ways. Firstly, decisions regarding the social, technical and economic requirements of the e-business initiatives were embedded in evaluation routines of the organisation, or what Laroche (1995) refers to as "looking back; decisions as rationalisations." Looking back is considered by Laroche (1995) to mobilise the social representation of decision making as well as ahead. That is, actors are able to construct "decisions" as more or less isolated cases, enabling them to explain things and to attribute responsibilities to other actors as well as themselves. This may involve a re-organisation of their initial ideas about the process. Normative aspects of the representation such as evaluation routines (eg. accounting criteria) are likely to play a key role in the retrospective interpretations, as "justification and legitimation are frequent issues in looking back" (ibid 1995, 72).

Secondly, with respect to the identification, sense making and commitment episodes, the availability of resources was in some cases a "precipitating" element (Langley & Truax 1994), or what Laroche (1995) refers to as "looking ahead." For example, the managing director of the E-Give organisation, identified access to resources as one factor that enabled her to commit to the use of the Internet early,

"I could see the potential and I think I could see the potential because of my direct marketing background. Because ... I don't particularly see technology as being a scary thing. Being in a position where you could have some financial resources to play with a little bit. Being in a position where I was not reporting to anyone else so I could play with it, those types of factors."

Conversely, the inability of bank to obtain financing for its e-procurement project was both an interrupting and a re-orienting element in searching for alternative approval processes. Finally, the episode itself was influenced by contextual elements, such as the availability of resources, cultural processes, leadership processes, and network

interactions, which are discussed in section 6.3. Therefore, while the social representation of decision making assists actors to make their way in the “organisational mess” to “look ahead” through coordinated expectations and behaviours stemming from some shared representations, it may be that the decisions are just “useful illusions” in that organisational members show incoherences describing reality in completely different terms (Laroche 1995).

The following section examines the final episode involving the acceptance or rejection of the e-business proposal. The decision makers with the formal authority can only act upon and make choices about the information they are prepared to recognise and thereby include as a legitimate part of their deliberations (McNulty & Pettigrew 1999). The choice behaviour is dependant upon contextual elements such as the membership of the authority structure, its involvement in shaping the content, context and processes of e-business decision making and hence the preceding decision episodes. This final episode overlaps with the judgement processes in the evaluation, justification and judgement episode, as the decision to adopt may effectively be made by another group who holds the power but not necessarily the authoritative position in the organisation. This is elaborated on further in the following section.

6.2.4 DECISION TAKING AND MAKING: AUTHORISATION STRUCTURES AND ROUTINES

Making choices and taking decisions is seen as the final episode in a continuous decision making process (McNulty & Pettigrew 1999) in the face of competing and contradictory arguments embedded in a variety of role languages (Parkin 1996) and organisational routines (Laroche 1995). The decisional role of the organisational body established to make decisions to accept or reject proposals may occur at different parts of the decision episodes because of different levels of involvement distinguished by decision and non-decision behaviour, power relations between members of the authority structure, and dialogue and social interaction between members (McNulty & Pettigrew 1999).

How the final judgement is achieved relates to the nature and purpose of the social argument (Parkin 1996) and its relationship to organisational routines, such as planning processes, as they form an underlying network of concrete motives, “a solid ground on

which the social representation can lean" (Laroche 1995). Naturally, organisational routines may play an important part in all the decision episodes as they materialise the process (ibid 1995, 71). A powerful argument is considered by Parkin (1996) to be one that is grounded in data, logically structured and is legitimised by a widely accepted value system. Therefore, the fit achieved between an argument or set of arguments and the dominant social values of the group that will experience the action, will determine the degree of resistance generated by the resulting action (ibid 1996, 261). For example, in the government statutory authority the choice to accept the proposal was effectively made by the IS manager and her department who possessed the technical expertise. The board of directors involvement consisted of "rubber stamping" or "taking" the decision to accept the e-business proposals, because of the IS culture and the "minimal cost" proposal presented to the board.

In contrast, the transport company's board membership and cultural processes meant that the board was not only involved in raising ideas and questioning assumptions about the e-business proposals, but also was involved in developing the context for strategic debate, establishing methodologies for strategic development, evaluation and decision making, and monitoring the strategic content of e-business. Therefore choices were made collectively by gaining a consensus among the members of the organisation. For the book retailer, the decision was actually made by the coalition formed around the initial proposal that is the managing director, the general manager of retail and the "downstairs" franchise. The board relied on the personal credibility of the managing director and his commitment to technology initiatives in "taking" the decision. For the bank, in keeping with all authorisation routines, the choice to accept or reject the proposals was made by the board of directors, in keeping with its strict control processes and authority structures largely due to its size and corporate governance requirements. For the Internet start up company the decision to accept the proposal was made at the same time as the e-business model was identified, by the three "founding fathers." Finally, for the e-giving organisation decisions were made collectively amongst the managing director and her team, who were extensively involved in shaping the decisions.

6.2.5 IMPLICATIONS OF THE FINDINGS FOR SIS ADOPTION DECISIONS PROCESSES

The observations made in the case studies, highlights the problem associated with conceptualising e-business adoption as a discrete decision process or a stage in the SIS planning process found in existing SISP models. That is, there is a lot of talk about decisions, decisions that have been made, will be made, should be made, will never be made, who will make them, when, how and why they will be made and with what results (Laroche 1995). As Langley and Truax (1994) found, ambiguity arises because: adoption involves different levels of interacting processes that may be called decisions; the notion of "decision" is suggestive of a degree of managerial control and purposefulness that "tends to discount the role of contextual elements impinging on the process;" and, it is difficult to draw "neat" boundaries between technological and other strategic decisions. Rather, it may be more closely represented as a flow of intertwined processes, than a "sum of juxtaposed decisions" where managers become immersed in processes they do not necessarily control and often do not understand (Laroche 1995).

The e-business adoption decision making episodes may be seen as an endeavour of a network of actors to manage events and institutional forces in such a way that they may be aligned with some conception of an ideal meaning of e-business for the organisation. The endeavour to derive or impose a sense of meaning took place through an array of dynamic processes involving power, persuasion, conflict, learning, or serendipitously, occurring simultaneously or separately over time and space. Therefore, there is no simple answer to the question as to how e-business adoption decision processes evolve in organisations, and so the pure order of any decision model should not be taken "too seriously ... [as] ... it is only a quick, crude sketch of the ever changing complex reality of social exchange" (Parkin 1996). Notwithstanding this, the theoretical framework provides some guidance in showing that there is some order in the "apparent chaos of organisational decision making," albeit that this order is not easily predictable (Kriger & Barnes 1992).

While the issue of uncertainty regarding e-business was a common factor amongst the case studies, the way e-business was perceived and the judgements made were different, as organisations tend to select a different "portfolio of cues" and weigh them differently

(Parkin 1996). That is, the adoption decision process is influenced by a dynamic set of contextual elements. As discussed further in the following section 6.3, it is the analytical interplay of these factors and processes that likely provides the deeper understanding of the conditions that enable or constrain adoption decision making episodes. I now turn to a discussion of these issues.

6.3 DRIVERS AND INHIBITORS OF E-BUSINESS ADOPTION DECISIONS: A DIVERSITY OF INFLUENCES

The purpose of this section is to synthesise and summarise the diversity of factors and processes that arose in this study, thereby addressing the second research question “What are the major drivers and inhibitors of these adoption decisions?” Together they reflected variation in different organisational contexts, interpretive schemes and social activities that went into making the adoption decisions and choices. The analysis was conducted in terms of the possibility for, but not the necessity of, such influences since the mobilizing factors and processes were often so numerous, diverse, ambiguous and uncertain, and had an equivocal a priori relationship to the e-business adoption episodes.

Notwithstanding its foreboding perspective, Latour (1991, 130), posits that it is necessary to describe the network in “order to make a diagnosis or a decision about the absurdity, danger, amorality, or unrealism of an innovation.” The discussion begins with an examination of these networks.

6.3.1 CONFIGURING E-BUSINESS: HETEROGENEOUS NETWORKS AND TRANSLATION PROCESSES

The decisions regarding the adoption of e-business were influenced by the views of e-business created by a network of actors. The actors which formed themselves under the rubric of e-business were multiple, heterogeneous and uncertain, such as individuals, groups, steering committees, authority structures, the Internet, existing IS infrastructure, products, services, consultant reports, and web domain names identified as part of the organisation, including the complex plurality of involved actors 'outside of the organisation' (Parkin 1996) such as management and IT consultants, suppliers and

customers. As seen in the case studies, the composition of the networks is not predetermined but is an experiential matter achieved through the negotiations of actor-networks with one another (Lea et al. 1995), discussed further in section 6.3.2, which varied in different contexts (discussed further in section 6.3.4). However, broadly speaking the networks can be described as boundary spanning networks, intra-organisational vertical networks and intra-organisational horizontal networks (Hislop et al. 2000) incorporating the social, the physical, the technical and the virtual.

The heterogeneous mixture of technical and social elements are indefinite and reflexively linked, in that descriptions of what e-business meant for the organisation was derived from descriptions of the socio-technical context and similarly, descriptions of the context are dependent upon a sense of e-business in its context. For example, the incompatibility of the legacy systems in the transport company brought about by its previous acquisitions, set about the search for a core freight management system which was found to have e-business capabilities identified as enhancing the offer it could make to its customers along the supply-chain network, in logistics and warehousing services. That is, the core freight management system became an "obligatory passage point" for senior management in considering e-business initiatives. Bank being an information intensive type organisation, meant that its products and services were more easily suited to the e-business environment than other types of product areas.

Therefore, the diversity of meanings associated with e-business were not simply the diffusion of some basic concept of e-business (for example B2C or B2B), nor a case of organisations striving to discover what e-business really was, "as if it were underpinned by some Platonic essence" (Bloomfield et al. 1992) as the changes occurring were determined more by circumstances and events. Rather, while some of the different e-business initiatives shared some similarities, the fabrication of e-business for each organisation was translated during the construction and transformation of localised network building whereby sets of relations between separate interests, goals, projects and objects were proposed and built (Lea et al. 1995). From an actor network perspective, the variety of meanings associated with e-business should not come as a surprise, nor should the variety be simply viewed as a reflection of "local colour or interpretation", but rather the "potency of local translations to quite radically change any idea or machine constructed" (Bloomfield et al. 1992) in the name of e-business.

The translation process involved the production of intermediaries, which both order and form the networks they describe. Four main types of intermediaries described by Callon (1991) were identified. First there were generally literary inscriptions or text, such as the banks e-business strategy framework and the transport company's e-business strategy document it submitted to the strategic management conference. These are materials, as they are inscribed and circulated on paper and electronically. Second, there were technical artefacts which included the technical elements that combined to form the technology, such as the Internet, the world wide web, domain names, network cabling, secure transaction facilities (SET), e-mail, software languages such as HTML and databases, as well as existing information systems. Third, there were the human beings and their skills, knowledge and "know-how," such as the IT and management consultants, the "three founding fathers" of the Internet start up company, the IS manager and corporate sponsors of the government statutory authority, the senior management group of the transport company, the managing director of the e-giving company and the managing director, of the book retailer. Fourth, there is money in all its different forms, such as for venture capital investments and accounting control criteria as found in the banking case study.

While the translations reflected the different purposes of different organisations, it also resulted from the differences in the specific allegiances that bind the network together (Bloomfield et al. 1992). This raises the question about the mechanisms by which these organisational specific translations with their similarities and differences actually came about. In actor-network theory terms, a successful innovation is one that draws resources from existing networks (global networks) and creates a novel network that is able to maintain a two way exchange of resources with these networks (Lea et al. 1995). The global networks were mobilised to provide support for a project while they themselves were reshaped by the e-business projects. The success, by which actors were able to enrol the support of and hold together these networks of social movements, and political and economic interests, determined how the decision episodes proceeded. A discussion of enrolment strategies follows in section 6.3.2.

For example, in the transport company the skills and expertise of senior management were drawn upon, to assist in "making sense" of e-business from sources such as the unsolicited approaches from consultants and technology vendors, the core freight

management system and international practices. This global network generated the negotiation space that is a space, period of time and set of resources for the e-business initiatives in anticipation of some future return, in terms of market share. In this negotiation space, an e-business steering committee (local network) was formed to conduct e-business development, which also led to the creation of the subsidiary company to focus on such initiatives and brought forward the planned organisational restructure. For the government statutory authority, the global network consisted of technology vendors and corporate sponsors, who provided the negotiation space within which IS manager and department (local network) operated in anticipation of a future return in terms of goodwill and “exposure” from being identified on the statutory authority’s web site.

6.3.2 THE “FABRICATION” OF MEANING: INTERPRETIVE SCHEMES, “BLURRED” VISIONS AND NEGOTIATION ACTIVITIES

Technological artefacts are not “unproblematic, predefined packages” (Boland 1987) but “equivokes” (Weick 1990) possessing a high degree of flexibility (Pinch & Bijker 1987). The process of “constructing technology” is a reflexive one where both technology and social groups mutually elaborate each other over time (Lea et al. 1995). Through enrolment strategies (Latour 1987), social interchange or negotiations over time (Isabella 1990), a “collective” interpretive scheme of e-business was created that satisfied, more or less, the diverse interests of actors involved (Webster 1991) both within and between institutions (Garrety & Badham 2000). It assisted actors in linking their thoughts and perceptions together so that a form of collective action was possible (Weick 1995) through a “reasoned” discourse that involved drawing inferences from existing beliefs and justifying those inferences in the face of other competing claims (Choo 1998).

Latour (1987) outlines a number of strategies as to how actors enrol “allies” in the “creation of the black box,” namely: appeal to the other’s explicit interests; to get others to follow our interests; to suggest a short detour; to reorganise interests and goals through tactics such as inventing new goals and groups; and by becoming indispensable to the others. For example, the “downstairs” franchise owner in the book retailer

recognised the opportunity to control the distribution and warehousing functions of the virtual shop and approached the general manager of retail and the managing director. It appealed to management's interests who at the time were examining how to respond to the Amazon.com threat.

While it is possible that the lack of common goals may not necessarily result in an avoidance of conflict, the cost of this can be that important issues are neglected (Walsham 1993, 85). For example, in the early periods, e-business for the book retailer was a mimetic representation of Amazon.com, which was put into place by a three member coalition. However, conflict arose, as the interests of other members of the franchise network had not been considered in regards to the use of a centralised advertising pool of funds to fund a "centralised" virtual structure that was perceived to be in competition with the franchises. Therefore as discussed further in section 6.3.8, the idea that decisions can always be negotiated is misleading, as an "element of arbitrary power derived from dominant forms of knowledge has to be imparted if decision-making is to 'work' " (Fincham 1992, 752).

The success of negotiation depended upon factors such as the type and strength of relations within and between organisations, discussed further in section 6.3.4, communicative behaviours, and the mediums of negotiation, such as discourse and the genres of organisational communication, for example meetings and proposals (Yates & Orlikowski 1992) discussed further in section 6.3.3. For example, the transport company negotiated an interpretive scheme of e-business with its major customers and suppliers as there were mutual benefits to be gained, relationships had been established for a period of time and there was trust between the parties. In contrast, negotiations with the e-tailers failed, because the proposal they put forward was considered by the transport company as "naive," they did not have the capacity to pay a "premium price" and the size and position of the e-tailer within the organisational field, was weak compared to the transport company's other major customers.

The interpretive schemes of e-business signified from these processes in turn shaped "strategic action" (Laroche 1995), in terms of channelling, selecting and monitoring the flow of interactive processes, information and technology within the network (Parkin 1996; Pitt & Clarke 1997) towards e-business initiatives. That is, a network of shared meanings and interpretations provided the social order, temporal continuity and

contextual clarity for members to coordinate and relate their actions (Parkin 1996). For example, transport interpreted e-business in terms of its relative advantages and compatibility with the needs of the organisation, spanning its entire supply chain. It therefore, played a significant part of its core strategic agenda and was allocated financial, technical and human resources to pursue. For the government statutory authority, e-business was “whatever came up” from the technology sponsors, consistent with existing attitudes and behaviours towards IS within the organisation.

While order and stability are considered necessary for co-ordinated action, organisations also need to be able to unveil opportunities or threats hidden in new information, assess the validity of assumptions and beliefs and stimulate innovation through inquiry and experimentation (Choo 1998). Therefore, Choo (1998) posits that the structure of shared meanings need to “retain enough residual equivocality” to provide the space for new ideas to propagate and to enact new responses. For example, in the transport company the senior management communicated their “initial” vision for e-business at the strategic management conference

“So the way it was presented was quite simply and then we broke away and went through it and interpreted it in different ways, then we all got back together and had further people ... speaking to us and clarified even more ... Rather than giving us a one hundred per cent solution, giving us say fifty percent, or forty percent with everyone then having it tossed around and all interpreting it in completely different ways. Then over the following day, they drew us all back and said well hang on this is what it is all about...”. [GM]

6.3.3 DISCOURSES AND PERSUASIVE RHETORIC: THE MEDIA FOR CONSTRUCTING MEANING, COMMUNICATIVE ACTIONS AND POWER

Discourses played an influential role in the adoption process in terms of the conditions that rendered e-business ‘plausible’ to the organisational decision makers. Discourse may be examined from a number of different perspectives (see for eg. Heracleosu & Barrett 2001). In the context of this study it was seen as a means of exchanging information about e-business through the symbolic medium of language, as well as constructing the meaning of e-business through its effects on actors’ thoughts, interpretations and actions. It was also seen as politically implicated, embedded in socially constructed hegemonic practices, such as the “elite” discourses of technology providers. Further, discourse was seen to be largely implicit, inter-textual, transtemporal and transsituational (Giddens 1984).

Interpretive schemes and actors' (communicative) actions are interrelated in a continual dialectic, in deriving a commonality of interpretive schemes (Heracleosu & Barrett 2001). The communicative behaviours that are employed in the interpretive discourse may assist in relieving tension between self values and shared consensus (Choo 1998), such as the types of conversations that managers use to create, sustain, focus and complete a change (Ford & Ford 1995), or the rhetoric of "captation" (Latour 1987) where the reader of the proposal is "carried along to its author's desired conclusions" (Boland & Schultze 1996). For example, the informal and "strategic" conversations that occurred in the transport company initially between senior executive levels and then with divisional levels at the strategic management conference. In the banking case study, the e-business strategy team had to identify an alternative language of approval to get the e-procurement proposal accepted.

Organisational processes of recontextualisation also increasingly over time tend to "technologize" meanings with respect to both what they signify and their materialization (Iedema 1999) informed by current expectations about the value and function of the technology, organisational problems of the period of time and the means through which the technologies are appropriated into the organisations (Orlikowski & Iacono 2000, 353). E-business was assigned rhetorically powerful and provocative labels, as is the case with most new "technological waves" (p. 360) with discourses on, for example, the geographies of cyberspace and technologies, such as the "information superhighway" and "digital marketplaces" encapsulating normative concepts of how technologies do or should relate to society and social change (Graham 1998). Therefore, discursive practices will mobilize not only human or embodied modes of meaning making, but also "exosomatic" modes of meaning making, such as electronic mail as well as other kinds of inscription of meaning (IS infrastructure, architecture, network technologies etc) (Iedema 1999); in some instances into "frozen discourse" (Walsham & Sahay 1999). For example, the Internet was seen as a critical medium of communication and marketing for the E-Giving organisation, as a distribution channel for the book retailer, as providing a virtual supply chain for the transport company, as a way to share information and for electronic payments for the government statutory authority, as an "electronic" branch network for the bank, and as an electronic market for the reverse auction house. As discussed previously, the web domain name "dot.com" was a piece of

frozen discourse that the reverse auction house actively sought to dissociate itself with due to the collapses of the “dot.coms” and associated market perception of risk in transacting with such organisations.

The external discourse of e-business potential or what may be described as “power rhetorics” by “fashion setters,” such as management gurus, consultants, mass media business publications, technology suppliers and business schools (Czarniawska & Joerges 1996; Newell et al. 2000), mobilised change in the organisations, particularly in the earlier periods when the knowledge of e-business was limited. The “elite discourses” of power (Heracleosu & Barrett 2001) and the discursive cohesion given to the disparate meanings of e-business by these “speech communities” such as technology suppliers (Raub & Clemens Rüling 2001) articulated a “new truth regime” a “normalising logic” (Hopwood 1987) a “discursive resource” (Watson 1995) of what issues e-business presented, described by some commentators as “exuberant predictions” (Orlikowski & Barley 2001), or in the context of the banking case study,

“...the latest gold rush, and hyping it to the max to make money for the IT industry ...” [IB]

The intent here is not to suggest that management consultants are “charlatans or that they simply tell organisations what they already know” as any “account of a social group must go beyond the concepts within the discourse employed by the group;” that is their talk is a “starting point for interpretation and not an end point” (Bloomfield & Danieli 1995). Rather, the purpose is to highlight the role of discursive resources in developing a picture of the “stratagems” by which consultants seek to become “obligatory passage points” (ibid 1995, 39) in the translation process (discussed in section 6.3.1) and the differential access to IT knowledge and skills, as an important aspect of power in the relationship with client or user organisations (Bloomfield & Best 1992).

The e-business discourse translated differently as it was reproduced in different locations. The types of forces mobilising deployment of the e-business rhetoric, for example, technical or economic changes, (discussed in section 6.3.4) and the responses by organisations varied depending on contextual elements, such as the socio-psychological need to adopt the latest new techniques (Newell et al. 2000) or pre-existing interpretive schemes (Doolin 1999). For example the managing director of the

e-giving organisation, who liked “things that are new” when referring to her attitudes towards technology. The role of managerial agents and attitudes is discussed further in section 6.3.5.

The “strategic” discourse (Knights & Morgan 1995; Barry & Elmes 1997) and the discourses of organisation (Salamen & Storey 2002), were also identified as influential factors in terms of the powerful rhetoric in which “strategic” issues were framed, elevating and augmenting instrumental reasons, and bestowing expertise and rewards upon those who can manage the most convincing presentation of themselves (Alvesson & Willmott 1995). This revealed the espoused and latent motivations (Brown 1998) of the organisation and the organisation’s ability or willingness to consider alternative forms of organisation such as virtual structures in their adoption decisions. For example, the transport company used strategic texts and authoring processes as a sequentialising sense making device for e-business (Weick 1995) in forming a powerful organising theme (Fuchs et al. 2000). Further, because of the acquisition strategy that the organisation had been pursuing strongly over the past decade, it had developed a discourse for new forms of organising to integrate other company structures and more recently virtual structures. In contrast, the multiple strategic narratives in the government statutory authority were perceived by the IS manager as rhetorical devices produced by consultants (Barry & Elmes 1997), that “remained on the page” (Gottschalk 1999) and were “left to gather dust” (Ward & Griffith 1997), which competed for limited resources and reflected the dominant “scientific” tradition. Further, for the banking organisation, strategic discourse was used as a symbolic “message” to the financial markets that they were engaged in e-business initiatives.

6.3.4. INSTITUTIONAL ARENAS AND SOCIAL LANDSCAPES: STRUCTURAL FORCES AND WEBS OF RELATIONS

The organisations were inextricably embedded within an “institutional arena” of exogenous pressures (Dacin 1997) that structured the context within which the adoption decision occurred (Hislop et al. 2000). These pressures arose predominately from mimetic forces (DiMaggio & Powell 1991), and structural relations (Davern 1997), that operated in concert with other forces, such as competitive or market pressures (Dacin

1997). How organisations responded to these institutional pressures and the nature of their responses involved a web of social, physical and virtual structures and relations, or heterogeneous networks discussed previously in section 6.3.1. Therefore, organisational action was the outcome of a complex interaction between “internal patterning processes” and “external institutionalised orders” (Reed 1992).

For example, in the case of the book retailer, the mimetic isomorphic effect of Amazon.com was seen as a way of addressing an ambiguous threat of competition at a time when the industry had a poor image, and the organisation was losing market share. The interactions between actors in the adoption decision were supported by the location of one of the key actors, namely the “downstairs” franchise owner whose size, distribution and warehousing facilities and proximity to head office, were influential in its involvement in the e-business adoption decision. Further, the effectiveness of the franchise network structure was undermined by the virtual structure, managed by “head office” and facilitated by the “downstairs” franchise owner as it was perceived to be in direct competition with other franchisees resulting in conflict.

For the banking organisation, the initiation of e-business was part of a larger global strategy by the bank in addressing broader issues such as deregulated financial markets and globalisation. The decision to adopt Internet banking was influenced by the mimetic pressures of other banking institutions already providing these services, and its concern to maintain its customer base, rather than strictly economic efficiencies. Decisions regarding Internet banking was also influenced by the political sensitivities surrounding the closure of physical branch networks and the perception of poor customer service quality where there was no face to face contact. E-procurement decisions were influenced by the need to form strategic alliances with application service providers, considered difficult because of its controlling culture. The venture capital company created in later stages to make decisions surrounding e-business ventures was located in a separate building with an open office layout policy, as its managing director wanted to move away from what was perceived as a bureaucratic control culture manifested in the functions and processes within the “head office” building.

Structural relations were also found to influence decision episodes at various points in time at the individual, organisational and institutional level. For example, evidence of individual relations, was found in the online reverse auction company, as the initial idea

to form the company was created from personal networks (Neu 1992; Ostgaard & Birley 1994; Dacin et al. 1999) between the “three founding fathers.” At an organisational level, hierarchical authority (vertical) structures not only affected the range of people involved in the adoption decision process, but also their ability to participate (or influence those who participated) in relevant decision making processes (Hislop et al. 2000). The character, extent and importance of these hierarchical structures were shaped significantly by the specificities of the organisational context (p. 40). For example, the formal authority structure in the banking organisation played a larger role in decision processes, than in the E-giving organisation, relating to issues such as cultures and size. The power and influence of the authority structure in the government organisation was predominately in a “rubber stamping” capacity.

Further, horizontal intra-organisational structures and relationships, such as peer relationships (Erns et al. 2001) between the business and IS functions were seen to influence decisions. For example, the general manager of e-business in the banking case study considered that a “cultural gap” (Peppard 2001) existed between the IS department and business departments,

“So often it is the IT people, who are almost the best informed on what’s happening from a technology front ... But we do not really get much of that advice. So, the downside of that in a lot of ways is that it is a lot more reactive than proactive. But it is starting to change a little bit. There is a small IT consulting group and there is an IT architectures group who sort of are available to provide this sort of advice but it tends to be on an at call basis rather than them approaching us.” [GM]

The IS department’s expertise, status and self image were important factors in the way that it was interpreted by the organisation. While this “cultural gap” may be explained in terms of a core capability and competencies perspective, such as IS/IT governance, business systems thinking and relationship building (eg. Feeney & Willcocks 1998; Van der Heijden 2001), from a social constructionist perspective, it may be seen as a “contested terrain” “where the claims of IS specialists are competing with the clamoring voices of senior managers from other functions and interests” (Scarbrough 1996). Therefore, decision processes may also be mediated through intra-organisational politics, making the outcomes of such processes uncertain (Hislop et al. 2000).

Finally inter-organisational structures and relationships were also found to influence adoption decisions. For example, the government statutory authority's ties with technology vendors (corporate sponsors) represented resource flows (Davern 1997) in the context of hardware, software, systems and expertise in return for technology vendors marketing themselves on the government web site. The organisational field of the transport company and its "centrality" within that network, because of its size, control over resources, and the many links it had within the field (Keil et al. 1997), particularly its prior relationships with its major customers and hence its prior related knowledge, enabled the effective utilization of new knowledge and facilitated its governance of future relationships (Gulati et al. 2000; Tsai 2000). That is, knowledge was not only recognized as a neutral business resource, but also for its potential as a political instrument (Hislop et al. 2000), discussed further in section 6.3.8. Further, socio-cognitive aspects of the relationships (Tsai 2000) such as the trust it had developed with these major customers facilitated decisions regarding mutually beneficial social and economic exchanges. In contrast the e-tailer's approach regarding resource exchanges failed because of a lack of shared language and common interests. Such findings "echo" El Sawy et al.'s (1999) value constellations metaphor of the "electronic economy" where the focus is on reconfiguring roles and relationships among a constellation of suppliers, business partners and customers in order to mobilize the creation of value in new forms by new players rather than the focus on activities performed by firms with the traditional value chain model.

6.3.5 LEADING THE JOURNEY: "CHAMPIONS", ATTITUDES AND LEADERSHIP

The e-business decision episodes were promoted by "champions" (Rogers 1995; Slappendel 1996; Heng et al. 1999), and advocates for e-business, varying in different contexts. The skills and attitudes of decision makers towards the IS "count for more than the technological elegance of an information system" (Hopper 1990). For example, in the transport company it was the beliefs and values shared by the e-business steering committee,

"What you do need is a champion within the business to take something and make it work, if you are doing it just for an idea it is not going to work ... You know a business champion at the end of the day to engage and accept it and run with it. So that was the [e-business steering committee] as such. And we have been very inquisitive and inquiring and wanting to know." [ED]

“Inquisitive” and “inquiring” minds and their commitment to “vision promotion” are consistent with the traits and styles identified in the strategic leadership and innovation literature, and the roles of champions associated with the success of organisational and technical innovations (Rogers 1995; Papadakis & Bourantas 1998; Heng et al. 1999). Further, the complementary and united leadership “constellations” and transformational processes to involve and empower leaders at all levels (Knights & Willmot 1992), stimulated the groups in coming to an agreement about e-business in the context of the organisation.

In contrast, the IS manager in the government statutory authority was a “technical innovator” (Heng et al. 1999) who operated in an organisation that lacked an IS culture. Despite senior management’s attitudes towards IS and the limited resources available, she used her political skills to obtain resources and organisational acceptance as she shepherded e-business through the bureaucracy (Heng et al. 1999). The managing director of the book retailer was recognised as a “technology advocate” within the organisation who was a key actor in the initial adoption decision, while the managing director of the e-giving organisation was identified as a charismatic leader whose attitudes towards IS and control over resources, were influential in her development and articulation of visions for the organisation through creative and intuitive processes (Barrett & Walsham 1995). The constituents of the e-business strategy team in the banking organisation had transformative capacity in getting commitment to their e-procurement vision by seeking alternative ways of having the proposal approved after it was rejected. The bank’s commitment to IS followed its history of being part of an information technology and telecommunications intensive industry. Finally the “three founding fathers” of the reverse auction company were perceived as “entrepreneurial” with a range of skills from various disciplinary areas.

6.3.6 LEARNING ABOUT THE JOURNEY: KNOWLEDGE, LEARNING AND REFLEXIVITY

The importance of organisational learning or an organisation’s absorptive and cognitive capabilities is widely recognised in the innovation, technological and organisational change literature (Barrett & Walsham 1995; Vadapalli & Ramamurthy 1998; Van de

Ven et al. 1999) and for successful SISP (Reponen 1998). In the preceding sections we saw how learning was part of organising processes. For instance, organisations learned through direct experience when they engaged in trial and error decision making processes, particularly during the knowledge integration and development episodes. Indirectly, organisations learned from the experience of other organisations such as the mimetic influences of Amazon.com. Learning processes were also identified in interpreting e-business. Further, learning is also bound up with cultural processes as organisations communicate their learning through stories and behavioural norms and expectations (Hatch 1997), which is discussed in the following section 6.3.7. Learning processes were also identified as reflexive loops as organisations routinely observed and came to an understanding as to what they were doing, while they were doing it, in a highly situated way. Ciborra and Lanzara (1994) posit that “limited learning” is a major obstacle to adoption, in that the organisation is unable to turn “anomalies and novelties into innovative patterns of behaviour” as it has limited capability to reflect upon and reframe the institutional and cognitive grounds that support habitual ways of doing things.

Changes in organisational knowledge may occur as a result of interpretations of the environment, such as e-business, past organisational actions, the influence of key decision makers and the advocacy position of coalitions with the organisation (Lyles & Schwenk 1992). As discussed above in the review of decision episodes and further in section 6.3.8, political processes relate to the negotiating and bargaining that takes place to gain support for alternative schemas such as the justification criteria observed in the Bank case study with respect to the e-procurement project. Further, socio-political themes, such as credibility and power may influence the acceptance of particular views, such as the case with the book retailing organisation in the earlier periods where acceptance of the e-business initiative was based on the “credibility” of the managing director, because of his perceived IS competence (Bassellier et al. 2001). Key decision makers may also have a strong influence on the development of organisational knowledge structures as they interpret the events, such as e-business, and influence attitudes and beliefs of others in the organisation by communicating and networking (Lyles & Schwenk 1992), constructing some “shared domain knowledge” such as between IS and business executives (Reich & Benbasat 2000); particularly important in the context of e-business.

Therefore, knowledge and reflexivity are central tenets to the argument that organisations may be moved in some coherent and explicit direction enabling a “deliberate” and “effective” strategy (Kawalek & Hackney 1998). However, the character of organisational and technical knowledge and expertise, tends to be tacit rather than explicit or codified, embodied in people and organisational structures, as well as being widely distributed, making knowledge integration and creation processes complex and difficult (Hislop et al. 2000). The control or possession of relevant knowledge or expertise may also be seen as a significant political resource in the “struggle” to shape the character of innovation (ibid). Further, as agents are not necessarily acting within the same organised system, such as in e-business environments, there is the potential for structural contradiction, a “disjunction” between different principles of system and organisation (Walsham & Han 1991).

6.3.7 ORGANISATION AND ‘CYBER’ CULTURES

Organisational culture plays an important role in shaping the social consequences of technology (Robey & Azevedo 1994). While a “mosaic of organisational realities” may be created from different and competing value systems (Morgan 1986 cf. Barrett & Walsham 1995), the focus here was on the cultural themes that set the context for the interpretation of e-business and decision making processes. That is, the influence in what organisations paid attention to, namely the conventions and expectations used to assign value and significance to e-business, and how organisations made decisions and formed judgements about e-business, or the actions taken. However, in discussing culture separately, it is done so for analytical purposes as it is inextricably linked with other factors and processes, such as power, leadership, social structures and has assumptions of time and space embedded within it (Sahay 1997). For example, proponents of cyber-culture (see Gibson & Oviedo 2000 for a detailed discussion) portrayed cyberspace as a utopian environment, a world of superior qualities, elevating its status above the physical world (Ward 1999; Balasubramanian & Mahajan 2001), where change was presumed and organisational improvements were required to achieve competitive advantages.

The transport company was focused on creating “synergies” which captured the content and process of this culture. Integration and openness to change were a major focus, stemming from its history of acquisitions. E-business was part of its broader belief system based on innovation and change. Senior management devoted a great deal of attention to building commitment and identity with the organisation, where power bases and authority structures were built on relationships. Judgement making and decision making were highly participative and people driven, where senior management paid attention to the ideas and opinions of others regarding e-business.

The control culture of the bank was manifested in its organisational structure and processes. The nature of authority was formally driven by roles and positions, where managing change was based on having it mandated. Planning was of major importance, perceived as a way to keep control. However, notwithstanding the required detail, time and “frustration” it was considered that

“... it does mean when the project is established and running it has got a very clear mandate, it has got the money and the mandate to get on and do it. I think that it means that there is a lot of clarity of what we are actually doing and how we are going to do it and by the time the project actually gets initiated you don't tend to have people running around doing stuff and then other people coming along and saying that is not what we thought you were doing. There are benefits of the processes and there are also the costs, the rigor. [IB]

Decision making processes were “analytically detached,” formula oriented and prescriptive (Schneider 1994). Strong emphasis was placed on rules and adherence to them. How decisions were made hinged on content and methods rather than people (ibid 1994, 35).

In contrast, the e-giving organisation approach to decision making was people driven, open-minded, organic and subjective (ibid 1994, 109). Change was embraced, stemming from the attitudes of the managing director. The Internet start up company's values and beliefs were based on professionalism, craftsmanship and “value adding” where the authority laid with the expertise of the “three founding fathers.” The initial decision making period for the book retailer, involved the ‘coalition’, which grew to a collegial “group decision making” in later periods.

In the government statutory authority case, the IS department formed its own subculture based on members common experiences and attitudes towards IS. This was in contrast to the attitudes towards IS in the broader organisational community, of strong "scientific traditions"

"People who work here generally are very committed. It is much more than a job to them, it's about conservation philosophies and things. So people are very strong in their opinions ..." [FL]

The diverse values and norms made it difficult for the IS department to have its preferences of goals and choices understood as well as the meaning of communication (Hauser 1998).

6.3.8 POWER AND POLITICAL PROCESSES: RULING INTERESTS, INDEXICALITY AND 'MODES' OF RATIONALITY

Power issues were identified in organisations at both the macro-structural and micro-behavioural levels. Choices regarding e-business were made by dominant groups which were not necessarily delineated by the organisational hierarchy, or within organisational boundaries. The dominant group relates to structures of power through dominant forms of organisational knowledge, or a dominant rationale representing a belief system "articulated around definite interests" (Fincham 1992, 751). For example, in the case of the statutory government authority, the IS manager and department held "expert" power with respect to IS and "referent" power with respect to how to get proposals approved within the authority structures. That is, the rationales were historically and materially conditioned (ibid 1992, 752). Decision making occurred within relationships that were legacies of the past, at odds with "surface functionalities and behaviours " (ibid 1992, 743). This overlaps with organisational culture, because of its focus on specific norms and rules, which in this case saw the role of IS as not a "key objective" and senior management's knowledge in the area limited, hence decisions regarding IS were made predominately by the IS manager and her department. Further, because of its limited resources, they relied on technology vendors for technical expertise and systems. Hence this outside group was powerful in the decision surrounding the type of system to be adopted. However, the relationship was based on a mutual dependency because of the benefits to be derived from the organisation's image.

In the banking case study, the decision criteria that were used in the evaluation, justification and judgement episodes, from a 'Foucauldian notion' of disciplinary power, represent the "enduring sediments of previous practice which have been selectively structured into the rules of organisation control" (Clegg & Wilson 1991, 242), through accounting systems. This "administrative power apparatus" (Fincham 1992) was embedded in the organisational belief systems (cultures) that legitimised the pressures of formal control.

Power is "inscribed within contextual 'rules of the game', which both enable and constrain action" (Clegg & Wilson 1991, 244). Therefore, rules are indexical to the context of interpreters and interpretation (ibid 1991, 245). Within the organisational arena actors with varying strategies struggle to constitute the capacities of the organisation in terms of the rules which represent conceptions of their interests (ibid 1991, 247). In so doing, they articulate around organisationally situated actions and "vocabularies of motive" to justify action. This articulation with pluralist political processes within the bank highlighted the problematic nature of decision making regarding the e-procurement project. The accounting control criteria and evaluation routines in the bank, constrained the approval of the project. Therefore, the e-business strategy team searched for an alternative approval process, through the venture capital company project.

By making reference to the "socially available and publicly accountable complexes of reasons" to justify the project, the rationalities when considered collectively are referred to by Clegg and Wilson (1991) as "modes of rationality." However, this is not to suggest some coherence should be read into this designation. It was a case of actors within the organisation constructing diverse and simultaneous rationalities, for the approval of the e-procurement project, which cohered neither across space nor through time. That is, models of rationality were derived from practice, shaped by culture or by the institutional framing of available "vocabularies of motive" (ibid 1991, 247).

6.3.9 TEMPORALITY: DECIDING TIME, VARYING TIME, WORKING TIME AND CHANGING TIME

The processes by which e-business was discovered and interpreted and the context in which adoption decisions were made occurred at particular times and places, "injecting an element of opportunistic logic into the process" (Sahay 1997, 231). As issues of space were discussed in the preceding sections, the following discussion focuses on the issues of temporality, utilising Heejin and Lee's (1999) framework.

Four notions of temporality were identified in this research. Firstly, it was identified in terms of its impact on organisational behaviour, in terms of a resource within the organisation that is “deciding time.” Secondly, in terms of the flow of events surrounding the adoption of e-business, time was uneven, discontinuous, and contained varying levels of contingency and in-determinancy with respect to the event trajectories and in terms of their actual occurrence (ibid 1999, 1046). That is, event-based temporalities differed between organisations. Decision making, negotiation, learning processes, etc were influenced by notions of time, which the actors concerned had in their mind, that is “varying time” (ibid 1999, 1048), that is personal domains of time created by organisational, technical, cultural and political processes. For example, in the government statutory authority, the IS manager recalled that

“... we made the decisions on the run, we had it in within three months with little or no fuss. Whilst that was a fantastic implementation the big mistake, the top level now thinks that things can just happen. They had not concept of the work involved, we did not get any extra staff, we did it in our own time...” [TP]

Thirdly, the attributes of e-business itself, influenced temporal patterning of decision making, that is “working time.” For example, in the banking organisation, the general manager stated that the bank needed to enter the market first and then differentiate itself because of the speed at which e-business was moving and the uptake by its competitors.

“I think basically, our plan would be basically be get into the market with a “vanilla” offering and then differentiate it ...” [GM]

Finally, from an actor-network perspective, different forms of temporality were seen to be the product of heterogeneous networks surrounding the e-business adoption decision episodes that is “changing time.” For example, the impact of e-business on the time-frame patterns of decision episodes differed depending on the stage in the development of e-business or the organisation’s IS maturity in general. Further, the attraction of e-business in the reverse auction house was seen in terms of the organisation of work becoming less rigid in terms of time patterns,

“In theory it is quite scaleable. We can envisage, ten, twenty people doing this, running auctions based on very specific times, some go over a long period, some go over days if they are across international time zones, some scheduled for an hour, it is all in a tentative period where all the action is.” [AD]

6.3.10 IMPLICATIONS

The preceding discussion reveals the diversity of factors and processes implicated in decisions regarding the adoption of e-business, the constitutive as well as reflective roles of the technology itself, and the ways in which interpretations of e-business shifted the preconditions for subsequent adoption decisions. There was no single “mobilising force,” be it a social intent, political will, economic rationality or technological need, but rather, a diverse range of drivers and inhibitors, found to be “silently embedded” (Hopwood 1987) within the shifting course of e-business decision episodes.

6.4 HOW EXISTING SISP MODELS COMPARE

The discussion in this section addresses the third research question “How do these findings of industry practice compare with existing SISP models”? The analysis that follows is divided into two parts. First, in Table 6.2 a synthesis and comparison of the findings for each case is provided based on the comparative framework developed in Chapter Two, Table 2.11. As discussed in Chapter Two, the seven dimensions identify characteristics of SISP, which may manifest across a variety of organisational contexts, independent of any particular method providing a guiding framework in which to compare strategic practice with existing methodologies (Segars & Grover 1999). Therefore, Table 6.2 serves to identify major elements that characterise the adoption of e-business in practice in terms of these dimensions and in doing so also highlight additional aspects unique to this study by nature of their absence from the framework. The second part of the analysis matches the planning characteristics identified in each organisation (see Tables 6.1 and 6.2) with the SISP models outlined in Chapter Two Table 2.11, presenting the results in Table 6.3 and Table 6.4. In contrasting these planning profiles it is possible to suggest reasonable linkages based on the characteristics of the situation and specifics of the SISP models, thereby relating SISP strategies to specific circumstances. However, while the inferences from the case studies are synthesised concepts and ideas developed from specific circumstances, intended to have value outside those circumstances, they should not be regarded as “general rules or social laws” (Walsham & Waema 1994).

Table 6.2 Comparison of case findings with SISP dimensions

Episode	Case	Strategy	Structure	Systems	Staff	Style	Skills	Superordinate goals
1	Retail				✓			
	GovStat				✓			
	Bank	✓	✓	✓	✓			
	InternetCo				✓	✓		
	Transport			✓	✓			✓
	EGive				✓			
2	Retail				✓			
	GovStat				✓		✓	✓
	Bank	✓	✓	✓	✓			
	InternetCo				✓	✓		
	Transport	✓	✓	✓	✓	✓	✓	✓
	EGive		✓	✓	✓	✓	✓	
3	Retail				✓	✓		
	GovStat			✓	✓		✓	✓
	Bank	✓	✓	✓	✓			✓
	InternetCo				✓			
	Transport	✓	✓	✓	✓	✓		✓
	EGive		✓		✓	✓	✓	
4	Retail				✓	✓		
	GovStat	✓		✓	✓	✓		✓
	Bank		✓	✓	✓			✓
	InternetCo				✓	✓		
	Transport	✓	✓	✓	✓	✓		✓
	EGive				✓	✓		

Episode 1 – Identification, Sense Making, Commitment; **Episode 2** – Knowledge Integration & Development; **Episode 3** – Evaluation, justification & judgement; **Episode 4** – Making adoption decision

In Table 6.2 emergent profiles of planning across six organisations are highlighted providing a useful foundation for understanding how and why planning occurred (Segars & Grover 1999) at different points in time. As shown in Table 6.2, planning dimensions differed across different episodes and contexts. Only in one case organisation (Transport) were all seven dimensions identified. A key dimension in all cases and episodes was staff, highlighting their central role in strategising whether it is at a collective (eg. Transport) or individual (eg. GovStat) level. In contrast, the strategy dimension was emphasised in only two of the six cases, Bank and Transport, in terms of economic and technological objectives. Finally skills were the least emphasised dimension in the adoption decision episodes. In contrast, characteristics relating to how managers behave, such as style and culture, were more commonly identified.

In Table 6.3, the drivers and inhibitors of adoption decisions identified in this study are matched with the planning models summarised in Table 2.11 in Chapter Two. As shown in Table 6.3, interpretive schemes and negotiation activities as well as discourses and rhetoric are not recognised in existing SISP methodologies. Further, the temporal dimension was only identified in two of the nine methodologies. In addition, while styles of decision making such as political processes and cultures were key issues, particularly in the later judgement episodes, of this study, these dimensions were identified in only two of the nine methodologies. Managerial agents and heterogeneous networks were most commonly identified in the SISP models. However, as discussed in Chapter Two, the majority of SISP frameworks and techniques are grounded in orthodox strategic management thought of managerial rationality based on objectively defined business and technological contingencies with a particular focus on strategy, structure, systems and managers within an organisation. The limitation with such approaches is the abstraction from the practical processes of decision making in organisations in that the “rational ideal” is inescapably compromised by the embeddedness of decision making in broader organisational, societal (Alvesson & Willmott 1995) and temporal (Heejin & Lee 1999) contexts. For example, while the staff dimension was identified in all but three of the SISP methodologies selected, the models provide little guidance as to the traits, characteristics and skills of these agents, nor their intentions, actions and effect in strategic practice. This implies that the managerial agent appears to be lacking in insights. Further, there are limited guidelines for action at this micro level where a high degree of reflexivity appears to take place amongst those actors who manage those activities. In addition, the heterogeneous network brings a far broader dimension to SISP as it encompasses both intra-organisational as well as boundary spanning social and technical networks. Limited attention is given to third party networks in existing SISP models, yet they are socially, technically, and economically significant in an e-business context.

Table 6.3 Comparison of case drivers and inhibitors with SISP methodologies

SISP methodology	Heterogeneous networks & translation	Interpretive schemes & negotiation	Discourses & rhetoric	Institutional arenas & social landscapes	Knowledge, learning & reflexivity	Culture	Politics & power	Managerial Agents	Temporality
7S Stages of growth (SOG)	✓			✓	✓	✓	✓	✓	✓
Critical Success Factors (CSF)	✓							✓	
Scenario Planning (SP)	✓			✓	✓				
IT Assessment & Adoption (ITAA)									
• Normative	✓			✓	✓			✓	
• Issue	✓			✓	✓			✓	
• Technology	✓				✓			✓	
• Opportunistic					✓			✓	
Information Economics (IE)	✓			✓					
Investment Strategy Analysis (ISA)	✓								
Linkage analysis (LAP)	✓			✓	✓	✓	✓	✓	✓
Creative problem-solving (CPS)					✓				
Enterprise modelling (EM)	✓					✓		✓	

Table 6.4 matches the profiles in Table 6.2 with those of the planning models summarised in Table 2.11 in Chapter Two, illustrating different models that, whilst not explicitly stated, may have been inherently adopted. The analysis may be thought of as a representation of a planner's efforts to achieve a match between the requirements of the situation and available strategies (Hartman et al. 1986). However, in doing so, the analysis offers guidance only as the framework needs to be subjected to empirical testing. In addition, the planning dimension profiles of prescriptive models did not necessarily match the descriptive cases in all instances suggesting the presence of other influential variables and/or a combination of more than one SISP model. Evaluating the relative 'goodness' of decisions that departed from these models and whether the adoption decision process achieved the desired results requires further investigation.

While several of the models described in Chapter Two were represented in various decision episodes, the extent to which they were contradicted, confirmed or lacking by the conceptualisation of the e-business adoption decision process was largely dependent on the meanings attached to e-business, how decisions unfolded over time and the social and temporal context of each case situation. As seen in Table 6.4, the majority of cases (Retail, GovStat, InternetCo, EGive) matched closely to the opportunistic model of Huff and Munro (1985). That is, the e-business adoption process was driven more by a "learn-as-we-go" philosophy than by a technological or organisational imperative. Why this was the case differed between the four cases. For example, the adoption process in Retail was driven by three key actors, ranging from the managing director to a franchise owner, because of mimetic pressures relating to Amazon.com. The managing director's credibility was relied upon by the board of directors in making the decision to adopt an online store model. In contrast, the e-business adoption process for GovStat was more serendipitous because of a systems audit requirement, which grew into hardware and software sponsorships from information technology and communication specialists because of the unique characteristics of the government authority. However, the adoption process became more technologically driven in the evaluation, justification and approval episodes largely due to the expert power of the IT manager and the limited awareness of technology in the organisation because of the board's scientific traditions. While e-business initiatives arose opportunistically in EGive from the introduction of the Internet, the structured but informal culture for making decisions in weekly meetings created a team environment where ideas were generated and evaluated from relevant information in a recursive fashion, similar to the methodology of creative problem solving.

Table 6.4 Contrasting case planning episodes with SISP methodologies

SISP Methodology	SISP Adoption Decision Episodes			
	Identification, sense making, commitment	Knowledge integration & development	Evaluation, justification & judgement	Making/taking the adoption decision
7S Stages of growth (SOG)		Transport		
Critical Success Factors (CSF)	Transport			
Scenario Planning (SP)				
IT Assessment & Adoption (ITAA)				
• Normative	Bank			Bank
• Issue	Transport	Bank, Transport		
• Technology			GovStat	GovStat
• Opportunistic	Retail, GovStat, InternetCo, EGIVE	Retail, InternetCo, GovStat, EGIVE	Retail, InternetCo, EGIVE	Retail, InternetCo, EGIVE
Information Economics (IE)			Bank	Bank
Investment Strategy Analysis (ISA)	Bank		Transport	Transport
Linkage analysis (LAP)	Transport			
Creative problem-solving (CPS)	EGIVE			
Enterprise modelling (EM)		Transport		

The e-business adoption episodes for the two largest organisations tended to follow practices, which advocate a more guided and comprehensive approach. This is not to suggest that problems were not encountered as seen in the case interpretations discussed in section 6.1. For example while the e-business initiative in Bank arose from a comprehensive assessment of both organisational issues and information technology, described by Huff and Munro (1985) as the normative ideal, the range of people involved and their respective views hindered the progress of e-business initiatives in the early stages. In the subsequent episode the processes more closely aligned with the issue driven model (ibid 1985) where e-business was delineated and prioritised from the corporate planning process to be managed by an e-business team. In addition the dominant rationale was based on accounting control criteria such as return on investment, which was specifically emphasised in the justification episodes. This focus aligned with investment strategy analysis in the earlier episodes and information economics in the latter two episodes. However, as discussed previously the accounting control culture of Bank meant that having certain e-business projects approved was difficult because of the separation of the business justification from the technology viability of the proposed application. The General Manager of E-business explicitly stated that adopting a portfolio approach in addition to the focus on investment criteria would have been beneficial, similar to investment strategy analysis. This approach allows managers to observe where current IT investments are being made and then make decision as to where they should be made in order to align the IT investments with the business strategy.

Planning dimensions identified in the Transport case study aligned with the issue driven model (ibid 1985) in the earlier episodes where e-business initiatives emerged indirectly from the business and systems strategy to implement a core freight management system. E-business capabilities identified from this system, together with approaches from consulting organisations, led the organisation to assess critical areas that would enhance organisational performance utilising senior staff with areas of particular expertise to analyse the range of different issues. Therefore characteristics similar to the critical success factors model, were also found to be closely aligned with Transport's early adoption episodes. Further, dimensions similar to linkage analysis planning were identified which may relate to the number of links that Transport had with other organisations because of the supply chain and logistics network in which it operates. In the knowledge and integration episode characteristics relating to the stages of growth and enterprise modelling were identified. This may relate to the consolidation phase that

Transport was moving through following a long period of acquisitions where they inherited a number of legacy systems. Reviewing the current use of IS, the effectiveness of these systems and where e-business initiatives would fit within the current infrastructure aligns with the objectives of stages of growth models. Further, in keeping with the holistic and synergistic culture of the organisation influenced by its acquisition policy, e-business was assessed at an enterprise level with senior and middle level managers from each business unit participating in decisions regarding its adoption and implementation in strategy workshops. Finally in the justification and approval episodes both the technological viability of e-business together with its investment potential were key considerations, similar to the dimensions of investment strategy analysis.

Therefore, whilst not suggesting mutual exclusivity, the SISP methodologies may provide some guidance in different decision episodes, such as the information economic decision framework for the financial justification process, the stages of growth model for learning and development episodes or the creative problem solving methodology and critical success factor model for sense making episodes. However, the extent to which they will be used by and or assist organisations is dependant upon the contextual and temporal factors as a driver of adoption in some organisations may be an inhibitor in another. For example, decision criteria (Bacon 1992) such as financial criteria appear to be emphasised in the evaluation, justification and judgement episodes, while business requirements appear to be more prominent in the commitment and knowledge integration and development episodes. However, the type of decision criteria emphasised is not just dependant upon the nature of the decision episode but also the organisational context. Meeting accounting control criteria was a dominant rationale in the control culture of the bank yet in the synergistic culture of Transport it was considered as one of a number of important criteria (ibid 1992).

The above discussion highlights that strategy is traditionally viewed as a macro problem removed from the internal dynamics of organisations as opposed to an organisational phenomena. Further, in contrast to existing phase type models discussed in Chapter Two, decision processes did not unfold in logical orderly stages, but rather as interwoven episodes, involving different actors in various ways, at various times with varying meanings of e-business, interacting with other issue areas. Therefore the model developed in this study further humanises the SISP field, developing a theory of social action within a strategy context. In the remainder of this chapter I look beyond the specific results of the study to consider some broader issues raised by it and to suggest avenues for future research.

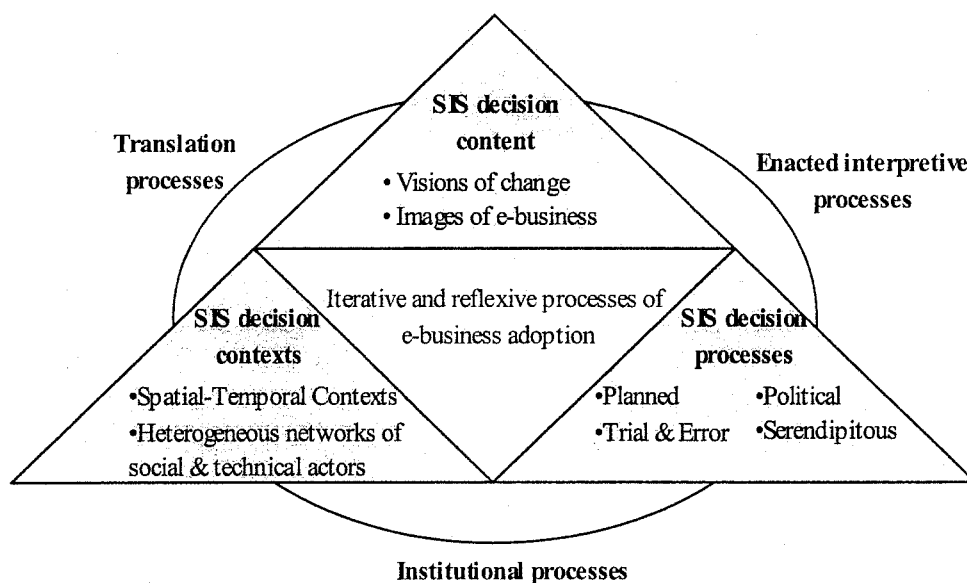
6.5 CONTRIBUTIONS, IMPLICATIONS AND FUTURE DEVELOPMENTS

The purpose and objectives of this research was to: assist organisations in the successful adoption of e-business by comparing current practice with existing SISP models; and to the extent that existing models may be considered incomplete, present alternative model(s) which place SISP in context, to provide a rich picture of the structures, processes and actors involved. In pursuing these objectives three major questions were investigated, namely: (1) How do e-business adoption decisions evolve in organisations? (2) What are the major drivers and inhibitors of these decisions? (3) How do these findings of industry practice compare with existing SISP models? The results suggest a dynamic and contextual model, as illustrated in Figure 6.2, involving an examination of the content, context and processes through which decisions are made to assist organisations in the successful adoption of e-business. Through translation processes, images of e-business are constructed and transformed by local and global heterogeneous networks of social and technical actors. The evolving images of e-business are also linked to visions of change, developed deliberately or as an emergent process, which together or separately are integrated into enactments of interpretation for action. Certain encounters with these images may also lead to a reformulation of the vision for change and recontextualisation or a change in the translator and in the translated. Spatial-temporal contexts also directly shape decision processes through institutional processes. At the organisational level, institutional processes shape the choices and preferences of the decision makers through social and cultural categories of rules, norms and routines. At the organisational field level, the importance of appropriateness and legitimation leads to institutionalisation in which decision making is shaped by the external environment.

The SISP adoption model developed from this empirical analysis contributes to research and practice in three key areas. Firstly, SISP for the adoption of e-business is shown to be an iterative and reflexive process shaped by dynamic contextual elements, visions of change and images of e-business. Secondly, the model contributes in explaining the diversity of SISP models and techniques assisting organisations to adjust between alternative courses of action if required by changing circumstances. Thirdly, the model

assists in explaining the various impacts of time on SISP for the adoption of e-business. The following discussion examines these three key contributions in detail, developing propositions and discussing the implications. The propositions offer promising lines of enquiry for future research, focusing on issues that promote more contextually and processually sensitive studies as it is the analytical interplay of several factors that is likely to provide a deeper understanding.

Figure 6.2 SIS adoption model



A major strength of the SISP adoption model presented from this research is that it highlights how e-business adoption decisions evolve through iterative and reflexive processes relating to episodes different in nature, as discussed further below. These episodes are intertwined with other decision processes within and between organisations and shaped by dynamic content and contextual elements that interact with one another over time. Further, in combining insights from several different theoretical perspectives, the research model also suggests ways in which linkages can be made between adoption decision processes, contexts and content. However, while the model provides guidance with respect to an ever changing complex reality of social exchange, a more complex treatment that extends the analysis beyond e-business adoption to its implementation and operation would allow for a deeper investigation of the iterative and dynamic relationships in adoption and implementation; a key issue flagged in other research that has been conducted in this area (see for eg. Elliot 2002). This would require the tracing of organisational activities over much longer periods.

Hence the model suggests to managers deciding on e-business that no one SIS adoption decision process should be considered universally applicable. Rather a number of processes may be used depending on the context and content of the adoption decision and the activities involved. Such findings are similar to Walsham's (1993) interpretive framework and Sabherwal and King's (1995) contingency model. However, this model extends on their work by providing a more holistic and powerful explanation of the adoption decision content, context and processes, as discussed further below.

Similar to Walsham's (1993) interpretive framework, strategic content incorporated some fluid vision for change linked to a sense of purpose, relating to goals, visions or business ideas which were largely ambiguous. However, evolving images of e-business itself, not just its effects or uses, arising out of changing networks of social and technical interactions (which have spatial and temporal dimensions) were also an inherent and indissoluble part of ongoing adoption decision processes and reflexively linked to the organisational environment in which it existed. This extends Walsham's and Sabherwal and King's models which were largely silent with respect to the IS itself, who considered it more in terms of an embodiment of strategic behaviours relating to some autonomy and control or economic gain. This suggests to managers that varying meanings or images of e-business may influence organisational adoption decisions and therefore should not simply be regarded in neutral terms of for example gaining some competitive advantage as this may unconsciously bias what they pay attention to in their SISP considerations. Further research into how discursive statements are used to manage meaning during interactions in these heterogeneous networks, particularly in earlier decision episodes, may provide further insight into areas of SISP practice that managers may practically manipulate and those beyond their control.

E-business adoption decision processes were also found to be an inherent part of institutional environments and practices. Similar to Walsham's findings, history, organisational relationships and available infrastructure were found to be legitimising devices in giving meaning to past events and future actions for adopting e-business. However, the model extends Walsham's findings in three key areas. Firstly, while Walsham's model provides a deep understanding of how events unfold over time, temporal aspects are treated implicitly. The role of time was examined explicitly in this research revealing varying impacts on the adoption process, discussed separately below.

Secondly, by incorporating an actor network perspective, the nature of e-business was shown to be constitutive of and constituted by changing heterogeneous networks providing insight into the source and fabrication of e-business images. Thirdly, Walsham's framework was grounded in web models, which broadly speaking focus on economic and technical dependencies. In drawing upon institutional theory, institutional social mechanisms conducive to isomorphism were also found to influence adoption behaviour. The research revealed that organisations face mimetic pressures in addition to competition, tend to seek legitimacy rather than some competitive advantage and exhibited isomorphic strategic tendencies rather than search primarily for differentiation in adopting e-business. It appears that the uncertainty surrounding e-business may result in organisations simply electing to mimic other organisations in their organisational fields. Further research in an international context may reveal differences in the types of isomorphic pressures faced and responses to emerging markets regarding e-business. This type of research would also be particularly useful in the context of globalised e-strategies. In addition, understanding the construction and formation of intra and boundary spanning networks underpinning the precarious institution of competitive advantage in hyper-competitive and rapidly changing environments may provide useful insights into the processes involved in the multi-organisational adoption of inter-organisational systems and the potential for conflict and risk.

Adoption decision processes were also found to more closely represent a flow of intertwined processes relating to decision episodes, than a collection of juxtaposed decision processes, as posited in Sabherwal and King's model. Four decision episodes, different in nature, were identified namely: identification, sense making and commitment episodes; knowledge integration and development episodes; evaluation, justification and judgement episodes; and choice/final judgement episodes. Whilst it was difficult to distinguish separate decision episodes as in some circumstances events took place simultaneously, it appeared that the four episodes were more closely intertwined in organisations where e-business adoption was a contributing element of a deliberate global strategy, such as the bank's strategy of market development or adaptively linked to other strategic initiatives, such as the transport company's strategy of technological change with its search for a core freight management system.

The identification, sense making and commitment episodes involved managers becoming aware of and making some commitment to e-business. Managers became immersed in processes of attention they did not necessarily control nor understand. This category of episode was characterised by serendipitous decision processes, less convergent heterogeneous networks, varied images of e-business and mimetic isomorphism. Decision making was more random and disconnected arising from the uncertainty and novelty surrounding e-business or inadvertently from other organisational activities. External social and technical actors tended to be dominant influences in shaping the meaning of e-business. Further, organisations with a greater amount of external e-business modeling had a propensity to imitate, such as Amazon.com in the book retailer case and the "American online auction models" in the online reverse auction organisation. However while exogenous actors were instrumental in shaping images of e-business, how this is played out varies according to organisational identities. For example in the book retailer case, a shift to a hybrid model of an online bookstore and a physical bookstore franchise network created conflict because of competing goals between franchises. This is in contrast to the auction organisation whose physical, social and virtual identity evolved with the adoption process. This suggests that it is important for managers to consider their organisational identities in sense making and commitment decision episodes, particularly when external actors strongly influence the fabrication of e-business images, as the length of exposure to certain institutional contexts may impinge heavily on and/or constrain later actions because of conflicting role conceptions and desired ways of acting.

The knowledge integration and development episodes were primarily concerned with developing solutions to problems and/or elaborating on opportunities arising from the images of e-business constructed in earlier decision episodes. The information generated by these episodes may affect the previous episodes and may also be used in evaluation and justification episodes. These episodes were characterised by more stabilised heterogeneous networks and objectified images of e-business, trial and error decision processes, organising cultures and tended to consume a lot of time and resources. The heterogeneous network is more localised mainly composed of collective structures, such as project teams, steering type committees, senior managers, existing IS infrastructure and specific technology suppliers, where personal expertise, experience,

advice and ideas, including externally-acquired content are pooled and deployed. However, organisations whose images of e-business were predominately shaped by mimetic forces tended to ignore these episodes initially as the image of e-business had been objectified in terms of an existing external model. Further, the meaning or images of e-business tended to crystallise more readily in organisations that identified with cultural processes of a collaborative nature, such as the transport company, the E-Give case and the government authority, as they tended to collectively reflect on their existing knowledge and capability and had a willingness to form partnerships to fill gaps more readily. However, whether particular knowledge management strategies are more suited to certain organising cultures is open to further investigation.

The evaluation, justification and judgement episodes mainly involved obtaining financial support for e-business. These episodes interacted with the previous episodes in various ways and were characterised by political and planning driven processes and convergent heterogeneous networks (actors with precise objectives and instruments). There was a propensity to use planning driven processes, largely based on investment methodologies, in organisations that faced regulatory pressures, namely the bank and the transport company because they were public companies with governance responsibilities. Further, there was a tendency for organisations to engage in political processes to resolve incongruent modes of rationality where authorising structures had not been enrolled in the localised heterogeneous network. This situation tended to arise in organisations with traditions of control, such as the bank, or a lack of IS culture in the case of the government authority. The final choice/judgement episodes events involved the authority structure within the organisation making or taking the decision to adopt. Whether the decision was a rubber stamping exercise (taking) and how the choice was made was largely dependent upon the previous episodes, the constitution of the authority structure, and organising cultures.

The second major area of contribution arising from this research is that the model assists in explaining the diversity of SISP models and techniques. Attempting to identify planning dimensions that were emphasised in different spatial and temporal contexts, assists in understanding where existing planning methods may be useful and where revisions may be required. As illustrated in Table 6.2 the basic components and orientations of planning emphasised differ across contexts and time. Further, as shown

in Table 6.4, different organisations use different methodologies at different episodes in SISP, multiple methodologies may be used in the same episode and opportunistic approaches are used most commonly at each episode. It appears that uncertainty as to the potential of e-business and how it may be realised reduces the propensity of organisations to design and implement formal strategies. Organisations appear to be working incrementally and opportunistically as a means to reduce their risk. While the research can not produce definitive prescriptions for practice, nor were any theoretically derived planning methods, other than financial criteria, explicitly identified by participants in this research, the tables of dimensions (Tables 6.2, 6.3 and 6.4) may be useful for organisations in comparing their circumstances and practices to assist them in their “ubiquitous role of improvisation” (Ciborra 1994, 143). However, in doing so, the analysis offers guidance only as the findings need to be subjected to further empirical testing.

The final key contribution arising from the research is its explicit recognition of time. Four key impacts of time on SISP for the adoption of e-business were identified. Firstly, the time available to managers in organisations and the length of time they have been exposed to certain institutional contexts may affect adoption decision processes. Secondly, the flow of events with respect to time varies between organisational contexts. Thirdly, the various alternatives and opportunities arising from e-business impacts upon the amount of time required for decision making. Finally, evolving images of e-business impact upon the temporal rhythm of SISP and decision episodes. While time and timing is a central issue in the SISP and e-business vernacular, it is a taken for granted notion, considered generally in terms of annual planning routines, the sequencing of activities or in terms of technological effects such as “24/7.” Hence, the research model contributes to the literature by giving attention to how time focuses attention, shapes approaches and gives meaning to actions and events which in turn may shape time itself. These observations suggest that explicitly incorporating not only objective facts of time (such as deadlines and time horizons) but also subjective or felt experiences of time may significantly improve SISP research, by providing insights into how SIS are situated in the context of time. At a practical level, the research showed that there is no obvious time when e-business came to the attention of organisations, each having its own particular rhythm. Further, there was considerable variation in the degree of change in organisation’s conceptions of time brought about by e-business. In

addition, the notion of timeframes and the time change in decision episodes also varied between and within organisations. This suggests to managers that it is important to consider temporal dimensions of e-business in their adoption decisions as this may evoke fundamental changes in the way organisations think about time and its uses. However, the degree to which this may occur varies according to institutional norms and practices, suggesting that the organisation's assumptions of time also need to be considered as these themselves may shape images of e-business. Further research, which explores the entrained relationship between e-business adoption and implementation would provide critical insights into how these activities are synchronised particularly when third parties such as technology vendors are involved.

6.6 LIMITATIONS

The current findings need to be considered in the context of the study's limitations. However, while the research has some limitations, these are not seen to negate the implications for theory developed above. Firstly, given the restriction of the empirical data to six organisations a caution in making generalisations is clearly recommended. Further, despite the richness of the data collected, it was acquired from interviewing senior managers identified as being involved in these adoption decision processes for e-business as strategic awareness is normally related to higher hierarchical levels (Golden 1992, 855). The perceptions and views of other actors such as consulting organisations or technology vendors advising the organisation and lower levels of management were not collected. This limitation was weighed up against the need to collect data from a range of different organisations, as a key objective of this research was to assist organisations in successfully adopting e-business by comparing current practice with existing SISP models. Future research providing a deeper examination of actors from a broader base of industries, organisations and cultures will assist in further developing and advancing the SISP adoption model of this study.

Secondly, the interviews of the e-business adoption process were made a posteriori, focusing on elapsed action and what had occurred. Assessments of organisational strategies are "necessarily subjective" and the phenomenon "inherently complex and ambiguous" (Golden 1992, 855). Therefore asking managers to recall past strategy increases the likelihood of past decisions being misrepresented either through faulty memory or the need for them to cast a "socially desirable image" (ibid 1992, 849). To

assist in minimising limitations associated with retrospectivity, two senior managers were interviewed in every case organisation except E-Give, as this was a small business owned and managed by the managing director who was interviewed. Each retrospective account was compared to assist in identifying where possible variations related to past facts or behaviours and those relating to past beliefs and intentions as the latter is more subjective and vulnerable to the effects of cognitive biases or flawed memory (ibid 1992, 855). Underlying this analysis was a broad based theoretical lens underpinned by an interpretive rationale, allowing for a “healthy dose of scepticism” in the interpretation of the retrospective data (ibid 1992). Interpretive research is “often built on events that have already transpired and around which a collective viewpoint has had time to emerge” (Isabella 1990) accommodating the co-existence of competing histories and views (Langley 1999). Further, other documentary sources of data were used to validate and enrich the researcher’s interpretation. Where inconsistencies were identified the researcher was able to seek clarification when the transcripts and preliminary interpretations were sent to the participants for feedback. However, the number and frequency of exchanges between the researcher and participants after the interviews and initial feedback was restricted because of the availability of senior level managers involved in the study. While these issues were considered in the design stage of this study, the extent to which senior management’s characteristics and the length of time that elapsed between the adoption of e-business and the recollection of that event in the interview affected retrospective accuracy does to a certain degree remain in question.

Thirdly, documenting the planning process as it actually occurred and contrasting these descriptive efforts against the prescriptive models found in the planning literature, provided an understanding of their uses and inconsistencies with actual planning activities. However, there are limitations with this approach as the outcomes from using planning frameworks may differ to what was initially intended, that is there may be a difference between “intended” and “realised” strategies (Venkatraman 1989). Finally, the six organisations investigated were in a single economy and culture, namely Australia. Further research in an international context may reveal national, regional and cultural differences in shaping SIS adoption decisions as discussed above in section 6.5.

6.7 CONCLUSION

The objective of the research was to address the gap in the literature by developing SISP model(s) that would more adequately explain the adoption of e-business. Three schools of thought, namely the socio-technical, socio-economic and strategic choice/organisational decision making were described, analysed and integrated using Pettigrew's strategic change framework. The theoretical model assisted the researcher in comprehending past efforts of SISP, situating current work and discerning future analytic directions when addressing the three research questions of this investigation. The SISP adoption model developed from this study highlighted the dynamic and contextual nature of e-business adoption and the multiple perspectives that SISP may present. The model shows how e-business adoption decisions evolve through iterative and overlapping episodes. Embedded within these episodes are a diverse range of drivers and inhibitors which vary across institutional and temporal contexts. Hence, different organisations use different methodologies at different episodes in SISP, multiple methodologies may be used in the same episode and opportunistic approaches are used most highly at each episode. Uncertainty as to the potential of e-business and how it may be realised reduces the propensity of organisations to design and implement formal strategies. Therefore, organisations appear to be working incrementally and opportunistically as a means to reducing their risk.

The study demonstrates the necessity for broadly based rigorous research that examines the adoption of SIS holistically and the importance of effective research relevant to the wider community in facing the multi-faceted challenges relating to the adoption of e-business. The emergent, fluid and negotiated quality of e-business adoption decision making, represented a process closer to "bricolage than it is to brilliance" (Garud & Van de Ven 2002). The adoption decision process was found to be more of a reflective endeavour, than a constructive or sequential one, where decision processes "double back on themselves," solutions are found in some cases before problems are understood, and actions on earlier problems affects current decisions (Kriger & Barnes 1992). Further, e-business was embedded in some time, place, discourse and community (Orlikowski & Iacono 2001), and therefore enacted differently by different actors in response to various visions, opportunities, skills and perceptions of risks. These were influenced by specific interpretations and particular institutional contexts and shaped by a diversity of intentions and practices such as to improve efficiency, learn or improvise

(Orlikowski 2000). Technologies themselves also acted to “discipline” the “interactions of actors” by providing “obligatory passage points” as well as embodying the interests of particular groups (McLoughlin 1999). By viewing e-business as a phenomenon that is interdependent with its context and thereby subject to the vicissitudes of other organisational practices and concerns, adoption decisions and actions were seen to be shaped by the ways in which they intersected with e-business. This view challenges the rational based and processual approaches in existing SISP models, where adoption would be seen as a technical reflection of some predefined economic or technical imperative faced by the organisation. However, while this research has contributed to closing the gap in the literature, a more complete picture will only develop over time.

In conclusion, the significant changes and uncertainty that e-business presents to organisations, poses challenges for both managers and researchers in understanding and developing theory that will more adequately explain the potential of e-business and how it may be realised (Elliot 2002, 341-342). A research endeavour that provides a more holistic approach in examining the adoption of SIS in context is necessary to more adequately account for the intangible and fluid nature of the phenomenon. The integrative SISP adoption model developed in this study is an attempt to more closely reflect current practice. Further, it is intended as a framework to guide further exploration of the adoption of SIS forming part of a broader theoretical research agenda arguing for greater reflection and different methodologies that can “accommodate novelty without being distracted into new intellectual cul-de-sacs” (Fenton & Pettigrew 2000). The aim is to supplement and enhance our knowledge of what is happening in the adoption and diffusion of IS in an environment of critical change.

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APPENDIX ONE

THE INTERVIEW PROTOCOL

The following is the interview protocol used in the study. As discussed in Chapter Four, Sections 4.4.2.2 and 4.4.2.3, the protocol was used to manage and guide the research. While there is a long list of questions: a large portion of them represented background information which was researched before the researcher conducted the interview; some questions did not apply in all contexts, such as the size and type of the organisation; and, in the earlier stages of the research, the researcher was concerned with ensuring that questions were not left unasked as there were limited opportunities in accessing organisations. However, as discussed in Chapter Four, interviewing was a learning process for the researcher. She found that by controlling the responses too much, the data was being directed too closely by what she was asking, thereby not providing the information needed and missing opportunities for gaining unplanned insights. The researcher learnt that "unobtrusive control" was necessary to steer the direction and to ensure that key areas were covered without being over-controlling by working relentlessly from a list of questions. The questions became more of a "backdrop" for the researcher to quickly assess areas that had not been discussed during the course of the interview.

INTERVIEW PROTOCOL

Name of Organisation: _____

Name of Interviewee: _____

Date of interview: _____

Time of interview: _____

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
Organisational Characteristics (<i>provides rules of the "game" – part of context</i>) 1. a) Is this organization privately or publicly owned? b) What year was the organization founded? c) Where was the organization founded? d) What is the annual turnover of the company? How many employees? e) What has been your annual growth in revenue over the past 5 years? f) What is your organizations major market now? g) What do you see your organisation's major market being in 5 years time?	<ul style="list-style-type: none"> Financial reports 						
2. What is the annual IT investment? Has this increased/decreased over the past 5 years?	<ul style="list-style-type: none"> Financial reports TOPIS 						
3. Briefly describe the major operations of the company. Also briefly describe the organisational structure.	<ul style="list-style-type: none"> Financial reports Org. chart Org. policy documents TOPNIS 						
4. Would you consider your organisatation large, medium or small in the market compared with other local organizations?	<ul style="list-style-type: none"> TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
5. How many major locations does your firm have? Where are these sites located?	• TOPNIS						
6. How many distinct product lines/services does the company market? How similar are they in their markets and the technology used to produce them?	• Financial reports • TOPNIS • TOPIS						
7. How "aggressive" is your organisation in seeking market opportunities?	• TOPNIS						
8. (a) How "capable" do you see this organisation in developing and producing products to meet customer needs? (b) How competitive does the organisation see itself with respect to price, quality and customer service?	• TOPNIS						
9. a) What is the organisation's major focus? Eg. is it on product/market development, efficiency, or something else? b) What are your organisation's key business drivers (what has to go right for the business to succeed)?	• TOPNIS						
10. (a) What is the organisation's major goals/business vision? (b) Does the organisation have a strategy/plan? How often do you plan? (c) How would you define strategic planning?	• Financial reports • Document – plan • TOPNIS						
11. Describe the nature of inter-departmental interaction during decision making. How are the important decisions made?	• TOPIS • TOPNIS						
12. To assure the compatibility among decisions in one area (eg. accounting) with those in other areas, to what extent are 'integrative mechanisms' such as inter-departmental committees, task forces and liaison personnel used	• TOPIS • TOPNIS • Minutes • Journals/ memos						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
Industry Environment <i>(consists of actors eg. competitors and general dimensions eg. threats, turbulence, complexity - part of context)</i> 13. To what industry does your firm belong?	<ul style="list-style-type: none"> • TOPNIS 						
14. At what rate do products/services become obsolete in this industry? Slow, moderate, extreme	<ul style="list-style-type: none"> • TOPNIS 						
15. How predictable are the:- actions of competitors - demands and tastes of your customers	<ul style="list-style-type: none"> • TOPNIS 						
16. How different are your firm's products/services compared with competitors?	<ul style="list-style-type: none"> • TOPNIS 						
17. How severely do such aspects of the industry, eg tough competition, price, quality, local vs international competitors, dwindling markets, scarce supply of labour/materials, government influence, etc influence or threaten the company? (Identify and rate as low, moderate or high)	<ul style="list-style-type: none"> • TOPNIS • Disc. Lists • News- papers • Journals/ memos 						
18. Do you systematically monitor your competitor's activities?	<ul style="list-style-type: none"> • TOPNIS • TOPIS 						
19. What do you consider the greatest threat facing your organization/industry?	<ul style="list-style-type: none"> • TOPNIS • TOPIS 						
Individual Factors <i>(personal characteristics and skills of decision makers)</i> 20 i) How would you define e-business? (ii) Who/what have been the major influences in your attitude/knowledge of E-business?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
21. (i) What is your role in the decisions surrounding the adoption of e-business? (ii) What is your perception of other people's roles	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
22. How would you describe you leadership & management style?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
23. What is your professional background? Are you a member of any professional associations/bodies?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
24. What are your educational qualifications, age, sex?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
IS Function (to determine historical and current views and practices in relation to IS/IT within the org) 25. Is IS a separate department or part of another? If part of another, which one?	<ul style="list-style-type: none"> • TOPIS • Org. structure 						
26. Is IS responsible for the development of all the applications in the company or are the end users also permitted to develop applications?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
27. Describe the IS planning process. Is e-business planning conducted: → (or no planning) How long has this organization conducting IS planning, and E-business planning?	<ul style="list-style-type: none"> • TOPIS 		In response to (but separate from) strategic planning	In response to (but separate from) IS planning	As a component of strategic planning	As a component of IS planning.	
28. How experienced is the company in computers, information and telecommunications technology?	<ul style="list-style-type: none"> • TOPIS • Policy statements • Web page • Hardware & software used 						
29. How many employees does IS have? To what extent is the IS personnel distributed throughout the company?	<ul style="list-style-type: none"> • TOPIS 						
30. What is the performance evaluation of IS based on?	<ul style="list-style-type: none"> • TOPIS 						
31. How informed are the IS managers about the company's business plans?	<ul style="list-style-type: none"> • TOPIS 						
32. How informed is senior mgt about information technology?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
33. At what rate does technology change in your firm's industry?	<ul style="list-style-type: none"> • TOPNIS 						
34. Is the use of the Internet and ICTs Internet different in your industry to other industries? How?	<ul style="list-style-type: none"> • TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
E-business innovation							
35. a) What type of technology is used in this organization (eg. e-mails, EDI, WAN, Internet, Conferencing calls and video conferencing, shared databases, shared information reporting systems, other?) b) Briefly describe the system(s) in terms of its various functions, the manufacturer, model etc and how it operates with respect to trading partners (buyers and sellers) c) What disruption would the unavailability of IS (in particular IOS) cause in your organization? →	<ul style="list-style-type: none">• TOPIS• TOPNIS• Docs. from IT supplier		1 hr 1 day 1 week Indefinitely	No, Little	Moderate	Major	Org. closure
36. To what extent is the e-business project integrated with other IT systems and business processes? (eg. sales, inventory, ordering, accounting etc)	<ul style="list-style-type: none">• TOPIS						
37. Who/what were the major influences with your choice of e-business technologies?	<ul style="list-style-type: none">• TOPIS• TOPNIS						
38. How did you develop the IOS? Eg. cooperatively, competitively	<ul style="list-style-type: none">• TOPIS• TOPNIS						
39. Have there been consequences of previous actions with respect to IS in terms of organisational change and future action?	<ul style="list-style-type: none">• TOPIS• TOPNIS• Minutes• Journals/ memos						
40. How much support and commitment was there from management? What infrastructure is/was available for its support?	<ul style="list-style-type: none">• TOPIS• TOPNIS						
41. Have you had any feedback from trading partners (buyers/sellers) about the system? Eg. potential efficiencies	<ul style="list-style-type: none">• TOPIS• TOPNIS						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
42. How important is e-business for the organization, seen in relation to its routine "ordinary" activities and any other innovations that were being contemplated or attempted? How large did it seem in the scheme of things? How did/or what do you perceive as the impact that the system will have on the org. in terms of economic (eg market share, return on investments, cost reduction, product differentiation and competitive advantage), technical (eg. security and risk) and social factors (org. environment)? Were any assumptions made regarding the impact on other organizations, sectors etc?	<ul style="list-style-type: none"> • TOPIS • TOPNIS • Minutes • Journals/ memos 						
43. a) Is/was the adoption of E-business a one-time event or one of a series of strategic initiatives? b) Was the project seen to be directly supporting an aspect of the current strategic plan at that time?	<ul style="list-style-type: none"> • TOPNIS 						
SISP Design							
44. What strategies did you use to acquire information for planning the adoption of e-business? (eg. formal strategies such as probing whereby market surveys, special task forces etc are used/or scanning, whereby routine and periodic acquisition of information is obtained through trade journals, industry surveys, etc) Were any assumptions made regarding other companies, sectors etc?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
45. Why did you use this particular strategy?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
46. How was the information distributed to members of the planning process? (Eg. was information distributed in the form of reports, ad hoc querying, or summarisation and routing, e-mail, meetings)	<ul style="list-style-type: none"> • TOPIS • TOPNIS • Copies of reports • Diaries/ memos • E-mail 						
47. a)How comprehensive was the planning process in making and integrating plans and policies? (Eg. was there exhaustive evaluation of information about strategic alternatives and integration of individual plans into an overarching organisational plan b)Was it difficult to find a suitable planning method? c)How precise and elaborate was the plan? d)Was there reliance on a large number of external expert parties? e) How did the plans evolve, eg. trial and error f)No. of staff involved/cost of planning (in terms of length of time it takes and \$ expense)	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
48. To what extent was debate and argumentation allowed into the planning group's communication exchanges during their examination of e-business issues How satisfied were the participants to the planning process at the time of the adoption decision?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
49. Did the plan deal with all of the problems anticipated at the time of the adoption decision? (Eg. human resource, training, technological issues)	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
<p>50. a) What role did divisional managers play in the development of the strategic plan, if any?</p> <p>(Extent of involvement of top mgt in i) consideration of strategic issues ii) generation of strategic proposals iii) evaluation of strategic proposals iv) choice of strategic alternatives)</p> <p>b) Was it easy/difficult to convince top management to approve the outcomes of the planning process?</p>	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
<p>51. a) What was the planning horizon – for corporate & functional plans?</p> <p>b) Did the planning process determine a uniform basis for prioritising e-business projects? That is, did it identify specific new projects?</p> <p>c) Was the planning process useful/successful? Why? (Eg. was it because of a good team leader)</p>	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
<p>Adoption Decision Making Process</p> <p>52. What event, problem, etc. triggered off the decision making process to undertake this project?</p> <p>What was/is the main reason for this decision? (eg. the most important factors that lead to this project, - organisational goals and strategies)</p> <p>When did this trigger occur?</p> <p>(Eg. problem perception, eg, outdated technology, changes in govt, policy, competitors etc – “newness of problem, ambiguity of problem)</p>	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
53. Was the e-business project driven by: business (100%) 50:50 or 100% technology?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
54. How long did the decision making process take?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
55. Who made the decision? How far ahead did the decision makers look while making the decision?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
56. Describe the major actions during the decision-making process, people involved and the order in which they occurred..	<ul style="list-style-type: none"> • TOPIS • TOPNIS 		See Table 1 below to assist in summarising				
57. What were the most important factors that lead to this e-business project? What major obstacles or barriers did your firm have to overcome for the project to be a success?	<ul style="list-style-type: none"> • 						
58. What role did the senior mgt play in: (a) the initiation of the decision process (b) the identification of the alternative courses of action (c) the making of the final decision	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
59. How much influence and what type did the various internal departments/functions have on the decision process?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
60. How much influence and what type did trading partners and customers have on the decision process	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
61. What information and alternatives were presented to individuals/groups/orgs.?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
62. Were there any objections to the adoption decision?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
63. How were solutions found and conflict resolved if there were any objections?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
64. Were there any problems from any other groups (eg. line managers and employees/users) during the adoption decision phase?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
65. Were any important conditions seen as missing from the adoption decision? If so, which were seen as most important?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						

Question	Actor/ Artifacts	Information collected	Information to collect	Where decision/action took place			Order of events
				Internal Eg. dept.	External Eg. other orgs. Seminars	Cyber Eg. Discussion lists	
66. What conditions for implementation were identified during the adoption decision process?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
67. Were there any difficulties with implementing the e-business project? Was the project implemented according to schedule?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
68. Do you consider the system has been a success? How is success determined?	<ul style="list-style-type: none"> • 						
69. What do you see as being the biggest challenges to organizations in future use of the Internet?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
70. If your organization was facing the same decision (to adopt e-business) today, would anything be done differently?	<ul style="list-style-type: none"> • TOPIS • TOPNIS 						
71. Any comments??	<ul style="list-style-type: none"> • 						

Table 1

Decision/Action during adoption decision process	Order	People involved in the decision/action
Start Up Eg. Event/Problem perception		
Development Eg. Information gathering eg. Review of business strategy Identifying strengths and weaknesses of company Review of applications portfolio and data resources		
Choice Eg. Attitude formation		
Implementation Eg. Evaluation and resource attainment		

APPENDIX TWO

DOCUMENT SUMMARY

Document Ref:	Source	Significance of document	Analytical comments and activities
Case 1 C1.1a	Interview transcript 26/4/00	Interview - Internet Business Manager	Preliminary interpretations and queries from researcher verified by Internet Business Manager. Salient points and themes/aspects arising from interview data prepared and matched against preliminary coding list. Coding list revised.
C1.1b	Interview transcript 4/7/00	Interview - Marketing Manager	Preliminary interpretations and queries from researcher verified by Marketing Manager. Salient points and themes/aspects arising from interview data prepared and matched against preliminary coding list. Item entered into within case interim data display if mentioned by Internet Business Mgr, determining temporal order and/or establishing key factors. Coding list revised.
C1.2	Questionnaire - Best practice in Internet Retail Sites 1999 - provided with permission from separate project.	Structured interview of Managing Director of case one - provided MD's perspective as to how the project evolved and strategic planning activities.	Triangulation with interview data outlined above to confirm themes, identify exceptions and offering further historical understanding assisting with sorting how events unfolded in within case data display.
C1.3	Internet Business Manager - supplementary information, 1/5/00	Technical aspects of the website and IT budget symbolic of how IT is viewed within the organisation.	Supplemented interview with contextual information regarding IS culture and technical specifications.
C1.4	Internal document, 26/4/00	Management structure - significant that the IS manager position had been crossed off the chart.	Verified emerging theme regarding IS culture
C1.5	Professional publication, June 2000	Case one was discussed as part of a broader analysis about the retail book market in Australia. Managing director interviewed.	Supplemented interview data with contextual information establishing factor of types of organisational pressures and verified emerging themes of existing external models, channel conflict and managerial agency in coding and data display.

Document Ref:	Source	Significance of document	Analytical comments and activities
C1.6	Web Site 3/4/00	General information about case one. Look and feel of the online facility.	Prepared researcher for interview with respect to background information and verified emerging themes relating to hybrid model..
C1.7	Professional publication, July 2000	Article regarding channel conflict. Case one used as an example, amongst others.	Confirmed issue of channel conflict.
C1.8	Professional publication, July 2000	Article regarding online sales channels and dis-intermediation.	Supplemented interview data with contextual information regarding online sales environment and customers.
C1.9	Professional publication, August 2000	Article regarding global retailing with case one's global strategy cited as an example.	Supplemented interview data with contextual information regarding general business strategy.
C1.10	Professional publication, February 2000	Survey information - customer perspective on doing business through the Internet.	Supplemented interview data with customer perspective and verified "the customer" as a key factor in coding and within the case data display.
C1.11	Professional publication, January 2001	Survey information - matching web strategies to the needs of customers	Supplemented interview data and established relationship between customers and strategy in data display.
C1.12	Professional publication, April 2001	Article regarding the importance of competing on some basis other than best price in online environment.	Supplemented interview data with contextual information regarding issue of price competitiveness, subsuming and splitting variable under "the customer" and "organisational identity"
Case 2 C2.1	Interview transcript 15/5/00	Interview - IT manager and General Manager Finance and Legal	Preliminary interpretations and queries from researcher verified by participants. Salient points and themes/aspects arising from interview data prepared and matched against coding list. Item entered into within case interim data display if no contradiction by IT manager and General Manager, determining temporal order and/or establishing key factors. Coding list revised.
C2.2	Interview transcript 18/5/00	Follow up interview with General Manager	Interview verified. Salient points and themes/aspects arising from interview data prepared and matched against coding list for further development.
C2.3	Annual report 1999	Background information about organisation including IT department.	Supplemented interview data regarding contextual information verifying emerging theme of cultural influences.
C2.4	Professional publication October 1999	Article regarding downturn in ERP companies.	Supplemented interview data providing contextual information, establishing key factor regarding resource dependency relationship.

Document Ref:	Source	Significance of document	Analytical comments and activities
C2.5	Professional publication, April 2000	Article regarding online government procurement models.	Supplemented interview data, establishing relationship between external influences and types of e-business.
Case 3 C3.1a	Interview transcript, 26 May 2000	Interview - General Manager E-Commerce	Preliminary interpretations and queries from researcher verified by GM. Salient points and themes/aspects arising from interview data prepared and matched against coding list.
C3.1b	Interview transcript, 13 February 2001	Interview- Internet Banking Project Manager	Preliminary interpretations and queries from researcher verified by Marketing Manager. Salient points and themes/aspects arising from interview data prepared and matched against coding list. Item entered into within case interim data display if mentioned by GM, determining temporal order and/or establishing key factors. Coding list revised.
C3.2	Annual report 2000	Description of business, vision and strategy, including e-business and financials.	Supplemented interview data confirming relationships between e-business strategies and organising principles.
C3.3	Web site 27/5/01	Press release relating to its "new economy business incubation and acceleration"	Supplemented interview data confirming e-procurement model and approach for its approval within the bank.
C3.4	Professional publication, October 2000	Insight into how major Australian banks leverage incumbent positions using the Internet	Supplemented interview data providing contextual information verifying emerging themes of organisational field in terms of competitors and case 3's network position in the field.
C3.5	Professional publication, October 2000	Insight into the opportunities of B2B for banks. Case 3 used as an example.	Supplemented interview data confirming e-business images.
C3.6	Professional publication, August 2000	Article regarding on developing e-commerce businesses from consultant's perspective. Case 3 used as an example.	Supplemented interview data with consultant's perspective, confirming influence of consultants with respect to shaping interpretive processes of e-business.
C3.7	Professional publication, June 1999	Article regarding the Internet and change in the financial services sector.	Supplemented interview data with contextual information regarding the IT intensive financial services industry and the impact of Internet on developing future strategies.
C3.8	Professional publication, April 2000	Article regarding transaction banking in an e-environment.	Established customer perspective with respect to how new business models were changing transaction banking needs.
C3.9	Professional publication, August 1999	Article regarding small business claims of cost, risk and difficulty associated with using Internet Banking Services. Case 3 used as an example.	Confirmed interview data with respect to problems associated with Internet Banking in terms of speed and flexibility.

Document Ref:	Source	Significance of document	Analytical comments and activities
C3.10	Professional publication, December 2000	Article regarding broader role of banks in the community.	Supplemented interview data with contextual information regarding community perceptions about banks and care needed in moving online. Confirmed GM's view about "pull rather than push" strategy to online banking.
C3.11	Professional publication, July 1999	Article regarding e-commerce strategy of major competitor of case 3.	Provided competitor's perspective of e-strategy revealing similarities with respect to outcomes but contrasts with respect to means namely developing partnerships. Established relationship of motivation to form partnerships with cultural influences.
C3.12	Professional publication, October 2000	Article regarding third party aggregators for online banking services.	Provided third party perspective with respect to shaping e-business models. Established factor of partnering.
C3.13	Professional publication, May 2000	Article regarding value added services banks offer small business customers in online environment.	Supplemented interview data with contextual information in terms of "packaging services and products"
C3.14	Professional publication, July 2000	Article regarding law suit with respect to case 3 in terms of a technology provider and their e-commerce strategy.	Supplements interview data providing contextual information regarding relationships with technology providers.
C3.15	Professional publication, March 2001	Article regarding the creation of exchanges by banks for trading goods and services.	Supplements interview data regarding e-business models and confirms issue of partnering.
C3.16	Professional publication, October 1999	Article regarding Internet valuations	Supplements interview data providing contextual information verifying emerging theme of conflicts in the rationale for justification.
C3.17	Professional publication, December 1999	Article regarding methods of accounting for "new economy" businesses	Supplements interview data providing contextual information regarding conflict experienced with respect to tangible vs intangible indicators of wealth.
C3.18	Professional publication, December 2001	Article regarding e-commerce strategy of major competitor of case 3.	Competitor perspective - established relationship between the similarity of the strategy and the close proximity of case 3 with competitors in the organisational field.
C3.19	Professional publication, February 2000	Article highlighting the importance of culture in the online revolution.	Supplemented interview data verifying cultural processes as key factor.
Case 4 C4.1	Interview transcript 31 July 2000	Interview - Managing Director and Manager of Auctions	Preliminary interpretations and queries from researcher verified by auction manager. Salient points and themes/aspects arising from interview data prepared and matched against coding list. Item entered into within case interim data display if no contradictions between

Document Ref:	Source	Significance of document	Analytical comments and activities
			participants, determining temporal order and/or establishing key factors. Coding list revised.
C4.2	Web Site, 27/07/00	Description of business and services offered.	Supplemented interview data with contextual information relating to the nature of the e-business model.
C4.3	Professional publication, May 2000	Article highlights the popularity of online auctions.	Supplemented interview data with contextual information verifying the organisational field and e-commerce model.
C4.4	Professional publication, November 2000	Article discusses the types of online auctions.	Supplemented interview data with contextual information and established the types of players in the organisational field.
C4.5	Professional publication, October 1999	Article describing online auctions in the United States. Of interest as the model of Case 4 was based on reverse auction model from US.	Supplemented interview data with contextual information regarding international online auction models - global competitors.
C4.6	Professional publication, March 2001	Article describing strategies of established companies in joining "the dot com boom" - organisational field.	Confirmed interview data with respect to issue surrounding the difficulties of established organisational identities vs establishing organisational identities in developing e-commerce models - established relationship of institutional contexts, time and e-business models.
C4.7	Professional publication, August 2000	Article describing the fledgling dot.com environment and associated images.	Supplemented interview data and confirmed "poor image" of dot.com as a difficulty with organisational identity.
Case 5 C5.1	Interview transcript, 9 October 2000	Interview- General Manager Operations	Preliminary interpretations and queries from researcher verified by GM. Salient points and themes/aspects arising from interview data prepared and matched against coding list.
C5.2	Interview transcript, 10 November 2000	Interview - Director Development	Preliminary interpretations and queries from researcher verified by director. Salient points and themes/aspects arising from interview data prepared and matched against coding list. Item entered into within case interim data display if no contradictions between participants, determining temporal order and/or establishing key factors. Coding list revised.
C5.3	Annual report 2000	Description of business, financials and strategic visions of organisation.	Supplemented interview data with contextual information confirming cultural processes, organisational identity and e-business strategy.
C5.4	Media release web site, 8/10/00	Comments regarding progress of e-business in	Supplemented interview data with details regarding

Document Ref:	Source	Significance of document	Analytical comments and activities
		organisation.	incubation business from managing director's perspective.
C5.5	Professional publication November 2001	General article about performance and key strategies of Case 5 - profiled managing director.	Supplemented interview data and confirmed factors relating to image within organisational field.
C5.6	Professional publication September 2000	Examination of Case 5's e-commerce strategy	Provided managing director's perspective on e-commerce strategy, confirming interview data and assisted in sorting how events unfolded establishing temporal order.
C5.7	Consultant Web site, 10/4/01	Report on the impact of e-commerce on the transportation industry	Consultant's perspective with respect to interpreting the meaning of e-business for transport companies. Confirmed interview data regarding influence of consultants and verifying emerging theme of shaper of meaning.
C5.8	Commonwealth of Australia web site, 30/01/01	Report exploring the use and potential of e-commerce within the transport sector. Interviews with a range of organisations and individuals from the industry - report referred to in interview.	Supplemented interview data with contextual information of organisational field - echoed similar themes and meanings of e-business.
C5.9	Consultant report, September 2000	Survey of e-tailers with respect to perceptions of Internet fulfilment service providers and key attributes they look for when choosing an Internet fulfilment provider.	Provided customer perspective - confirmed interview data regarding the importance of customer input in designing e-strategy - verified "the customer" as a key factor.
C5.10	Professional publication, April 2000	Article regarding the competition within the transport market for e-fulfilment.	Supplemented interview data with contextual information regarding the organisational field and provided insight into competitor's perspective.
C5.11	Professional publication, July 2000	Article regarding market power of internet exchanges - fair trading laws.	Supplemented interview data and established government as a key actor in organisational field.
Case 6 C6.1	Interview transcript, 13 February 2001	Interview with managing director	Preliminary interpretations and queries from researcher verified by MD. Salient points and themes/aspects arising from interview data prepared and matched against coding list.
C6.2	Professional publication, June 2000	Provides background information about nature of organisational field and interview with MD regarding organisation.	Confirmed interview data about the nature of the e-business model, how it arose and major competitors. Items entered into within case interim data display.
C6.3	Web Site, 20/9/01	Describes organisation and services.	Confirms meaning of e-commerce model and supplements interview data with contextual information.
C6.4	Professional publication, February 2001	Provides insights into organisational field and key strategies.	Supplements interview data and confirms nature of e-business model.