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Information Systems Strategy: An Empirical Investigation into the Social Complexity of its Formation in Practice

Walid J. Arif

A thesis submitted in partial fulfilment of the requirements of
University of Northumbria at Newcastle
for the degree of Doctor of Philosophy

School of Computing, Engineering & Information Sciences

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ABSTRACT OF THE THESIS

New trends of world economy are placing great pressures on organizations to rethink their IS strategies. The IS literature review reveals the misapprehension of the complexity of the phenomena. Research that investigate the social complexity of IS strategy formation in practice is lacking in IS literature. A considerable gap in IS strategy thinking between theory and practice is evident.

This thesis, from an alternative perspective, provides an in-depth description and a profound analysis of the actual practice of IS strategy formation in a real live situation. By focusing upon examining the relationship between the formation process and aspects of the organizational context of IS strategy, it generates new insights into the social complexity of IS strategy formation. These essential insights should help rethinking the concept of IS strategy and enhances its formation process in practice.

A longitudinal interpretive case study has been designed to investigate the process of strategic decisions of exploiting Geographical Information System (GIS) in a large public service organization in Saudi Arabia. The research provides an exceptional case study that addresses IS strategy in the public sector and in the international context which both are under-studied and under-represented in the IS literature. Adopting ideas from the contextualism approach, and web models analysis, a conceptual framework has been devised to guide the research. In-depth interviews, participant observation, and documentary evidences methods are used for collecting empirical data.

Themes abstracted from the case study reveal that IS strategy formation can be perceived as a reflection of a sense-making process of the organizational social reality. The discussion of the abstracted themes has led to the construction of a conceptual scheme which is intended to provide an epistemological device to aid making sense of the practice of IS strategy formation in any particular context. Implications of the findings for theory on and practice of IS strategy are then discussed. Finally, suggestions for further research arising from this thesis are considered.

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DECLARATION

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work.

Name: Walid Arif

CHAPTER ONE

INTRODUCTION

1-1- Overview

Information systems (IS) strategy has been frequently described by senior executives as a critical organizational issue. Economy trends and technology innovations pressure organizations to rethink their IS strategies. The literature provides the IS practitioners with prescriptions of how to develop IS strategies that evidently impractical. A considerable inconsistency in IS strategy thinking between theory and practice is apparent. The limited published studies argue for the complexity of IS strategy formation in practice and for the importance of the social dimension of the phenomenon. Research that investigates the social complexity of IS strategy formation in organizations is still in the formative stage.

A longitudinal interpretive case study research has been designed to investigate the social complexity of IS strategy formation in practice. Important themes abstracted from the case study should enhance our understanding of the phenomena and lessen the gap between theory and practice. The abstracted themes suggest that IS strategy formation is a reflection of a sense-making process of the organizational social reality. A conceptual scheme has been devised to facilitate making sense of IS strategy formation process. Implications of the research findings for theory and practice are discussed. Several areas of learning and suggestions for future research are provided.

1-2- The Research Issue

IS strategy has been ranked as top management concern by consultants, academics and research organizations. Surveys conducted by the Society for Information Management (SIM) about key issues facing IT executives show that IS strategy was a top issue for the last 20 years (Luftman, Kempaiah & Nash, 2006).

Nowadays, evolving trends in world economy such as e-business models, globalization and agility are forcing new strategic values of information technologies (IT). On the other hand, new models for provisioning IT infrastructure in organizations such as enterprise resources planning (ERP), outsourcing, and the new technologies and communication channels (e. g. peer to peer computing, mobile technology) are placing pressures on organizations to rethink their IS strategies.

Organizations from both governmental and private sector invest greatly in IS strategy planning using prevailing approaches and methodologies in order to define and develop innovative capabilities to enable strategic agility. Too often, IS strategic plans are not enacted. Or worse, they are enacted and the results turn out to be a waste of resources (Luftman, Kempaiah & Nash, 2006).

IS strategy has a poor record throughout the world. IS projects consequently suffer from a high level of failure. In the USA for example 70% of IS projects fail to meet their timetable or budget or come up to specification (Cross, 2005). A survey across seven countries shows that the UK has the highest record of failure with Japan and the Netherlands with the best records (Dunleavy & Margetts, 2004).

Failure of IS strategies results in failure of IS projects that comes in several forms. Fortune and Peters (2005) characterize IS failure as a product of outputs which are considered to be undesirable by those involved. A recent example of IS projects failure is the UK National Health IS project that considers as one of the largest public IS programs in the world, reports indicate that the project is behind schedule, over budget and facing difficulties of implementation.

Failure of IS strategies can be caused for a variety of reasons but it is the impact upon the organizations context that causes the greatest problems. The failure of IS projects in large public organizations for instance involve a serious economic and social calamity. It affects not just those who involved with its operation as a management tool it also frustrates the sponsors, the designers, those who managed the project and, increasingly, the general public (Stowell, 2006).

The IS literature contains numerous reports of failure (Fortune & Peters, 2005; Cross, 2005; Myers, 1994). The important question is why do they continue? It would seem that lessons about failure are not being learnt and research into the complexity of IS strategy not taken up.

In an attempt to reconcile what they read in the prevailing literature with what they actually experience in practice, IS practitioners, such as myself, are disturbed with the inconsistency that exists between IS strategy theory and practice. The literature, for instance, conceives IS strategy formation as a formal process that can be conducted using rational techniques such as Porter's competitive forces model to gain competitive

advantages (Porter, 1980, Porter & Millar, 1985). In practice, the researcher's personal experience, and those of others reported in the relatively limited number of studies about IS strategy formation in organizations (e. g. Davies, 1991; Walsham, 1993; Jones, 1994), conversely argue that IS strategy formation process is complex and often plagued with various problems (Teo & Ang, 2000). The continued high ranking of IS strategy as a key issue facing IT executives and the frequent disappointing results of its implementation in organizations confirm these argument and signify the insufficient understanding of the concept and the complexity of its formation process in practice. Little valid practical guidance therefore is available in the IS literature that organizations can exploit in their quest for exploring better ways for forming effective IS strategies to respond to evolving trends in the business environment.

In view of that, it is reasonable to ask why IS strategy theory does not correspond to its practices, and why so many approaches and methodologies in the literature produce so little results in helping organizations with their IS strategy formation? The few available studies that address this issue relate it to the fact that the field of IS strategy has been derived by the rational strategic thinking that adopted from the strategic management literature (Waema & Walsham, 1990). From this traditional rational perspective, IS strategy formation process is perceived as a series of straightforward prescribed steps that can be accomplished in formal and objective manner (Walsham, 1993). Many IS scholars take the underlying assumptions of the traditional rational perspectives of strategic management for granted and apply it to the IS strategy domain. This results in various approaches and methodologies that aim at describing how IS strategies should be formulated rather than how they necessarily do

form. Such perspectives of IS strategy may fill an intellectual function much more than significantly contributing to the provision of guidance for practice.

There are comparatively a small number of scholars reported upon research that have explicitly addressed how IS strategies actually formed in practice. The clear message they convey is that IS strategies are not concerned with technological issues *per se* but incorporates other important contextual issues. Most important is that IS strategy formation involves social issues which may not at first sight have been considered as being directly relevant in IS strategy domain (Galliers & Leider, 2003).

The researcher own experience and the review of significant research findings show a considerable lack of emphasis in dealing with complex social and organizational factors associated with IS strategy formation in organizations. Omitting these influential factors in prevailing rational perspectives of IS strategy, this research argues, plays a major role in the misunderstanding of the actual practice of IS strategy in organizations. This consequently has led to a significant gap between theory and practice, that is, between the way in which IS strategy concept is perceived from the academic point of view and who it is actually formed in practice.

Several scholars (e. g. Walsham, 1993; Jones, 1994; Wainwright & Waring, 2004) argued for the importance of the social aspects of IS strategy. Empirical studies that investigate the social complexity of the formation process of IS strategy in practice are noticeably lacking in IS literature. This represents a significant limitation in the IS literature, which is the concern of this research.

There is a pressing need for innovative perspective on IS strategy that can bridge the gap between theory and practice by considering the social complexity of the phenomenon. Such perspectives need to focus upon the concerns of practice and how IS strategy actually forms in organization setting. New perspective of IS strategy, as Mintzberg, Ahlstrand and Lampel (1998) suggest, should be pulled by concerns in practice rather than being pushed by concepts in literature. IS strategy formation is a complex set of organizational activities that reflect a philosophy rather than a narrow set of steps prescribed by a rational method (Segars & Grover, 1999). Indeed, strategy planning in today's world calls for less hypothesis and more systematic observation. Thus, what is essentially required is good practice, not neat theory (Quinn, 2003).

The importance of this research lays in its attempt to bridging the perceived gap in IS strategy thinking between theory and practice. In doing so, the research is focusing upon investigating the social complexity associated with the formation process of IS strategy in practice in order to enhance our understanding of the subject. The new empirical insights gained should help reconsider the traditional rational perspective of the phenomenon and thus bring the IS strategy thinking in theory and practice to a more mutual position.

Linking the insightful themes that are inductively derived from this research to a wider theoretical debate in the subject should contribute in generating new theories that explicitly addresses the social dimension of IS strategy and the actual needs of its practice. Incorporating the new insights gained into existing IS strategy formation approaches and methodologies should enrich its value for practice.

1-3- The Research Aim and Objectives

Inspired by the researcher's own experience and through reading of literature in the subject, the primarily purpose of this research is to contribute to knowledge by addressing the perceived gap in IS strategic thinking between theory and practice. In doing so, the research concerns is focused upon the significant inadequacy in understanding the actual practice of IS strategy and the social complexity associated with its formation process.

In view of that, the aim of this research is to investigate how IS strategy is formed in the context of a large public service organization in Saudi Arabia. The investigation was carried out using a holistic and dynamic contextual analytical approach in order to construct a profound empirical understanding of the relationships between the formation process of IS strategy and social aspects of the context in which it take place.

To achieve this specific research aim, two main research objectives have been set:

- To thoroughly investigate and describe what, why, and how the IS strategy under investigation forms.
- To analyse how the IS strategy formation process interacts with the social aspects of the organizational context.

Given the above research aim and objectives, two sets of questions were found to be necessary to guide the research and shape the description and analysis of the data. The first set of questions relates to the first objective and includes the following:

- What IS strategy is the organization pursuing?

- Why is the organization forming IS strategy?
- How is the organization forming IS strategy?

The second set of questions relates to the second objective and includes the following:

- How are aspects of context drawn on and used by actors in taking actions?
- How do certain aspects of context constrain and facilitate actions?
- How do actions affect aspects of context?

In the first set of questions, the "What" part is concerned with the content of the strategy, that is, what is the organizational vision for change? The "Why" part is associated with the contextual dimension of IS strategy from which ideas for change have to proceed. It involves understanding the contextual aspects that influence and are influenced by the content and the process dimensions of the strategy. Finally, the "How" part relates to the process dimension, which incorporates the actions, reactions, and interactions of actors involved in the organizational activities of the strategy formation.

The second set of questions is concerned with analysing the interaction between the IS strategy content, its formation process, and the various aspects of its context over time. This involves exploring the interaction between the strategy formation process and the various aspects of its context. It also concerns how the contextual aspects can affect and be affected by the strategy formation process. The explorations also question how certain contextual aspects of the organization influence and are influenced by the organizational visions for change which shape IS strategy content, and how these visions vary over time.

1-4- The Selection of the Research Setting

This interpretive longitudinal case study research investigate the practice of IS strategy formation in a large public service organization in the Kingdom of Saudi Arabia. The research involved a historical reconstruction of the IS strategy formation and implementation efforts in the organization from 1980 to 2002 and a longitudinal study of the period from 2002 to 2004.

The selection of this particular setting to conduct this research on IS strategy formation has several valuable implications. Firstly, it has been argued that understanding the nature of the interaction between the process of IS strategy formation and social aspects of the context in which it take place is more decisive and demanding from the perspective of the international context. This is because IS strategy formation in the international context is challenged not only by the complexity of the indigenous cultural, but also by the cultural values incorporated within the imported information technology and its applications. It has been noticed that there is relatively limited published research on the international context. Hence, the case study was intended to address the international perspective, and to challenge the shortcoming of research on the subject in the literature.

Secondly, it has been noticed that much of the work on IS strategy in the literature is principally devoted to the private sector. Many of the available IS strategy methodologies (e.g. Robson, 1997; Ward and Peppard, 2002) are associated with notions of competitive advantage, market forces, and financial profitability (Whittington, 2001). The public sector has been under-studied and under-represented in

the IS literature (Willcocks and Lacity, 1998). The organizational research suggests that there are many differences exist between private organizations and public organizations regarding decision-making processes and IS management (Perry and Rainey, 1988; Bretschneider, 1990; Bretschneider and Wittmer, 1993). The complexity of IS development and implementation in the public sector in general is often very high due to the complexity of the organizational structure, culture and processes where there are many stakeholders who may have broadly different interests and perhaps conflicting perspectives (De looff, 1997). Thus, it has been recommended that managers working in public sector must be cautious as they attempt to draw lessons from conventional case studies reported in IS literature (Bozeman and Bretschneider, 1986). It can be argued, therefore, that the selection of a public sector organization as a case study for this particular research was worthwhile, and can be seen as a potential contribution to fill the gap in the IS literature.

Lastly, since the researcher has worked with the chosen public service organization for a long period of time, he has an extensive knowledge of the context of the research setting and a considerable experience of much of the IS efforts in the organization. This exceptional status of the researcher allowed smooth interactions with the participants in the research setting which would otherwise have been very difficult to obtain in normal circumstances. The researcher's prior experience of the organization under investigation has informed this research and provided a useful base for reflective understanding of the social context of the research setting. This researcher and subject relationship has provided an exceptional opportunity for conducting a unique longitudinal in-depth case study research.

1-5- Theoretical Framework

The research issue discussed above may not be adequately explored without a sound underlying theory. However, the overall social complexity of the situation in the real world and the multifaceted nature of the activities associated with IS strategy formation imply that no single theory can be expected to provide a reasonable response to all research questions. Thus, a range of theories has been used to construct the research theoretical framework including Walsham's (1993) theoretical descriptions of the nature of the social processes of IS strategy formation, Pettigrew's (1987; 1990) contextualism methodological approach, and Kling's (1987) web models approach.

Walsham (1993) provides theoretical descriptions of the nature of the social processes of IS strategy formation. Drawing on Walsham's (1993) work, the formation of IS strategy can be conceived as a process of continuous discourse. This discourse on IS strategy is a way of communicating meaning that is based on norms and values, and linked to power in relation to others. The language of the discourse on IS strategy uses a vocabulary that influences the content of the discourse. The core of the discourse in IS strategy concerns computer-based information systems.

Taking the above theoretical view of IS strategy formation, the frame of reference used to guide this research is based on Pettigrew's (1987; 1990) work on organization and strategic change and his analytical approach of contextualism. The contextualism approach provides a theoretical framework that appropriately serves the research objectives. It facilitates examining the content of IS strategy, the process of its formation, and aspects of its internal and external context, and the dynamic

interconnection between the content, context, and process over time. The contextualism offers a processual and contextual approach to analysing strategy formation. It therefore take us beyond the limitations of the traditional rational approaches by considering the influence of additional important factors such as organizational culture, structure, and other social aspects of the internal and external context.

The web models approach has been utilized for further explanation of the context dimension of IS strategy formation. Kling (1987) adopts the metaphor of web in his approach to illustrate the complexity of the activity surrounding computerization in organizations. The web models approach explicitly includes social relations to provide a model of the social context in which people act. It draws broad boundaries around a focal computer system and investigates how that focal computer system depends upon a context of complex social actions. The web models define the social context by considering three contextual aspects. The first is concerned with the social relationships between a set of participants who can influence the adoption, development, or use of information technology. The second is related to the supporting infrastructural resources. The third involves the history of commitments made in developing and operating information systems.

Drawing on the above theoretical background, a research investigative framework has been constructed. The investigative framework was intended to structure the data collection, the resulting case descriptions and analysis, and key themes abstraction. It was intended as a theoretical device that guides the research efforts rather than a rigid structure that may inhabit other ways of viewing the situation under investigation.

1-6- An Overview of Research Methodology

The research methodology adopted in this work was a contextualised, interpretive one, employing longitudinal in-depth case study approach. From the interpretive tradition, knowledge of reality is viewed as necessarily a social construction and thus a shared subjective experience. This emphasizes the need for thorough understanding of human meanings in context. In this sense, interpretive research grounded the phenomenon under study in its complex, multi-faceted and dynamic social context, and hence produces an insightful understanding of the context and the process whereby the phenomenon such as IS strategy formation influences and is influenced by its context. Adopting this broadly interpretive theoretical stance on the nature of knowledge, the longitudinal in-depth case study is considered to be the most appropriate approach for conducting this research.

A set of principles proposed by Klein and Myers (1999) for conducting and evaluating interpretive empirical research in the IS field have been applied to this research. The suggested principles are firmly grounded in interpretive philosophy. They have been found valuable for this research as they sum up important insights in interpretivism that are not, hitherto, commonly embedded in the practice of interpretive empirical research.

This type of longitudinal in-depth interpretive case study research is one in which the subjectivity of the interpretation refers to how the meaning and understanding of the actors involved in the subject of the research are reflected in the research final report. It

stresses reliability, that is, it concentrates on critical research issues such as the quality of the empirical data and the process of its selection (Weick, 1984).

The data was collected from three different sources. Interview was the main source for data. The second source of field data was the participant observation. Detailed analysis of documentary data was the third source for data. The three sources of empirical data serve the aim of stressing research reliability by maintaining the quality of the data and its selection processes.

The research investigative framework was intended to guide both the field data collection and the data analysis process. It provides the necessary measures of overlap between the case analyses and data collection so that they informed each other. The data analysis drawing from the investigative framework involves analysing the organization's context at internal and external levels, identifying essential elements of the IS strategy content and its formation process from the perspective of the participants. It also analyse the formation process of the strategy and its interaction with aspects of the organization internal and external context.

The whole data analysis process reflects the constant comparative method (Glaser & Strauss, 1967) in which new empirical data is constantly compared with old data. The analysis goes through several iterations and emerging concepts and themes are constantly evaluated against theories that guide the investigation and inform the field and analytical work. This process has enabled an ongoing dialectic between the analysis and theoretical work.

1-7- Structure of the Thesis

Subsequent to this introductory chapter, the rest of the thesis draws on the linear-analytical approach and is organized as follow:

Chapter Two is concerned with the subject of strategy. The chapter reviews four main topics from the strategic management literature. The first topic is concerned with the notion of strategy. It discusses definitions of strategy and its multifaceted nature. It also discusses functions and perceptions of strategy. The second topic is concerned with the development of strategic management. It discusses primary perspectives on strategic management with a focus upon traditional and emergent perspectives. The third topic is about the schools of thought of strategic management. It synthesises all schools of thought and maps its overall position. The fourth topic provides a critique of the strategic management perspectives and theories. The last section is concerned with the linkage between management and IS strategy.

Chapter Three examines prevailing IS literature with the view of identifying gaps in current IS strategic thinking, theories, and perspectives. The chapter starts by exploring IS strategy principal concepts, theories, and models. Approaches and methodologies for its formation are then evaluated. Following from that, the different perspectives on IS strategy formation are discussed. This is followed by an analysis of the position of IS strategic thinking in comparison with the mainstream of strategic thinking in strategic management as a reference discipline. The chapter concludes with a discussion of the inferences that have been extracted from the perceived gaps between

the two disciplines with a focus upon issues that are thought to be relevant to the purpose of this research.

Chapter Four discusses the theory of method that guides the research and informs the field and analytical work. The chapter start by providing a theoretical description of the social process of IS strategy formation. This is followed by a discussion of the contextualism methodological approach and the rationale for adopting it as a theoretical basis for this research. Ideas from the work on the web models approach are then discussed. Following from that, the chapter discusses the research investigative framework that has been devised to inform the research field and analytical work.

Chapter Five is concerned with the methodological considerations that underpin this research. The chapter first discusses the current status of IS research approaches, the criteria for selecting the research approach, and the selection of case study as an approach for conducting this research. The chapter then discusses the important issue of the criteria adopted for conducting this research. This is followed by a section about applying the criteria of the research. Data collection and analysis processes are then described in some details.

Chapter Six is about the external part of the context of the research setting. The discussion of the external context starts by considering the main IT issues and challenges that face the IT initiatives at the national and organizational levels. This is followed by a discussion of the national context. In the national context, the historical

development and reforms of the public organizations and the planning system are examined. Other major IT issues including the national IT vision, IT infrastructure, and IT initiatives and programs are also considered. The social barriers of the national IT initiatives are then discussed. The chapter concludes with a synthesis of the IT environment in the country.

Chapter Seven presents the case study. The chapter starts by providing a background of the internal context of the organization under investigation. Then, a thick description of the case study is presented in which the formation process of the strategic decisions of exploiting GIS technology in a large public service organization in KSA is traced over time. Drawing more explicitly on the research investigative framework, the case analysis section provides further insights into the strategy formation process discussed in the case description. Principle themes abstracted from the case study is then outlined, and its linkage to the data and the research investigative framework is diagrammatically explained.

Chapter Eight discusses the understanding that has been gained throughout the research. Core ideas and concepts that emerged from the iterative analysis of the case study are crystallised into key analytical themes. Each of the abstracted themes is discussed in detail to put them in the context of broader theories, and to carefully consider how they are related to each other to create a clear description and build an integrated explanation of IS strategy formation phenomenon. The research findings are then synthesised into a conceptual scheme that is intended to work as an epistemological device to aid making sense of IS strategy formation in practice.

Chapter Nine concludes this thesis by providing reflections on several areas of learning that have been derived from conducting the research. Learning about the subject of the research involves issues relates to the research findings. Learning about the research process focuses upon the selection of the research theoretical framework. Learning points cover the researcher's role includes the researcher-subject relationship, the role of the researcher preconceptions of the topic and the setting of the research, and the issue of the researcher investigating his own organization. Following from that, the implications of the outcomes of this research for theory on and practice of IS strategy formation are discussed. The chapter then summarizes the research contribution to existing knowledge. It concludes with suggestions for further research.

CHAPTER TWO

THE SUBJECT OF STRATEGY

2-1- Introduction

The concept of IS strategy is especially relevant to the strategic management discipline as most of the underpinning assumptions of IS strategy formation approaches and methodologies are principally borrowed from the strategic management literature (Byrd, Sambamurthy and Zmud, 1995). Thus, in order to make sense of the field of IS strategy it is necessary to examine relevant ideas from the strategic management literature as the source discipline. Realizing the origin of the underpinning assumptions of IS strategy is essential for understanding the perspectives and position of IS strategic thinking and recognizing possible limitations in its formation in practice.

This chapter therefore reviews five main topics from the strategic management literature. The first topic is concerned with the notion of strategy. It discusses the several definitions of strategy, its multifaceted nature, and the several perceptions of strategy. The second topic is concerned with the development of strategic management. It discusses primary perspectives with focus upon traditional and emergent perspectives. The third topic is about the schools of thought of strategic management. It synthesises all schools of thought and maps its overall positions. The fourth topic provides a critique of the strategic management perspectives and theories. The last topic addresses the linkage between businesses and IS strategies.

2-2- The Notion of Strategy

Strategy has long been established as a subject of academic study. Classical management schools provided the basis for the initial business strategic models. New strategic models began to emerge from management schools as their influence on the subject increased over time. Recently, however, strategy model-making has become an industry in itself.

2-2-1- What is Strategy?

Strategy is a complex and confusing notion. The complexity and confusion starts with the question: What is strategy? Most of the standard textbooks on strategy define it, more or less, as top management's plans to attain outcomes consistent with the organization's mission and goals. Strategy, in its broad sense, is thought to be concerned with all the critical activities or issues facing the business, providing a course of action for meeting the challenges facing an organization. It provides a comprehensive and integrative blueprint for the whole organization, leading to plans whose aim is to achieve the organization's objectives. Strategy is also viewed as a way of identifying and shaping the goals and objectives of the organization, defining the major action programmes to achieve those goals and then allocating necessary resources to achieve those goals. Mintzberg (1994) calls this broad view of strategy a plan, because it represents a conscious attempt to define where the organization is going and how it should get there. It has been argued, however, that strategy is a multidimensional concept that goes into the very heart of business and organizations. There are several answers to the question what is strategy? The vagueness about the notion of strategy is creating more confusion rather than helping organizations in making strategies.

2-2-2- The Multifaceted Nature of Strategy

Review of the mounting literature on the subject of strategy stresses the argument that strategy is a multifaceted notion. For instance, strategy is considered to be about ideas such as: structure (Chandler, 1962); logical incrementalism (Quinn, 1980); coping with competition (Porter, 1980); anticipating change (Peters and Waterman, 1982); developing core competencies (Prahalad and Hamel, 1990); bringing order from chaos (Stacey, 1993); vision (Mintzberg, 1994); fit and scope (Johnson and Scholes, 1997). strategy can also be treated as: a plan, a master plan, a pattern, a position, a ploy, a perspective (Mintzberg, 1994; Wheelen and Hunger, 1992); an integrative blueprint (Hax, 1990); innovation (Baden-Fuller and Pitt, 1996); language (Goddard and Houlder, 1995); a learning process (Senge, 1990).

Strategy, on the other hand, can be: generic (Porter, 1980); deliberate or emergent (Mintzberg, 1994); rational or incremental (Johnson, 1988); prescriptive, descriptive, or configurational (Mintzberg and Ansoff, 1994); and implicit or explicit (Mintzberg and Ansoff, 1994). Moreover, strategy can be approached from either a classical, evolutionary, processualist, or systemic framework (Whittington, 1993), or from a process, content, context perspective (De Wit and Meyer, 1998).

2-2-3- Perceptions of Strategy

The notion of strategy has been widely accepted as to be beneficial in an organization as it (1) sets direction; (2) focuses effort; (3) defines the organization; and (4) provides consistency. Strategy formation is a major task for organizations top management, but it is the task of middle managers and project managers to carry the

strategy out and turn it into results. Although the value of the notion of strategy is well recognized, it seems that it is frequently defined in one way and used in another (Mintzberg, Ahlstrand and Lampel, 1998).

Early approaches to strategy formation in strategic management field were based on perceptions such as an organization gaining advantage over its competitors. The scientifically managed workers have been used as the tools for implementing intended strategies. Internal and external contextual pressures, however, have forced organizations to rethink their fundamental ideas of the notion of strategy. The democratization and education of the organization workforce, for example, has led to altered notions such as "job satisfaction" and "worker participation" in place of the "scientific management" principles. The Japanese management principles, likewise, have introduced the notion of "co-operation" as opposed to "conflict" as the basis for business operation.

Lately however strategy has become the most important item on the management agenda in almost all organizations. Consequently, the ways of thinking about the essential characteristics of strategy have considerably developed. Strategy can be seen as: (1) as a plan or a guide for a course of action from present to desired future; (2) as a pattern of consistent behaviour over time; (3) as a position such as locating specific product in specific markets; (4) as a perspective of the fundamental way of doing things; and (5) as a manoeuvre to gain a market share (Mintzberg, Ahlstrand and Lampel, 1998).

2-3- Schools of Thought of Strategic Management

The concept of strategy has been discussed extensively in the management literature as the earliest contribution to strategy came from attempts to develop business strategies using theories of decision making. Strategies at that time were managed as a special kind of problem-solving process from which organizations defined their business directions (Hofer and Schendel, 1978). Since then, the notion of strategy has evolved dramatically in management schools. Several schools of thinking of strategy have emerged as a result of the radical changes in business environment and world economy. Primary strands of thinking on strategic management will be discussed in the following subsections. The aim is to understand how strategic management thinking has developed, and how its underpinning assumptions evolved. This understanding is necessary for investigating similar development in IS strategy thinking and examining the underpinning assumptions adopted.

2-3-1- Ansoff and Porter - The Rational Approach

The classical management school led by Fayol (1949) and Urwick (1943), which championed management as a rational profession, provided the basis for these strategic models. Strategies are perceived in the traditional view as a product of a deliberate and straightforward process. The process of developing strategies that draws on this traditional perspective is commonly termed "*rational*", consisting of logical procedures such as identifying current strategy; analysing environments; identifying resources and gaps; revealing and assessing strategic alternatives; and then choosing and implementing strategy that has been carefully analysed (Cohen and Cyert, 1973; Glueck, 1976; Miller and Friesen, 1978). One of the earliest models of the rational

tradition is the work of Ansoff (1965) in which he prescribes a systematic method for developing strategies. The model is illustrated in Figure [2-1].

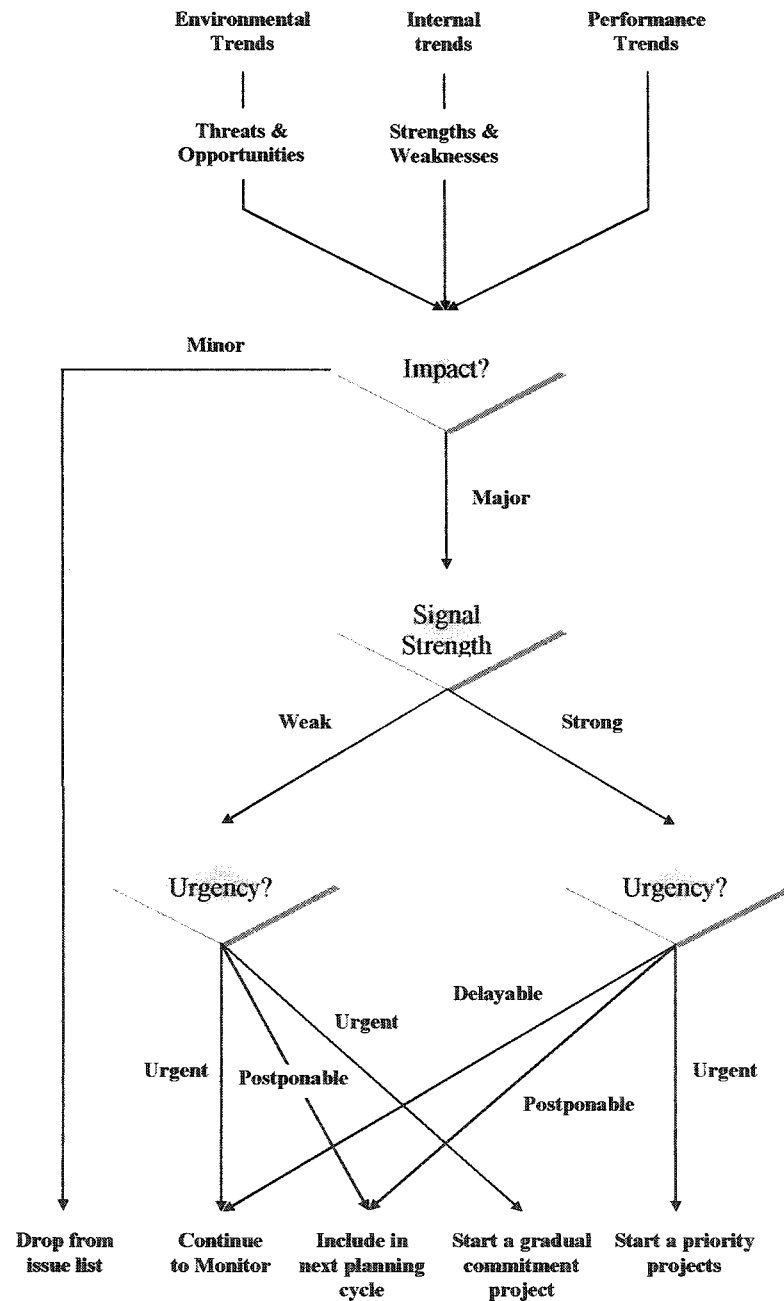


Figure [2-1]: Sample of the Rational Approach to Strategic Management

Ansoff (1965)

The concept of competitive strategy of Porter (1980) is another prominent model of the rational tradition. Porter suggests two dimensions to strategic management which he labelled; competitive advantage and competitive scope. Competitive strategy signifies the organization's aim to be better than its competitors, and competitive scope indicates the need to decide whether to serve a particular sector of the market. Based on that, three generic business strategies are developed, namely: cost leadership, differentiation, and focus. Porter's model is illustrated in Figure [2-2].

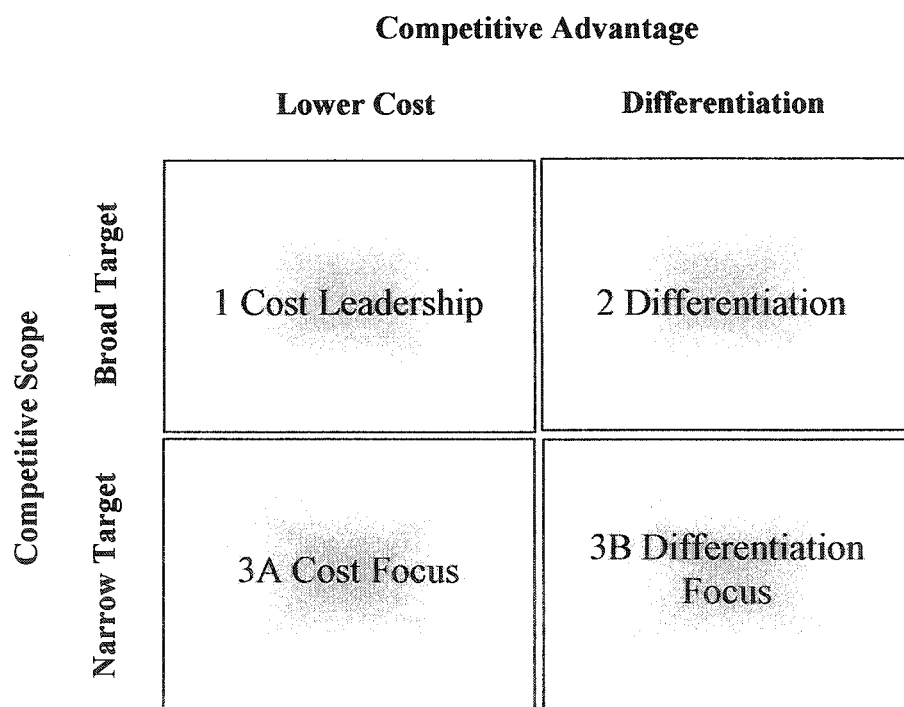


Figure [2-2]: Porter's Generic Strategies

Porter (1985)

The assumptions underlying Porter's model suggest that markets can be analysed, organizations can rationally respond to market analysis, and senior management can reach a rational decision about strategy. It further suggests that the possession of a clear and coherent strategy is crucial to organizational survival.

Thus, in considering the basic assumptions underlying the traditional rational approach, we find notions such as: organizations are centrally coordinated and purposeful, organizations exist in an objective competitive market place, goals are known and consistent; actors are analytically objective in carrying out logical activities, cause-effect relationships are fairly well understood, resources are unbounded, and enough information is available to tackle most issues effectively (Allison, 1971; Hofer and Schendel, 1978; Porter, 1980; Pfeffer, 1981). Such assumptions, however, have been criticised as concentrating on the analytical strategy content and overlooking the contextual aspects of the strategy process, and thus are considered unrepresentative of organizational reality and generally simplistic (Mintzberg, 1978; Quinn, 1981; Pettigrew, 1985; Lynch, 1998).

2-3-2- Cyert and March - Integrating Behavioural Aspects into Strategy

In challenging the conventional assumptions made in the traditional rational decision-making process models, which underpin the rational approach to strategy, Cyert and March (1963) adopt a coalition view of goal formation as part of their proposed behavioural theory of the firm. The consideration of coalition formation has been recognized as a first step towards integrating behavioural aspects into strategy and, thus, establishes the shift toward the process based approach of strategy development (Waema and Walsham, 1990a). The coalition formation can be viewed as goal-oriented alliances between actors with different interests, assembled to mobilise joint resources to manipulate decision outcomes. Hence, instead of maximised objectives that respond to the interests of a single group, the result is a compromised goal or set of goals that serve the interests of the involved actors.

Other approaches that are more open to organizational reality such as Braybrook and Lindblom's (1963) "muddling through", and Etzioni's (1968) "incrementalism" have been advanced as a result of the limitations in the rational approaches in considering the contextual aspects of the strategy process. "Muddling through" theory, for example, assumes that social systems and processes are complex phenomena and, therefore, it is not possible to exactly predict the results of one's actions or the kind of difficulties that the process may challenge.

The importance of the social, political, and behavioural processes in influencing the effectiveness of strategy has been further emphasized by other scholars (e.g. Bower, 1970; Allison, 1971). Within these schools of thought of strategy, that may be termed "*processual*", social and political aspects in particular have been found to be closely representative of the reality of organizational activities concerned with forming the strategy. Conflict, in this school of thought, is considered normal when coalition groups interact with each other, and the final decision can be regarded as evolving out of a process of power "mobilization" attempted by each group in support of their interests (Pettigrew, 1973).

2-3-3- Quinn - Logical Incrementalism

Quinn (1980; 1981), however, criticises both the rational and the processual perspectives to strategy. He argues that the rational perspective focuses excessively on measurable factors and under-emphasises the vital qualitative, organizational, and contextual factors that may underlie strategic success in many cases. On the other hand, Quinn continues, some of the early processual perspective studies were conducted in

settings far removed from the realities of the processes of developing strategies and others overlooked the way in which strategic data analysis was conducted. Quinn advocated "logical incrementalism" which is a combined approach to strategy that adopts both rational and processual perspectives. The approach recommends proceeding in a flexible and experimental manner, from broad concepts to specific commitments, and materializing commitments as late as possible.

Quinn described his approach as purposeful and an effective management technique that can be used to improve and integrate the analytical and behavioural aspects of strategy creation. The logical incrementalism approach, Quinn claims, can provide a richer explanation of the strategic process in organizations.

2-3-4- Mintzberg - Towards Processual Perspectives

Mintzberg (1978) in his work on strategy criticises the concept of strategy "formulation" and its rationalistic overtones, and used the term "formation" to reflect the emergent nature of the strategy process. He defined strategy as a pattern in a stream of decisions. Later, Mintzberg and McHugh (1985) modified the definition of strategy to be a pattern in a stream of decisions and actions, where the term "decisions" represents intentions and the term "actions" represents realized activity. Mintzberg does not reject the rational model of strategy, but suggests that both rational and processual perspectives are needed. He portrays strategy as walking on two feet, the first is deliberate and the other is emergent. Figure [2-3] illustrates the concept of deliberate and emergent strategies.

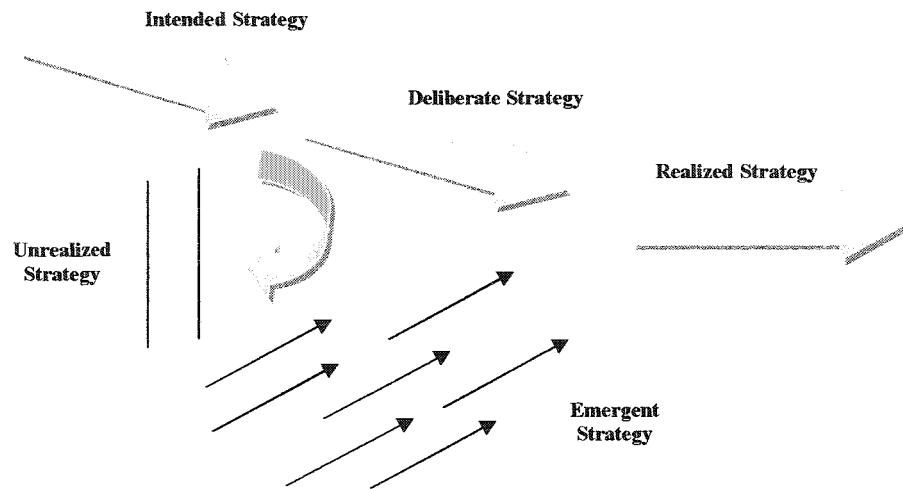


Figure [2-3]: Deliberate and Emergent Strategies

Mintzberg and Waters (1985)

Careful attention is needed so that intentions are realized whilst simultaneously responding to an unfolding pattern of action (Mintzberg, 1987). Important premises from Mintzberg's work include his view of the idiosyncratic nature of decision-making in different organizational settings, the importance of the long-term view of change in organizations, and the strategy life cycle in which distinct periods of change and continuity can be discerned in strategy formation.

2-3-5- Pettigrew - Contextualism

Pettigrew (1985), from a similar perspective of strategy as Mintzberg, takes the processual approach a step further by emphasizing the importance of contextual aspects in shaping the emergence of strategies. Unlike Mintzberg, Pettigrew is more explicit in his emphasis of the social and political aspects and the way in which they may create

opportunities and constraints for the strategist. He argues that the rational approaches explore in different ways the content and external context links and ignore the internal context of the organization, while offering an implicit theory of process which is rational in nature. Thus, the formation of strategy is treated as a discrete and linear activity. He also criticises the processual approach for focusing upon the link between the process and the internal context to the neglect of the explanatory role of the external context aspects. He accordingly devised his methodological approach of "contextualism" which is an analytical method to strategy formation and strategic change processes. Contextualism is considered as a significant development in organization studies (Murray, 1989). It can provide a detailed observation of the events and actions which occur in an organization over a long period of time, giving explanations for the trends and events in terms of historical, social, and political processes, and leading to insightful ways of understanding strategy formation.

2-3-6- Knights and Morgan – Power and Discourse

Knights and Morgan (1991) in an attempt to develop a new approach to the study of corporate strategy, argue that analysis of strategy cannot be reduced to either rationalist accounts of markets and environments or interpretive understanding of actors' frame of reference. They proposed a framework for the critical analysis of corporate strategy which is distinctive from the rational and processual approaches. Foucault (1980) emphasis the inseparability of power and knowledge and the way in which knowledge is always intricately bound up with technologies of power that reproduce particular discursive practices. Knights and Morgan (1991), drawing on the work of Foucault, suggest that the whole concept of corporate strategy can be seen as a set of

discourses and practices that transform organization managers and employees alike into subjects how secure their sense of purpose and reality by forming, evaluating, and conducting strategy. The central concern of the approach is the emergence, development, and reproduction of discourse of strategy which entails an investigation of the conditions under which strategic discourse becomes both "thinkable" and "practical". Knights and Morgan (1991) conceive of discourse as "a set of ideas and practices which condition our ways of relating to, and acting upon, particular phenomena" (p. 253).

An important concept from the discourse approach is the notion that strategy does not simply respond to pre-existing problems. That is, in the process of its formation, strategy is actively involved in the constitution, or redefinition, of problems in advance of offering itself as a solution to them. Further, strategic discourse is seen as having certain power effects that tend to strengthen the position of management in the organization. It is useful, therefore, to examine how the discourse is formulated, how resources and cultural meanings are drawn into its service and what are its effects.

2-3-7- Prahalad and Hamel - Resource Based View

Lately, a new body of thinking of strategy has emerged as a result of the growing criticism of the old linear and static approaches and as a result of the emerging era of rapid, systemic and radical change which requires more flexible, systemic and dynamic approaches to strategy formation. The resource-based view of the firm is an example of the new paradigms that have been advocated to put balance back into the original notion of strategic management. The resource-based view is grounded in the perspective that a

firm's internal environment, in terms of its resources and capabilities, is more critical to the determination of strategic action than is the external environment. The focus is on the firm's resources and capabilities as it turns out that the unique characteristics of a particular organization within an industry can make a difference in terms of profit performance (Prahalad and Hamel, 1990).

Strategic management models traditionally have defined the organization's strategy in terms of its product/market positioning, that is, the products it makes and the markets it serves. The resource-based approach suggests that organizations should position themselves strategically based on their unique, valuable and inimitable *resources and capabilities* rather than the products and services derived from those capabilities. Resources and capabilities can be thought of as a platform from which the organization derives various products for various markets.

The resource-based approach provides a more long-term view for the organization business than the traditional approaches. While products and markets may come and go, resources and capabilities are more enduring. Therefore, competitive advantage based on resources and capabilities is potentially more sustainable than that based solely on product and market positioning.

2-3-8- New Body of Thinking of Strategy – Dynamic Strategy

Recently, however, certain moves have been started in the direction of combining different currently practiced strategic management approaches in response to what can be perceived as a demanding environment. Some of the more recent approaches, such as

learning and design in the "dynamic capabilities" approach and the "dynamic strategy" that is based on knowledge working, take a wider perspective and cut across different strategy formation schools of thought in eclectic and interesting ways. This new body of thinking of strategy has a coherence and integrative role that places it well ahead of other mechanisms of strategic management.

Ireland, Hitt and Hoskisson (2003), for example, utilized a unique model that blends the classic industrial organizational model with the resource-based view of the firm to explain how firms use the strategic management process to build a sustained competitive advantage in age of globalization and rapid changing environment. In order to adapt to changes in organizations environment, Hill and Jones (2006) suggest that strategist must monitor on-going process, internal and external events, and timely changes. Sadler (2003) argues that the strategy formation involves intuition, judgment, wisdom, experience and insight.

David (2006) in discussing the strategic management concepts highlights that a global perspective is a matter of survival for businesses in nowadays. He argues that while the natural environment is an important strategic issue, e-commerce is a vital strategic management tool. David described the strategic management as attempts to organize quantitative and qualitative information under conditions of uncertainty.

Stacey (2003), from a radically different approach to strategic management, argues that in order to succeed in uncertainty and continual change, organizations need to create new perspectives and learn from the chaos within which they operate. Arguing

against the rational models of planning and control covered in other strategy literature, Stacey emphasizes the importance of narrative, conversation and learning from one's own experience as the central means by which we can gain understanding and knowledge of strategy in organizations.

There have been many discussions about the new business landscape. Some focus on the internet as if technology is the driving force. Others focus on knowledge and expert. Venkatraman and Subramaniam (2002) believe that the internet is a subset of the larger shift to the economy based on knowledge and expertise. They argue that strategy phenomenon is becoming network centric and thus there is a need to look beyond traditional units of analysis of business units and corporations.

Technological convergence of digitization and the internet are blurring industries and forcing strategist to broaden the competitive landscape beyond narrowly defined industry boundaries. As knowledge and expertise becoming the key sources that drive value creation, organizations need to rethink the driver of competitive advantage (Venkatraman and Subramaniam, 2002).

Scholars and practitioners alike now appear to think that the rules of competition may be increasingly losing relevance in the new economy, and there is a pressing need for organizations to find and embrace new rules to survive and prosper (Venkatraman and Subramaniam, 2002). The field of strategic management is opening up to new ideas, and being constantly challenged by rapidly changing contexts (Pettigrew, Thomas and Whittington, 2002).

2-4- Synthesis of Schools of Thought of Strategy

Mintzberg, Ahlstrand and Lampel (1998) summarized the various approaches to strategy formation into ten distinct schools of thought and grouped them under three main categories. The first category, which is labelled "prescriptive", is concerned more with how strategies should be formulated than how they necessarily do form. The second category, which is labelled "descriptive", is concerned with specific aspects of the process of strategy formation. The descriptive category has been involved more with describing how strategies do get made. The last category contains but one school of thought, which is a merger of the first two categories. It combines concepts from other schools but with a particular angle.

#	School	Category	Nature of Process
1	Design	Prescriptive	Conception process
2	Planning	Prescriptive	Formal process
3	Positioning	Prescriptive	Analytical process
4	Entrepreneurial	Descriptive	Visionary process
5	Cognitive	Descriptive	Mental process
6	Learning	Descriptive	Emergent process
7	Power	Descriptive	Negotiation process
8	Cultural	Descriptive	Collective process
9	Environmental	Descriptive	Reactive process
10	Configuration	Prescriptive & Descriptive	Transformational process

Table [2-1]: Schools of Thought of Strategic Management

After Mintzberg, Ahlstrand and Lampel (1998)

The ten schools of strategic management and their associated nature of process are summarized in Table [2-1]. In the following, some of the main features of each of the ten schools will be briefly highlighted.

1) Design School: The design school regards strategy formation as a process of conception. The strategy is designed to achieve the best possible fit between the strengths and weaknesses of the internal context, and the threats and opportunities of the external context of the organization.

2) Planning School: In this school, strategy is seen as a formal process. It follows a set of rigorous steps that start with the analysis of the situation to the development and exploration of a range of alternative scenarios of strategies. The planning school predominated during the mid-1970, and faltered in the 1980's. However, it continues to be an important influence today.

3) Positioning School: This school of thought views strategy formation as an analytical process. It reduces strategy to generic positions selected through formalized analysis of industry situations in which the organization operates. The position school is heavily influenced by the works of Michael Porter on the concept of the competitive advantage in the 1980's. It looks at how the organization can improve its competitive positioning within its industry.

4) Entrepreneurial Schools: strategy formation in this school is regarded as a visionary process that is created within the mind of the charismatic founder or leader of an organization. Unlike the other schools, it shifts the strategies from precise designs, plans, or positions to vague vision that typically has to be seen through metaphor.

5) Cognitive School: This school is based upon the science of brain functioning. It regards strategy as a mental process, and analyzes how people perceive patterns and

process information. Newer branches of this school adopt a more subjective view of strategy. The subjective view argues that cognition is used to construct strategies as creative interpretations, rather than simply to map reality in some objective way.

6) Learning School: The learning school considers strategy formation as an emergent process. Lessons learned, from paying close attention by management to what works and doesn't work over time, are incorporated into the organization strategy. Strategy in the learning school can be found throughout the organization, and its creation and implementation intertwine.

7) Power School: In this comparatively small school, strategy formation is viewed as a process of negotiation between power holders inside the organization, that is label *micro* power, and/or between the organization and external stakeholders, that is called *micro* power. This school characterizes strategy formation as an overt process of influence, emphasizing the use of power and politics to negotiate strategies favourable to particular interests.

8) Cultural School: Strategy formation in this school of thought is seen as a collective process involving groups and departments within the organization. It focuses upon common interest and integration. Strategy, therefore, mainly reflects the corporate culture of the organization.

9) Environment School: This school of thought of strategic management views the formation of strategy as a reactive process. It is basically a response to the challenges of the set of forces outside the organization or what is widely referred to as the "environment". While other schools perceive the environmental force as a factor, this school perceives it as an actor. Organizations which fail to respond to the environmental forces will fail.

10) Configuration School: In this school, strategy is seen as a process of transforming the organization from one type of decision-making structure into another. In the quest of being integrative, organizations in this school cluster elements of the strategy's process, content, and context into distinct phases or episodes. Strategy formation is viewed as varying depending on circumstances. This school, in a sense, combines the other schools. However, it differs by offering the possibility of reconciliation, that is, to integrate the messages of the other schools.

The ten schools provide a good illustration of the disparate strands of thinking on the subject of strategic management. Each has a unique and limited perspective that focuses on one major aspect of the strategy formation process. Each school is narrow and overstated, but also interesting and insightful. Each offers some useful concepts, and some strong points to aid understanding, but has its disadvantages as well. Together, they represent the whole picture of the concept of strategy formation.

None of the ten schools however is capable to clearly describe how an organization is able to leap from the collection and analysis of information to the conceptualization of alternative courses of action. The process of strategy formulation itself is regarded as something of a "black box".

While there are, of course, other possible categorizations of the field of strategic management besides the ten schools, the disparate and often conflicting schools reflect the richness of existing debate among academics and practitioners in the field of strategic management (De Wit and Meyer, 1998).

2-5- Positions of Schools of Thought of Strategic Management

In order to map the space of strategy, Mintzberg, Ahlstrand and Lampel (1998) identify the various schools of strategic management along two dimensions as illustrated in Figure [2-4]. The first dimension is concerned with the external environment and how controllable it is, ranging from comprehensible to unpredictable and confusing. The other dimension is about the internal process and how open-ended it is ranging from rational to normal.

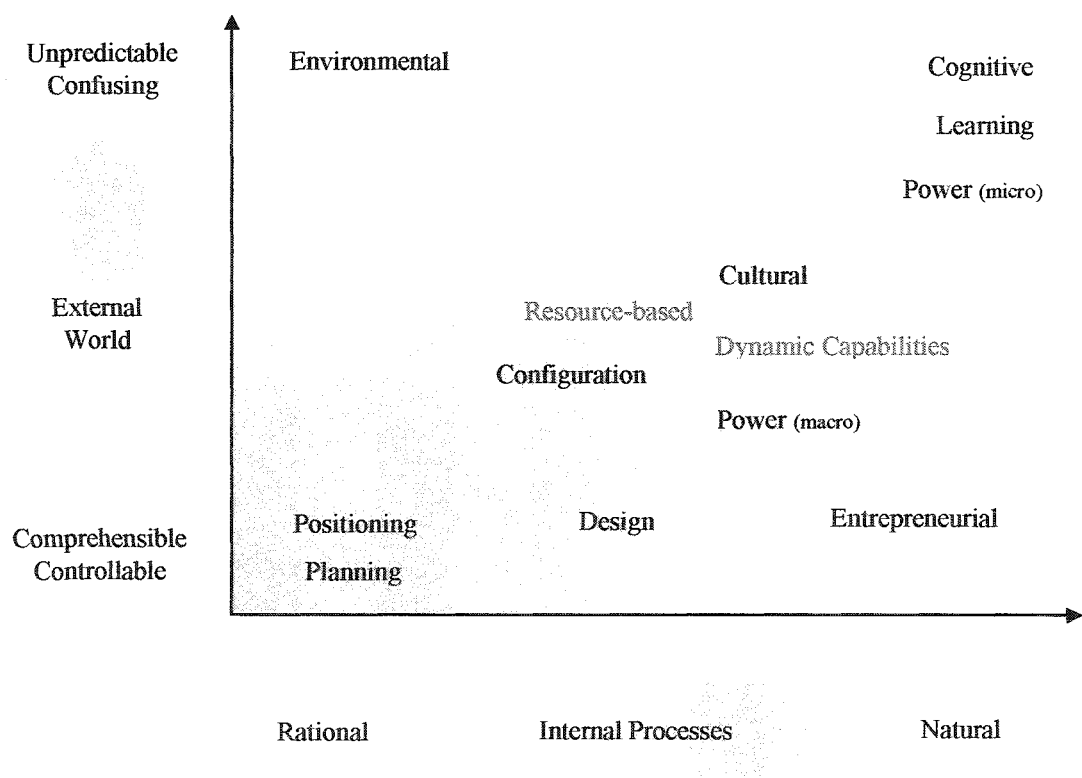


Figure [2-4]: Positions of Schools of Thought of Strategic Management

After Mintzberg, Ahlstrand and Lampel (1998)

All the three prescriptive schools are located in the space where the environment is controllable although the planning and positioning schools are more close to the rational process corner. The entrepreneurial school is also located in the comprehensible environment but adapts a more open-ended process. The environment school falls in the space where the environment is unpredictable, but the process is rational. The cognitive, learning, and power (micro) schools fall in the space opposite to the planning school, where the environment is unpredictable and the process is rather natural. The cultural, power (macro), and configuration schools fit somewhere in between. New paradigms of strategy such as dynamic capabilities and resource-based may fit in the middle between power, culture and configuration schools.

2-6- Evolution of Schools of Thought of Strategic Management

The aim in this section is to capture the evolution of strategic management thinking in order to examine the importance and the current situation of each school of thinking. Based on their classification, Mintzberg, Ahlstrand and Lampel (1998) subjectively plotted their estimation of the amount of attention that each school has received from scholars and practitioners. Figure [2-5] illustrates the evolution of the first three prescriptive schools of thought of strategic management, whereas Figure [2-6] illustrates the evolution of the other seven schools.

The diagrams in Figure [2-5] and Figure [2-6] demonstrate that strategy schools have appeared at different stages in the development of strategic management field. They grew slowly in the early years, but took off on several fronts later in the 1990s. The diagrams also show the dominance of the prescriptive schools. The design school

dominated in the 1960s, followed by the planning school in the 1970s, and the positioning school in the 1980s.

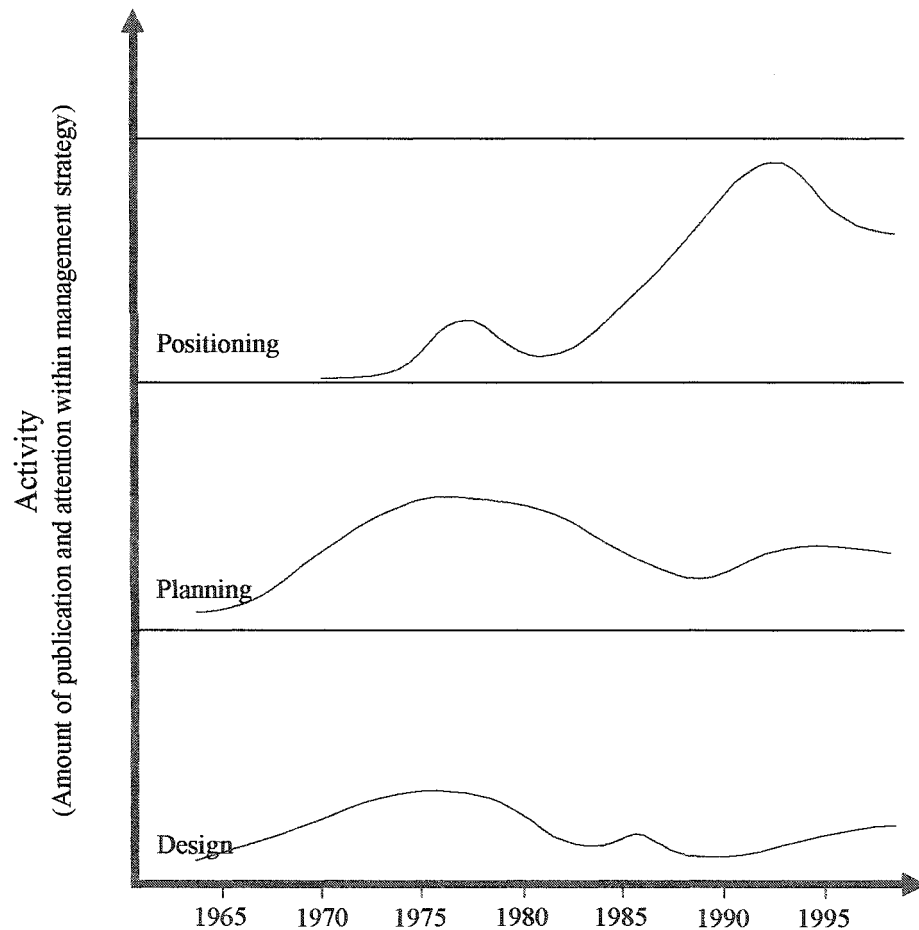


Figure [2-5]: Evolution of the Prescriptive Schools

After Mintzberg, Ahlstrand and Lampel (1998)

In the 1990s, all the other schools start gaining in importance. At a later stage, there has been growing interest in both power and cognitive schools. But as shown in the evolution of the descriptive schools in Figure [2-6], the learning school and configuration school have witnessed significant progress and great prominence lately,

especially with the guise of innovative notions such as "learning organization", "core competence", and "strategic transformation".

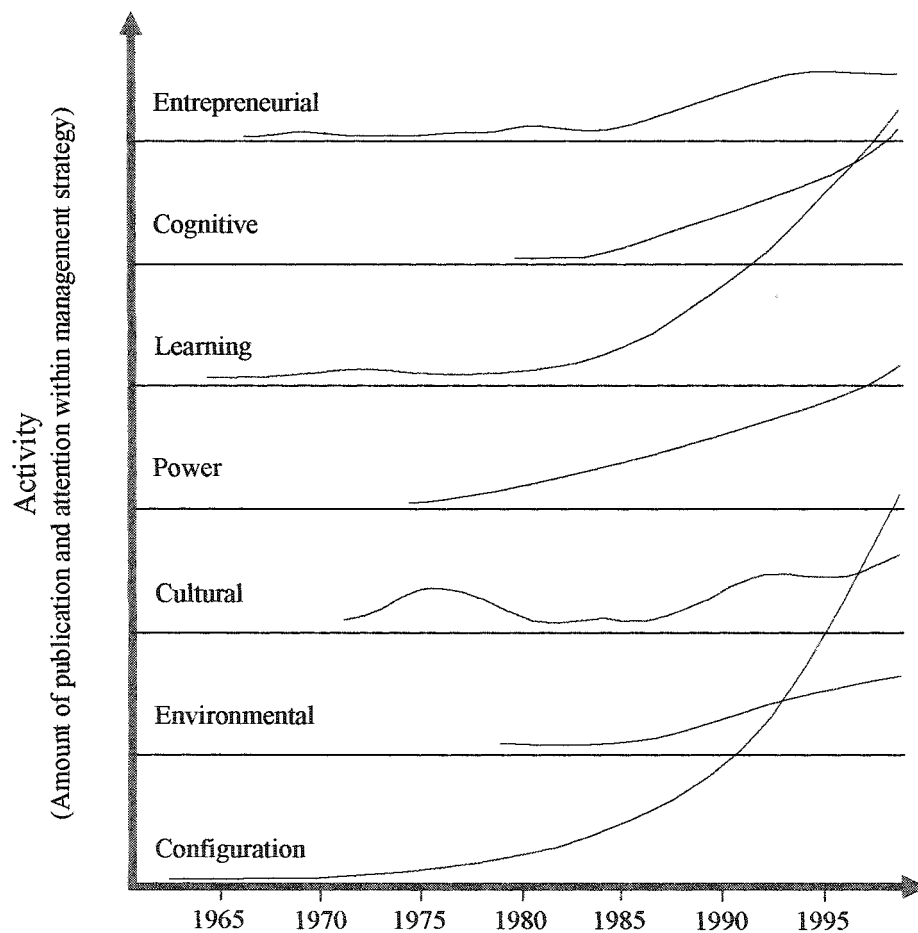


Figure [2-6]: Evolution of the Descriptive Schools

After Mintzberg, Ahlstrand and Lampel (1998)

Although acknowledging their contribution to the field of strategic management, with the exception of the learning and configuration schools, all other schools too often suffer little empirical research.

Venkatraman and Subramaniam (2002) captured the evolution of thinking about strategy in three eras: First wherein strategy was viewed as a portfolio of business, second, as a portfolio of capabilities, and third, as it is now surfacing in the current knowledge based economy, as a portfolio of relationships. They argue that each of the three eras has had a distinct paradigmatic focus. The first era associated with economies of scale, the second era with the economies of scope, the third era with the economies of expertise. Table [2-2] provides a summary of the three ears.

	Era (1)	Era (2)	Era (3)
Description	Portfolio of businesses	Portfolio of capabilities	Portfolio of relationships
Key drivers of competitive advantage	Economic of scale	Economic of scale and scope	Economic of scale, scope and expertise
Key resources	Physical assets	Organizing skills for managing relatedness across businesses	Position the network of expertise
Unit of analysis	Business unit	Corporation	Network of internal and external relationships
Key concept	Leverage industry imperfection	Leverage intangible resources	Leverage intellectual capital
Key question	What product? What Market	What capabilities?	What streams of expertise?
Dominant view	Positioning	Inimitability of processes and routines	Network centrality

Table [2-2]: The evolution of strategy from a theorizing perspective

Venkatraman and Subramaniam (2002)

Venkatraman and Subramaniam (2002) emphasize that throughout these three eras cumulative development has occurred with each era supplementing rather than supplanting earlier periods of thinking.

2-7- The New Context of Strategic Management

It can be argued that the context of strategic management has been manipulated by a set of changing forces. These include influential issues such as the linked set of market, global competitive, deregulatory and environmental changes, and innovative technologies. This changing context of strategic management can be described, following D'Aveni (1994), as hyper-competitive. Instead of long, stable periods in which organizations can achieve sustainable competition advantages, the hyper-competitive context allows only short periods of advantage, punctuated by frequent interruption. Stable end-states are illusory and the re-thinking of strategy becomes more or less continuous (Fenton and Pettigrew, 2000).

Strategy formation nowadays is fundamentally more challenging than it used to be just a few years ago. Wagner (2004) argues that three clearly identifiable factors contribute to today's complexity increases:

- Shorter planning and implementation cycles.
- Frequent and rapid environmental changes, possibly with discontinuities.
- Organization units that extend beyond a single company, such as supply chains or virtual organizations.

Competitive pressures from start-ups (Kambil, 2000; Watts, 2002) and the availability of almost real-time information to manage the business (Anderson, 2002) have forced shorter strategy cycles. New companies with integrated enterprise systems and on-line research capability create pressures for established firms to target strategy formation in short cycles (Baum and Wally, 2003).

The changing environment of global economy and international markets raise the concept of international strategy which focuses on what is required for success in international markets. Along with the increasing number of multinational enterprises, the interconnectedness of cross-border, regional, and even global markets places significant importance on the topic of international strategy.

While environmental changes have always existed in strategic management theories, methods and approaches, the recent global economic uncertainties are signs of environmental changes that are frequent, impactful, and seemingly unpredictable (Oliver, 2002).

The importance of different institutional environments across countries has been broadly realized in international strategy thinking. The potentially significant effects of institutional environments of different countries on firm strategies are the focus of recent research in field of international strategy. The norms, values and rules of economic exchange, for instance, affect the strategic behavior of firms. The institutional environment affects firms' competitive behavior, and also the means of learning the knowledge that firms need in order to be competitive (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004).

Pettigrew, Thomas and Whittington (2002) predict that the present and future development of strategic management is likely to be driven by two compulsions. The first is the contemporary development in social and economic theory. The second is the recent changes in the nature of business and economic context. In recognizing the

importance of the business context, they argue that the focus should be upon the big themes and issues around us.

In considering big themes from emerging context, Whittington (2001) argues that studying strategy as social practice is a long overdue research theme in strategy. Contextual themes provoke challenges to the concept we have about strategy and organization. They also require an approach to analysis which more dynamic, processual and contextual.

2-8- Reflections on Strategic Management Literature

The review of the literature reveals that strategy is a problematic notion and its formation is a complex process. The schools of thought of strategic management are the product of a long process of evolution. The field of strategic management has come a long way since the 1960s. Early schools that were easy to recognize have given rise to later schools that are more complex and more interconnected with each other.

The rational perspective that dominates the strategic management thinking has led to prescriptive schools. The prescriptive schools, measured by the literature, are by far the biggest in the field of strategy. The rational perspective, nevertheless, has come under increasing criticism from a number of scholars (e. g. Mintzberg, 1978; Pettigrew, 1985). They argue that while the rational models of strategic management can provide useful prescriptions to senior business management, they are unrepresentative of practice (Quinn, 1980; Mintzberg and Waters, 1985; Pettigrew, 1985; Pettigrew and Whipp, 1991). The extent to which strategy actually embodies rational processes has

been questioned. Scholars who adhere to the prescriptive schools are criticized for prescribing a theoretical ideal rather than researching what actually happens in practice. The prescriptive schools, it is argued, fill an intellectual function rather than providing insights and guidance for practice.

The processual perspective, on the other hand, has led to the descriptive schools. The descriptive schools seek to describe what actually happen in forming strategy rather than prescribe the ideal. The processual perspective distinguishes itself from the rational perspective by arguing that strategies are not often purposeful or intended as the rational perspective assumes. It provides alternative perspectives by focusing upon the internal processes which are a condition and consequence of decisions and actions in organizations. The processual perspective, however, is criticised for retaining some of the assumptions of the traditional rational models. For example, strategy is still conceived in the processual perspective as a natural rather than problematic facet of organizational life that has been developed by senior managers to achieve desired change. It also assumes, just like the rationalist do, that strategies exist to solve problems concerning the organization and its environment (Knights and Morgan, 1991). In addition, the processual perspective, while providing significant insights into strategy formation, essentially lacks sound theoretical frameworks with which to conceptualise the relationships between process and context.

The examination of the rational and the processual perspectives suggests that the main difference between the two appears to be their particular focus upon their perception of organization and strategy. In the rational perspective, with its rather

mechanistic view of organizations, strategy is considered mainly as a formal process that can be carried out using objective, normative, and analytical methods, with little attention given to the contextual aspects of the formation process. Conversely, the processual perspective, which has been claimed to be the critical alternative to the rational perspective, rejects the mechanistic view of organization and considers strategy as a complex and continuous process. It recognizes the significance of social, political, and other behavioural aspects surrounding the strategy formation process, such as the existence of coalitions and the reality of political differences between actors, and bargaining and negotiation in conflict situations.

The disparate, and often conflicting, schools of thought of strategic management suggest the elusive nature of the concept of strategy. Each school of thought has a unique and limited perspective that focuses upon specific aspect of the strategy formation process. It is certainly important therefore to continue to explore the important aspects of each school. More importantly, as Mintzberg, Ahlstrand and Lampel (1998) put it, “we have to get beyond the narrowness of each school . . . We need to ask better questions and generate fewer hypotheses - to allow ourselves to be pulled by concerns out there rather than being pushed by concepts in here” (p. 373). It is the notion of the concerns "out there" that makes the subject of this research meaningful and noteworthy.

The review of the literature also reveals that most theories of strategy seem to have a short lifespan. While a few successful theories find their way into textbooks or consultancy organizations, many are quickly forgotten. It has been claimed that this is

because most strategy theories generally do not work properly. They tend either to be too narrow in focus to build a complete corporate strategy, or too general and abstract to be applicable to specific organizational situations.

There are several critics, on the other hand, that claim there are not enough strategic management theories. They argue that even when new theories arrive they are mostly too late. As the business environment is constantly changing, effective strategic management, it has been argued, requires a continuous flow of new theories suitable for the new circumstances. It seems that the problem with most strategy formation theories is that they solve yesterday's problems.

Another noteworthy thought from the literature review is that the field of strategic management is by far an invention and product of the Western nations, the US in particular. In an increasingly interdependent and multicultural world, it is essential to concenter diversity in intellectual traditions in different societies. Strategic management literature has not gone far enough in recognizing available intellectual diversity (Pettigrew, Thomas and Whittington, 2002). Although relatively limited, considering other strategic management perspectives from societies beyond the Western nations will enrich the field greatly.

New forms of organizations in Europe and Japan indicate how and why national cultures and institutions can shape the strategy and behaviour of corporations (Pettigrow, Massini and Numagami, 2000). In an age of globalization, it is essential to think hard about why and how various levels of context shape the strategies of

organizations and the people work in them. Management sciences in the past may have been not culture free but culture blind (Whittington and Mayer, 2000).

A final thought is about strategy research. Schwenk and Dalton (1991) in their work on changing shape of strategic management research noted that longitudinal studies were very rare in up to the mid 1980s, comparative and cross sectional research using surveys was the great preoccupation.

In sketching future directions for strategy research, Bowman, Singh and Thomas (2002) highlight the need for more research that is based on longitudinal, processual and contextual analysis. Pettigrew, Thomas and Whittington (2002) argue that research in strategy should focus less upon universal laws and give more due to temporal and spatial context.

2-9- Linkage between Strategic Management and IS Strategy

In theory, it is formerly established that the concept of IS strategy is closely relevant to strategic management. This is because most of the underpinning assumptions of the concept of IS strategy are principally borrowed from the strategic management literature. In practice research indicates that the alignment between the two is rather problematic.

Alignment or the degree of closeness between IS strategy and business strategy has been given significant attention in recent year and has been ranked among the top 10 issues facing IS executives (Brancheau, Janz, and Wetherbe, 1996). Parsons (1983)

was one of the first to argue that information technologies exploitation can affect a firm's ability to execute their business strategy. Since then, many others have emphasized the need to develop a fit between IS strategies and business strategies (Galliers, 1991; Chan et al., 1997; Boddy and Paton, 2005).

For organizations to succeed in an increasingly competitive, information-intense, dynamic environment, the alignment of business and IS strategies was a necessity (Hirschheim and Sabherwal, 2001). Organizations with greater alignment between business and IS strategy are more likely to utilize their information systems for competitive advantage (Sabherwal and Chan, 2001). Several researches focused on the necessity and benefits of aligning IS with the rest of the business (Reich and Benbasat, 2000; Benbya and McKelvey, 2006). Earl (1998) argues that there is a reciprocal relationship between businesses and IS strategies. While the business strategy has considerable influence on IS strategy, there is a possible feedback or iterative loop in reverse direction.

The importance of new technologies as a driver for strategy is a dominant theme in management literature. The imperative role of IT as an enabler of competitive advantage forces organizations to explore appropriate ways to mate the business architecture with the IT architecture. In practice, it is difficult to keep business and IT aligned as business strategies and technology evolve. Experience shows that no single activity will enable an organization to attain and sustain IT and business strategy alignment (Luftman, 2003) and research failed to find an association between IS strategy alignment and organizations performance (Plamer and Markus, 2000).

Even though IT has progressed to hold a more strategic organizational role, little is known about the strategic potential of IT or the appropriate process for aligning business and IT strategies. There are too many variables. The technology and business environments are too dynamic. Thus, achieving and sustaining IT–business alignment continues to be a major issue (Luftman, 2003).

The notion of alignment or fit broadly expresses an idea that an organization's information systems, must match its context in order to be effective (Iivari, 1992). Alignment from this perspective deserves particular attention as it reflects the importance of the relationship between IS strategy formation process and aspects of the context in which it take place. Going beyond the traditional considerations are factors that include the organization's cultural and social environment. This emphasis the concern about the social complexity of IS strategy formation in practice. In the following chapter, IS strategy literature will be reviewed with intention to identify status, limitations, and potentials of current IS strategy thinking.

2-10- Summary

The review of the strategic management literature reveals that strategy is a complex and confusing notion that has several meanings and definitions. It is a multidimensional concept that goes into the very heart of business and organizations. Although the value of the notion of strategy is well recognized, it seems that it is frequently defined in one way and used in another.

Several schools thought of strategic management have emerged as a result of the radical changes in business environment and world economy. Each school has a unique and limited perspective that focus on one major aspect of strategy formation process. The rational perspective dominates the field. While it can provide useful prescriptions to management, it is considered as unrepresentative of practice. The processual perspective seeks to describe what actually happens in forming strategy rather than prescribing the ideal. Yet, it retains some of the assumptions of the traditional rational models. It also lacks sound theoretical frameworks with which to conceptualise the relationships between process and context.

The notion of alignment between management and IS strategies reflects the importance of the relationship between IS strategy formation process and aspects of the context. It emphasis this research concern about the social complexity of IS strategy formation in practice.

The findings from this chapter lay the ground for the discussion of the IS strategy formation phenomena in the following chapter.

CHAPTER THREE

THE CRAFT OF IS STRATEGY

3-1- Introduction

The aim in the following is to make a case for the need for more pragmatic perspectives on IS strategy that can lead to a thorough understanding of the phenomenon and the social complexity of its formation in practice. Towards this end, the principles of the concept of IS strategy will be explored, its diverse schools of thought will be evaluated, and the need for innovative perspective on its formation in practise is discussed.

The chapter starts by investigating principals of IS strategy. Primary theories, approaches and methodologies are examined. Flowing from that, the different perspectives on IS strategy formation are discussed. The discussion is focused upon the dominant traditional rational perspectives and the leading efforts for understanding IS strategy from alternative perspectives. This is followed by an analysis of the position of current IS strategy thinking in comparison with strategic management thinking as a reference discipline. The intention is to identify status, limitations, and potentials of current IS strategy thinking. Inferences extracted from examining principals of IS strategy and from the analysis of the position of IS strategy thinking are then reflected upon with focus upon concerns that thought to support the research argument of the need for innovative perspective of IS strategy formation.

3-2- Principals of IS Strategy

The concept of IS strategy has been evolving over the last three decades. Its primary tasks when first practiced at the 1970's were to improve communication with users, increase top management support, help forecast and allocate resources, and improving MIS department (McLean and Soden, 1977). Later, additional objectives such as the development of organization-wide data architecture and the identification of strategic applications have been recognized (Vitale, 1986). During the 1980's, the competitive strategy framework proposed by Porter (1980, 1985) was dominating the concept of IS strategy (King, 1988). The concept of alliance appeared later as an enhancement to Porter's framework of competitive strategy (Rokart and Short, 1989). It based on clusters of organizations cooperate with each other in order to gain competitive advantage over other similar organizations, or to neutralize the advantage of one or more competitor organizations. The notion of "strategic alignment" then emerged from the idea that information technology innovation is of strategic value for the organization only if it is fitting with, and rather leverages upon the organization's existing characteristics and advantages. It calls for the strategic alignment between the IS functions and organization business strategies (Henderson and Vankatraman, 1992; Avison et al., 2004; Byrd, Lewis and Bryan, 2006).

With flexible information infrastructure being a necessity for organizations to perform efficiently and effectively, IS strategy is becoming more imperative than ever (Ciborra, 2000). Commercial and governmental organizations alike are more dependent upon IT and its advanced applications. An entire industry, accordingly, has grown up around the subject of IS strategy during the last decade (Earl, 2003).

3-2-1- Definition of IS Strategy

Lederer and Sethi (1988) define IS strategy formation as the process of identifying a portfolio of computer-based applications to support an organization's business plans and to help it realized its business goals. This definition of IS strategy has been widely used in IS literature. Several other definitions, however, do exist. They all in a sense share similar meanings. Remenji (1991), for example, defines IS strategy as the process of establishing a programme for the implementation and use of information systems in such a way that it will optimize the effectiveness of the firm's information resources and use them to support the objectives of the whole enterprise as much as possible. Focusing on the use of information in organizations, Smits, Poel and Ribbers (1997) define IS strategy as a complex of implicit or explicit visions, goals, guidelines and plans with respect to the supply and the demand of formal information in organization in the long run, while being able to adjust to environment.

The above represents the more frequent definitions of IS literature. Other viewpoints however have been explored by some authors. Walsham (1993), for example, perceived the formation of IS strategy as a process of continuous discourse, and defined this discourse as away of communicating meaning, that engage norms and values, and linked to power in relation to others. The terms that used in the language of the discourse influence its content, and the core content of the discourse concerns computer-based information systems. Reponen (1998) emphasizes the subjectivity of the IS strategy formation and argues that it is something which is essentially a planning process in the minds of the decision makers, users and developers of the system. It is supported by written reports and plans, but they are of secondary importance.

Ward and Peppard (2002) suggest that the strategic planning for IS composed of two parts, the first part is the information systems components, and the second part is the information technology components. The information systems (IS) part defines the organization's requirement for information and systems to support business strategy, and concerned with competitive impact and alignment requirements. The information technology (IT) part is concerned with how the IS strategy will be supported by technology, it address the provision of IT capabilities, resources and services in the organization. In support to this two parts concept of IS/IT strategic planning, Ward and Peppard (2002) provides a distinction between the terms information systems (IS) and information technology (IT) arguing that the abbreviation (IT) refers to technology, essentially, hardware, software, and telecommunication networks. Whereas the abbreviation (IS), based on the UK Academy for Information Systems (UKAIS) definition, refers to the purposeful utilization of information technology and involves the study of the theories and practices related to the social and technological phenomena, which determine the development and, use and effects of information systems in organizations and society.

Given the fact of the existence of various meanings and definitions of the concept of IS strategy, there is a noticeable confusion between the terms used in the IS literature regarding the subject. For example, terms such as information systems strategic planning, strategic information systems planning, information technology planning, and information systems strategy are frequently in use in the IS literature. In order to avoid the possible terminology confusion, the notion "IS strategy" is used as a generic term in this research. It encompasses all similar notions in IS literature.

3-2-2- IS Strategy Theories, Models and Frameworks

It has been established that IS strategy is difficult to accomplish and often ineffective to implement. IS strategy has long been considered as a key issue by senior and IS managers alike. The growing importance and increasing concern of IS strategy by both IS scholars and practitioners have provided the impetus for its study. Indeed, the review of the IS literature reveal that many IS strategy studies have been conducted for some time now, yet, the overall practical contributions of the findings of the conducted studies are merely a collection of different methods and prescriptions for IS strategy rather than an accumulative, organized, and thoughtful account of the subject. Lederer and Salmela (1996) argues that the absence of a theory of IS strategy impedes the research efforts in the field.

In rationalizing the need for theory of IS strategy, Lederer and Salmela (1996) argued that a theory of IS strategy is needed to enable IS researchers to conduct studies and present findings in an organized, comprehensive, and meaningful manner. In addition, a theory will help build a cumulative collection of findings that should assist researchers in describing what has been established and what need to be discovered. Further more, a theory is necessary to prevent researchers from being exposed to criticism that their work lacks scientific rigor. Lederer and Salmela (1996) adopted a systems based model introduced by King (1988) to propose a theory of IS strategy illustrated in Figure [3-1]. The proposed theory assembled of seven constructs, (1) the external environment, (2) the internal environment, (3) planning resources, (4) the planning process, (5) the information plan, (6) the implementation of information plan, and (7) the alignment of the information plan with the organization's business plan.

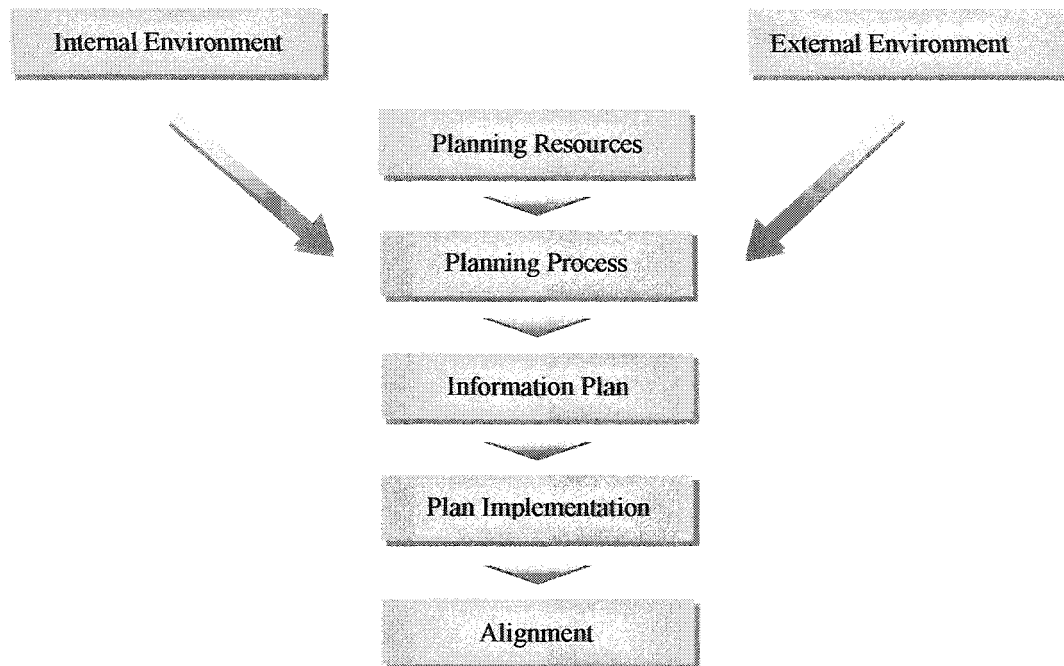


Figure [3-1]: A Theory for IS Strategy

Lederer and Salmela (1996)

Figure [3-1] illustrates the six hypotheses of the proposed theory. According to Lederer and Salmela (1996), the first hypothesis suggests that a more stable external environment produces effective and efficient planning process. The second hypothesis maintains that a simpler internal environment produces a more effective and efficient planning process, while the third hypothesis claim that more extensive and higher quality planning resources produce a more effective and efficient planning process. The fourth hypothesis concludes that a more comprehensive planning process produces a more useful IS strategy. The fifth hypothesis assumes that a more useful IS strategy produces greater strategy implementation. The last hypothesis argues that a greater strategy implementation produces better alignment.

Ward and Peppard (2002) describe an overview model to illustrate the building blocks of the IS strategy formation framework. The model, shown in Figure [3-2], consists of three parts namely, inputs, process, and outputs. The first part is the inputs elements which include internal and external business environment and internal and external IS/IT environment. The second part is concerned with the process of forming the strategy. The third part is the outputs elements of the strategy formation process which consists of the business strategy, the IS/IT management strategy, IT strategy, and future application portfolio.

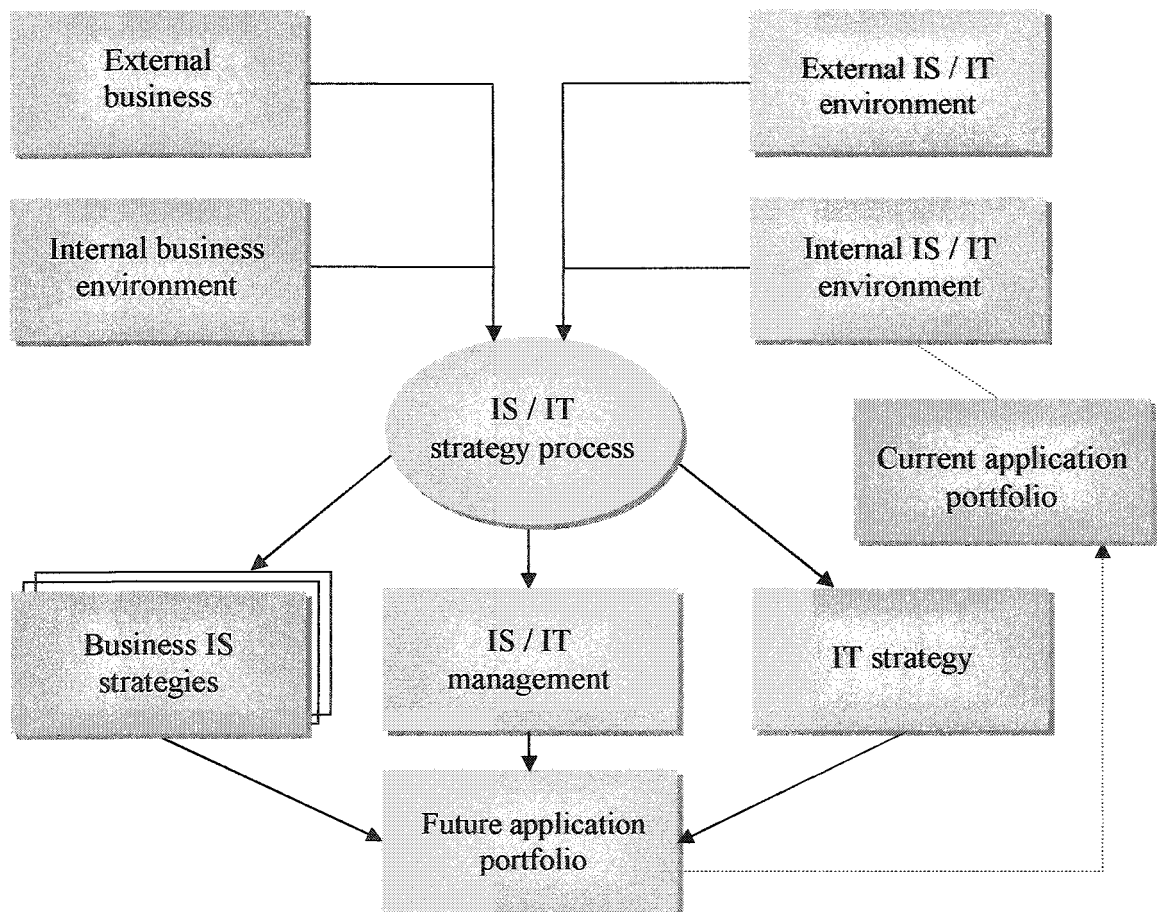


Figure [3-2]: IS Strategy Model

Ward and Peppard (2002)

McNurlin and Sprague (2002) from a more radical stance, suggest the notion of sense-and-respond as a pragmatic alternative to the traditional models of IS strategy. The sense-and-respond model, shown in Figure [3-3], is based on the concept of sensing new opportunities and directly responding by testing them through experiments. Accordingly, the process of IS strategy consist of a multitude of small experiments going on in parallel, each test its own proposition to the future. The model suggests the migration from the era of big choice and long commitment strategy to new ear of many small choices with short commitments strategy.

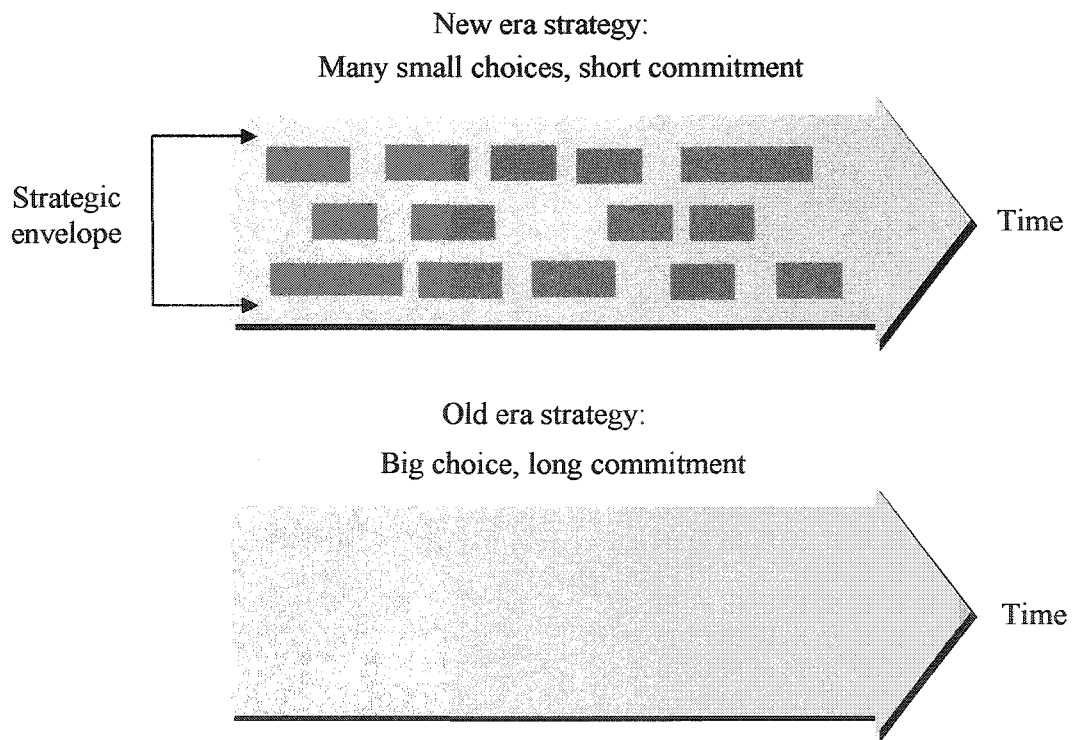


Figure [3-3]: Sense-and-Respond IS Strategy Model

McNurlin and Sprague (2002)

3-2-3- Approaches and Methodologies of IS Strategy

Earl (2003) argues that IS strategy formation approaches are not methods or techniques *per se*. An approach may comprise a mix of procedures, techniques, user-IS interactions, special analysis, and random discoveries. IS strategy approaches from this point of view can be perceived as the interaction of method, process, and implementation, as well as the variety of activities and behaviours. From research on IS strategy planning among UK-based companies, Earl (1996) identified five different approaches to IS strategy formation as ideal types and argues that each may be appropriate for a particular kind of organization and corporate culture. Each approach represents a particular philosophy, and has its own strengths and weaknesses. In the following, the five approaches will be broadly discussed.

The first approach is the "*business-led approach*", this is when the IS department in the organization develop IS strategy that based on organization business strategy, It is argued that the business-led approach often not be successful as business strategy sometimes not clear or detailed enough, or user may not sufficiently involved in strategy formation.

The second approach is the "*method-driven approach*" which is typically exercised by IS consultancy firms using formal proprietary methodologies. The approach strengths include showing gaps in the organization strategic vision and indicating the sensible allocation of IS resources, while the weaknesses incorporate possible senior management opposition to the strategy and thus potential implementation complexity.

The third approach is the "*Architectural approach*". In this approach, analytical modelling and computer based case-tools are generally used to design and produce IS strategy in the form of blueprint. According to Earl (1996), the word "architectural" therefore may use as substitution to the word "plan" or the word "strategies". However, it acquire a large amounts of organization resources and sometimes hard to interpret the strategy blueprint.

The fourth approach is the "*administration approach*" which adopts more familiar procedures that are similar to the organization resource allocation process. The IS investment plans are proposed by the organization departments and decided upon by the responsible committee. The possibility of implementing the IS strategy in this approach is high as the result of the organization department involvement and the familiarity with the planning procedures. Yet, as a bottom-up planning approach, it is may not correspond to the strategic vision of the business, and may associated with organization department conflicts of interests.

The last approach is the "*organizational approach*" in which the organization focus on limited themes with unambiguous out comes and then allocates teams to identify schemes for business change and IS applications. The approach emphasis is on the process and implementability. Although the approach seems vague for some IS executives, it gave rise to fewer concerns than the other approaches. Earl (1996) claims that the organizational approach is superior to other approaches, and suggests that there are six features which help make the organizational approach works, (1) "focus on themes" that is to concentrate on one or two business themes at a time, rather than

developing large application portfolios, (2) "evolutionary change" is to attempt change in small steps, the business themes are broken down into identifiable and frequent deliverables, (3) "teamwork" is to combine IS professional with line managers in the planning process, (4) "education" is to raise IT awareness throughout the organization, (5) "devolution of IS function" is the potential to involve all IS personnel in identifying and developing IT opportunities as a result of expanding IS applications down to the lowest levels of the organization, and (6) "eclectic use of methods" refers to the organization applying whichever method that appropriate in each phase of IS strategy formation, rather than following a specific formal methodology.

Approaches and methodologies of IS strategy have been explored by several authors. Sabherwal and King (1995), for instance, identified eight key attributes for studying IS strategy methodologies. The attributes labelled, (1) analysis, (2) planning, (3) delay, (4) politics, (5) external influence, (6) internal influence, (7) top management influence, and (8) information systems influence. The first four attributes represent the strategy formation activities, while the last four attributes represent the influence forces. By applying these attributes against 85 cases, Sabherwal and King (1995) identify five clusters each represents a particular methodology for conducting IS strategy. The five clusters named, (1) planned, (2) provincial, (3) incremental, (4) fluid, and (5) political. The five clusters seem quite distinct, in terms of the activities involved and the influences encountered as well as the conditions under which they are used. Sabherwal and King (1995) conclude that no one IS strategy methodology should be considered universally applicable. Instead, any of the methodologies may be used for developing IS strategy, depending on the organization specific circumstances.

Segars and Grover (1999) drawing upon theoretical and operational perspectives of both IS strategy and strategic management literature, have identified five distinct approaches for IS strategy. The identified approaches are characterized against six planning dimensions namely, (1) comprehensiveness, (2) formalization, (3) focus, (4) flow, (5) participation, and (6) consistency. Segars and Grover (1999) argue that the five approaches represent discrete stances that are reflective of inherent experiences, beliefs, and attitudes about IS strategy. The results clearly support the importance of multi-dimensional approaches for IS strategy.

While there exist several approaches and methodologies of IS strategy, each has its own characteristic that represents its author's assumptions of the concept of IS strategy and how it should be formed in practice. Authors incorporate their basic assumptions of the concept of IS strategy into the structure of the approaches and methodologies of IS strategy. As a result, there exist several perspectives of IS strategy. They together shape the overall picture of IS strategy thinking. Perspectives of IS strategy will be addressed in the following section.

3-3- Perspectives of IS Strategy

In the following the diverse perspectives on IS strategy will be explored. For the purpose of facilitating the exploration, perspectives of IS strategy are grouped under two categories, the first termed "rational" and the other termed "alternative". The first category encompasses the approaches which are based on the traditional rational perspective of strategy. The second category covers the foremost efforts attempt to overcome the lack of explanation of IS strategy in practice that principally characterized

the rational perspective. More attention has been given to the alternative perspectives in order to emphasize this research argument of the need for more innovative perspective of IS strategy and its formation process in practice.

3-3-1- The Rational Perspective of IS Strategy

The literature review indicates that the concept of IS strategy have been predominantly subscribed to the traditional rational perspective model of strategic management (e.g. McLean and Soden, 1977; King, 1978; Earl, 1989). IS scholars have incorporated ideas from the rational perspective into the structure of their IS strategy approaches and methodologies (e.g. IBM, 1981; Martin, 1989). Empirical evidences indicate that the rational based approaches are more prevalent in IS strategy practice in organizations (Vitale, Ives and Beath, 1986; King, 1994).

The large body of work that based on the rational perspective of IS strategy suggests that it can lead organizations to achieve intended strategic objectives such as the production of IS strategy (Premkumar and King, 1992; Flynn and Goleniewska, 1993), the delivery of IS applications (Moynihan, 1990), aligning IS strategy with business strategy (King, 1994), the delivery of value to the business (Brown, 1993), and enhancing business competitiveness (Fray, 1993). This suggests that rational perspective based approaches may provide some practical insights into the process of IS strategy formation, and offer a framework in which various IS strategy methodologies could be categorised and used (Dickson and Wetherbe, 1985). Numerous rational based approaches and methodologies, as previously explained, have been proposed to enable IS strategy to be developed. Examples of this are the strategic opportunities framework

(Benjamin et al., 1984); value chain analysis (Porter and Millar, 1985); strategic options generator (Wiseman, 1988); opportunities matrix (Kettinger et al., 1995); and strategic formulation and planning process framework (Ward and Peppard, 2002). Approaches, such as the stage model (Gibson and Nolan, 1974; Nolan, 1979); strategic grid (McFarlan, McKenney and Pyburn, 1983); and Sullivan's framework for choosing effective IS planning methodology (Sullivan, 1985) can give an insight into the relationship between the context of the information systems and the appropriate methodology that can be utilised to develop the IS strategy.

3-3-2- Alternative Perspectives of IS Strategy

The review of the strategic management literature, as presented in the previous chapter, suggests that strategy is a multifaceted notion and its formation is a complex process that reaches beyond what the rational perspective generally suggests. Several alternative perspectives emerged that recognize the significance of the social, political, and other behavioural aspects surrounding the formation process of strategy in organizations (e.g. Quinn, 1980; Mintzberg, 1987; Pettigrew, 1987; Knights and Morgan, 1991).

In the IS strategy domain, the growing recognition of the complexity associated with IS strategy formation process in practice have led several scholars to consider alternative perspectives of IS strategy. Several attempts have been made to advance the field beyond the rational perspective. The aim was to explain how IS strategy actually forms in practice, rather than prescribe what to do to develop an effective IS strategy. Leading efforts in this direction are examined in the following.

3-3-2-1- Pyburn - Early Contextual Perspective

The lack of explanation of IS strategy formation in practice encourages the need for research aimed at description. One of the early studies intended to provide a description of IS strategy is the work by Pyburn (1983). The focus of the study that carried out in eight organizations was upon exploring the relationship between IS planning approaches and context. The findings of the study suggest three different approaches to IS strategy, namely: personal-informal, personal-formal, and written formal. The three approaches, according to Pyburn (1983), depend on the perceived status of the IS managers, the physical proximity of the IS managers to the senior managers, the senior manager's leadership styles, the complexity of the IS environment, and the volatility of the business.

Pyburn findings are particularly informative in terms of exploring the role of selected aspects of organizational context in the formation of IS strategy. However, Pyburn did not provide sufficient justification for his choice of the particular context aspects that he investigated and claimed to be important. Another drawback in Pyburn's work is the snapshot nature of his study, that is, it represents a picture of IS strategy at one point in time.

3-3-2-2- Waema and Walsham - The Socio-Political Aspects

The importance of the socio-political aspects of context in exploring IS strategy formation in organizations has been highlighted in the work of Waema and Walsham (1990b) in which they describe a longitudinal case study of IS strategy formation in a medium size UK building society. The organization is examined over a period of

several years under the contrasting leadership of two different chief executives. They draw on the contextualism methodological approach of Pettigrew (1985) to analyse IS strategy formation process in its embedded context. The study analyses the connectedness of actions of key actors and groups involved in the strategy formation process over time.

Waema and Walsham (1990b) suggest that IS strategy formation analysis conducted from a socio-political perspective linked across various contextual levels is more descriptive of reality and thus more insightful than the traditional rational view. They also argue that there is a need to study important organizational issues such as the action of key actors and groups in decision making process, sources of power, the shifting of coalitions of interests and perceptions, and the way conflicts resolved at all levels of the organization.

The process of IS strategy formation emerges from complex social and political interactions among people at different organizational levels. The reason for the emergent nature of IS strategy formation, as Waema and Walsham (1990b) suggest, is that it is subjected to constant modification as the perceptions and interests of key actors and groups in the organization change, and as managers in the organization accumulate knowledge of what can realistically be achieved. They argue that power is implicit in IS strategy formation. This give emphasis to the social and political impacts on IS adoption, and suggest that they play a major role in the formation process of IS strategy. The work of Waema and Walsham (1990b) again highlights the social complexity of IS strategy formation

3-3-2-3- Davies - The Role of the Political Activities

Davies' (1991) work, in a similar vein of the socio-political perspective, reflects upon political activity as a key aspect of the social complexity of organization. In a case study about the British Army Davies argues that power, context, and time are important concepts in making sense of organizational activities involved with the IS strategy formation. Although Davies does not explore the three concepts of power, context, and time to any depth in her work, the work emphasizes the importance of social dimensions through which organizations as a collective social activity can be investigated in relation to IS strategy formation.

The work principally based upon an interpretive research approach which, Davies asserts, is especially useful in enhancing our understanding of IS strategy formation in organizations by giving attention to important aspects of an organization that are rarely addressed in other research.

3-3-2-4- Walsham - IS Strategy as a Continuous Discourse

Walsham (1993) in his book about IS in organizations provides an empirically based assessment of IS strategy formation in organizations. His work marks a notable move beyond the rational perspective of IS strategy formation as he redirects our attention toward the significance of the social aspects surrounding IS in organizations, and the complexity of the IS strategy concept. In discussing the nature of IS strategy, Walsham described the formation of IS strategy as “a process of continuous discourse” (p. 157). This organizations discourse on IS strategy is described as a way of communicating meaning, centred on norms and values, and linked to power in relation

to others. The language of the discourse uses vocabularies which influence its content. The core content of the discourse concerns computer-based information systems which can be viewed strategically as embodying interpretive schemes, providing co-ordination and control facilities and reflecting norms.

Walsham (1993) conceptualises IS strategy formation as “involving a social process of communication, learning, and negotiation both within and between individuals and stakeholder's groups” (p. 236). The social process involves cultural and political debate and action where ethical issues are implicit or explicit throughout all the discourse and activities of stakeholders in all phases. Walsham calls for the explicit use of social theories to inform analyses and to encapsulate conclusions from research and practice concerning information systems, and argues for broad interpretive methods of research aimed at producing an understanding of the context of the information systems strategy and the process whereby it influences, and is influenced by, the context.

3-3-2-5- Knights and Murray - The Influence of Power-Relations

Knights and Murray (1994), in an empirical study about the information technology developments in the UK financial services industry reported in their book about organization politics and information technology management, argue that the management of IS can only be fully understood through the analysis of the mutual relationship between power and identity that supplements the politics of process. Inspired by the processual perspectives of strategy formation of Mintzberg (1978) and Pettigrew (1985) in strategic management, Knights and Murray proposed that the scope of these processual approaches should be broadened by examining management and

organizational change in the context of the IS development and use. Their aim was to explore more deeply and theoretically the relationship of power and identity or what they refer to as the "political subjectivity".

The exercise of power, as Knights and Murray (1994) suggest, is "not only appeals to, but also constructs, definite identities and subjectivities such that individual (or groups of) managers begin to attach themselves to certain practices and definitions or constructions of reality in respect of, for example, technology, markets and organization" (Knights and Murray, 1994, p. 182). They further suggest that from the processual perspective, such attachment can be related to the quest for material and career advantages actors or groups may obtain from supporting or even creating a specific strategy. However, this processual perspective is criticised for not exploring the conditions in which strategic behaviour might be possible and probable, and for not examining fully its effects on specific managerial identities.

Knights and Murray (1994) claim that the approach they adopted in their work differs from, but contributes to, the processual approach in recognising how technology and the market can be constructed by practitioners either as externalities over which the organization has little control, or as open to negotiation internally. However, Knights and Murray (1994) explain that the processual approaches take a particular management perspective as given and thus reproduce it as reality rather than reflect critically upon its "power-infused" construction. Examining power and identity more closely, Knights and Murray (1994) conclude that these constructions of an externally determined or internally negotiated reality are precisely the tools of politics. Creating such

constructions in the exercise of power generates practices which transform individuals in organizations into subjects who secure a sense of identity, meaning and purpose through a commitment to those realities.

It can be reveal from the work of Knights and Murray (1994) that strategies are complex socially constructed phenomenon that produced from both direct reflections of market forces, as suggested in the rational perspective, and from a simple negotiated outcome of political struggle, as argued in the processual perspective. Strategies often accidental in their formation, that is, they are not produced in planned and consciously designed manner. Strategies are more often discontinuous, casual and unpredictable in their realisation.

3-3-2-6- Jones - Considering the Broader Context

Jones (1994) argues that the process of IS strategy formation may be studied from four different levels of analysis. The four levels are: (1) strategic resources, (2) strategic process, (3) discourse of strategy, and (4) broader social discourses. A longitudinal single case study of IS strategy formation in the UK National Health Service is used to illustrate this argument. The case study carried out over a period of 26 months in which the author participated as invited adviser to the Information Strategy Group of the Melchester District Health Authority.

Jones (1994) describes the first level on which IS strategy may be studied as concerned with the resources that are seen as being deployed in the strategy formation. Types of resource include: financial, physical, human, organizational, and technological

capabilities. The second level considers the process by which strategy is formed. It is concerned with explaining the how of the strategy and examining why the process may have occurred. The third level, though yet not broadly adopted in IS strategy research, addresses the specific power effects of the social discourse and its role in constructing the subjectivity of strategic actors and the problems to which it is applied. In the fourth level the strategic discourse may itself be considered as part of the broader social discourse, that is a more general ideology of organization, the analysis therefore is concerned with the relationship between the strategy formation process within the organization and broader social discourses.

The study thus suggests that the development of IS strategy needs to be understood not just as an organizational activity, but in relation to a broader social phenomena. Jones (1994) was keen to point out that the four levels of analysis are not objective elements of a unified hierarchy of strategic action. They may be seen “in the sense that their focus is progressively wider, from the internal, formal process of an organization to the societal context within which it operates” (Jones, 1994, p. 121).

Despite the fact that Jones work does not provide detailed discussion of the theoretical bases of his work, it do offer a particular interpretation of the strategy process, and present some developments in IS strategic thinking. An important idea from Jones' study is that we should consider the IS strategy formation aspects, including the resources, process, politics, and societal discourse, as all interconnected rather than consider them in isolation. Thus, we may understand IS strategy formation process not just as an organizational activity but in relation to its broader context.

3-3-2-7- Auer and Reponen - The Learning Process

Another perspective of IS strategy formation, that not particularly processual is the learning perspective. Several empirical research support the learning aspects of the IS strategy formation process (Reponen, 1993; Reponen, 1998; Ruohonen, 1990). A little research effort, however, has been devoted to address the learning perspective of the IS strategy formation.

While Mintzberg's viewpoint that strategy is an emergent learning process rather than a plan, Auer and Reponen (1997) argue that IS strategy should include both the learning and planning aspects. The learning process produces a plan for IS strategy, whereas the planning process should be seen as tool to support learning. The outcome of an IS strategy formation process should be an increased understanding of IS opportunities and constraints and a shared view of IS exploitation. Auer and Reponen (1997) proposed an approach that combines both the learning and planning approaches to strategy formation. A longitudinal case study in a conglomerate operating in the foodstuffs has been conducted to test the developed approach.

The IS strategy formation approach proposed by Auer and Reponen (1997) is based on four development phases. The first phase involves evaluating the current organizational reality of IS exploitation from the management, usage, and IT point of view. The second phase involves joint learning between interest groups. The learning happened through interactive planning process between groups to improve managerial abilities, change organizational structures, and reach a common view of IS development, use and management. The third phase is concerned with learning process

that take place as a result of the IS strategy implementation at both middle management and individual levels. The fourth phase is where the outcome of the IS strategy formation process has to be continually observed and evaluated to understand progress and needs for further development.

By combining the process phases of an IS strategy formation into long-term learning cycle, it is possible to increase the effectiveness of the IT investment and limit its unpredictable consequences. The proposed approach should be able to establish a learning-intensive strategy formation process to facilitate managerial learning and interaction between interest groups.

Auer and Reponen (1997) stress the importance of the organizational resources and their condition to support learning process. They point out that the abilities to use and manage IS are not alone sufficient, understanding how they are integrated, communicated and utilized need to be understood.

Similar research conclusions can be drawn from the study of Huysman, Fischer and Heng (1994), they consider the process of IS strategy formation as a process of learning for the organization that carries out the process. They argue that the experience gained in this learning process must be regarded as a crucial source for further success of IS exploitation in the organization. The organizational learning perspective proposed by Huysman, Fischer and Heng (1994) was based on the argument that the chance of successful IS strategy formation increases when taking into account the idiosyncratic processes of organizational learning.

The learning process in organizations is seen as a process of accumulation of experience and knowledge through trial and error experimentation. This experiential learning in organizations can be seen as an idiosyncratic process through which unique routines evolve. This idiosyncratic process can give an organization a competitive advantage. These considerations imply that IS strategy is far more difficult to form than what the traditional IS strategic thinking suggests.

The learning perspective has been recognized by several researchers. Mostly by researchers criticize the mainstream thinking on IS strategy formation as too rigid, formal and logical (Zuboff, 1988; Walsham, 1993). However, researchers broadly consider the learning aspects of IS strategy formation as managerial issue or as an issue for future research, or addressed it as a recommendation in their research (Huysman, Fischer and Heng, 1994).

While the limited research on the learning perspective of IS strategy formation can provide only tentative conclusions in this respect, it nonetheless represent the pressing need to consider the concept of IS strategy from alternative perspectives which challenge the traditional approaches and its rational assumptions that underpinning the mainstream research on IS strategy formation. It draw attention to the valuable insights that alternative perspectives can offer for better understanding of the IS strategy formation theory. Numerous questions are yet to be answered to get hold of the learning perspective on IS strategy formation. Certainly, further empirical research along these lines appears to be warranted.

3-3-2-8- Peppard and Ward - IS Capability

Lately, Peppard and Ward (2004) have used the resource-based theory to address the issue of the management of IT that specifically considers how organizations can continuously derive and leverage values through IT. In seeking to move beyond the principles and canons of the strategic information system era that have dominated IS research and practice over the last 20 years, they introduced the concept of "IS capability" which focuses on the issue of sustainability and the attainment of continuous value through IT. They argue for organizations to understand, develop and nurture IS capability if they are to deliver value from investment made in IT on an ongoing basis.

Peppard and Ward (2004) suggest that the strategic management of IS in the new era is about developing IS capability which should be embedded within the fabric of the organization. With strong IS capability, opportunities that IT can provide will be incorporated in the corporate strategy. IT investment will be aligned with organization objectives and the business values delivered can be explicitly addressed. Organization's performance, from the resource-based perspective, will be significantly dependent upon its IS capability. That is, for organizations to take advantage of all what the innovative technology offers they have to have an enduring ability to understand how systems and information use can and does improve their performance.

The organizational IS capability, can be rendered as having three attributes: a fusion of business knowledge with IT knowledge, a flexible and reusable IT infrastructure, and an effective use process. Peppard and Ward (2004) argue that a

sustained investment in developing a full set of IS capability which once in place, with knowledge acquired, can lead to a realized organizational performance improvements.

The capabilities approach to IS management derived from resource-based theory has become evident in many organizations in recent years. Duhan (2007) explain that the focus in the capabilities approach should be on the development of IS competences within an overall IS capability which to be effective must permeate throughout the organisation, and not just the IS department.

A number of authors have explored the applicability of resource-based theory to the IS domain, mainly at a conceptual level (Bharadwaj, 2000; Caldeira and Ward, 2003; Piccoli and Ives, 2005, Pavlou and El Sawy, 2006). The resource-based and IS capability yet have not been seriously addressed in the IS strategy research.

Peppard and Ward (2004) call for a research agenda that examine and understand how IS capability can be developed and sustained and argue that this will provide a real source of value for organizations. The resource-based theory seems to have a high potential for future IS strategy research. It can provide a sound theoretical background for new perspective on IS strategy and its formation in practice.

In conclusion, the disparity and often conflict between IS strategy perspectives entails the need for rethinking IS strategy and the underlying assumptions that dominate much of its practice. Rethinking IS strategy start by identifying the status of IS strategy thinking, its limitations and potential which is the subject of the following section.

3-4- Position of IS Strategy Thinking

As stated in the introduction section, the aim in this chapter is to make a case for the need for more pragmatic perspectives on IS strategy that is sensitive to the social complexity of its formation process in practice. In view of that, the foremost schools of thought of IS strategy explored in the previous section will be synthesised and analysed in order to make sense of IS strategy thinking with reference to the schools of thought of strategic management. The intention here is not to be inclusive, but rather to give an indication of the status and directions of IS strategy thinking.

The review of the literature of strategic management in and IS strategy suggests that they share much in common in their fundamental conceptions and underlying assumptions. They both, for example, suffer from multiple conceptions and definitions (Baets, 1992), but what most notable is the diversity in theories and perspectives about how strategy may be formed that they both encompass (Walsham, 1993; Scarborough, 1998). From a theoretical viewpoint, as previously argued in the previous chapter, IS strategy theory is an IS variant of strategic management theory (Huysman, Fischer and Heng, 1994; Byrd, Sambamurthy and Zmud, 1995). Thus, to facilitate the discussion of IS strategic thinking strategic management will be used as a reference discipline.

Draw from the previous discussion of the rational and alternative perspectives of IS strategy, it was possible to identify five distinct schools of thought of IS strategy. One school of thought represents the rational perspective and four other schools of thought represent the alternative perspectives. Table [3-1] provides a summary of these schools of thought.

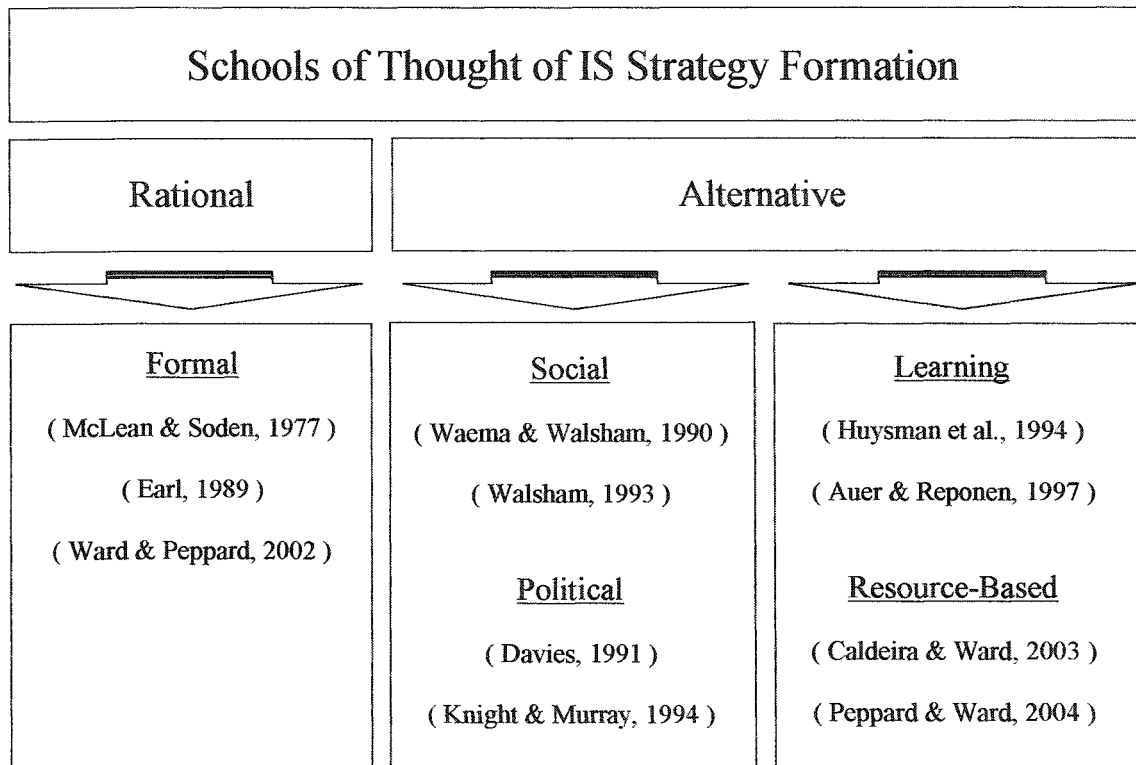


Table [3-1]: Schools of Thought of IS Strategy

The rational category is corresponding to the prescriptive category in the strategic management discipline. The rational category includes what has been labelled "formal" school of thought of IS strategy. This school is principally based on the traditional rational perspective of strategy. Most of the existing IS strategy approaches and methodologies as previously explained are principally based on this school of thought. Likewise in the field of strategic management, this school of thought is still dominating the research and practice of IS strategy. The formal school, for the most part, encompass much of the characteristics of the planning school of strategic management in which the strategy formation is seen as a formal process.

The alternative schools, on the other hand, draw more on the descriptive schools of thought of the strategic management. It is possible to discern four major schools of thought as representative of this category. The first is the social school which concerned with the social aspects of the strategy formation process (Waema and Walsham, 1990a; Walsham, 1993). This school, in sense, corresponds closely to the cultural school of the management strategy. The second is the political school which concerned with the politics of IS strategy formation process. It focuses on issues such as power relations between individuals and interest groups involved in the formation of the IS strategy in the organization (Davies, 1991; Knight and Murray, 1994). It draws, for the most part, on the macro and micro levels of power school of management strategy. The third school is the learning school which corresponds to the learning school of strategic management. Draw on concepts from the organizational learning theory, the formation of IS strategy, in this school, is seen as involving organizational learning process. Learning occurs at all levels of organization in which individuals may be engaged as part of the formation process of IS strategy (Jones, 1994; Auer and Reponen, 1997). Lastly, the resource-based school is the most recent paradigm. Despite the fact that it is in its initial stage in IS strategy literature, and yet has not been profoundly investigated in real organizational situations. The resource-based school seems to have a high potential for future work on IS strategy formation. It adopts the resource-based theory which has been used in the strategic management discipline as an alternative to the economics viewpoint that has dominated the field for a long time. The core concept of the resource-based school of thought can be envisaged as focusing on the organization's IS resources and capabilities as a platform from which the organization derives its IS strategic decisions (Caldeira and Ward, 2003; Peppard and Ward, 2004).

The review of the strategic management literature in the previous chapter indicates that the strategic management theory has been the focus of several changing views over the years. Many strategic management schools of thought have emerged since the early design and planning based strategies. IS strategic thinking appears to follow a similar but a lengthy development process. When mapping the schools of thought of IS strategy on the space of strategic management schools of thought, it is possible to broadly depict the scope and position of current IS strategic thinking.

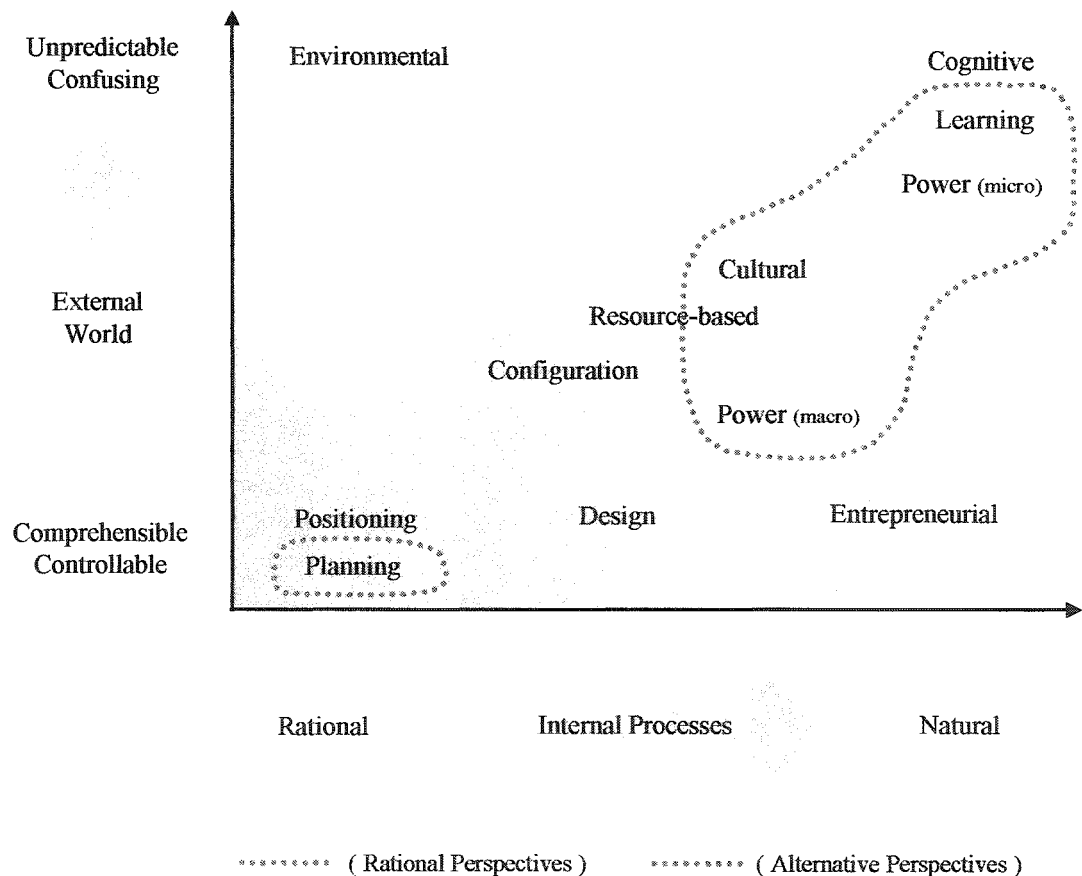


Figure [3-4]: Correlation between IS Strategy and Strategic Management

The formal school of IS strategy, as shown in Figure [3-4], is located in the space where the planning school of strategic management is positioned. This space represents an organizational environment where the external world is controllable and the internal process is very much rational than natural. The social school can be seen as located close to where the cultural school of strategic management is positioned. The political school can be located somewhere between the micro and macro power school of strategic management. The learning school is located where the environment is unpredictable and the process is rather natural. This is where the learning school of the strategic management is also located. The resource-based school is expected to fit, likewise in the strategic management, in the middle between the social and political schools.

3-4-1- Reflections on the Position of IS Strategy Thinking

While the above is only an approximate mapping of the schools of thought of IS strategy that aims at providing a general sense of its scope and position in accordance with the mainstream of strategic thinking. The mapping highlights some valuable inferences that can provide a useful guidance for assessing and understanding the status, limitations and potentials of IS strategy thinking. Principal inferences that inductively extracted from the above mapping will be discussed in the following.

The process of strategic management thinking which has been the focus of several changing views over the last 40 years is one interesting issue that is relevant to the status of IS strategy thinking. Extensive research on the subject carried out throughout the years, yet, the field of strategic management has been a rather lumpy one (Mintzberg, Ahlstrand and Lampel, 1998).

In questioning the consequence of the vast development of the field of strategic management Pfeffer and Sutton (2000) ask: Why do so much education and training, management consulting, and business research and so many books and articles produce so little change in what managers and organizations actually do? Attempts to make sense of the field has been made through various lumping and distortion processes resulting in numerous schools of thought, which appear to fill an intellectual function much more than significantly contributing to providing insights and guidance for managerial practice. This is, according to Mintzberg, Ahlstrand and Lampel (1998), reflects the influence of the academic writers and the consultants who have been driving the thinking in this field.

The above statement of Pfeffer and Sutton (2000) which reflects the inconsistency of the field of strategic management, to a great extent, can be said about the field of IS strategy. For instance, whilst recognising in many cases the limitations of much of the rational IS strategy approaches and methodologies, IS consultants value them as a prop to justify their products and services. This is only one example of the similar factors that may influence strategic thinking in both fields. Nevertheless, much can be learned from the rich experiences of the strategic management discipline to advance the schools of thought of IS strategy in order to provide insights and guidance for its formation in practice without lumping and distortion processes.

Strategy formation, as established in the previous chapter, is a complex subject that has a multifaceted nature. Mintzberg, Ahlstrand and Lampel (1998) hold that strategy formation is judgmental designing, intuitive visioning, and emergent learning;

it is about transformation as well as perpetuation; it must involve individual cognition and social interaction, cooperation as well as conflict; it has to include analyzing before and programming after as well as negotiating during; and all of this must be in response to what can be a demanding environment. Clearly, this would represent a challenge for both IS strategy scholars and practitioners if they are to incorporate such variety of thoughts and assumptions of the nature of strategy into their current schools of thought of IS strategy formation.

A new holistic view of the IS strategy phenomenon that takes it beyond the limitations of the traditional rational perspective is indispensable for innovative IS strategic thinking. However, it is argued that strategy formation in today's world calls for less hypothesis and more systematic observation (Mintzberg, Ahlstrand and Lampel (1998)). Without intensive empirical research into the complexity of the concept of IS strategy and the actual practice of its formation in organizations, incorporating innovative ideas from the strategic management theory into IS strategic thinking, it can be argued, may yield another worthless hypothesis.

It is important to continue to explore the significant aspects of each school of thought of strategy. More importantly, as Mintzberg, Ahlstrand and Lampel (1998) suggest, is to get beyond the narrowness of each school and ask better questions and generate fewer hypotheses. We need to focus upon real concerns in practice rather than upon theories in literature. Indeed, IS strategy formation is becoming more sophisticated practice. What is required is good practice, not neat theory.

It has been argued that the various, differing, and often conflicting, schools of thought reflect the richness of existing debates among academics and practitioners in the field of strategic management (De Witt and Meyer, 1998). The comparatively fewer number of IS strategy schools of thought indicates the scarcity of such debates among IS academics and practitioners which could decelerate the emergence of new schools of thought in the field of IS strategy. On the other hand, the theoretical underpinning and empirical evidence that supports an analysis which considers alternative perspectives of strategy has been increasingly growing in the strategic management. Conversely, the lack of sufficient theoretical underpinning and empirical evidence is hindering the little efforts for advancing IS strategy thinking towards alternative perspectives.

Last but not least, while an independent line of research in the strategic management field continues to investigate the interrelated relationships between strategy and social aspects of its context, there has been little attempt to integrate ideas from this line of research into mainstream of IS strategy research.

As stated earlier, the intention in the above analysis is not to provide a comprehensive comparison between the IS strategy and the strategic management, but rather to give an indication of the status and directions of IS strategy thinking. The focus in particular have been upon issues that thought to be closely relevant to the subject of this research and its argument of the need for new perspective of IS strategy formation in practice. It is worthwhile to acknowledge here that several other imperative inferences that thought to be fall beyond the scope of this research can be derived from the analysis. Certainly, further research along this line should be warranted.

3-5- Synthesis - Making Sense of IS Strategy Phenomena

This section assembles all pieces of inference extracted from the discussions of the subject of IS strategy in the previous sections. The aim is to construct the research conception of the IS strategy phenomena, and to provide rationales for the argument of the need understanding IS strategy from innovative perspective that is sensitive to the social complexity of its formation process in practice.

3-5-1- Rethinking the Concept of IS Strategy

The principles of IS strategy discussed earlier in this chapter is only an illustration of the various attempts by IS scholars to make sense of IS strategy phenomena. The examination of the literature reveals that the trouble with these attempts is that they have insufficient consideration of how IS strategy actually forms in practice. They take underlying assumptions of the traditional rational perspective of strategic management for granted and apply it to the IS strategy domain. This is evident in many aspects of the principles of IS strategy. The theory of IS strategy proposed by Lederer and Salmela (1996), for instance, holds apparent assumption that there is a formal process to form IS strategy. The theory claims, for example, that each of its hypotheses represents a simple, predictable, direct effect of one construct on another. It does not question the possible assorted perceptions that exist within the organizational setting.

Despite the fact that IS strategy discipline lacks theory that can help building a cumulative collection of findings, and assists in describing what has been established and what need to be discovered, such theory has to be generic to contain the diverse perspectives of the concept of IS strategy and to hold in varied organizational contexts.

It is not surprising in view of that to find that adopting conventional models, frameworks and methodologies of IS strategy may have led many IS practitioners to inadequate understanding of the phenomenon, and disappointing results from its implementation in practice.

It has been noticed from the IS literature review that much effort has been devoted to discussing approaches and methodologies for conducting IS strategy. The focus tends to be upon the role and effectiveness of the prescribed approaches and methodologies, rather than to consider the broader context which influences the application of IS strategy within specific organization (Lederer and Sethi, 1996; Segars and Grover 1998). It can be argued, therefore, that the conventional approaches and methodologies are not sufficient for directing the application of IS strategy as they focus mainly on the techniques, procedures, or methods employed, and overlook essential organizational concerns, and important contextual issues (Teo and King, 1997).

In addition, most approaches and methodologies are ahistorical, that is, they fail to consider at earlier stages of the formation process the burden of the existing IT infrastructure and the experiences the organization gained from successful and failed IS initiatives. They also ignore the complexities inherent in an actual organizational setting which is loaded with social and political problems (Huysman, Fischer and Heng, 1994). Methodologies of IS strategy have been also accused of approaching organizations from an implicit rational perspective that perceives organizations as coherent entities with shared goals, and management as a rational process of decision-making, and view IS strategy formation processes as a series of logical steps (Walsham, 1993).

Indeed, several models and frameworks can be found in the IS literature that intended to assist in conducting IS strategy based on conventional approaches and methodologies. Despite the usefulness of these models and frameworks applied to competitive based organization, they are market-oriented, that is, to deal with IS strategy within commercial organizations context, and consequently, may not be suitable to explain IS strategy formation practice in other non-market-oriented industries, such as public services organizations and government agencies. Non-market-oriented organization, such as the governmental organizations have much more complicated work environment and more influential contextual aspects than commercial organizations that need careful consideration. Much of the prevailing IS strategy approaches lack considerations of such organizational complexity. This, it can be argued, represents a serious limitation in much of the prevailing IS strategy approaches. It further stresses the need for a more generic perspective of IS strategy that consider its formation complexity in commercial as well as in governmental organizations.

In short, several concepts and numerous approaches and methodologies for conducting IS strategy have been proposed in the literature. Nevertheless, much of the proposed approaches and methodologies emphasize the rational and formal aspects of organizational life. They pay insufficient attention to the multifaceted social and human behaviour aspects that characterize the actual organizational situations. Conventional approaches and methodologies tend to view the process of IS strategy formation as context independent. It has become apparent to observers in the field that such characterizations of the concept of IS strategy are narrow (Das, Zahra and Warkenting, 1991) or simply inaccurate (Earl, 1993).

3-5-2- The Social Complexity of IS Strategy

Although there are many ways in which the concept of strategy is conceived in the literature, many researchers have taken strategy as given, without questioning what strategy is, how it is formed, how it comes to change, and how strategy constitutes and is constituted by social aspects of its context. Absence of an appreciation of these essential conceptions will lead to a muddled understanding of IS strategy formation in practice (De Witt and Meyer, 1998).

The importance of the social aspects has been reported in various researches most were on IS development and implementation and much less on IS strategy formation. Nevertheless, recognition of the importance of the social aspects of the context in which IS strategy formation take place has been reported in limited published studies. Davies (1991), for example, highlights the significance of the social aspects through which organizations can be explored in relation to IS strategy by focusing upon the political activity as a key facet of the social complexity of organizations. Similar research conclusions can be drawn from Walsham's (1993) study discussed earlier which draws attention to the social activities surrounding the IS strategy and conceptualized IS strategy as involving a social process of communication, learning, and negotiation both within and between individuals and stockholder groups.

Avison & Malaurent (2007), in a case study describes a largely unsuccessful implementation of a French firm's ERP project in its Chinese subsidiary over 18 months, argue that the success or failure of implementing proposed systems of IS strategies has as much to do with human and social aspects than technical issues.

Clarke (2007) argues that consideration of IS, and related strategies, should move beyond a purely technological view, to include a human-centered approach. He used ideas from several theories such as critical social theory and critical systems thinking to emphasis on IS as a socio-technical discipline and proposes a “critical framework for information systems strategic management” as an alternative to the conventional purely technological view.

Although there are comparatively fewer authors who have reported upon researches address issues relate to social aspects of IS strategy formation in practice. The clear message they declare is that IS strategy formation is not concerned with technological issues *per se*. In reality, it incorporates other important contextual issues. Most importantly however is that the formation process of IS strategy in organizations involves social issues that may not at first sight have been considered as being directly relevant (Galliers and Leidner, 2003).

Calls for empirical IS research that explicitly address the social complications associated with IS adoption in practice have been frequently raised. Orlikowski and Barley (2001) for instance call to broaden the scope of IS research from its traditional focus on phenomena associated with computer-based information systems at the individual, group and organizational level, to address the broader institutional and social developments in which IS are increasingly implicated. Wainwright and Waring (2004) argue that there is a need for more work to be done at the individuals and departments within organizations where there is evidence from the literature that it is here that the main difficulties occur.

In the IS strategy field, similar calls have been raised by several scholars (e.g. Davies, 1991; Walsham, 1995; Myers, 1997). It has been noticed however that empirical studies on the social complexity of IS strategy formation in organizations is considerably rare in the IS literature. This represents an important limitation in the IS literature that this research has been designed to address.

Taken the view that IS Strategy formation embody social practice and ascribe meaning through socially constructed views. An innovative theory-based perspective that takes sufficient account of social aspects of context is required to investigate the formation process of IS strategy in practice, in order to generate a thorough empirical understanding of the social complexity of the phenomenon. The need for such perspective is the subject of the following section.

3-5-3- The Need for Innovative Perspective of IS Strategy

It review of the literature in the previous sections revealed that the field of IS strategy is largely dominated by the conventional rational perspective. The rational perspective of IS strategy, nonetheless, has been criticised for its implicit view of organizations as coherent entities with shared goals, of organizational management as a logical process of decision-making, and of strategy formation process as a series of straightforward prescribed steps (Walsham, 1993).

The review of the literature also revealed that the rational perspective takes little account of aspects of the social context of the organization, and makes a rather simplistic view of the relationship between the contextual aspects and the process of the

strategy formation. Reservations about some of the underlying assumptions of the rational perspective include the belief in unity of purpose which ignores important social and behavioural aspects such as conflicts of interests and power struggles as potential sources of disunity. The similarity of organizational characteristics is another inherent assumption that is untenable due to the subjectivity of the organizational reality and the impact of unintended consequences (Pettigrew, 1985). Globalization, for example, drastically increases the context complexity of the IS formation process by introducing many new variables and unknowns (Akmanligil and Palvia, 2004).

The rational perspective while provide useful prescriptions of what to do to form IS strategy, have a limited account of the nature of its formation process, and therefore is not adequate for understanding IS strategy formation in practice. Galliers, Merali and Spearing (1994) caution against persisting with an overly optimistic, rational models of IS strategy formation, and argue for a different perspective that better reflect the way in which IS strategy actually practiced in organizational settings.

IS scholars and consultancy firms are commonly apply traditional rational models from strategic management discipline in constructing their approaches and methodologies of IS strategy. Experience of IS practitioners, such as myself, along with findings obtained from empirical studies describing the formation process of IS strategies in practice suggest that traditional models of strategy are often not appropriate for forming effective IS strategies. The complexity of the context in which the IS strategy formed in conjunction with the complexity of the technology it self prevent the effective use of traditional rational models.

The limited attempts to consider alternative perspectives on IS strategy discussed earlier whilst provide considerable insights into the actual practice of IS strategy formation in organizations, they fundamentally lack sound theoretical frameworks and empirical evidences to support its validity. Further empirical research that based upon sound theoretical frameworks, it has been argued, is essentially required to validate the ideas that alternative perspectives of IS strategy suggests, and to provide the needed conceptual and empirical support for its adoption in practice.

Furthermore, despite the fact that alternative approaches to IS strategy formation are considered to be more effective, methods that can be used to facilitate alternative approaches to IS strategy formation are few, not detailed enough and not comprehensive. Innovative methods are needed to facilitate implementation of an incremental and continuous IS strategy formation process in a flexible and dynamic way (Salmela & Spil, 2002).

Regardless of the limitations of the alternative perspectives of IS strategy formation discussed earlier in this chapter, the important message they broadly convey is that IS strategy formation is a complex set of organizational activities that reflect a philosophy rather than a narrow set of steps prescribed by a simple methodology or techniques (Segars and Grover, 1999). This important message can provides a sound theoretical base for understanding the apparent gap that this research argues to remain to be exist between who IS strategy is perceived in the literature and who it is actually practiced in organizations.

While many businesses have become highly dependent upon IS to support numerous core activities to the extent that failure of these systems would critically harm the firms (Kearns and Lederer, 2004), IS strategy is still very disappointing. The area still lacks credibility in the eyes of decision makers. In practice, IS strategists are often unable to explain their own planning processes (Hansson, 2002). The main reason for such a position is the huge gap between theory and practice, between technology-oriented and organization-oriented views of IS implementation (Magalhaes, 2004).

Teubner (2007) conducted an in depth case study on IS strategy in a German financial services company to investigate gap between IS strategy research and practice. The findings of the study support the claimed detach between academic discussion and practical conduct. The study highlights that practitioners largely ignore academic literature and do not use it in support of IS strategy endeavors. They deem that the academic literature ignores the real IS strategy formation problems and thus is not accredited as a relevant source of advice.

In order to broaden IS strategy formation process beyond prescriptive approaches, Fahy (2002) suggests that we need to explore the extent to which IS strategy thinking can possibly support a knowledge-rich, qualitative, and non-algorithmic planning and decision making task. In other words, IS strategy formation has to change from a sequence of planning events to a business process, one that is ideally well-structured, iterative, and whose outputs are captured in organizational information systems, from which planning can be followed up by implementation, results measurement, and organizational learning (Fahy, 2002).

Thus, there is a pressing need for innovative perspectives on IS strategy formation. Such perspectives need to focus upon the concerns of practice and how IS strategy actually forms in organization setting. This, it can be argued, should help bridging the significant gap between theory and practice by considering the concerns of practice and the complexity that they encounter in their quest for exploring better ways for forming effective IS strategies that can help organizations to respond to evolving trends in the business environment.

As doubts continue to be raised about IS strategy formation efforts in practice, calls are mounting for more thoughts of the human aspects of IS strategy. In particular, there is a pressing need for empirical research that explicitly address the social dimension of IS strategy formation (Walsham, 1993; Earl, 1998; Wainwright and Waring, 2004). This dimension, as discussed earlier in the previous section, is acknowledged as being particularly important for understanding IS strategy and its formation process in practice. Yet, this important dimension is relatively ill-understood by both academics and practitioners.

Inspired by the previously discussed limitations in the current position of IS strategy thinking in providing an appropriate theoretical base for conceptualizing the formation process of IS strategy in practice, and the calls for rethinking the concept of IS strategy along with the growing concerns about the importance of the social aspects of the phenomenon, this research argues for the need for understanding IS strategy form innovative theory based perspective that is sensitive to the social complexity of its formation process in practice.

3-6- Summary

The review of the IS literature reveals that while the logic and purpose of IS strategy formation are generally well recognized, the process of its formation within the organization's context is not well understood. This can be attributed to the fact that much of the previous research on IS strategy exhibit rational perspectives which, it has been argued, have led to a limited account of the actual practice of IS strategy formation in organizational settings.

The limited published researches that describe the actual practice of IS strategy in organizations along with the researcher personal experience indicate that the concept of IS strategy embodies complex social practice. IS strategy formation can be seen as a social process that influence and is influenced by aspects of the organizational context. Research conducted from a socially sensitive perspective, it has been argued, is more insightful and can provide a better understanding of the social complexity associated with IS strategy formation in organizations. It has been noticed, however, that empirical research on this subject is considerably rare. Scholars call for more empirical research on IS strategy which explicitly address the social complexity of the phenomena. Insights from such research should help rethinking the concept of IS strategy and its formation process in practice.

The social complexity of IS strategy formation in practice may not be adequately explored without a sound underlying theory. In the following chapter the theory of method that has been used to guide this research and inform the field and analytical work will be discussed.

CHAPTER FOUR

THE RESEARCH THEORY

4-1- Introduction

There is a requirement for empirical researchers to make clear the theory of method that guides their inquiries (Pettigrew, 1990). Theories are used at an early stage in this research to create an initial theoretical framework that aims at taken account of previous knowledge, and build a rational basis to inform the research subject and approach. While it is realized that using theories and ideas in any effort to appreciate the essence of human experience will at best only elucidate interesting elements of a substantially variable and complex reality, it certainly informs the process of the research and sensitize the researcher to the presence of important issues that might otherwise be overlooked.

In this chapter, the attempt is to make explicit the theory of method that has been used to guide this research and inform the field and analytical work. The chapter start by providing a theoretical description of the social process of IS strategy formation. This is followed by a description of the methodological approach of contextualism. Ideas from the work on the web models approach are then discussed. From that, the chapter describes the investigative framework that this research developed as a sense-making instrument that guides the field and analysis work.

4-2- Interpretation of IS Strategy Formation

A principal conclusion from the literature review in the previous chapter is that the formation of IS strategy embodies a social process. This conclusion has led to the argument that the process of IS strategy formation influences and is influenced by social aspects of its context. It is the view of this research therefore that a thorough understanding of IS strategy formation in practice entails a profound interpretation of its social process and its interplay with social aspects of context over time.

Walsham (1993) in his work on interpreting information systems in organizations provides a theoretical description of the nature of the social process of IS strategy formation. Drawing on Walsham's (1993) work, this research conceives the formation of IS strategy as a process of continuous discourse. This discourse on IS strategy is a way of communicating meaning that is based on norms and values, and linked to power in relation to others. The language of the discourse on IS strategy uses a vocabulary that influences the content of the discourse. The core of the discourse in IS strategy concerns computer-based information systems.

The above theoretical description of the social process of IS strategy formation can be broadened by elaborating ideas from the field of anthropology. Anthropology suggests that individuals make sense of or attach meaning to events, actions, words, and things through their interaction with other people. These meanings when shared between individuals in organizations set models and guidelines for action. Models however can be altered by social interactions, from which they have emerged in the first

place. In organizations, this sense-making course is largely performed through the organizations every day processes, practices, and social activities (Green, 1988).

The formation of IS strategy as an organizational process can be viewed as a symbolic social artefact that individuals use to adapt meanings, that is, to stabilize models within the organization. The argument of strategy as to having symbolic side is widely supported in literature. Smircich (1983), for instance, points out that much of the strategic activity is dedicated to bring about a shared vision and shared interpretations of experience. Green (1988) further affirmed the symbolic face of strategy, and argued that strategy, intended and realized, has social functions besides its role in improving organization competitiveness.

The social functions alter and reproduce organizational shared meanings and the social relation they articulate. Thus, the formation process of IS strategy can be conceived as being used in the creation and communication of meanings, and thus maintaining or changing such context of meanings.

In the view of the above perspective of the social process of IS strategy formation, a robust theoretical framework is required to conceptualize the dynamic interactions between the social process and context of IS strategy formation in practice. Such theoretical framework, as previously argued, is lacking in much of the prior research on IS strategy formation. In the following, the research theory of methods will be discussed. Alternative social theories will be evaluated before the selected theoretical approach is discussed.

4-3- The Research Theory of Methods

Several relevant and alternative theories have been carefully explored before selecting the contextualism approach as a theoretical basis to construct the research investigative framework. Structuration theory and actor network theory are of the primary alternative theories considered for this research. The structuration theory and actor network theory will be briefly evaluated before the contextualism methodological approach is discussed.

4-3-1- Structuration Theory

Structuration theory has been described by Giddens (1984) as ontology of social life. The theory can be seen as a description of the nature of the human action and social organization. Central to the theory is the attempt to consider human action and social structure as a duality rather than a dualism. Social structure is therefore seen as being drawn on by human agents in their actions, while the actions of humans in social contexts serve to produce, and reproduce, the social structure. Structure is thus not simply an exogenous restraining force, but is also a resource to be deployed by humans in their actions: it is enabling as well as disabling.

Giddens (1983, 1991) in his structuration theory identifies three dimensions of structure that he terms signification, domination and legitimation. These three dimensions of structure are linked with corresponding dimensions of agency, described as communication, power and sanctions, through modalities of, respectively, interpretive schemes, facilities and norms. The dominations and modalities of the structuration theory are illustrated in Figure [4-1].

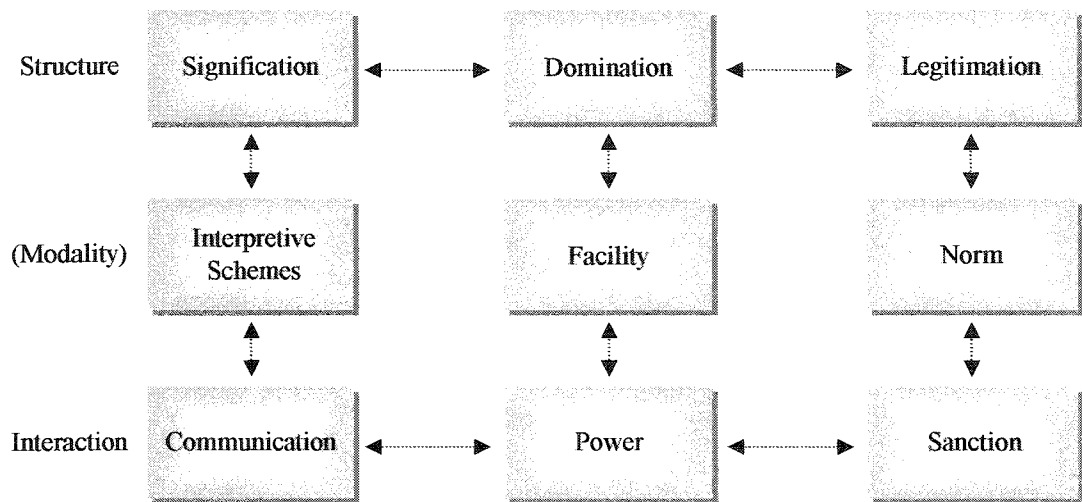


Figure [4-1]: Structuration Theory

Giddens (1984)

While the IS literature was somewhat later than some other areas in exploiting structuration theory, the IS literature review reveals that the structuration theory has been used in several IS research. As a general theory of social practice, structuration theory addresses a wide range of significant, inter-related concepts that relevant to the study of IS phenomena.

However, the recognition that technology is not easily accommodated within a structural framework prompting efforts, notably by Orlikowski (1992) and DeSanctis, Poole (1994), to develop IS specific versions of structuration theory. The resultant approaches, such as adaptive structuration theory and the duality of technology, it is argued, differ significantly from Giddens's concept.

The structuration theory has been criticized for operating at too high a level of generality to provide guidance in specific empirical settings. It has been suggested therefore that structuration is best considered as a meta-theory, a way of thinking about the world rather than as an empirically testable explanation of social behavior. Meta-theories nevertheless are necessarily limited. By virtue of its generality, it is essentially deficient in describing specific contexts. Giddens recognize that and argues that his theory is rather a sensitizing device. Structuration theory has been also criticized for its complexity, obscurity and non-propositional character (Gregson, 1989; Archer, 1990).

The various attempts to conceptualize consistently the social aspects of IS phenomena drawing on other theories, such as Social Construction of Technology, Actor Network Theory, and Contextualism, suggest however, it is not clear whether a satisfactory structurational account of technology has yet been achieved.

4-3-2- Actor Network Theory

Actor network theory (ANT) is initially concerned with the sociology of science. It is associated with the analyses of scientific and technological artifacts. In studying science, technology and society, Latour (1987) and Callon (1991) argue that scientific knowledge is local and constructed by a network of actors. Rather than considering the results or representations produced by science, ANT seeks to identify the processes that produce the results. The theory can be more technically described as a "material-semiotic" method. This means that it maps relations that are simultaneously material (between things) and "semiotic" (between concepts). It assumes that many relations are both material and "semiotic".

ANT proposes that the world is full of hybrid entities containing both human and non-human elements. The theory consequently is concerned with the creation and maintenance of extensive networks of human and non-human elements. It examines the motivations and actions of groups of actors who form elements of heterogeneous networks of aligned interests. ANT tries to explain how material-semiotic networks come together to act as a whole. As a part of this it may look at explicit strategies for relating different elements together into a network so that they form an apparently coherent whole (Law, 1992).

One of the most controversial positions associated with ANT is its insistence on the agency of nonhumans. Critics maintain that such properties as intentionality fundamentally distinguish humans from animals or from things, and they have charged ANT scholars with making absurd claims about the capacities of nonhumans.

Another criticism is that ANT suggests that all actors are equal within the network. It does not account for pre-existing structures, such as power, but instead sees these structures as emerging from the actions of actors within the network.

In a study of GIS development in India using ANT as a theoretical basis, Walsham and Sahay (1999) point out that ANT is not a stable body of knowledge that can be drawn on by researchers in an unproblematic way. They enlighten that while some key aspects of the ANT have remained relatively stable for the last decade or so of its development and use, the theory has been frequently revised and its elements have been extended by its authors in several occasions.

The literature on ANT contains many concepts but their interpretation and application vary. Describing the concepts involved in ANT with the terms "actor", "network" and "theory" is not straightforward. ANT as a result is interpreted and used in a wide range of alternative and sometimes incompatible ways. Many scholars assume that the theory is potentially precarious. Relations need to be repeatedly performed or the network will dissolve. They also assume that networks of relations are not intrinsically coherent, and may indeed contain conflicts.

In view of the above, both structuration theory and actor network theory have been disqualified as a theoretical basis of this research. The contextualism methodological approach and the rationale for adopting it as a theoretical basis for this research will be considered in the following.

4-4- Contextualism Methodological Approach

It can be deduced from the discussion in chapter two that the relationship between organizational process and context is the core of the strategy formation concept. Consequently, any worthwhile investigation into strategy formation in organizations should consider this fundamental relationship as a key element of its theoretical approach. Nevertheless, as previously noted, not many theories can provide a robust framework for conceptualizing such complex relationship. One of the exceptions is Pettigrew's (1987, 1990) contextualism methodological approach in which he adopts the operational definition of strategy of Mintzberg and the behavioural perspective of strategy formation to provide a contextualist and processual approach for interpreting IS strategy formation in organizations.

Pettigrew (1987, 1990) proposed the methodological approach of contextualism which emerged from his work on a programme of research on organizational change at Warwick University. The programme of research incorporated inquiries of competitiveness and strategic change in firms and study of the linkages between changes in business environment, business strategy and organization structure. The analytical cornerstone of Pettigrew's work has been the view that theoretically sound research on organizational change should explore the content, outer and inner contexts, and process of change together with their interconnection through time.

The contextualism approach was adopted in several IS research (e. g. Walsham and Waema, 1994; Jones, 1994; Smits, Pole and Ribbers, 1997). Lately, Caldeira and Ward (2003) used the contextualism approach as a framework in their work on using resource-based theory to interpret the successful adoption and use of IS in small and medium size enterprises.

The contextualism approach has been found appropriate to provide a theoretical basis to inform the field and analytical work in this research. The following presents the main ideas of the contextualism approach that have been used to construct the research investigative framework.

The contextualism methodological approach suggests that analysis of organizational process draws on phenomena at vertical and horizontal levels of analysis and interconnections between those levels over time. The vertical level refers to the interdependencies between different levels in the organization and its context that can

be explained by reference to a further level. The horizontal level refers to the sequential interdependencies among phenomena over time.

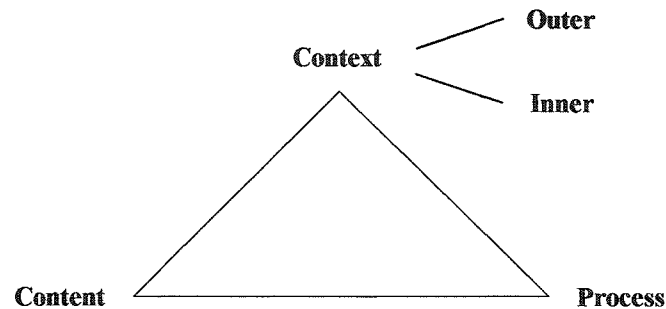


Figure [4-2]: The Framework of the Contextualism Approach

Pettigrew (1987)

Pettigrew (1987) points out that any wholly contextualist analysis would have four main characteristics: (1) it requires a clearly delineated but theoretically and empirically connectable set of levels of analysis; (2) it requires a clear description of the process under investigation; (3) it requires a model of human behaviour underlying the research; and (4) a crucial aspect of the analysis is the way that the contexts in the vertical analysis are linked to the process under investigation in the horizontal analysis.

The contextualism approach according to Pettigrew (1990) is based on four key assumptions. The first is that targeted phenomena should be studied in the context of other levels of analysis. The asymmetries between levels of context is believed to be the main source of change, as these processes are perceived to have their own momentum, rate, pace and route. The activities at one level of context may be more visible and

intense than at other levels. Thus, researchers need to understand the nature and patterns of change in the short and longer terms.

The second assumption is about the importance of revealing temporal interconnectedness that is, locating changes in past, present, and future time, as the antecedent circumstances form the present, from which the future emerge. Revealing the history requires not just understanding the events and the chronology but searching for structures and underlying logic. However, the approach does not assume predetermined timetables of ordered and inevitable stages.

The third assumption relates to the role of context and action. Context is perceived, not as stimulus environment alone, but as a "nested arrangement" of structures and processes as well. Process as a result is constrained by context. At the same time, it shapes the context either by preserving or altering it. Accordingly, the contextualism approach attempts to conceptualize context not just as a barrier to the process, but also as an essential factor in its production, and to demonstrate how involved actors and groups in the organization may mobilize aspects of context to achieve outcomes that are valuable to them.

The fourth assumption is about causation in this kind of holistic and multifaceted analysis. The attempt in the contextualism approach is to avoid the use of singular theories, as the search for a simple and singular grand theory is unlikely to bear fruit. Organizational phenomena have multiple causes and hence should be explained by loops rather than lines.

Pettigrew (1987, 1990) points out that the main task of his approach is to explore the complex, messy and sometimes contradictory ways that change emerges in organizations. It also builds a model that permits realization of conflicting rationality, objectives and behaviours. The contextualism approach, therefore, challenge ideas of the rational theories of strategy in which action are seen as ordered and the rationally declared goals can be achieved through sequential set of actions, with actors operate in a rather unconscious manner to achieve organizational goals. In addition, Pettigrew explains that strategies are multifaceted phenomena that involve cultural, political, and structural as well as rational dimensions. He recognized the importance of power, chance, and accident as influential factors that shape the outcomes of the strategic change processes, as well as design, negotiated agreements, and master plans.

The contextualism approach gives emphasis to the importance of multilevel context. It considers two levels of context, the inner context and the outer context of the organization. The inner context refers to aspects such as structure, culture, and political context within the organization through which ideas for change have to proceed. The outer context refers to wider aspects such as the social, economic, political, and competitive environment in which the organization operates.

In order to deepen the contextualist analysis and to make it more specific to the subject of IS strategy. Ideas from the web models approach (Kling and Scacchi, 1982; Kling, 1987) have been utilized. Web models provide a valuable approach to the study of context in the domain of information systems. Relevant ideas from the web models approach will be discussed in the following section.

4-5- Web Models

Kling (1987) argues that conventional analytical models fail to capture important social relationships that influence the adoption, development and use of IS applications because they draw formal boundaries around direct IS and their immediate users, work groups, or formal organizational units. As IS applications are increasingly expanding beyond the narrow boundaries of a work group or organizational unit and become more involved with more complex social relations, conventional analytical models are becoming less relevant as a base for guiding IS research. Conventional analytical models fail to account for the conditions under which IS applications is exploited as symbols of legitimacy in inter-group negotiations. Often problems occur because of social relations and resource dependencies between direct users, resource controllers and other actors who appear outside the narrow boundaries of the work group closely connected to the focal IT resources. The narrow individualistic explanations of conventional analytical models provide little insight into the difficulties associated with IS adoption, development and use. Kling (1987) argues the ignoring the social relations will led to a peculiar explanation of the IS problems in organizations. An alternative approach that draws boundaries around groups that influence IS adoption, regardless of their social location, appears more appropriate to capture the social complexity of IS applications in organizations.

Kling (1987) proposes the concept of web models as an alternative to the inadequate conventional analytical models. The core concept of web models, which is behaviourally grounded, is to draw boundaries around focal information system, and to examine how its use depends upon the context of complex social actions.

Web models define the social context of information system under investigation by taking into account three contextual aspects. The first aspect is concerned with the social relations between the set of participants who are concerned with the information system. The second aspect relates to the supporting infrastructural resources that are available to the information system. The third aspect involves the history of commitments made in and around the system. The concept of web models is diagrammatically illustrated in Figure [4-3].

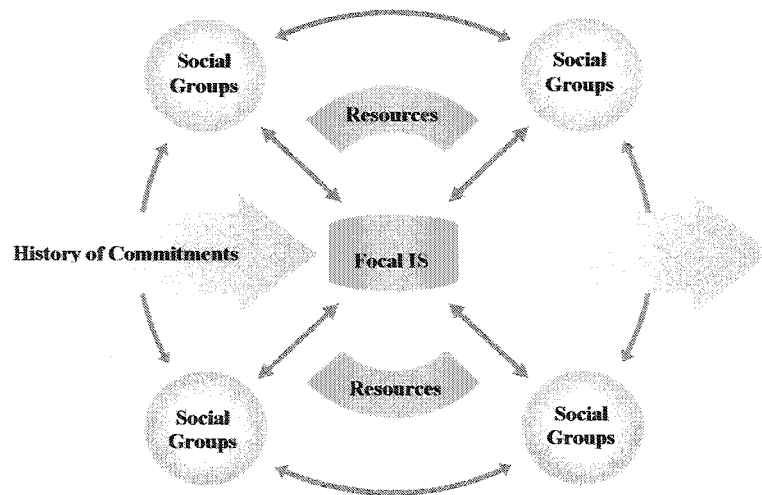


Figure [4-3]: The Concept of Web Models Approach

After Kling (1987)

By making explicit the connection between the focal information system and the social, historical, and political contexts in which it is developed and used, web models helps explain the social leverage provided by IS adoption, its adoption processes requirements, and the affect of the social setting on shaping IS configuration and consequences.

Web models conceive information systems as a form of social organization with important information processing, social, and institutional properties. The configuration of information systems, the mode in which they are used, the influences they have, and the interest they serve, depend upon the interplay of actors, resources, and social context within which they are deployed.

In web models approach, the web analyst is concerned with array of activities that people actually engaged in while pursuing some task, rather than examining isolated components of IS application and assuming that they will be smoothly attached into a formal task system. Thus, Kling (1987, p. 313) suggests that a web analyst should start by asking questions such as “who are the key actors, what kinds of things they do here, what incentives influence their activities, and what organizational routines constrain their actions and choices?”.

There are on methods handbook for carrying out web analysis. Standard social research methods texts leave the definition of social and temporal boundaries to the discretion of the analyst. Kling (1987), however, in his web models approach sketched the elements of a web method for defining analytically useful boundaries in particular setting. He suggest that the web analyst begins with mapping the social and technical architectures of the IS application, and then characterizes the social contexts in which it is developed and used, and choices of social architecture framed. Following from that the web analyst maps the infrastructures which support the deployment of the IS application for various users. Then, the web analyst characterizes the history of key social relationships.

The starting questions focus upon the social relations people and organizations are playing out as well as the IS application tasks. The analyst identifies the key stakeholders and key groups who are linked to the IS application: IT vendors, IS service providers, resource controllers, etc. The analyst draws boundaries within organization that include these groups. Boundaries also extend to include actors who are located outside the organization under investigation.

After web analyst draws boundaries, he link the use of IS application to negotiations between identified groups, and to routines in communications, resources, etc. that regulate key social relationships between the identified groups. Event related to the IS application should be compiled to identify (1) key participants, (2) the history of commitments, (3) organizational style, (4) routines, and (5) other behaviour which drive and constrain organizational actions which strongly influence patterns of IS application development and use.

Kling (1987) admits that the web models approach is analytically more complex and somewhat cumbersome compared with other conventional analytical models since the web analysts have a more difficult time in defining boundaries using social criteria that lead to different boundaries in different settings. The web models approach, nevertheless, provides a useful approach for studying social behaviour in and around information systems in different organizational settings. It is especially appropriate when the production or support of information systems is socially complex, or their adoption or operation rely upon social relations that extend far beyond the behavioural setting in which the technology is developed or used.

4-6- The Research Investigative Framework

This section discusses the theoretical framework that has been constructed as an investigative device to guide the field and analytical work of the research. The research investigative framework draws on the theoretical rationale discussed in preceding sections. The investigative framework is essentially inspired by the research perspective on the nature of social process of IS strategy formation. The contextualism methodological approach is used as a basis for constructing the investigative framework. Ideas from the web models approach and the concept of metaphor of culture has been used as supplement to the contextualism methodological approach.

Pettigrew (1987, 1990) argues that the starting point for any contextualist analytical framework is the notion that forming the content of any new strategy inevitably entails managing the content, context and process of the strategy. He explains that contextualist analysis involves detailed questions about the content, context, and process of the phenomena under investigation, together with the interconnections between those three analytical dimensions.

In the following sub-sections, the three dimensions of content, context, and process of the contextualism methodological approach are revised in order to adopt them into the domain of IS strategy. In doing so, main concepts and general definitions of the three analytical dimensions will be discussed. This is followed by identifying major aspects and characteristics of the three dimensions. From that, the relationships between the three dimensions will be established. The research investigative framework as a whole will then thoroughly described.

4-6-1 - The Content Dimension - *The What*

The growing interest in strategic issues by academics and practitioners has led to the emergence of a body of research on strategy content. According to Fahey and Christensen (1986), three major categories have been found dominating strategy content researches in strategic management literature: goal, scope, and competitive advantage. Goal researches focus on organizational issues such as survival, performance, social conduct, and other fundamental positions or results that the organization has made a commitment to achieve. Scope researches, on the other hand, address organizational issues such as diversification, vertical integration, geographical expansion, strategic alliances, and methods for changing scope. Competitive advantage researches may focus on strategic groups and industry segmentation, determinants of business-unit performance, taxonomies of strategy types, stages of industry evolution, and signalling and competitive response. The issues related to the competitive advantage category represent both the static and dynamic dimensions of competitive strategy discussed in related literature (e.g. Hofer and Schendel, 1978; Porter, 1980). The three categories represent the major themes of the content dimension that managers need to consider in conducting strategy (Fahey and Christensen, 1986).

In the IS field, the dominant view assumes that the content dimension specifies the basic components and orientation of the IS strategy, such as scope, objectives, architectures, rules and plans (Earl, 1989). The scope represents the range of specific types of IS covered in the strategy. The objectives are the targets set for the IS function and the linkages between these targets and the business objectives. Objectives can be specific and quantified. The architecture aspect incorporates three categories: (1) is the

systems architecture identifies the application portfolio to be implemented in the organization and may consider as the core of the IS strategy; (2) is the technical architecture concerned with the IS infrastructure, that is, the hardware elements required to support the IS strategy; and (3) is the organizational architecture which defines tasks and responsibilities associated with implementing the IS strategy. The rules involve guidelines and policies that facilitate taking decisions. Finally, the plans provide guidelines for the IS projects priorities and budgets.

A close examination of the above view of the content of IS strategy reveals that this view, which is widely adopted in IS literature, perceives IS strategy as logical inferences and steps, and hence, it attempts to describe objectively the formal component of IS strategy content and considers it as a product of its formation activity. This perspective of the content dimension is likely to be reflected in the contents page of the IS strategy documentation. It reflects the rationalist view that previously argued is insufficient for understanding real life situations.

Earl (1989) constructs the organizational fit framework to describe the domains of IS strategy. The framework consist of three domains each contain particular elements of the content dimension of IS strategy. The first is the information systems (IS) strategy. It includes the scope and objective elements of the content dimension. The second is the information technology (IT) strategy. It is concerned with the architecture element. The third is the information management (IM) strategy. It covers the role element of the content dimension.

Later however, Earl (1998) adds a fourth domain to the framework in which he addressed the organizational strategy. The framework is illustrated in figure [4-4]. The contents of the organizational strategy set are often an account of which choices of IS, IT, and IM strategies are made.

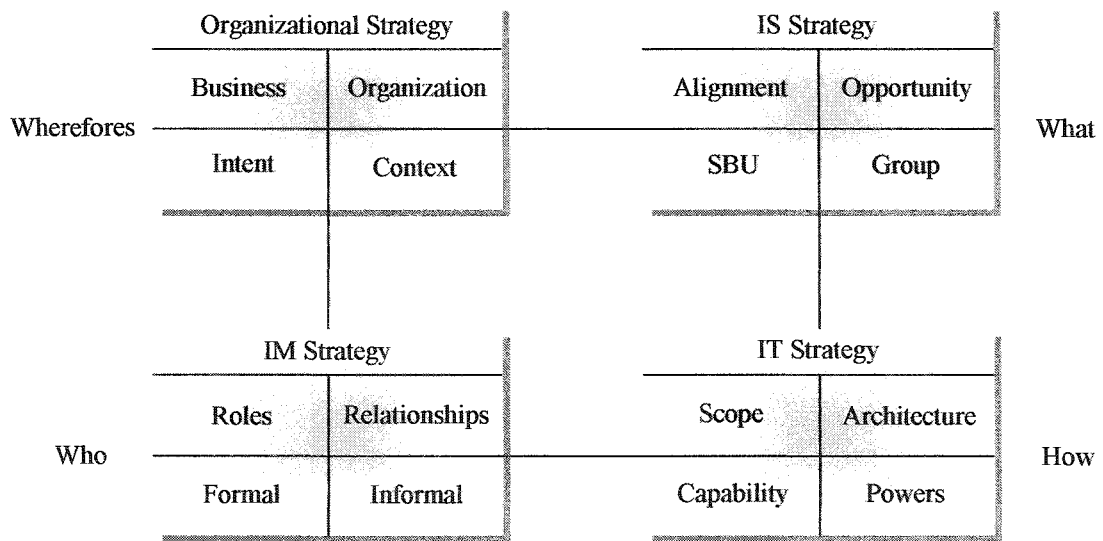


Figure [4-4]: The Organizational Fit Framework

Earl (1998)

An alternative view of IS strategy content, which is adopted in the investigative framework of this research, conceptualizes it as a vision for change (Pettigrew, 1987; Walsham, 1993). The content dimension in this view is concerned with bringing about changes to the organization. It involves planned changes to aspects of the organization such as technology, business processes, services and products, organization structure and roles, corporate culture. This vision for change which is

embodied in IS strategy either by deliberate design or as an emergent phenomenon, as described by Walsham (1993), appears to draw mainly from inherent organizational knowledge and is therefore too complicated to be reduced to a series of logical assumptions and steps as much of IS literature assumes.

The concerns within this view of content are focused on the norms and values that underpin the intended organizational strategy and its possible impact on the organization context, and on organizational involvement in defining the intended strategy. The view of content as vision for change is concerned with the dominating frames of thought of the organization that are behind the execution of the IS strategy formation effort, and understanding the organization's objectives, motivations, and thrusts. It is principally involved with the social organizational aspects that influence strategy content and its relationship and interaction with the other aspects of the IS strategy domain.

The content dimension focuses on the question of "*What*" is the organization's vision for change. The content can change over time with the possible changes in the organizational environment and, hence, can be conceived as having a fluidic nature. The content dimension is therefore sensitive to other aspects of IS strategy. It influences IS strategy aspects and is influenced by them. In essence, the content dimension alters the strategy process and can be viewed as an aspect of its context. Accordingly, the content dimension can only be understood and managed in terms of the strategy process and the organizational context.

4-6-2- The Context Dimension - *The Why*

In Chapter Two, it has been pointed out that previous researches on strategy that adopt rational perspectives can be criticised for not taking sufficient account of the organizational social context. Pettigrew (1985) argues that context is taken to refer to the competitive environment that exists beyond the notional organizational boundary. This functionalist view of context is reflected in some of the IS strategy formation literature (e.g. Earl, 1989; Robson, 1997) where context is considered as something that is separate from the organization and can be appraised in order that the organization can take the appropriate action in response. The social perspective of IS strategy formation taken in this research calls for full attention to its social context. Kling (1987) defines such context, in his web models approach, as including social, infrastructural, and historical elements.

The context dimension is described in the contextualism methodological approach as composed of two contextual levels: the "inner context" and the "outer context" of the organization. The inner contextual level involves aspects such as the structure, culture and politics of the organization. The structure aspect relates to both the formal framework of relationships within organization, and to multiple structures produced by the composite actions of individuals within an organization. The culture aspect includes the beliefs, meanings and relations used to legitimatise actions in organizations together with the languages, codes and rules that inform those actions. The politics aspect of an organization relates both to the internal distribution of power and the conflict of interests between the actors involved. Each has either direct or indirect bearing on strategy by the way they shape strategy in either their mode of formation or their

implementation. The external contextual level, on the other hand, incorporates aspects such as the economic, business, political, and social environment in which the organization operates (Pettigrew, 1990).

The context dimension can be seen as broadly concerned with the "*Why*" part of the IS strategy which can be derived from an analysis of the organization's internal and external environment. It includes a range of contextual levels that start from the organizational department within which a particular strategic IS decision is being made, moving to the whole organization, and then the national and international environment within which the organization is located.

In addition to the above relatively objective perspective of the dimension of contexts, a more subtle or subjective set of contexts can be addressed that include the various social structures embodied in the minds of the actors involved. Walsham (1993) argues that the actor's interpretation of reality and their shared and contested sense of the world, create complex interacting contexts within which IS strategy as a human artefact is drawn on.

Thus, in attempt to analyse the social context of IS strategy, it is not enough to consider contextual aspects of the organization in which the strategy is developed and aspects of the external environment within which the organization operates. It is more important to consider the social contexts represented by both constant and changing social practice and cultural attitude.

The context dimension is conceived here as broadly concerned with the social relationships between IS strategy and aspects of organizational life and the external environment over time. From this perspective context is not just a stimulus environment but, according to Pettigrew (1990, p. 270), “a nested arrangement of structures and processes where the subjective interpretations of actors preserving, comprehending, learning and remembering help shape processes. Thus processes are both constrained by contexts and shape contexts, either in the direction of preserving or altering them”.

4-6-3- The Process Dimension - *The How*

The process dimension involves the overall activities that organizations may undertake in order to develop IS strategy. In the IS domain, Das, Zahra and Warkenting (1991) describes the process dimension as the characteristic of the approach the organization follows in developing and implementing its IS strategy. They consequently suggest five aspects for IS strategy process namely: formality, scope, participation, influence, and coordination. Formality indicates the level of structure employed in the process of IS strategy formation. Scope refers to the comprehensiveness of IS strategy efforts and the extent of planning activities. Participation specifies the extent of the IS manager's involvement in the strategic decision making process. Influence refers to the ability of a person or a group to exercise formal or informal power to influence planning outcomes. Coordination indicates the degree of consistency, compatibility, and integrity of the various IS strategy dimensions.

Several studies have analysed the IS strategy formation process in terms of their key characteristics. For example, Segars and Gover (1998) in their study identify six IS

strategy formation process aspects. The aspects identified are: (1) comprehensiveness, (2) formalization, (3) focus, (4) flow, (5) participation, and (6) consistency. They argue that the internal alignment of these aspects should be positively associated with planning effectiveness.

There is a considerable literature relevant to IS strategy formation process. Studies have covered several processual issues. Issues covered include the difficulties in developing and implementing IS strategy (Lederer and Mendelow, 1986; Lederer and Sethi, 1988); taxonomies of IS strategy (Earl, 1993); strategic IS decision or IS strategy making (Sabherwal and King, 1995); the contingency relationship between IS strategy context and process (Raghunathan and Raghunathan, 1990; Premkumar and King, 1994); the need for linking IS strategy formation process with the business planning process (Boynton and Zmud, 1987; Henderson & Venkataraman, 1992); and the evaluation of these links (King and Teo, 1997).

Literature on IS strategy formation, therefore, suggests several variables that are relevant to the various aspects of IS strategy formation process, and though sometimes categorized and labelled differently, the importance of these IS strategy formation process variables are well supported by the studies mentioned above. Nevertheless, much of the IS literature recommend using a rational analytical process and implementation mechanisms while ignoring the potential effects of important social contextual factors. This, according to Sabherwal and King (1995), may explain why the strategy formation approaches are less adaptable to different organizational contexts and, hence, are overly deterministic.

In criticizing the rational analytical process of strategy, Pettigrew (1990, p. 658) argues that “there is no pretence to see strategic change as a rational analytical process of analysing environments, resources, and gaps, revealing and assessing strategic alternatives, and choosing and implementing carefully analysed and well thought through outcomes. . . Rather. . . the transformation of the firm is seen as an iterative, multi-level process, with outcomes emerging not merely as a product of rational or boundedly rational debates, the forces of bureaucratic momentum, gross changes in the environment, and the manipulation of the structural context around decisions”.

Pettigrew (1990, pp. 657-658) refers to the process dimension as “the actions, reactions and interactions from the various interested parties as they seek to move the firm from its present to its future state”. Walsham (1993) conceptualized it as a dynamic connection between action and context. Elements of context such as resources or perceived authority are drawn on by human actors to carry out actions. These actions consequently can strengthen the existing arrangement of resource distribution or power, or can create a new order of authority or meaning. Hence, the process dimension can be viewed as a dynamic social system that is in a constant state of flux and change.

The process dimension concerns the question “*How*” of the IS strategy. It is through this dimension that we capture the social complexity of the strategy formation. In order to do so, we need to find out “who champion and manage new strategies; what decision arenas and processes they emerge from; what models of change govern the conception and implementation, and how appropriate they are to the contexts in which the organization operates” (Whipp, Rosenfeld and Pettigrew, 1988, p. 19).

4-6-4- Description of the Research Investigative Framework

The main purpose of the proposed investigative framework was to guide the empirical research. It was intended to structure the collection of empirical data, and to structure the resulting case description and analysis. The investigative framework, as constructed for the purpose of this research, is expressed in a diagrammatic form in figure [4-5]. Each components of the investigative framework contains a collection of research themes and issues. The underlying assumptions for the choice of the conceptual components will be explained in some detail next.

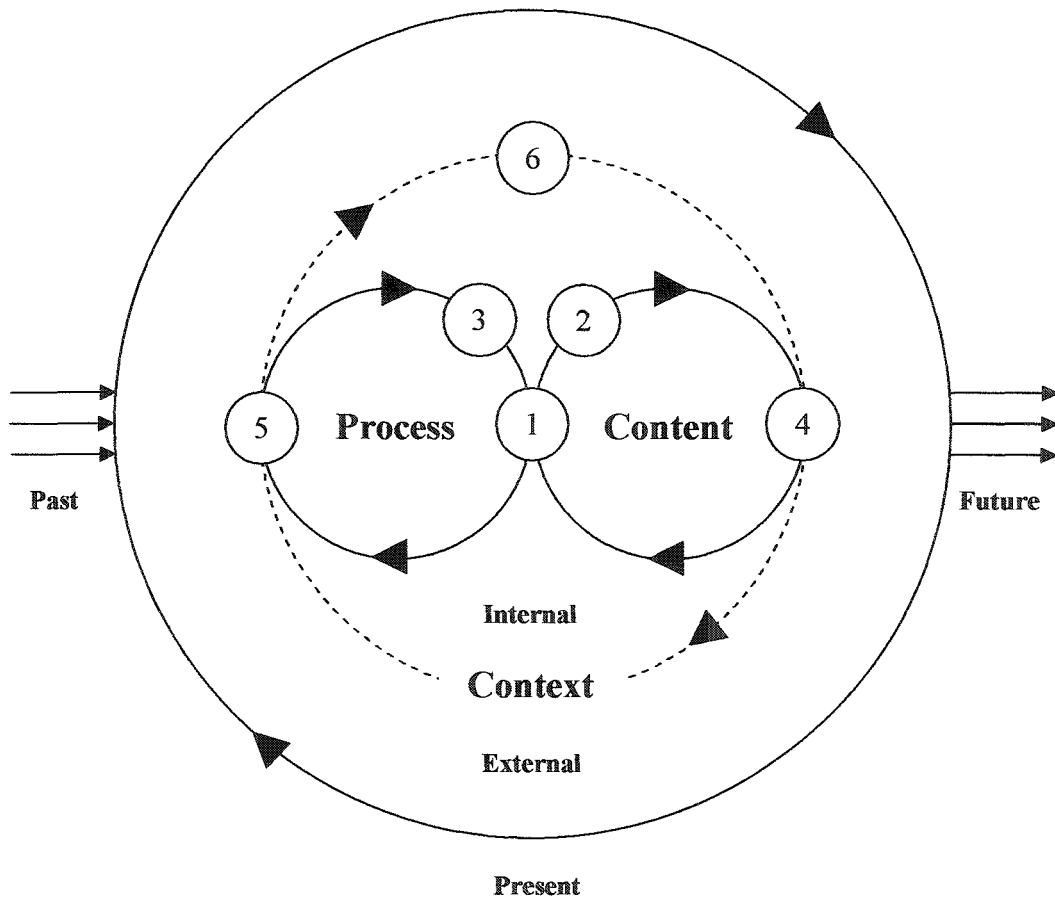


Figure [4-5]: The Research Investigative Framework

The contextual methodological approach requires clearly delineated, but theoretically and empirically connected sets of levels of analysis. Three broad levels of analysis have been identified in our investigative framework. The content of IS strategy and its formation process are the first and the focal level of analysis. The other two levels of analysis are concerned with the context dimension in which IS strategy formation take place. The first of the two contextual levels is the immediate organizational environment. It referred to as the "internal context" in the framework. The other is concerned with the wider organizational environment. It referred to as the "external context" in the framework.

Ideas from web models (Kling and Scacchi, 1982; Kling, 1987) have been adopted in the research framework to supplement the internal context aspects and to make it more specific to the IS domain. Contextual aspects, incorporated in the framework from web models, include the social relations between actors involved in IS strategy formation, the infrastructure available for its support, and the history of commitments made which influence the aspects of IS strategy of interest. Viewing internal context in terms of web metaphor helps to define context and focuses on important social aspects.

Whilst each of the three levels of analysis has been defined as separate entities, it is recognised that they are inextricably linked in practice. The circled numbers in the diagrammatic form in Figure [4-5] though does not reflect a linear sequence of activities they indicate these strong linkages in the investigative framework. The circle number **one** refers to the dynamic interlink between the content of IS strategy and it formation

process. Circle number **two** indicates the linkage between the content dimension and the internal level of the context dimension, while circle number **three** refers to the dynamic linkage between IS strategy formation process and its internal context. Circle number **four** suggests that there is a direct relationship between the IS strategy content and the external context that is not necessarily filtered through the internal context. Circle number **five** indicates the same idea between the process dimension and external context. Finally, circle number **six** refers to the linkage between internal and external levels of the context dimension, which full outside of the focus of this research. The dotted circle between the internal context and external context in the research investigative framework reflects the view that there are often no sharp borders between the two interconnected levels of context in real life situation.

Contextualist analysis requires a clear description of the process under examination. The process under examination in this research is concerned with the formation of IS strategy as a process of continuous discourse from which individuals communicate meaning that is based on norms and values, and linked to power in relation to others. It is a dynamic social system which in a constant state of flux and change in which events and actions are interconnected over time.

In addition, it is crucial to the contextualist analysis to consider the way in which the contextual aspects in the vertical analysis are linked to the process under investigation in the horizontal analysis. The linkages between context and process are explored by examining aspects of context that drawn on in process, and thus how these aspects of context were preserved or altered by process.

According to the principles of the processual analysis, organizations may be explored profitably as a continuing system, with past, present, and future. The research investigative framework, therefore, takes into account the history and future of the formation process of IS strategy and relates them to the present. In so doing, the strategy formation process itself can be seen as a continuous, interdependent sequence of actions and events that is being used to explain the origins, continuance, and outcome of some phenomena. The arrows on the circles in the diagrammatic form of the research investigative framework in Figure [4-5] indicate the constant state of flux and change of the three dimensions of IS strategy over time.

The research investigative framework is theoretically grounded in the existing literature. The broad theoretical approach used in constructing the research investigative framework has been to consider the social process of IS strategy formation in an organization by human actors within social context that are constituted by ongoing social actions. This approach, which is concerned with the process whereby social actors are engaged in generating and regenerating the social systems of which they form apart, is described as "constitutive process" theories (Walsham, 1993).

From the processual perspective, the research investigative framework is concerned with exposing the hidden world of the organization, where social values, political interests and structural inertia shape the formal instrument of reality. Its focus is more on the struggle within the organization as different social groups within the structure of the business compete for power.

From the social constructionist view, as reflected in theoretical approaches such as the social construction of technology and actor network, the framework is not concerned with the focal organization adapting to its environment but on the way in which social groups within and across organizations actually construct the realities that seem to confront them. From this perspective, the IS strategy is neither a concrete reality in its own right nor an outcome of political braining, but a resource which social groups use to construct reality.

Integrating elements from several theories within a constitutive process based framework, according to Walsham (1993), provides a new theoretical approach to research on the social aspects of IS. It is the development of such new theoretical approach to research on the social complexity of IS strategy is what make the subject of this research and the ends it seeks meaningful and worthwhile.

4-7- Summary

This chapter has discussed the theory of methods that the research used for considering the social complexity associated with the formation process of IS strategy in practice. The chapter started by highlighting the research perspective on the nature of social process of IS strategy formation. It is concluded that a thorough interpretation of IS strategy formation in practice entails a profound understanding of its social process and its interplay with social contexts over time. Following from that, the theoretical approach from which the research investigative framework is constructed was considered. The construction of the research investigative framework is based on the on the methodological approach of contextualism, and supplemented by ideas from work on the web models approach. A detailed description of the research investigative framework is then provided.

The research investigative framework as described in this chapter requires a proper research methodology that enables the collection of empirical data on IS strategy content, context, process, and the dynamic relationships between them over time. In the following chapter, the research methodology and main issues of the research process will be discussed.

CHAPTER FIVE

RESEARCH METHODOLOGY

5-1- Introduction

The research methodology adopted in this work was a contextualised, interpretive one, employing longitudinal in-depth case study approach. From the interpretive tradition, knowledge of reality is viewed as necessarily a social construction and thus a shared subjective experience. This emphasizes the need for thorough understanding of human meanings in context. In this sense, interpretive research grounded the phenomenon under study in its complex, multi-faceted and dynamic social context, and hence produces an insightful understanding of the context, and the process whereby the phenomenon such as IS strategy formation influences and is influenced by its context. Adopting this broadly interpretive theoretical stance on the nature of knowledge, the longitudinal in-depth case study is considered to be the most appropriate approach for conducting this research.

This chapter represents the methodological considerations that underpin this research. It first discusses the status of IS research approaches, the factors that influence the selection of the appropriate approach, and the selection of case study as an approach for conducting this research. The chapter then discusses the important issue of the criteria adopted for conducting this research. Data collection and analysis processes are then described in some details.

5-2- The Research Approach

The purpose of this section is to discuss the rationale for choosing interpretive longitudinal case study as a research approach appropriate for studying IS strategy formation in organizations. The discussion takes account of current thinking in IS research, the criteria for selecting the appropriate approach, and the case study as an approach for this research.

5-2-1- Development in IS Research Approaches

In an earlier review of IS research and disciplinary development, Alavi and Carlson (1992) noticed that since the mid-1980's, there has been a shift in IS research efforts from non-empirical research that essentially focus on purely conceptual work to empirical research that focus on testing and constructing empirically based theories. It was also noticed that almost all the approaches used in the IS empirical researches characterized as traditional and reflecting positivist orientation.

In a later study, Markus and Lee (1999) argue that the acceptance of qualitative research in IS field became so total in the 1990's that serious challenges to the legitimacy of such research no longer arise. They assert that the acceptance of the methodological diversity in IS research will enable researchers to move beyond methods into the unique subject matter of the field.

Lately, WenShin and Hirschheim (2004) examined 1893 articles published in eight major IS publication outlets between 1991 and 2001. Their findings suggest that the positivist research still dominates (81%) of published empirical research. USA

journals, as apposed to the European journals, tend to be more positivists, quantitative, cross-sectional and survey oriented. With respect to research design, survey research is still the most widely used method and represents (41%) of the published research. Case studies have gained substantial recognition and represents (36%) of the published research. The study found that qualitative research increased by (30%), empirical studies by (61%), and longitudinal cases by (33%) at the expense of laboratory experiments which reached only (18%). These findings suggest that IS research have become more interested in obtaining scientific knowledge in real world settings. WenShin and Hirschheim (2004) advice that the long-term endeavours of interpretivist researchers might need to continue because the paradigmatic progress appears somewhat inconsequential.

5-2-2- Taxonomies of IS Research approaches

Several taxonomies of IS research approaches have been developed over the years (e.g. Van Horn, 1973; Hamilton and Ives, 1982; Galliers and Land, 1987). In a review of the range of approaches that have been advocated as being suitable for IS research, Galliers (1991) divides the IS research approaches into two categories:

- 1- Scientific approaches
- 2- Interpretivist approaches

Scientific approaches are those characterized by repeatability, reductionism, and refutability. They assume that observations of the phenomena under investigation can be made objectively and rigorously. Interpretivist approaches on the other hand, argue that the scientific philosophy is misplaced in social science enquiry because of the

possibility of several diverse interpretations of social phenomena, the impact of the researcher on the social system being studied, and the problems associated with forecasting future events concerned with human activities (Checkland, 1981).

The IS research approaches in the context of the scientific and interpretivist categories are provided in Table [5-1].

Scientific	Interpretivist
Laboratory Experiments	Subjective / Argumentative
Field Experiments	Reviews
Surveys	Action Research
Case Study	Descriptive / Interpretive
Theorem Proof	Future Research
Forecasting	Role / Game Playing
Simulation	

Table [5-1]: IS Research Approaches

After Galliers (1991)

Whereas Table [5-1] provides a general categorization of IS research approaches, it is important to notice that allocation of a particular approach to one category should not preclude its use in the other category. For example, there could be some debate whether the case study approach should be listed under the scientific category or should fall within the interpretivist category. Galliers (1991) argues that he decided to include it in the scientific category since many of its exponents classify it thus.

Klein and Myers (1999) have used Chua's (1986) categorization of research epistemology in order to classify IS research into the following:

- 1- Positivist
- 2- Critical
- 3- Interpretive

According to this classification, IS research is consider as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from a sample to a stated population (Orlikowski and Baroudi, 1991). IS research is consider as critical if the main task is seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are highlighted. IS research is consider as interpretive if it is assumed that our knowledge of reality is gained through social constructions such as language, consciousness, sheared meanings, documents, tools, and other artefacts.

5-2-3- Selecting the Appropriate Research Approach

Benbasat (1985) identifies three ways to select research strategies for the subject of management support systems that can be applied equally to other IS research subjects. The three proposed ways include:

- 1- Assessing the approaches independently, that is without reference to the research problem;
- 2- Utilising a number of complementary research approaches to overcome the limitations of any individual approach.; and
- 3- Selecting the research approach based on the nature of the research problem.

In a later article, however, Benbasat, Goldstein and Mead (1987) advice that the research approach should be selected based on the goals of the researchers and the nature of the research topic. Hamilton and Ives (1982) argue that the key to good research is not just choosing the right research strategy, but in asking the right question and selecting the most effective approaches for answering the questions given the objectives, research setting, and other salient factors.

There are several principles that the researcher may consider in selecting the appropriate research approach. Four essential factors that believed to have a significant influence in conducting this particular research have been taken into account in selecting the research approach. Each factor represents an important segment of the research. The four factors are as follow:

- 1- The researcher own philosophy;
- 2- The nature of the subject of the research;
- 3- The research context; and
- 4- The research constraints.

In the following, the influence of each factor in selecting the approach for this research will be discussed in some details.

5-2-3-1- The Researcher Own Philosophy

Guba and Lincoln (1994) define paradigms as a set of beliefs about the nature of social reality, that is, the nature of the world and the individual's place in it. They note that a paradigm has three dimensions:

- 1- What is the form and nature of reality (the ontological question)?
- 2- What is the relationship between the researcher and what can be known (the epistemological question)?
- 3- How does the researcher find out whatever they believe can be known (the methodological question)?

It is important to keep in mind that paradigms are assumptions that are not subject to proof. They are human constructions that are neither right nor wrong. Proponents must argue for their utility (Guba and Lincoln 1994).

In this research, the researcher adopts a broadly interpretive theoretical stance on the nature of knowledge. From the interpretive tradition, knowledge of reality is viewed as necessarily a social construction and thus a shared subjective experience. This emphasizes the need for thorough understanding of human meanings in context. In this sense, interpretive research grounded the phenomenon under investigation in its complex, multi-faceted and dynamic social context, and hence produces an insightful understanding of the context, and the process whereby phenomenon such as IS strategy formation influences and is influenced by its context.

From this broadly interpretive theoretical stance on the nature of knowledge, the interpretive tradition of the case study research appears as the most appropriate approach to investigate the social complexity associated with the formation process of IS strategy in practice.

5-2-3-2- The Nature of the Subject of the Research

In considering the nature of the subject of the research, the IS literature suggest that increasing interest in social issues associated with IS adoption in organizations has led many researchers towards research approaches that concentrate upon understanding social phenomena in their natural setting and cultural context (Pettigrew, 1985, Walsham, 1995; Darke, Shanks and Broadbent, 1998). Thus, for the purpose of this research of developing insightful understanding of the social issues associated with IS strategy formation phenomena, it is necessary for a long-term research to take place whereby the interaction between the IS strategy formation process and social aspects of the organizational context can be analysed over time. Again, the longitudinal case study approach fits perfectly with the nature of the subject of this research.

5-2-3-3- The Research Context

The research context is an important factor that has a direct effect in selecting the research approach. The selection of the research setting, as will be explained in the following section, is subject to many considerations. Contextual issues associated with the research setting may largely determine the appropriate approach for conducting the research. For example, action research is a widely used in IS research (Checkland, 1991; Baskerville and Wood-Harper, 1998). It allow the researcher to be actively involved in the problem situation, while in the same time reflecting upon, and integrating the evaluative outcome of the researcher own and others interventions in the situation. Schon (1983) argues that the reflective engagement in the problem situation is an essential part of action research. It represents the means of learning and adapting the action that one takes (Checkland, 1991). Action research can provides practical results

of value to organizations under investigation, while at the same time adding to the body of theoretical knowledge. The level of the involvement with the organization under investigation that was obtainable for the researcher, as will be explained in the researcher roles section, was a part-time consultancy service. The researcher provides the organization with the consultancy service as required. This situation is not suitable for the researcher to be actively involved in the problem situation which is an essential part of action research approach. Thus, action research has been excluded as an approach for this research. The case study approach has been found as more suitable for this particular research context. It can provide the flexibility required for the mode of involvement that was possible in this research.

5-2-3-4- The Research Constraints

Research constraints in terms of time, resource availability, and geographic location are part of the reality of the research. Such constraints are impossible to disregard in determining the research approach. Several alternative approaches eliminated because of the distinctive constraints of this research. For instance, ethnography is an approach that would enable the researcher to get close to the activities surrounding the phenomena under study. It enables comprehending the view of the natives by illustrating the way in which individuals constitute and interpret organizations on a daily interactional basis (Schwartzman, 1993). However, ethnography necessitates an ongoing immersion of the researcher in the organizational setting. Giving the time required to be spend in the research setting, the complexity associated with the geographical location, and the resources required for conducting the research in such manner, ethnography was consider as inappropriate for this research.

Consideration of the research constraints and the other three influential research factors discussed above, entail case study as the most appropriate approach that serve the purpose and circumstances of this particular research.

5-2-4- Case Study as a Research Approach

Case study research approach has been defined as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not evident.

Case study approach can be used in several ways from within different research perspectives using a variety of data collection and analysis methods. It can be undertaken from a positivist or interpretivist paradigm, may be deductive or inductive, may involve single or multiple cases and may use qualitative and quantitative data.

Case study approach can be used to achieve various research aims. Nevertheless, case study has often been associated with providing description of a particular phenomenon and with theory development and testing. It is widely used to present evidence for hypothesis generation and for exploration of areas where existing knowledge is limited (Cavaye, 1996).

The focus in the case study research is on in-depth understanding of a phenomenon and its context but does not involve explicit control or manipulation of variables. It tends to be selective, focusing on particular issues that are fundamental to understanding the phenomenon under investigation (Cavaye, 1996).

Benbasat, Goldstein and Mead (1987) delineate case study as primarily suitable for exploratory study, and identify several characteristics of case study research namely:

- Phenomena are examined in natural setting.
- Data are collected by multiple means.
- The research is directed at the exploration, classification and hypothesis development stages of the knowledge building process.
- No Experimental controls or manipulation are involved.
- No independent and dependent variables specified in advance.
- The results derived depend heavily on the integrative power of the investigator.
- Changes in site selection and data collections could take place as the investigator develops new hypotheses.
- The concerns are with "why" and "how" rather than frequency or incidence.
- One or few entities (person, group, organization) are examined.
- The complexity of the unit is studied intensively.

Case study research is particularly appropriate for IS research (Benbasat, Goldstein and Mead, 1987; Myers, 1997; Myers and Avison, 2002). Longitudinal case study in particular has been recognized as having a high potential for IS research (Myers, 1997; Walsham, 1993). A number of different perspectives underpin the longitudinal approach. One of which is of Pettigrew (1990) in which he expands on the concept of contextualism as an appropriate approach to research in organizations. Pettigrew (1990) argues for studying the event in its setting and see that the truth theory has to be qualitative conformation since the context will change, and knowledge will need to change as well and the root metaphor is the historic event. The longitudinal

approach provides a way of understanding the relationships, if any, between variability in context, variability in processes, and variability in outcome.

5-2-5- Single Site Case Study Research Design

The use of a single site case study design as a basis in this research for drawing inferences about the social complexity of IS strategy formation in practice was principally related to the researcher epistemological stance on the nature of knowledge. Walsham (1995) argues that, from an interpretive stance, the validity of an extrapolation from one or more individual cases depends not on the representativeness of such cases in a statistical sense, but on the plausibility and cogency of the logical reasoning used in describing results from the case, and in drawing inferences and conclusions from those results. Similar point can be drawn from Orlikowski and Baroudi (1991) study in which they argue that every particular social relation is a product of generative forces or mechanisms operating at a more global level. Hence, an interpretive analysis is an induction, guided and couched within a theoretical framework, from the concrete case situation to the social totality beyond the individual case.

In this research, the purpose was not to achieve statistical generalization from the case study but rather analytic generalization. Walsham (2002) pointed out that generalization of results, from either single or multiple case study research designs, is made to theory and not to populations. The research reported here, therefore, contributes to existing knowledge by developing analytical propositions to a wider body of theory. A good example of the significant contribution to knowledge arising out of the insights from a single site case study is the work of Markus (1983) on resistance to the

implementation of a financial information system. Another example is the work of Boland and Day (1989) on the experience of systems design from the perspective of a systems analyst employed by a credit company.

5-2-6- Limitations of Case Study Research

There are, however, several disadvantages that have been claimed to be associated with the use of case study research regardless of the philosophical perspective adopted or the way in which the case study employed in the research strategy. One of the main claimed disadvantages of the case study approach involves the issue of the researcher prejudice, which although could be made known so as any bias can be account for, yet has been contend to have the possibility of leading to a vague interpretation of reality. This has been argued may limit the validity of the research findings. Another disadvantage is concerned with the difficulties associated with qualitative data analysis, and the volume and variety of data collected may make analysis time-consuming (Miles and Huberman, 1984; Cavaye, 1996).

A range of methodological majors has been carefully considered in order to overcome the possible limitations of the case study approach. For example, the researcher role and his interaction with the respondents in the research setting have been fully explained to acknowledge any possible prejudice. Reputable methods have been used for data management and analysis (e.g. Miles and Huberman, 1994; Rubin and Rubin, 1995). Adopting a set of criteria, Klein and Myers (1999) suggest, would also help overcoming limitations of interpretive case study research. The criteria adopted in conducting this researcher will be explained in detail in a subsequent section.

5-3- Criteria of the Research

In the view of the interpretivism tradition adopted in this research, the aim in this section is to identify explicitly what is believed to be appropriate criteria that can be use as guidelines by which to conduct, report, and judge this research. In the following, the suggested criteria are discussed and the ways in which those criteria applied to this research is then explained.

As discussed earlier, interpretive research has been emerged as a valid and important approach to IS research. However, compared to the historical debate on the core assumptions of positivist researches, the advocates of interpretivism have been relatively silent (Klein and Myers, 1999). The nature and purpose of interpretivist research differs from positivist research (Harvey and Myers, 1995; Lee, Libenau and DeGross 1997; Walsham, 1995). Therefore, the methodological principles formulated for conducting and evaluating, for example, a case study that is consistent with the conventions of positivism (e.g. Benbasat, Goldstein and Mead, 1987; Yen, 2002) may not be appropriate for interpretive case study research (Orlikowski and Baroudi, 1991). They differ in their philosophical assumptions, research procedures, generalizability arguments, and the form of the written research report (Markus and Lee, 1999).

Although it has been generally argued that the interpretive research dose not subscribe to the idea that a pre-determined set of criteria can be applied in a mechanistic way, yet, there have been calls from several scholars (e.g. Lee, Libenau and DeGross 1997; Markus and Lee, 1999) to explicitly discuss the possible criteria for conducting and evaluating interpretivist research.

Klein and Myers (1999) have addressed the criteria issue and proposed a set of principles for conducting and evaluating interpretive field study in IS. The suggested principles are based on the practice of anthropological research and the underlying philosophy of phenomenology and hermeneutics. Thus, they are firmly grounded in a major direction of interpretive philosophy. While the suggested principles seems to violate the emergent nature of the interpretive research, Klein and Myers (1999) believe that their proposed principles are consistent with a considerable part of the philosophical base of literature on interpretivism and hence improvement over the status quo. They further believe that it is better to have some principles rather than none at all in order to eliminate the risk that interpretive research will continue to be judge inappropriately.

As interpretive research takes many different forms, not all of which are hermeneutic in orientation, Klein and Myers (1999) emphasize that their suggested principles apply mostly to the conduct and evaluation of interpretive field study of a hermeneutic nature. Although the suggested set of principles is just one of many plausible and valuable sets of principles for conducting interpretive research, nevertheless, it has been found valuable for this research as they sum up important insights in interpretivism that are not, hitherto, largely embedded in the practice of interpretive field research.

Table [5-2] summarize the suggested seven principles for conducting and evaluating interpretive field research. Each of the seven principles and its implication for this research will be then discussed in some details.

#	Principles
1	The Fundamental Principle of the Hermeneutic Circle This principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. This principle is fundamental to all the other principles.
2	Principle of Contextualization Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.
3	Principle of Interaction between the Researcher and the Subject Requires a critical reflection on how the research materials or (data) were socially constructed through the interaction between the researcher and participants.
4	Principle of Abstraction and Generalization Requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action.
5	Principle of Dialogical Research Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings (the story that the data tell) with subsequent cycle of revision.
6	Principle of Multiple Interpretations Requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.
7	Principle of Suspicion Require sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the participants.

Table [5-2]: Summary of Principles for Interpretive Research

After Klein and Myers (1999)

5-4- Applying the Criteria of the Research

Klein and Myers (1999) argue that none of the principles, when taken individually, is necessarily complete. Hence, each of the principle is used to discover or better understand a significant part of the case study that contributes to an understanding of the subject as a whole. Nonetheless, it is important to keep in mind that even using all the suggested principles in any particular research cannot grantee an interesting result. Interesting result still requires considerable creative thought. It is incumbent upon interpretive researchers to appropriate the suggested principles and use their own judgement as to their specific application (Klein and Myers, 1999). In view of that, the suggested principles will be used as guidelines for conducting this research and evaluating its outcomes. The seven principles and the way in which they have been applied in this research will be discussed next.

5-4-1- The Fundamental Principle of the Hermeneutic Circle

The hermeneutic circle principle is foundational to interpretive work of hermeneutic nature and can be consider as a meta-principle upon which all other principles expand. The hermeneutic circle principle suggests that “we come to understand a complex whole from preconceptions about the meanings of its parts and their interrelationships” (Klein and Myers, 1999, p. 71). The process of interpretation moves from a precursory understanding of the parts to the whole and from the understanding of the whole back to improved understanding of each part. The principle of hermeneutic circle is conveniently used in this research to move back and forth between the different interpretations of the field data. The aim is to fill in any gaps in the field data and to resolve contradictions in the field data that may persist.

5-4-2- Principle of Contextualization

The contextualization is one of the most fundamental principles adopted in this interpretive case study research. In the view of the contextualization principle, the aim is to explore the social and historical context within which the involved actors and the organization as whole operate. This principle contributes to the overall understanding of the historical forces affecting the organizational IS strategic decision under investigation. All participants are portrayed as actors and not simply as passive respondents to a situation over which they have no control. In this particular research, the subject matter has been placed in its social and historical internal and external context. The context has been placed at early stage in the presentation of the case, which is more common in interpretive field study IS research (e.g. Orlikowski, 1991; Walsham and Waema, 1994). In attempt to be comprehensive, this research provides a detailed discussion of the multi-level analysis of context of the public services organization under investigation, and an overview of the events and actions over the whole period in the public services organization from 1985 to 2004.

5-4-3- Principle of Interaction between the Researcher and the Subject

As a result of the researcher pervious experience with the research setting, the principle of interaction between the researcher and the subject has been given careful attention in this particular research. Participant observation, as will explained in the data collection section in this chapter, forms the second source of the data collection. Interaction with participants enables acquiring real-time data necessary for the processual analysis nature of this research. It provides a valuable source to update empirical data, and to discuss, as needed, the emergent themes from the case description

and analysis process. The role of the researcher in the research setting has been recognized as highly significant in maintaining the social interaction with the participants. Thus, the role of the researcher in the research setting has been explicitly acknowledged in this research and its effects have been reflected upon. Main ideas of the principle of interaction between the researcher and the subject will be discussed in more details in the data collection section.

5-4-4- Principle of Abstraction and Generalization

The interpretivist tradition values the documentation of unique circumstances and adopts the view that human affairs are not governed by natural laws that are culturally independent. In spite of this, Klein and Myers (1999) point out that there is a philosophy basis for abstraction and generalization in interpretive field studies, and thus argue that interpretive research may relate particulars to very abstract categories, that is, unique instances can be related to ideas and concepts that apply to multiple situations. Walsham (1995) identifies the development of concepts, the generalization of theory, the drawing of specific implications, and the contraption of rich insights as four possible types of generalization from interpretive case studies. Walsham (1993) argues that the validity of the inferences drawn from one case or more cases does not depend on the representativeness of cases in statistical sense, put rather “on the plausibility and cogency of the logical reasoning used in describing the results from the cases and in drawing conclusions from them” (Walsham, 1993, p.15).

The principle of abstraction and generalization emphasizes the crucial role that theory plays in interpretive research. It argues for the importance of relating the

theoretical abstraction and generalizations to the field study details as they collected which allow following how the researcher arrived at theoretical insights. The interest in this research is in developing analytical propositions to a wider body of theory (Miles and Huberman, 1994; Walsham, 1995). To this end, the research draw on Pettigrew's (1987, 1991) contextualism and Kling's (1987) web models as a theoretical foundation. A theoretical framework has been constructed and used as a theoretical device to collect, describe, and analyse empirical data from the case study. Through interpretation of the case study, the theoretical ideas have been explored as they related to the case details. The case study rich description and analysis are then used to generalize to theoretical constructions of interest of the wider IS research community.

5-4-5- Principle of Dialogical Research

Following the principle of dialogical reasoning, it has been explicitly acknowledged in this research that the researcher pervious experience in practice has shaped much of the initial preconceptions of the research topic. The researcher preconceptions formed the intellectual bases for the research design, and provided an important starting point for developing understanding. The purpose of explicitly acknowledging the historical intellectual basis of the research is to make the researcher preconceptions, which guided the original research design, as transparent as possible.

The research reported herein has been informed by the researcher preconceptions about IS strategy formation process, which initially have been shaped by the researcher pervious hands-on experience in practice. Contrary to the theoretical position perceive IS strategy formation as a rational process that can be carried out using prescribed steps,

the researcher previous experience affirm that IS strategy formation is rather a complex social process. These preconceptions, which then enriched through intensive review of relevant literature, have led to the use of general social theories such as contextualism and web models as a theoretical base for undertaken the field work. The researcher preconceptions form the intellectual bases for the research design, and provide an important starting point for developing understanding.

The acknowledgement of the researcher owns historicity provides information that help understanding the way in which the research theoretical perspective emerged. The interest in applying the dialogical reasoning principle is to confront the researcher preconceptions with the data that emerge through the research process. The possible contradictions between the preconceptions guiding the research design and the research actual findings are then carefully considered. The implication of applying the dialogical reasoning principle has been reflected upon in the research conclusions chapter.

5-4-6- Principle of Multiple Interpretations

Central to this research is the notion that human actions are conditioned by a social context involving multiple agents. Accordingly, main interest of this research is to examine the influence that the social context has upon the IS strategy formation process. Thus, it was of particular importance to apply the principle of multiple interpretations, which requires the researcher to seek out and document multiple viewpoints along with the reasons for them. In this research, viewpoints of various stakeholders involved with the process of IS strategy formation have been considered. The analysis has been focused upon understanding conflicts related to influential social

aspect of context. The intent, based on the multiple interpretations principle, is to confront the contradictions potentially inherent in the multiple viewpoints with each other. The results of this process are then used to revise the researcher understanding of the subject (Ricoeur, 1974).

5-4-7- Principle of Suspicion

The principle of suspicion is of heuristic value as it leads to searching beneath the surface of the words of the participants. It encourages critical thinking and the discovery of false preconceptions. While there is a considerable disagreement among interpretive scholars concerning the extent to which social research can be critical (Walsham, 2005), the interest in this particular research is on the world of social relations between actors involved in the IS strategy formation process. Thus, the intention is to go beyond understanding the meaning of the data to read the social world behind the plain words of the participants.

By reading the social world behind the words, we should be able to explore and make sense of the structure of the social interactions that shaping the organizational culture. From that understanding we can identify subtle, yet powerful pragmatic moves of social actors to meet goals instrumentally and continually reproduce social relation along the way (Kling, 1996).

The seven principles have been wholly respected and cautiously applied as guidelines for conducting this research and evaluating its outcomes. The level of adoption of each of the seven principles varied according to its implication for the

research process. Table [5-3] provides an overall summary of the previously discussed principles and the way in which they have been applied in this research.

#	Principles	Their use in the research
1	The fundamental principle of the hermeneutic circle	Applied and considerable recognition has been given to it.
2	Principle of contextualization	The social and historical context within which the involved actors and the organization as whole operate explored.
3	Principle of interaction between the researchers and the subjects	Social interaction between participants and the researcher has been carefully addressed.
4	Principle of abstraction and generalization	Pettigrew's theory of contextualism has been used with focus on IS strategy formation process.
5	Principle of dialogical research	The intellectual basis of the research was made clear, and the dialogical aspects discussed.
6	Principle of multiple interpretations	Alternative viewpoints are presented, with focus upon key stakeholders.
7	Principle of suspicion	Views and actions of various stakeholders examined from a socio-cultural perspective.

Table [5-3]: The Exercise of the Seven Principles

After Klein and Myers (1999)

5-5- Research Process

A host of theoretical and practical issues need to be addressed in conducting interpretive case study research (Van de Ven and Huber, 1990; Mills and Huberman, 1994; Silverman, 2001). In the following, the research overall process will be outlined. Then, the important issues of data collection and analysis as conducted in this research will be addressed.

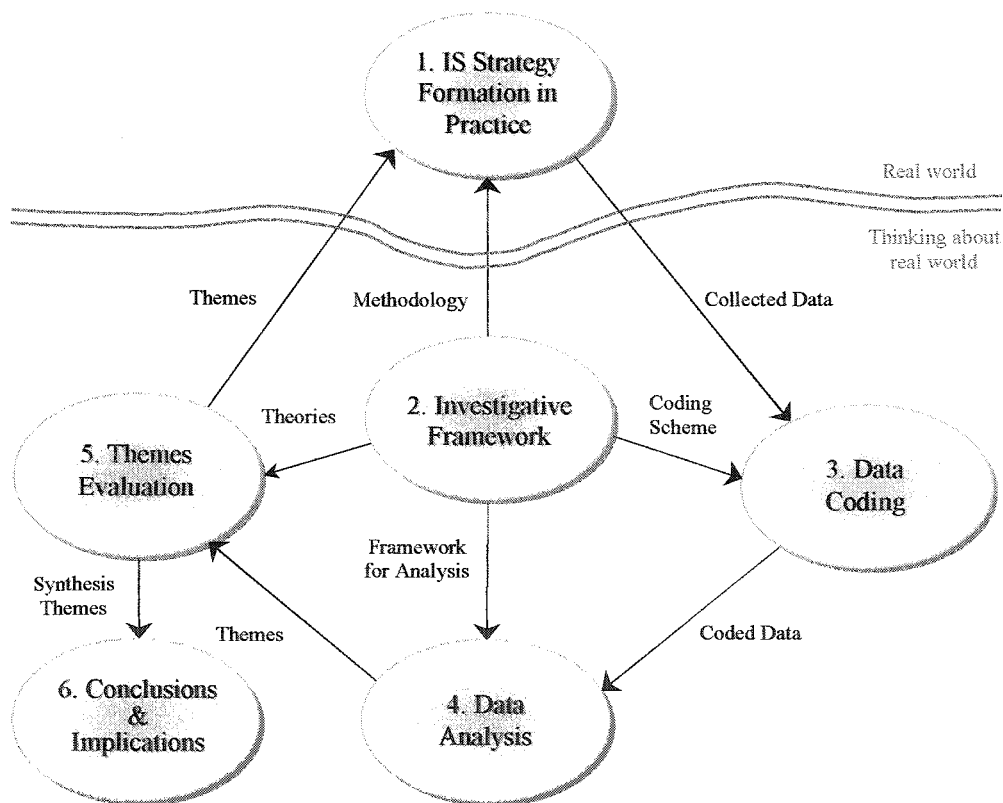


Figure [5-1]: The Research Overall Process

After identifying the research topic, its aim and objectives, and reviewing the literature in the subject, the research process, as illustrated in Figure [5-1], starts by constructing the research investigative framework from the research theory. The

research methodology is then designed. AS the data collection process started, the research investigative framework provides the necessary theoretical categories for coding the collected data. Coded data is then analysed by the means of the research investigative framework to capture significant themes. Abstracted themes are constantly evaluated against the theories underlying the research investigative framework. Themes are also reevaluated in the research setting. Key themes are then synthesised and placed in the context of broader theories in order to build an integrated explanation to enhance our understanding of the IS strategy phenomena.

The research investigative framework plays a central role in the research process. It provides the basis for the research design and thus for choosing interpretive longitudinal case study as an appropriate approach for studying IS strategy formation in practice. The framework is also intended to guide both the data collection and data analysis process. It is therefore used as an instrument to facilitate the design and conduct this research. It provides the guidance for structuring the categories for coding data. It also provides necessary measures of overlap between the case study analyses and data collection so that they informed each other.

While the data analysis goes through several iterations as more data become available, the emerging themes are constantly evaluated against the theoretical assumptions incorporated into the research investigative framework. This process enabled the researcher to maintain an ongoing dialectic between data analysis and theoretical work. The whole process reflects what Glaser and Strauss (1967) refer to as the constant comparative.

5-5-1- Data Collection

The process of data collection begins when the researcher develops a set of categories to combine the data. The categories are considered constructs, each representative of a certain element of the IS strategy formation phenomena. Qualitative data collection is typically multi-method, usually involving interviewing, observing, and analyzing documents. By using multiple sources of information the researcher is able to validate and cross-check findings (Creswell, 2003).

The data collected using three different sources. Interview was the main source for data collection. The second source was the participant observation. Detailed analysis of documentary data was the third source for data. Table [5-4] summarise the strength of each source of data. The three sources of data used in this research will be described in the subsequent subsections.

#	Source	Strength
1	Interview	Provides depth, subtlety, and personal feeling.
2	Participation	Provides access to group processes, and confront researcher with discrepancies between what individuals have side in interview and what they actually do.
3	Documentary	Provides facts.

Table [5-4]: Data Sources Strengths

After Pettigrew (1990)

5-5-1-1- Interviews

Altogether 34 face-to-face interviews were arranged with participants in the research setting. The average length of interviews was approximately 90 minutes. Table [5-5] summarise the interviews conducted. A more detailed description is provided in Appendix I. The interviewees represent key persons from all parties involved with the IS activities in the organization. They were normally persons in administrative positions toward the information systems. Primary in-depth interviews with key participants provided the main source of empirical data. Another interviews session carried out to fill gaps in the data and to test the emerging themes from the preliminary data analysis.

Interviews	Interviewees	Average Time	Total Interviews Time
34	24	90 min.	51 hr.

Table [5-5]: The Interviews Summary

The interviews method as used in this research has been shaped by four particular issues, which have been at the heart of the interpretive tradition adopted. Firstly, interviews were conducted using mainly loosely structured interviews. Despite the help of the research investigative framework to guide the interviewing, the interviews were more like casual conversations between colleagues within the organization, in which the participants were encouraged to express their views fully. The aim was to achieve openness and sincerity with participants, in a culture that is highly sensitive towards expressing personal opinion about official issues.

Secondly, the interpretive nature of this research implies that interviews involved exploring the shared meanings that individuals develop as they interact with the process of IS strategy formation in their organization. Thus, a particular attention has been paid in this research to the way in which individuals inform their version of the story, and the symbols and metaphors they use to describe their experience (Rubin and Rubin, 1995). Applying the principle of multiple interpretations discussed earlier, different versions of reality had to be considered and listened to during interviews.

Thirdly, although the research investigative framework has broadly guided the interviews conducted, the researcher was aware not to relay entirely upon the research investigative framework guidance at the expense of other related issues that the interviewees may wish to discuss. The intention was not to limit the possible experience-based insights that the participants may provide.

Fourthly, much effort has been given to avoiding the affects of the researcher preconceptions of the topic and the research setting. All possible precautions have been taken during conversations with participants to avoid imposing the researcher own preconceptions. Similar precautions have been taken in analysing data. There was a careful consideration not to dismiss any versions of an event no matter how conflicting it was with the researcher version or other participants' versions. It was accepted that they may all have been valid interpretation of events, and yet different.

Audio recording is an increasingly important part of qualitative research. Recording and transcripts can offer a highly reliable record to which researchers can

return as they develop their analysis (Silverman, 1994). However, for the cultural considerations of the research setting, it was believed that audio recording might not be favourable. The assumption was that the presence of the audio recorder would enforce formal responses from the participants. The researcher may therefore end up with an excellent record of deficient data. Short written notes have been taken when appropriate during interviews. Fuller notes were made immediately afterwards in a form designed for that purpose. The form starts by the interview date and time and the interviewee name and position. A complete transcript of the interview conducted is then included. The field notes recorded impressions and questions that might assist with the interpretation of the interview data. The researcher made note of stories told during interviews and flagged them for potential use in data analysis.

The interviews conducted have been topical (Rubin and Rubin, 1995), that is, they have been largely focused upon the topic of IS strategy formation process. Although they varied slightly based on the position of informants, all interviews were principally focused around six broad areas of concerns that have been derived from the research investigative framework. The six areas of concerns are as follow:

- 1- The participants perceptions of what happened and why;
- 2- How IS strategic decisions were influenced and made;
- 3- How conflicts, if any, were resolved;
- 4- The influence of aspects of context on the strategy formation process;
- 5- The participants particular role, attitude, and motivation;
- 6- The consequences of previous events and actions in terms of IS strategy formation and future actions.

5-5-1-2- Participant Observation

The participant observation forms the second method of the data collection. It was a highly valuable source for empirical data and means of data renovation. Yet, this dynamic method of data collection involves many critical research issues that required particular attention in this research. Issues concerned with managing the degree of involvement with participants in the research setting (Pettigrew, 1990), defining the researcher role in the research setting, and the level and nature of the interaction between the researcher and the subjects in the research setting will be discussed next.

Research is a social process not just a technical task. Managing the degree of involvement with participants in the research setting is a crucial issue for any researcher to achieve the most from the experience (Pettigrew, 1990). As previously explained in the last part of the research setting selection section, the researcher has worked for the chosen public service organization for a long period of time. Consequently, he was familiar with the social context of the organization under investigation, and has an extensive knowledge of the organizational culture and the nature of the social relationships between its members. During his work in the computer department in the organization, he was directly involved in the IS services and IS project. He, therefore, have a considerable experience of much of the IS efforts in the organization.

Although the researcher, during the research period, was not formally working for the organization under investigation, he managed to maintain a good relationship. Besides conducting the research, the arrangement was that the researcher, during his research period, should provide the organization with some consultancy services.

The role of the researcher was to provide the organization with counsel in issues related to the activities of the IS department and the IS service providers undertaking the IS projects in the organization. As a result of his research interest, the researcher main task was to observe the work on the GIS projects in the organization and to provide a broad appraisal of the work of the IS service providers on the GIS projects in the organization. The researcher was to report directly to the head of "CPA" the Construction and Projects Agency in the organization.

Through commitment and keenness, the researcher managed to establish a robust means for communicating and exchanging information with participants in the research setting regarding the IS projects performance and other issues of interest. Communicating exchanging information with participants had been done mostly through telephone calls and by e-mails.

Although his main task was to provide consultative services related to the GIS projects, the researcher was assigned some other tasks for the organization in several occasions during his research period. For example, he was assigned the task of reviewing the specifications of the IS services requested in some of the main projects that the organization was undertaken during that time. He was also assigned the task of producing the technical specifications of the second phase of the aerial survey projects in coordination with the ministry overseeing the public organization under investigation. The researcher was also requested to participate in some of the main IS meetings in the organization. The researcher had to travel to the research setting for such activities in several occasions.

This dynamic level of interactions between the researcher and the participants preserves the kind of involvement with the research setting that Pettigrew (1990) and others recommended for the interpretive research. It was not a direct involvement in which the researcher gets over-involved and becomes entirely "native" to the participants in the research setting and therefore may be considered as a player in the organizational games. On the other hand, the researcher is not a total "outsider" to the participants who they may have to treat with caution.

The researcher interaction with participants in the research setting facilitates much of the data collection effort and enables the real-time data required for the processual analysis of IS strategy formation. The researcher's advisory role, for example, permits attending official organizational meetings with top officials in the organization to discuss IS strategy and projects. These official organizational meetings were of considerable value for observing the negotiations of current and future directions of IS strategic decisions in the organization. It formed the appropriate base for much of the discussions with involved participants.

Throughout the research period, the researcher was cautious to maintain good interactions with all parties in the research setting. The researcher was treated in deferent manners in deferent occasions by deferent parties in the in the research setting. He was treaded, for instance, as a researcher, as a local IS consultant, and as previous colleague. These dynamic interactions provided a valuable source to updating empirical data and to discuss as needed the emergent concepts and themes from the data coding and analysis processes.

5-5-1-3- Documentary Data

A key strength of the case study method involves using multiple sources and techniques in collecting empirical data. The interviews and participant observation methods were supplemented by detailed analysis of documentary data in the form of organizational memos, letters, administrative reports, studies, and presentations. Data collected from existing organizational documents, provided stable, unobtrusive, exact and broad coverage of the case.

The descriptive background data about the external context of the research setting that include the national context and the IT environment was collected from secondary resources. The secondary resources include reports from international organizations such as the Human Development Report, and studies and reports from government organizations such as Ministry of Planning and Ministry of Communication and Information Technology. In general, acquiring significant and updated data from the government organizations was a problematical and challenging task.

5-5-2- Data Selection

The type of interpretive longitudinal in-depth case study approach adopted in this research is one in which the subjectivity of the interpretations refers to how the meanings and perceptions of the participants about the phenomenon under investigation are reflected in the case study description and analysis. It stresses research reliability, that is, it concentrates on issues such as the quality of the data and the process of its selection (Weick, 1984).

Acknowledging the importance of the quality of the data and its selection process, Table [5-6] summarise the kind of quality criteria that have been used to guide the selection process of the empirical data.

Criteria	Description
Processual	An emphasis on action as well as structure over time.
Pluralist	To capture the often competing versions of reality seen by actors.
Historical	Take into account the historical evolution of ideas and actions as well as the constraint in which decision makers operate.
Contextual	Examine the mutual relations between process and contexts at different levels of analysis.

Table [5-6]: Data Selection Criteria

After Pettigrew (1990)

5-5-3- Data Analysis

Researchers are encouraged to make every effort to produce an analysis of the highest quality. In order to accomplish this, four principles should attract the researcher's attention:

- Show that the analysis relied on all the relevant evidence
- Include all major rival interpretations in the analysis
- Address the most significant aspect of the case study
- Use the researcher's prior, expert knowledge to further the analysis

In this research, the data analysis objective is to abstract from the empirical data significant analytical propositions through which we can enhance our understanding of IS strategy formation in practice (Pettigrew, 1990, Walsham, 1995). Several prominent works concerning data management, data coding, and data analysis have been examined before ideas from the work of Miles and Huberman (1994) and Rubin and Rubin (1995) are adapted to achieve the required result.

Several analytical techniques are available to choose from, none of them should be considered easy to use. Thus, what required for this research is a well structured and comprehensible technique that allows a compelling case study analysis. Such analytical techniques have been found in the work of Miles and Huberman (1994) and in the work of Rubin and Rubin (1995) on data analysis. Ideas from each have been used in conducting the fieldwork and subsequent data analysis.

Data Reduction	Data Display	Conclusion / Verification
Selecting, focusing, simplifying, abstracting, and transforming the data from the field.	Organized, compressed assembly of information that permits concepts and themes abstraction.	Concepts and themes abstracted and verified as the analysis proceeds.

Table [5-7]: Data Analysis Activities

After Miles and Huberman (1994)

Drawn on the work of Miles and Huberman (1994), the data analysis process in this research consists of three concurrent flows of activities, namely, data reduction, data display, and conclusion drawing and verification. The data analysis process as adopted in this research is described in Table [5-7]. The flow of data analysis activities is illustrated in Figure [5-2].

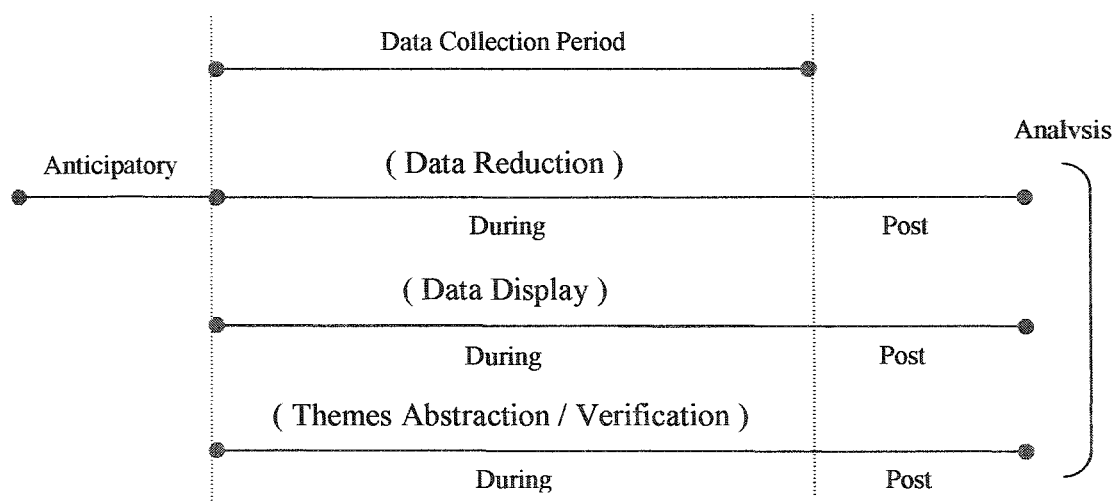


Figure [5-2]: Data Analysis - Flow Model

After Miles and Huberman (1994)

5-5-3-1- Data Coding

In coding data, the plan was to use the computer software package "ATLAS.ti". However, this has been found not convenient due to the fact that almost all the data was in the Arabic language. The translation of data from Arabic to English was not recommended for two reasons. The first is that it was not a practical exercise considering the nature and the size of the data. The second is that it was essential to

keep the data on its original format throughout the data coding and analysis process. The purpose was not to lose any essential value of the data during the translation process. A careful translation, however, has been carried out at a later stage of the research. Thus, the coding of data has been performed manually.

Without careful data management, data can easily be miscoded, mislabelled, mislinked, and mislaid (Miles and Huberman, 1994). Three levels of data filing have been adopted in this research. The first was labelled "raw data" files that contain all collected data including interview transcripts, observational notes, e-mails, and all organizational documents. That is, every single piece of data must have a copy in these files. Data are filed according to a broad coding scheme illustrated in Appendix II. The second level of data filing was labelled "transitional data". It contains copies of selected materials from the raw data files with summaries, comments, and initial coding. The third level was labelled "coded data" files. These are the final version that contains data with specific codes attached.

Working in this way the large amount of the collected data was more easily managed and later analysed. This data management solution also answered to Benbasat, Goldstein and Mead (1987) recommendation that the researcher should be meticulous in record-keeping of all collected data.

Coding is the process of grouping collected field data into categories that bring together the similar ideas, concepts and themes. It is possible to code on any thing the researcher think may later help in analyze the collected data (Robin and Robin, 1995).

In selecting categories for coding data for the purpose of this research, the intent was to choose categories that reflect the theoretical assumptions underlying the research investigative framework.

Accordingly, the data coding was design to include five categories. The first category is concern with the content dimension of the research investigative framework. The second category is related to the external context of the organization under investigation. It includes all main aspects of the internal context. The third category is about the external context in which the organization exists. The fourth category is about the process of IS strategy formation and its interaction with the other three dimensions delineated in the research investigative framework. The last category is about the historical dimension. (See Appendix III for details of the data coding categories).

A simple hieratical numerical coding system has been used to code field data in this research, where each number is shorthand for a particular coding category. Each main coding category includes subcategories which may include another level of subcategories.

As new concepts emerge and potential themes crystallize, it was necessary to add new categories at a later stage to fit the new concept discovered in the data. An example of this process is the resources subcategory that has been added to the internal context category. The process of adding new category involves recoding all the data set previously examined. This is a lengthy process that researchers want to avoid. Well structured coding system can save researchers many hours of routine work. Using the

investigative framework as an underlying structure for coding data allowed adding new categories without the need to restructure the coding system or recoding all the examined material.

A massive amount of data has been collected in this research. The data collected in form of interviews transcripts, observation notes, e-mails, organizational documents and other secondary data. The researcher reads all available documents paragraph by paragraph, word by word, marking off each time a particular concept is mentioned or explained, using the data coding categories to denote the subject of each statement or paragraph. A sample of the coded data is provided in Appendix IV.

Once all the collected data marked up with coding categories, a copy of all related material were put together, that is, copy of all data with the same codes. In this research, a physical photocopy of all data from the same category placed together in separate files. By grouping data in this manner, it was possible by means of the research investigative framework to analyze the material within and across categories to refine findings and synthesis themes.

Most of the data collected was not immediately accessible for analysis. Several data display techniques have been used to permit themes abstraction and conclusion drawing. Collected data displayed in several formats including placing the evidence in a matrix of categories, tabulating the relationships of different events and other such techniques to facilitate data analysis. Samples of the display techniques used in this research are provided in the case study description and analysis in Chapter Seven.

5-5-3-2- From Data to Themes

The approach used in abstracting themes from the empirical data was based on Rubin and Rubin (1995) ideas of data analysis that involve three areas. These areas are: (1) recognizing concepts, (2) hearing stories, and (3) finding themes. These ideas have been used to help focusing the analysis efforts, and to provide a structured approach in which the research moves from data to themes.

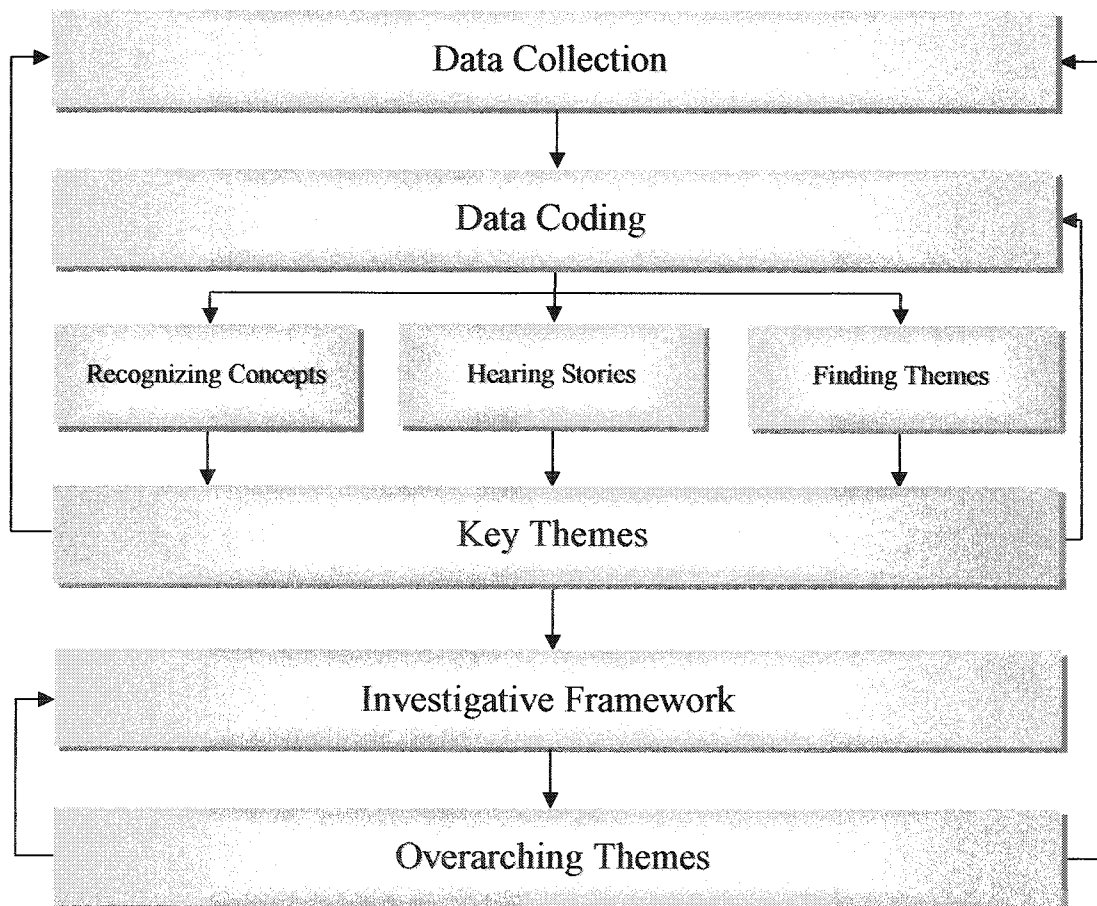


Figure [5-3]: Themes Abstraction Process Model

After Rubin and Rubin (1995)

Concepts are gathered from the data by picking out the words participant frequently use that sound different from his ordinary vocabulary. Vividness of the vocabulary suggests that an important concept may be involved. Nouns or noun phrases that are repeated frequently by the participant was another way used to notice concepts in the interviews scripts. It usually repeated by the participant to express important idea.

Stories, as Robin and Robin (1995) define the term, are refined versions of events that may have been condensed or altered to make a point an indirectly. Stories is often thought out in advance and designed to make a point that usually cannot be made in a direct way. In this research, key themes abstracted from analysing stories that participants provided during interviews or other unintended conversations in the research setting. It is understood that stories are moral themes that widely used to respond to difficult or threatening questions indirectly, thus they have been treated cautiously to figure out the lessons that it is meant to communicate.

Themes provide explanation for how or why things happen. Themes provide description of how people do or should behave or may tell people how not to behave. Related themes when combined together can help build toward a broader description or overall theory of a phenomena (Robin and Robin, 1995).

Themes abstractions process started at an early stage of the data collection in this research. After completing each interview session the data that have been collected examined to find key themes that can help understanding how IS strategy is actually formed in practice. Once initial themes identified, they examined to decide which

themes should further be investigated in more details. This preliminary analysis helped in focusing in on key themes as the data collection carry on.

While some of the abstracted themes had leaped out directly from the data, other had to be deduced from several resources. Combining information from different sources of field data, it was possible to deduce themes that not individual interviewee explicitly mentioned. Themes are also abstracted from compatible and contradictory concepts. Concepts such as ambiguity of IS history, multiple perceptions of IS strategy and leadership style but together to suggest the broader theme of ambiguity and uncertainty. Strong statements from participants as well have been kept in a separate file. Dramatic statements often suggest important themes. A strong statement by an IS consultant, for example, suggested the theme of ambiguity of the IS strategy content.

Drawn on Robin and Robin (1995) approach, the data analysis process that has been followed in this research to abstract analytical themes as diagrammatically expressed in Figure [5-3], was to read and reread data to note core ideas and concepts, recognize emotive stories, and find themes. The collected data is coded to group similar themes together and to figure out how they relate to each other. The abstracted themes are then evaluated against the research theoretical framework, and further discussed with participants in the research setting. Data analysis was repetitively revised as more data become available and as the analytical themes crystallised. The data analysis process ends when "overarching" themes are found and placed in the context of broader theories in order to build an integrated explanation and construct an empirical understanding of IS strategy formation process in practice.

5-6- Summary

This chapter discussed the methodological considerations that underpin this research. The researcher broadly interpretive theoretical stance on the nature of knowledge entails the longitudinal in-depth case study as the most appropriate approach for conducting this research. Several other factors are considered in selecting the research approach including the nature of the subject of the research, the research context, and the research constraints. Klein and Myers (1999) seven principles for conducting and evaluating interpretive field study in IS were cautiously used as guidelines to conduct, report, and judge this research. The ways in which those criteria applied to this research is then explained in some details.

The research investigative framework plays a central role in the research process. The data collected using interview, participant observation, and documentary data. Full account of each method was provided. Four criteria have been used to guide the selection process of the empirical data.

The data analysis objective was to abstract from the empirical data significant analytical propositions through which we can enhance our understanding of IS strategy formation in practice. Ideas from the work of Miles and Huberman (1994) and Rubin and Rubin (1995) on data analysis have been adapted to achieve the required result.

A description of the external context of the selected research setting will be provided in the next chapter.

CHAPTER SIX

THE RESEARCH SETTING

6-1- Introduction

Draw on the research investigative framework discussed in the chapter about the research theory, this chapter provides a broad description of the external context of the research setting. The context dimension, according to the research investigative framework, is both a medium of organizational actions as well as a product of those actions. The focus in this chapter will be upon external contextual issues that can influence the content and the process dimensions of the IS strategic decisions in the research setting. It is necessary to provide this contextual discussion as a way of informing and adding to the richness of the description, analysis and understanding of the case study (Pettigrew, 1985, 1990).

The discussion of the external context starts by considering the main IT issues and challenges that face the IT initiatives at the national and organizational levels. This is followed by a discussion of the national context. In the national context, the historical development and reforms of the public organizations and the planning system are examined. Other major IT issues including the national IT vision, IT infrastructure, and IT initiatives and programmes are also discussed. The social barriers of the national IT initiatives are then discussed. The chapter concludes with a synthesis of the IT environment in the country.

6-2- Major IT Issues and Challenges

In a study of the trends, issues, and problems that influence IT decision makers in the Middle East (KPMG Management Consultants, 1991) several problems have been found to be associated with the rapid development of IT in many organizations in the region. Some of the problems are more specific to the region, such as lack of IT skills and Arabization, while others are endemic worldwide, such as software piracy. The study points out that only fewer organizations claimed that they have received no tangible benefits from their IT investments. Conversely, most decision makers, despite the identified problems, are encouraged for further investment in IT in their organizations.

6-2-1- Lack of Regulations and Legislations

With its exceptional financial capabilities, KSA has found solutions to some of the common problems it shares with developing countries, however, factual experience reveal that not all problems can be solved by money. Several critical issues related to the introduction of IT are yet to be resolved. For example, lack of governmental regulations and legislations is a major IT challenge in KSA. The legislative and legal framework of any nation, it has been argued, is a reflection of its cultural values and will influence what subsequently becomes legitimised within the country. The lack of legal regulations in the information system arena is in fact a massive problem that is challenging many countries around the world. In KSA, the issue seems to be very problematic, as evident by the severe shortage of laws and regulations governing the information technology related activities in public organizations in the country. Although the KSA government, as will be explained later, is taking several measures in

constructing the required infrastructure for IT efforts in the country, there are yet no established regulations and legislations that support and guide, for instance, the emerging e-Government activities in public organizations. Legislations on information technology use impact public sector as well as private sector and their clients as they relay more electronic services.

6-2-2- Imported IT Expertise

Another major issue that has a significant impact on exploiting IT at the national level in KSA is related to the imported IT expertise. Al Samurai, and Ba Othman and (1990) in a study of the effect of IT on Saudi society, argue for the need for open economic and free market systems. The study defines three main features of the Saudi IT market namely, minimizing of dependence on the human workforce, economic growth, and the availability of large number of foreigner IT experts. The study suggests the need to develop Saudi expertise in the field of IT, and recommend the enforcement of high standards in selecting foreign IT expertise.

It is clearly noticeable that the IT industry in the Gulf Council of Cooperation (GCC) states in general is mainly in the hands of experts who largely come from other Arab, Far East, and Western countries. For many reasons that are beyond the scope of this research the professional level of these IT expertises, with few exceptions, is below international average level. They usually have a limited IT knowledge and experience on arrival. In addition, it has been observed in GCC states as well as in other developing countries (Khan, 1991) that these expatriates, from the Far East in particular, are usually contracted to work in organizations in the Gulf region for one or two years before they

leave to better paying jobs in Western countries after gaining some basic training and expertise. Even those who stay longer; they leave and take their expertise with them. This places the host organizations in a dilemma. The case is even worst in the public sector organizations where salaries are lower than the private sector. Public sector organizations suffer from the leaking of local IS professionals to the private sectors. Local IT trainees benefit from the public sector organizations IT training programmes and practice before they depart to the private sector seeking better salaries. This situation has a damaging consequence on most of the public sector organizations' IT human sourcing and training plans. The ever-increasing shortage of IT professionals is intensifying this problem.

Even when imported IT professionals have the required technical skills, they lack relevance. That is, as they come from different cultures, imported IT professionals usually encounter difficulty understanding the host country culture, which leads to serious IT development difficulties. Public organizations, consequently, are loaded with disappointing IT project results.

6-2-3- Quality of IT Services

The quality of IT services available in the market in KSA is an issue that both public and private sector organizations are suffering from. It is not easy, for example, to find good quality IT consultations services for a reasonable price. The cost of the consultancy is high, and mostly directed to large public and private sector organizations. However, several of those organizations that have used external IT consultants claimed that the consultancy had been unsuccessful (Al Samurai, and Ba Othmanand, 1990). A

wide range of reasons is behind the high level of dissatisfaction with consultancy services. A more visible reason involves the consultants' failure in meeting the expectations of their clients effectively. Considering the fact that a considerable number of the decision makers do not fully aware of the issues involved in IT adoption, the roll of the consultants in any IT project is vital. Other reasons given for the limitations in IT services include failure to define precise business requirements, bad planning, and poor project management (Al-Sudairi, 1994).

6-2-4- Other IT Challenges

The above discussions about the major issues and challenges that related to the introduction of information technology in KSA is not meant to be comprehensive, but rather to give an indication of the IT issues that are influential at the national level. There are several other issues associated with IT exploitation in KSA that can be considered as common problems in other societies worldwide. For example, Abdul-Gader and Alangari (1995) identify ten main organizational issues that they argue to represent a challenge to IT adoption in KSA. The issues as they ranked by 25 experts in the country are:

- 1- Lack of appropriate IT planning;
- 2- Insufficient IT professional training and career development;
- 3- Lack of organizational strategic plan;
- 4- Lack of sufficient computer knowledge within middle and top management;
- 5- Scarcity of qualified work force;
- 6- Low top management involvement in IT projects;
- 7- The IT department has a low organizational power;

- 8- Insufficient user training;
- 9- Insufficient financial support to meet the needs; and
- 10- Problems with government budgeting process.

Al-Sudairi (1994) categorized the problems and issues associated with the IT adoption in KSA into 25 grouping. Many of the issues are common problems everywhere in the world such as:

- Computer piracy;
- Copyright protection;
- Spread of PCs;
- Centralization and decentralization;
- Maintenance and support
- Transfer of technology;
- Planning and other administrative problems.

These issues can be worked out by looking at the experience of other countries and by adapting those that fit to the Saudi IT environment. Other issues, however, are unique to KSA such as Arabization of hardware and software, work force development, the shortage of local expertise, and lack of IT research institutions. These issues can be worked out by better planning and organization.

It is reasonable to believe that much of the common IT challenges in KSA can be defeated by the government initiatives such those discussed later in this chapter. The other more persistence issues may need careful consideration by the KSA government.

However, as much of the IT strategic initiatives in KSA are continue to be carried out by the central government, public organizations in KSA are expected to face additional challenge in their IT efforts because of the government centralized approach. IT in public organizations will be discussed next.

6-3- IT in Public Organizations

Emphasis on IT as means for enhancing service performance in public organizations in KSA did not start in the country national development plans until the 1990's. However, the first actual experience for the Saudi public organizations with IT was in 1962 when the Ministry of Finance installed its first IBM system. The use of IT has advanced gradually in public organizations since then (Al-Sudairi, 1994). A range of modern IT systems and applications are widely in use nowadays in almost all public organizations in KAS.

6-3-1- IT Investment in Public Organizations

Public organizations in KSA have been making substantial investments in IT projects in their increasing efforts to yield quality information, reduce communications problems, and enhance decision-making process at the organizational and departmental levels. The public organizations rush endeavours to acquiring state-of-the-art information systems have enabled KSA to establish a sophisticated computerized infrastructure at exceptional rate. However, the ad hoc approach to IT adoption has led some public organizations to porches un-needed excess capacity equipments and inadequate information systems. It was widely believed in the IT industry in KSA that most of the public organizations in the country are over-spending on their IT related

projects with no sufficient effects on the organizations performance. In addition, the role that IT effort in each public organization play within the government overall IT adoption effort is not comprehensible. There is also some evidence to suggest that Saudi public organizations lack general direction in their IT initiatives (Al-Sudairi, 1994). This, it is argued, can be broadly attributed to the lack of comprehensible strategic IT vision at the national level.

6-3-2- IT Efficiency in Public Organizations

Public organizations in KSA has been commonly viewed as being newly introduced to innovative IT which is frequently used as an excuse for their being less associated with IT compared to their counterpart in other societies. In early survey findings, Yavas, Lugmani and Quraeshi (1992) point out that IT is under utilized in public organizations in KSA. It applies only in limited areas of management.

In a more recent study, however, Idrees (1999) investigates the use of new technology and its affect on the bureaucratic decision making in KSA and concludes that the overall utilization of IT in public organizations in KSA is successful and effective, technologies and applications are modern and advanced, and users are generally knowledgeable and sophisticated. The majority of the public organizations managers have been found to be using three or more kinds of software, which is close to the average user in USA. In-house databases and in-house network systems are used as means of obtaining information. Nevertheless, managers at different levels usually can obtain only certain type of needed information depending on the capacity of the IT applications in the organization.

A considerable benefit from the use of IT has been experienced by many of the managers of the public organizations. Much of the public organizations with IT adoption programmes have experienced substantial improvement in their access to quality information and decision making which is important for the overall goal of effective planning and social and economic development.

6-3-3- IT Impediments in Public Organizations

Whilst the implementation and use of IT in public organizations in KSA has been considered as successful and effective, it has not been extensively applied in all functions of the public organizations. Furthermore, not all need information is yet available to users through its applications. Several obstacles have been found to contribute to this shortcoming. One of the main obstacles, according to Idrees (1999) is the lack of clear and well defined national policies toward the importation, utilization, and development of information technology in public organizations. This issue, however, has been recently addressed by the Saudi government, as will explain later in this chapter.

Another major impediment to successfully implementing effective IT use in public organizations in KSA has been attributed to the dysfunctional behaviour and characteristics of the Saudi bureaucracy such as centralization of authority, inflexibility of procedures, and information confidentiality. A further barrier to IT adoption in public organizations in KSA is associated with the status of IT departments in the management structure of the public organizations. It has been argued that the higher the ranking of the IT department in the organization the more effective the IT use is.

6-4- Overview of the National Context

According to the Human Development Report issued in 2001, the Kingdom of Saudi Arabia is an upper to middle income country with a Human Development Index of 0.747 and a HDI rank of 73. GDP per capita, has increased from US \$10,158 in 1998 to \$13,330 in 2001. The petroleum sector accounts for roughly 75% of budget revenues, 32.7% of GDP, and 88% of export earnings. About 45.8% of GDP comes from the private sector. The population has been estimated at 22 million. About 25 percent of the populations are non-Saudis. KSA has a large young population thirty years and under that has been estimated by 73% of the population. The majority of the population is of Arab origin, and therefore Arabic is the official language of the Kingdom, whereas English is widely spoken and considered as the language for conducting business (particularly in the private sector). The life expectancy at birth is estimated at 74 and 70 years for females and males respectively. The Adult literacy rate is 82.4% among males and 64.4% among females.

Presently, the Kingdom faces a broad range of development challenges at both domestic and international levels, which are now emerging as key issues or are expected to emerge in the future as economic or social variables influencing the trend of future development. In its serious attempt to prepare for long-term development planning, the Kingdom has identified the following major topics as the key elements of its development strategic plans:

- Population growth and its expected socio-economic impacts up to 2020
- Long-term structural changes and competitiveness of the national economy.
- Long-term development of human resources.

- The future position of the Kingdom in global energy markets.
- Economic stabilization and diversification of government revenues in the long run.
- Management of supply and demand for water resources in the long run.
- Role of science, technology and informatics in future development.

This broad range of development challenges is placing enormous pressure upon the Saudi government. Focusing upon the role of technology and informatics in future development, the national development plans in its later versions placed great emphasis on the application of new IT to enhance the public organizations efficiency. Several national IT initiatives have been designed to prepare public organizations for the imminent development challenges. The development stages of public organizations in KSA will be broadly discussed in the following.

6-5- Development of Public Organizations

In order to gain insights into influential contextual aspects of the organization in which this case study was based, it is important to understand the historical development of the context in which the organization operates. Hence, the historical development of public organizations in KSA in general will be considered with focus upon main features of each stage of the development processes. The stages of the development are summarized in Table [6-1]. The table provides a brief description of the major changes in the structure and process of the public organizations through out the history of the Saudi government.

Stages	Description
1924	With exception of the western region, there was no organized administrative or organizational system in any part of KSA. The available departments in the western region were coordinated by the city council. These departments then served as the base for what is now the central government (Al-Awaji, 1971).
1926	The first constitution was issued that governed the administrative system. It created several other public departments such as the department of interior which included the health, municipal, post and telegraphs, and public security services (Assaf, 1983).
1931	The government established the Council of Deputies as an executive council. The council then supervised the administrative system and had the authority to draw the state's public and administrative policies (Al-Mazroa, 1980).
1953	The Council of Deputies was replaced by the Council of Ministers. There was no recognized administrative system in the country. Each province of the country was administrating its own affairs. The King was responsible of appointing his representatives in each province or city to carry out his instructions (Al-Awaji, 1971).
1960's	The enormous revenues generated from oil production resulted in broadening the functions and scope of the public organizations. New ministries and public agencies had to be established to carry out added responsibilities to the central government. However, the unorganized expansion of the public organizations had imperative consequences on its performance.
1970's	Several critical problems have risen at this stage. The concentration of power at the top, the over lapping of responsibilities among organizations, the absence of national standard operating procedures, and the lack of basic administrative skills of middle and lower level executives (Huyette, 1985).

Table [6-1]: The Stages of Development of Public Organizations in KSA

6-6- Administrative Reforms

As a result of the administrative difficulties in the 1960's, the Saudi government invited a united nation's reconnaissance mission to investigate the country's administrative difficulties and economic growth needs. Later, in 1964, the Saudi government also assigned "Ford Foundation" to study the overall organizational and administrative practice in the country (Al-Awaji, 1971). The two studies suggested the establishment of a central government planning authority.

The Central Planning Authority has been established as the studies recommend. The tasks assigned to the central planning organization include planning, coordinating, and supervising the economic development in the country. The studies also recommended planning units to be established in each ministry and government agency. Each unit was to work as a connection between the respective ministry or agency and the central planning organization (Al-Tawail, 1981). In 1975, the Central Planning Authority became the Ministry of Planning.

In 1993, significant changes have been introduced to the administrative system in KAS by the Royal order of establishing the Consultative Council. The Consultative Council composed of sixty members appointed by the King for the term of four years. The Consultative Council was responsible for studying plans for social and economic development of the country, questioning ministers, proposing and interpreting laws or amendments, examining annual plans and reports submitted by ministries and other government agencies, examining administrative corruption at the highest levels, and

studying and advising the King on policy matters including foreign affairs and international treaties and agreements.

The Royal order that limited the services term of a minister to four years with possibility to renew was one of the major changes in the administrative system. An interesting rationale for this change was the belief that as a result of the long term services of most of the ministers (average of 15-25 years), they have often been slow to adapt to changing circumstances and many have developed an institutional resistance to change (Cordesman, 1997).

Another significant reform of the administrative system has been the establishment of the provinces systems. The Royal decree issued in 1993 organized the country administratively into thirteen governorates. Each governed by province governor or (emir). Responsibilities of the governor was to hear the petitions of local citizens, arbitrating dispute him self or referring them to the appropriate court. It was the governor duty to broadly oversee the activities of all central government agencies operating in his region. The governor supervises all public services organizations performance, and, in particular, municipal officials performance (Long, 1997).

All these administrative reforms actions have had a dramatic affects on public organizations in KSA. It has changed the role, size, and activities of public organizations, and subsequently, the decision making process in these organizations. Another influential aspect that has direct impact upon public organizations performance is the planning system at the national level, which will be discussed next.

6-7- Planning System

In order to study the strategy formation process in any public organization, it is necessary to have a clear understanding of the overall planning system of the country. It was important therefore to examine the strategic planning thinking and its process in KSA and its implications for the public organizations. Access to the national development plans is the natural starting point for understanding the actual planning practices at the national level in KSA.

6-7-1- The National Development Plans

The formation of the national development plans has been considered by many observers as the most significant and innovative administrative events occurring in KSA (Al-Farsy, 1986). The first development plan was issued in 1970, since then KSA has published a series of five-year development plans focusing on infrastructure and industrialization. The planning system, as indicated in the development plans, serves four basic functions:

- 1 To provide a long term conceptual vision guiding development.
- 2 To provide an organizational framework for coordinating the development efforts in both the public and private sector so that they can guide and initiate structural change.
- 3 To direct government resources towards achieving long term development objectives for the economy, and towards ensuring the availability of essential public services.
- 4 To strengthen the on-going management of the economy and to prepare for emerging conditions that could seriously affect the development process.

It is apparent from the readings of the development plans that the government planning approach broadly revolves around setting objectives and targets to be accomplished. A series of programmes are set for each objective, with each programme segmented into projects. Monitoring and control mechanisms are constructed in a manner that the plans can be adapted to any possible changes in the environment.

Therefore, the planning system in KSA can be seen as a sequence of the five-year plans. Each development plan embodies an organizational framework and guidelines for implementation. The development plans integrate the main elements of development, the structural priorities, the direction for economy, and the government development and expenditure programmes. The development plans are used then as guidelines for the government annual budgets. The joint system of development plan and the annual budget specify the amount of pattern of expenditure for ministries and government agencies (Ministry of Planning, 1996).

6-7-2- Political Issues

Although the development plans are formed centrally at the Ministry of Planning, each individual ministry and public agency has additional function of planning agency, which guides programmes and coordinates activities of the individual public organizations and agencies and forms its specific plan. All plans are then turn over to the Ministry of Planning to form the national economic plans in according with the national policies (Al-Saloom, 1983). The actual development plan include both the plan document, which outline the economic medium term policy along with the national development strategy for each ministry and government agency in the country, and the

detailed operation plan that specify all government expenditure programmes. Instituting strategies and plans require issuing a Royal decrees or ministerial orders to be adopted as a law. That is, to give legitimacy to the strategies, plans, and decisions.

6-7-3- Planning Efficiency

As a result of the rapid changes in the political, economical, and social environment The Saudi officials have realized that the focus of the development plan should be more on efficiency than capacity. The main concern of planning is the agencies abilities to satisfy socio-economic priorities. Projects should be analyzed to identify their consequences and affect instead of contemplate the way in which they filling needs. In the view of this realization, the first formal amendment in the KSA government planning system occurred in the fourth development plan. The shift in orientation has been from projects to programmes, from individual items to structure, from rigid commitment in detail to responsibility for expenditure priorities and proportions (Ministry of Planning, 1996).

6-7-4- Planning Attitudes

In sense, planning system in KSA, although seems to be broadly follows formal Western models; it has its idiosyncratic indigenous planning attitude. Similar conclusion can be drawn from Kassem (1989) study of strategic decisions making in organizations in Arab states forming the Gulf Council Cooperation (GCC) states. Several environmental constrains have been found to affect the strategic management practice. Six contextual factors have been identified as leading environmental constrains that influence the strategic management in The GCC states. These factors are:

1. Heavy dependence of the Gulf States on the outside world to buy their oil, to provide them with modern technology, skilled labour, management, and raw materials;
2. Heavy involvement of government in the economies of the Gulf States;
3. Islamic principles and doctrines;
4. Political instability, regional rivalries, ethnic sensitivities;
5. Abundance of cheap capital and shortage of human capital;
6. Small domestic market segment by ethnicity.

Kassem's (1989) study found that overwhelming majority of the organizations in the GCC states covered by the study practices various forms of reactive, intuitive, and incremental planning. Fewer organizations, on the other hand, practice formal strategic planning as described in Western management literature. The study suggests a number of possible explanations for the dominance of reactive planning among organizations in the GCC states.

One possible explanation for the dominance of reactive planning among organizations in the GCC is related to the economic nature of the GCC states as being highly dependent on world oil markets, and thus highly susceptible to fluctuation in this market. The GCC states and their organizations, therefore, have trouble predicting, comprehending, and responding to these fluctuations. This handicap is mainly due to the severe shortage of the timely and essential information required for strategic analysis and what little information is available is either out dated, erroneous, or regards as confidential.

6-7-5- Cultural Issues

Another possible explanation for the dominance of reactive planning among organizations in the GCC can be derived from a cultural perspective. Kassem (1989) argues that the managers in the GCC states in general, unlike many corporate managers in the Western countries, can be characterized as traders by tradition. They typically rely on market instincts, not on hard data. This "trading" mentality is focused on the short term rather than the long term vision.

Fatalism may also influence this mind-set of the managers in the GCC as they may believe that planning involves dealing with the unknown, a domain that properly belongs to God, not to man. They tend to be traditionalists at heart. They idealize the past and distrust the future, and prefer the tried and true to the untried.

6-7-6- Implications for Strategic Planning in Public Organizations

The increasing complexity of the administrative system has led to influential changes to take place within the planning system and decision making attitude in public organizations in KSA. As making day-to-day decisions becoming more complex and technical, it has been argued that it is the experts and bureaucrats rather than the government's top officials are beginning to exert influence on the formation of public organizations strategies (Koury, 1978). Given the complex nature of the strategic planning system of the KSA government, strategic planning at the public organizations level would be anticipated to follow the same attitude, and reasonably utilise principles from the already well-established national strategic planning approach.

6-8- The IT Vision

In order to realize the position of IT in any country, it is necessary to consider the vision of the government of that country in respect to the development and application of IT at national level. Thus, in the following, the IT vision of the KSA government will be discussed. The discussion will include the national IT strategy, the IT vision in the national development plans, and the national policy for science and technology.

6-8-1- National IT Strategy

The fifth national development plan (1990-1995) had specifically focused upon the deficiency in the quality, accuracy, reliability, and accessibility of information that the public organizations was facing. The Saudi government, consequently, issued several strategies aimed at improving the collection, dissemination, and flow of information within public organizations and agencies. The proposed strategy suggested the creation of separate department in each government organization and agency that is responsible for the collection and dissemination of information.

The proposed strategy also calls for improvement of the capabilities and services of the Central Department of Statistics that was established in 1980 under the control of the Ministry of Finance to collect and report statistical information. In addition, the strategy suggests, (1) the creation of an electronic national data bank, (2) more investment in telecommunication, (3) more access to national and international electronic data banks, (4) the standardization of the procedures and implementation and use of electronic technology in all public organizations and agencies (Ministry of Planning, 1996).

The release of the seventh development plan has been synchronized with start of the third millennium that expected to be characterized with numerous and continuance challenges. The foremost of the challenges that the development plan have recognized include the vast changes in science and technology, in particular the substantial advancement in IT. Other important issues include privatisation, globalization, and the country imminent joining of the General Agreement on Tariffs and Trade (GATT). Hence, the national economy needs to be prepared for integration with the international economy. Locally, the plan focuses upon reforming the government organization, to enhance its administrative and financial structures. Crucially, the plan emphasizes the importance of the IT innovations in reinforce the economic efficiency in both the public and privet sectors (Ministry of Planning, 2000).

The seventh development plan sits out some very broad objectives and guidelines for the national IT strategy. However, the focus of the plan on exploiting IT as means for strengthen efficiency in both the public and privet sectors has been recognized as a very important factor that has a considerable influence on the decision makers in public organizations, and in shaping their visions towards IT initiative in their organizations.

Several initiatives have been undertaken by the KSA government to draft a national IT strategy. Most of the programmes and initiatives in that direction have been hosted by the educational institutions in the country. These programmes generally are in the form of financial aid or facilities to researchers. Several other programmes have also existed in some of the government-subsidized businesses and in public organizations. The problem with such programmes is that the efforts are not recognized nor do ideas

go any further than a file or a folder on someone's office shelves. Such practice challenges the purpose of these programmes (Idrees, 1999).

In some countries, such as Japan and Singapore, a government body works out a comprehensive IT strategy for the nation. In most countries, however, such strategy is broadly consisting of measures and initiatives taken by several institutions and governmental bodies, usually without any formal means of coordinating action nationally. The uniting factor in most successful national IT strategies is a commonly national vision about socio-economic changes enabled by the exploitation of new technologies (Mandoura, 1990).

In the KSA context, a similar vision has been used to guide the formation of national IT strategy. On March 2001, the Saudi Information Technology Association (SITA) has been instructed by a royal directive to prepare a national IT strategy and propose the needed mechanisms for its implementation. The IT national comprehensive plan should provide a long term perspective of IT in the country for the next 20 years, and a five-year rolling plans. In preparation of the KSA national IT strategy, SITA carried out a number of preliminary studies. The studies covered an analysis of the current situation, experience of other countries, and modern technologies in the field relating to four main areas namely, (1) Education and Culture, (2) Trade and Economy, (3) Communications and Information Security, and (4) Administration and Services (Ministry of Communication and Information Technology, 2003). Each of the above areas is divided into a number of sub-areas. Details of main areas and sub-areas are shown in Appendix V.

At the same time, SITA was working in preparation of initiatives for immediate implementation to address urgent issues pending the application of the comprehensive plan. Initiatives for immediate implementation cover a number of urgent IT issues that call for immediate action. It includes six main proposals that cover the following issues:

- 1 Restructuring of the information sector;
- 2 Training of human resources in the field of informatics;
- 3 Development of the ICT infrastructure;
- 4 Development of IT industries;
- 5 Strengthening of the Arabic and Islamic content, and
- 6 Enhancing the realization of e-government.

It has been argued that the Japanese, and to certain extent the Singapore information technology strategy initiatives success can be largely attributed to the effective infrastructure that they have (Mandoura, 1990). What seems to be lacking in the KSA government initiative towards drafting national information technology strategy was the appropriate infrastructure that allows these initiatives to succeed. As a latecomer to the scene, countries like KSA face enormous difficulties, perhaps the most important being that they are becoming users of IT without required infrastructure and manpower support it (Kirlidog, 1997). The Saudi national IT strategy is expected to become feasible once the government is done with the development of the infrastructure needed for such strategy. The Saudi government has realized that required infrastructure for implementing the national IT strategy involves not only a technical aspects such hardware, software, and communications, but further beyond that to the establishment of an information society in the country.

6-8-2- IT Vision in National Development Plans

In essence, the successful implementation of any national IT vision in any country depends largely upon both the political will of the leadership of that country and the relevance of the IT vision to the realities of the economic, social and cultural environment of the country.

The KSA government is investing greatly in information and communication technologies. The focus was on using information and communication technologies for the development of the basic services such as, education, health and public organizations. They also have been interested in the development of modern industries in the fields of IT. The aim was to meet the demand of the local markets and to reduce the dependence on the outside world.

The seventh national development plan of the KSA government includes a clear vision of the role of IT in the economy. The plan envisages, among other things, a national plan for the use of IT for scientific and economic development. The plan includes programs aimed at:

- 1 Facilitating the availability of and easy access to the most recent information;
- 2 Determining the roles of data producing and data collection entities;
- 3 Information integration;
- 4 Establishing information systems within the national information network; and
- 5 Making information technology and information services accessible to all segments of the society.

The general objectives and strategic bases of the eighth national development plan (2005-2010) emphasized once again the importance of IT industry for the country social and economical development. The ninth general objective of eighth development plan, for instance, stressed the need to develop the science and technology system, pay attention to informatics, support and encourage scientific research and technology development with a view to enhance the efficiency of the Saudi economy, and keep abreast of the knowledge economy. Whilst the fourteenth strategic basis of the eighth development plan calls for the creation of a strong foundation for national science and technology capable of innovating and inventing and for expanding information and communication technology applications and improve data bases to support the national economy (Ministry of Economy and Planning, 2004).

6-8-3- National Policy for Science and Technology

One of the most important initiatives in the field of science and technology during the past few years in KSA has been the development of a national science and technology policy in order to support and sustain social and economic development programmes in the Kingdom.

The national science and technology policy document contains ten strategic principles, each encompassing a number of mechanisms and programs for the implementation of the country's science and technology policy. The focus of the strategic principle was essentially on the availability of and accessibility to scientific and technological information, through the application of number of steps. The main steps include:

- Development, strengthening and facilitating accessibility to national scientific and technological databases;
- Development of national programs to encourage the production, dissemination, and exchange of information, and to facilitate the application and accessibility of such information, with a view to integration in the information age;
- Developing mechanisms for the security and protection of information;
- Strengthening the use of the Arabic language in the information technology;
- Development of a national information plan in support of global development in the country;
- More focus on the adaptation and national development of information technology with a view to enhancing the efficiency and effectiveness of the use of information in the country.

The policy includes long-term goals and objectives for the period 2001-2020 as well as four executive five-year plans defining priorities and describing detailed programmes and projects. Accordingly, the underway seventh development plan reflects the first executive sciences and technology plan. The forthcoming ninth and tenth development plans will be associated with a counterpart of the national long-term, comprehensive sciences and technology plan for the period from 2005 to 2020.

The first executive sciences and technology plan accommodates the diversity of scientific and technological fields and recognizes the complex relationships between those fields and their influence on economic sectors. Taking into account local

capabilities for technology transfer and adaptation, the plan attempts to reach a balance between indigenous research and development in KSA and imported technologies. As a comprehensive plan, it encompasses broad missions, including heightening public awareness of the importance of and need for science and technology, human resource development, expansion of research and development capabilities, and acquisition and adaptation of technology.

In forming the sciences and technology policy, a careful consideration has been directed to reflect the progress of social and economic development programmes in the country, reorientation of goals, modification of priorities, and alterations to the scope or scheduling of various programmes. The plan is also based on reasonable expectations and realistic implementation schedules, and on meeting the requirement of the changing nature of technological innovation (Ministry of Communication and Information Technology, 2003).

6-9- IT Infrastructure

The Saudi government realized that fundamental to any of its IT strategic initiatives is the catch-up preparatory work on the infrastructure. The realistic perception, therefore, was that IT strategic initiatives do need a working high-tech infrastructure in place and sufficient trained personnel for it to work. The private sector in KSA is relatively small to take the initiative to develop the required infrastructure for IT industry in the country. The public sector on the other hand cannot introduce radically innovations in IT without very clear signals to do so from central government.

It was, therefore, the KSA strong central government that directing the IT infrastructure development in the country.

The literature on information technology and developing countries suggest that poor infrastructure along with high cost, social factors, and politics can hinder IT diffusion in developing countries (Al-Gahtani, 2003). In the Saudi context, several infrastructural issues have been recognized as obstacles that influence the communication and information technology adoption initiatives in the country (Abdul-Gader and Alangari, 1995).

In spite of the realized barriers, several important measures have been carried out by the Saudi government to facilitate the deployment of IT in the country. Some of the government leading steps in this direction include:

- 1 Reformation of the Ministry of Communications to include the IT. The aim is to benefit from information and communication technologies in the process of rapid and integrated development of the country's social, economic and administrative life, and to support the development of an information society.
- 2 Establishment of the Saudi Communications and Information Technology Commission, and the adoption of the telecommunications legislation and its regulation. The ultimate goal set for the Saudi Communications and Information Technology Commission is the liberalization of the market and open competition.
- 3 The Saudi government policy to transform the telecommunication sector into a private corporation as a step towards complete liberalization of the sector, the

Saudi government has decided to sell 30% of its equity in the Saudi Telecom Company to the private sector.

- 4 The Saudi Council of Ministers decision of authorizing the provision of internet service in KSA in 1998. The decision authorized the provision of the service under certain controls. The aim was to make the service available to customers to benefit from the great potentials of the internet, while, at the same time, protecting the values and Islamic beliefs of the Saudi society. The controls relate to blocking access to inappropriate content.
- 5 Establishment of interagency standing committee for the security of information. The Committee is entrusted with the control and regulation of issues relating to the management and security of information. The Committee, presided by the Ministry of Interior, has issued regulation governing the use of the Internet in the country. It has also developed a draft system for information protection and control of internet piracy (Ministry of Communication and Information Technology, 2003).

6-10- IT Initiatives and Programmes

Several important initiatives in the field of IT have been undertaken by the Saudi government. The IT initiatives are derived from a paper presented by the Ministry of Communications and Information Technology in the world summit in information society held in Geneva in 2003. Four of the KSA government foremost IT initiatives will be listed in the following:

- 1 E-Commerce: In 1999, a royal directive was issued for the establishment of a Standing Committee on e-Commerce. The committee is lead by the Ministry of

Commerce. In 2001, the framework of Plan of Action of e-Commerce has been officially approved. The Standing Committee on e-Commerce identified the requirements for promoting the technology of e-Commerce in KSA.

- 2 E-Government: In 2003, the Public Investments Fund of the Ministry of Finance has been assigned the responsibility of the e-Government initiative in KSA. The Public Investments Fund, within the framework of the strategic visions for applying e-Government, has laid down a programme for establishing e-Government. The strategic vision for the e-Government adopts a decentralized approach in executing the projects related to e-Government. Based on this approach, ministries and agencies may execute e-Government projects related to their activities. Ministry or agency would be responsible of their e-Government projects, but according to set rules and regulations.
- 3 Saudi Project for Electronic Data Interchange: The main objective of the Saudi Electronic Data Interchange (Saudi EDI) is to secure speed and transparency in business and trade. The focus of the project is upon international trade, that is, to establish e-Trade in KSA. The project, accordingly, includes the electronic interchange of the consignment manifest information, delivery papers, and the various items of import-export information among the different concerned agencies such as the Customs Department, the General Ports Department, and shipping agents.
- 4 Electronic Financial and Banking Services: An integrated system for the immediate settlement of transfers among Saudi banks, through their accounts with the Saudi Monetary Authority has been established by the Saudi Monetary Authority. The system maintains speedy money transfer between Saudi banks.

6-11- Social Barriers

Acceptance of new IT initiatives by users in public organizations can be defined as the act of adopting the new technology, that is, the initial decision to use or not to use the technology. Lack of acceptance has long been recognized as a principal impediment to the success of introducing new information technology into organizations. With few exception (e.g. Rose and Straub, 1998; Straub et al., 2002) the number of studies on IT acceptance that has been conducted in societies other than the Western atmosphere have been relatively limited. There is hardly any in public organizations in KSA.

Findings from the limited published research on the subject of IT acceptance in non-western societies draw attention to several social and cultural impediments. For example, Atiyyah (1989) in an early study argues that IT acceptance in KSA often hindered by technical, organizational, and human problems. Similar research conclusions can be drawn from the Hill et al. (1998) study, which indicates that the main impediments to IT transfer have been found to include conflict with personal values and fear of loss identity along with other organizational and technical issues.

Straub, Loch and Hill (2001), suggest that cultural beliefs in the Arab world in general were a very strong predictor of resistance to systems and thus IT transfer and dissemination. Other main impetuses to IT transfer have been found to include efficiency of organization, increasing knowledge, and linkage to world systems.

Drawn on conclusions from available empirical research (e.g. Al-Gahtani, 2003; Avgerou, 2002) and the researcher own experience, it can be argued that several social

and cultural barriers are influencing the acceptance of IT initiatives by individuals in Saudi public organizations. Three socio-cultural perspectives can be identified as influencing IT initiatives in the public organizations in KSA. The first perspective encompasses those who believe in Westernization. This group consists of technocrats who have received a Western education, either in the USA or in Europe. The second perspective includes those who reject the Western methods. This group usually includes those who take a conservatives stance. They believe in the significance of the indigenous culture, and work for its preservation and continuation. They seek different approaches that secure their independent distinctive identity. The third perspective represents those who consider a median stance between the other two perspectives. They do believe in the importance of their own distinctive social identity, but they do not entirely reject the Western models. They seek a hybrid models that combine modernization and traditionalism. From the point view of this perspective, strong societies can absorb and interact with the modernization factors. The exceptional formula they are seeking, nevertheless, is a challenging target to achieve. Lacking references to authoritative papers or case studies, further research along these lines appears to be warranted.

Not many decisions makers in public organizations in KSA have started to recognize that the information age involve much more contextual issues than installing hardware, software, and collecting data. Several social aspects are equally, if not more, important for the IT exploitation than the technical aspects. The subject of IT exploitation in public organizations in KSA is, yet, thick with lots of ambiguity and uncertainty.

6-12- Synthesis of the IT Environment

The exploration of the IT environment in the KSA context reveals that the government has given special attention to the information and communication technologies and has taken steps for promoting these technologies at different levels. At the national planning level, the underway eighth development plan and the forthcoming ninth development plan envisages the role of IT in 2020. The national policy for science and technology put forward the adoption and development of information technology, together with mechanisms for achieving this objective. The national IT strategy has been intended as a development support tool in order to keep abreast with the information era.

At the level of the infrastructure, important steps forward have been taken by the Saudi government to facilitate the deployment of IT in the country. The recent establishment of the Ministry of Telecommunications and Information Technology highlights the attention given by Saudi government to this imperative issue. The Telecommunications Authority has been restructured by the government in order to create the proper environment for growth and open new horizons for IT initiatives in the country. Several significant initiatives to support the IT industry have been taken by the Saudi government. The foremost of these IT initiatives are the e-Commerce programme, the e-Government programme, the Saudi project of electronic information interchange (Saudi EDI), and the electronic financial and banking services.

The KSA society is currently witnessing a major social transformation from a conventional society to an information society. Indicators of IT penetration in the Saudi

society such as the number of personal computers, the density of fixed-line, and the number of Internet users/100 inhabitants indicate an accelerating growth of IT and communication technologies in KSA in recent years (Ministry of Communication and Information Technology, 2003).

The assessment of the IT use in public organizations in KSA demonstrates that it range from fairly simple systems to the most advance state-of-the-art systems (Ministry of Economy and Planning, 2004). Payback of IT investments, although not yet satisfactory, has been increasingly realized by managers in public organizations. The lack of clear national IT vision has led, among other things, to the non-homogenous state of IT adoption across KSA public organizations. In addition, there are yet no established regulations and legislations that guide IT initiatives in public organizations (Ministry of Communication and Information Technology, 2003).

Some of the major challenges that confront the IT exploitation efforts in KSA includes lack of governmental regulations and legislations, the imported IT expertise, and the quality of IT services available in the market. There are several other issues associated with IT exploitation in KSA that can be considered as common problems worldwide such as such as computer piracy, copyright protection, spread of PCs, centralization and decentralization, maintenance and support, transfer of technology, planning, and other administrative problems. The social barrier, it is argued, is one of the most influential aspects of the national context that effects the IT exploitation in public organizations in KSA.

6-13- Summary

In this chapter, a description of the external context of the research setting has been provided. Key issues concerning the context of the research setting have been discussed. The aim was to concentrate upon contextual aspects with strategic consequence for the public organization under investigation. The discussion has covered important IT related issues at the national and public organizations levels. It also covered issues concerned with historical development and reforms of the public organizations and the planning system at the national level. It is against these influential contextual aspects that concerned individuals take organizational actions concerning issues such as the formation of IS strategy in their organizations. The organizational actions taken, subsequently, will alter influential aspects of context.

It has been argued however that for the research synthesis to be understated, it is helpful when providing descriptions of any research context to allow each reader to make his own interpretations. It is with this in mind that the description of the external context has been presented in this chapter.

The internal context of the research setting, which is the second part of the context dimension of the research investigative framework, will be discussed as part of the case study description and analysis in the following chapter.

CHAPTER SEVEN

CASE STUDY DESCRIPTION AND ANALYSIS

7-1- Introduction

The purpose of this research is not to provide "the truth" about the phenomena under investigation but to tell "a truth", that is, our own thoughts and ideas in relation to the phenomena under investigation. In so doing, we filter participant's statements, actions, and other available data through our own subjectivity, and then produced the incorporate story about the events that have happened and some explanation of them. Thus, the data in this research cannot be triangulated to provide a true interpretation of the IS strategy formation process in practice, but rather reflects our own thoughts and ideas of the subject at the time of writing (Walsham, 2002).

This chapter contains the description and analysis of the case study. It starts by exploring influential aspects of the internal context of the organization under investigation, which in order to keep anonymous will be referred to as "MCJ". Following from that, a thick description of the process of strategic decisions for exploiting GIS technology in the organization is provided. This is followed by the case analysis which draws more explicitly on the research investigative framework. Principle themes abstracted from the case study is then outlined, and its linkage to the data and the research investigative framework is diagrammatically explained. The themes will be thoroughly discussed in Chapter Eight.

7-2- An Overview of MCJ

It has been previously argued that any organizational process cannot be understood independent of its context in which it takes place. The previous chapter has described significant aspects of the external context of the research setting. According to the research investigative framework, the context dimension consists of two parts. The external context only represents the first part of the context dimension. The other part is the internal context of the organization in which the process of interest takes place. In the following, the internal context of the organization under investigation will be discussed with focus upon aspects that influence and are influenced by the process of the strategy formation. Figure [7-1] summarizes the aspects of the internal context that will be discussed.

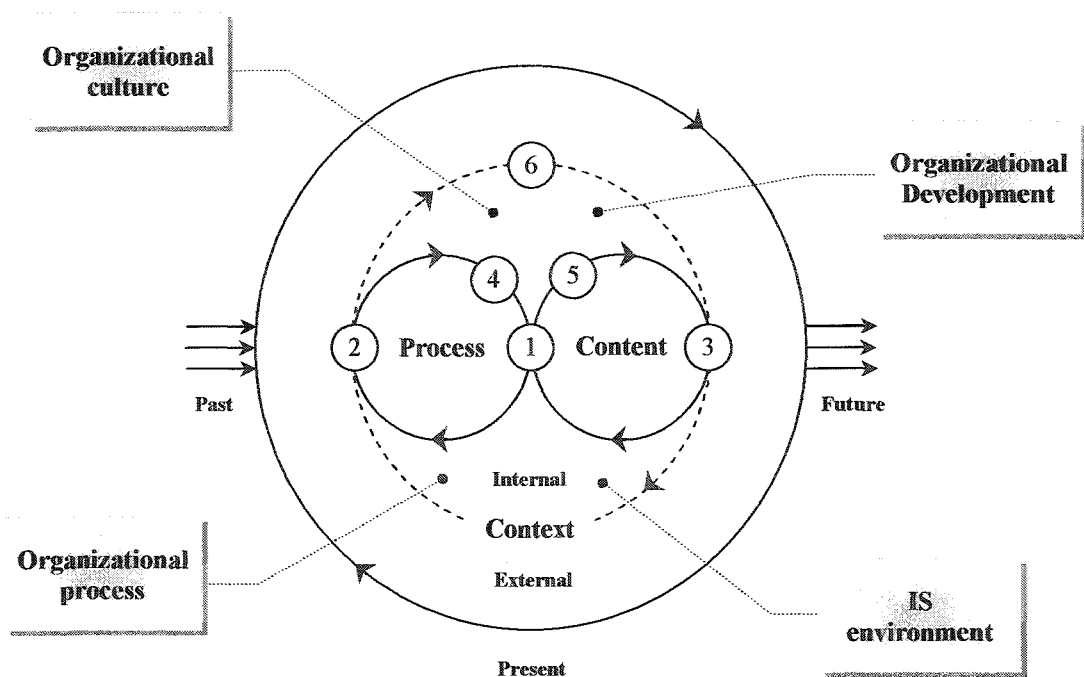


Figure [7-1]: The Internal Context of MCJ

The identity of the research setting, which has been referred to as "MCJ" throughout this thesis, has been made anonymous as far as possible. The researcher has also preserved the anonymity of individual contributors throughout as agreed with the participants in the research.

7-2-1- Organizational Development

MCJ was originally established back in 1955 as a public organization funded by the government to provide civic services for the community of one of the largest city in the KSA. MCJ currently is a large public service organization with more than 1500 employee. The total population of the city that MCJ serves has been estimated at 2 million in the latest national population survey in 2001. Since the 1970's, with the enormous increase of the oil price, the city that MCJ serves has been a subject of a remarkable development in all aspects of life. It is still expanding at a very high rate that exceeded the expectations of its latest urban development master plan. This vast rate of growth has placed enormous pressure on the civic services provided by MCJ.

As with other public organizations from 1990's onwards, MCJ has been strongly influenced by the shift in the government policy towards public services in the country. The public organizations according to the new government policy have been required to become more efficient in providing their services to the public. The five-year development plans, as discussed in the previous chapter, emphasize the government aim to improve the performance level of public organizations in the country. More specifically, the government new public services policy focuses upon improving public organizations economy, efficiency, and effectiveness (Ministry of Planning, 1996).

Consequently, MCJ as one of the main public organizations in the country has been a subject of increasing pressure to respond to the government new public services policy. The influence that MCJ has been subject to came from various governmental sources at different levels. For instance, The Ministry of Finance has been placing a growing pressure on MCJ and other civic services organizations in the country to increase its revenue from civic services fees, public advertisement fees, and other sources of income in order to support their annual budgets and enhance their financial capabilities. According to the Manager of the Administrative Development Department in MCJ, much of the difficulty with the public fees collection can be linked to the lack of sufficient information of the sources of these fees. The Administrative Development Department is relaying heavily on new information technology in their efforts to enhance the process of collecting fees. The department, for instance, is planning to use hand held Global Positioning System (GPS) technology to help them in collecting spatial data related to fees collection, and to use advance information systems to facilitate the fees collection activities.

The recent government initiative of what can be defined as an organizational reforms intended to enhance the public organizations services, as described in the previous chapter, has led to appointing the present head of MCJ to carry out the intended organizational reforming policy. As a result of the reforming program, MCJ has been striving to provide efficient civic services to the community. The present head of the organization stated in a statement to a local newspaper that the priority of the organization was to improve the provision of current civic services to bring them in line with the community increasing demands.

Following the guidelines of the national development plans, the reform process in MCJ was largely associated and highly reliant upon the adoption of information technology. In order to achieve the intended objectives of the government policy that stress the need to enhance the efficiency of the service that provided by the public organizations (Ministry of Planning, 1996), MCJ has been working hard on exploiting IT in all aspects of its activities in order to improve the quality of its services.

As a result of the nature of the activities, much of the information the organization operations need in MCJ are spatial information. That is, information related to geographical locations whether it is a parcel of land, a building, or other features in the city that fall within the MCJ responsibility. Because of this specific needs for spatial information, most of the IS applications in MCJ have been geographically based. The Geographical Information System (GIS) technology, consequently, was the core technology that MCJ utilizing to serve its specific needs. The interest of this research, accordingly, was primarily focused upon the practices surrounding the strategic decisions to implement the GIS technology in MCJ.

MCJ, as a bureaucratic government organization, have a highly defined structure. It consists of two large agencies, thirteen branches, and several administrative, financial, and other services departments. The construction and projects agency, which will be referred to here as "CPA", is the largest sector in MCJ. As such, CPA was responsible of much of the engineering and civic work within MCJ. The agency comprises of three general departments, namely, the Planning Department, the Projects Department, and the Maintenance Department. The Planning Department is responsible of the urban

development plans of the city. The Project Department responsibilities include studying, planning, and executing major civic projects in the city. The Maintenance Department is in charge of operating and maintaining most of the civic utilities. The head of CPA reports directly to the head of MCJ. However, CPA works in close contact with MCJ's other agency, branches, and various departments.

The highly defined organizational structure and the strong centralized system in MCJ have strong influences on the decision making process, reporting lines, and the way that work flows through the various departments. They have significant consequences upon the organizational culture which will be discussed next.

7-2-2- Organizational Culture

Handy (1985) describes four types of organizational cultures. The first type is the "power culture" which concentrates power in a few pairs of hands. In this type of culture, control radiates from the centre like a web. Power cultures have few rules and little bureaucracy that gives permits swift decisions to be made. The second type is the "role culture". In this type of organizational culture, people have clearly delegated authorities within a highly defined structure. Typically, these organizations form hierarchical bureaucracies. Power derives from a person's position and little scope exists for expert power. The third type is the "task culture". In this type of organizational culture, teams form to solve particular problems. Power derives from expertise so long as a team requires expertise. These cultures often feature the multiple reporting lines of a matrix structure. The fourth type of organizational culture is the "person culture". It exists where all individuals believe themselves superior to the organization. Survival

can become difficult for such organizations, since the concept of an organization suggests that a group of like-minded individuals pursue the organizational goals. Some professional partnerships can operate as person cultures, because each partner brings a peculiar expertise and clientele to the firm.

Draw on Hendy's (1985) above descriptions of organizational culture, the MCJ's organizational culture can be broadly described as "role culture". As a large public service government organization, MCJ can be seen as a hierarchical bureaucracy. Its members have clearly delegated authorities within highly defined structure.

The organizational culture in MCJ, from other perspective, is also close to what Deal and Kennedy (1982) refer to as "the process culture". For instance, organization's members in MCJ are concerned more with how things are done in the organization rather than with what are to be achieved. Deal and Kennedy (1982) argue, however, that whilst it is easy to criticize these organizational cultures for being over cautious or bogged down in red tape, they do produce consistent results, which is, in some way, ideal for public service organization such as MCJ.

In general, MCJ can be seen as having a complex and influential organizational culture that manipulates much of its daily activities. As a result of the rich, profound, and influential culture of MCJ, the routine behaviour of the organization, that is, the way things get done around here was clearly defined. This allows employees, particularly new employees, to easily understand and smoothly adapt to the organizational culture.

A noteworthy observation from the MCJ culture is that with exception of the head of the organization, how usually comes from out side the organization, most of the managers in MCJ are broadly have an extensive experience in the organization business. This is because most of the exciting managers, according to the organization records, have serviced in MCJ for a considerable time that range between 10 to 20 years. On the other hand, lower level employees are changing more often due to the nature of the employment policy that MCJ follows. We have, therefore, an organizational culture in which the managers are relatively well experienced in the civic services affair working with employees who are relatively less experienced, and they both have little experience with information technology. At the same time, they all required to adapt to a major shift towards using information technology in all aspects of their daily activities.

Traditionally, the new head of MCJ started his era by sending a very clear message to all members of the organization as to what behaviour will and will not going to be tolerated by the new order. This massage is usually expressed in the form of circulated organizational memos to senior mangers or during executives meetings. The massage is quickly spread out between members of the organization at all levels as the new values of the organizational culture.

Several important stakeholders have been found to exist within MCJ external context. Key stakeholders include the government; the ministry presiding MCJ, the local government, other public organizations, and to lesser extent, the public. Other external stakeholders with particular influence with respect to the IS activities in MCJ are IT vendors, IS service providers, and IS consultants.

Each of these stakeholders has a direct or indirect influence on the organization activities at a certain level. For example, the government through its national five-year development plans determine, for a large extent, the overall strategic decisions and directions of MCJ. The government policies, rules, and regulations, on the other hand, influence the day-to-day work decisions of the organization. The government also allocate the annual budget for MCJ through the Ministry presiding MCJ. The Ministry, although do not intervene directly with the day-to-day decisions in MCJ, it has a powerful influence over much of its main activities. For instance, the ministry hold the authority of endorsing all the projects requested by MCJ in its annual budget plans. The Ministry also hold the authority of regulating much of the public services organizations practices in the country.

Local authority, as explained earlier in the section about the government system in the previous chapter, govern and supervise the work of all public organizations operating in its province. The Governor (Emmer) of the province has the political power to interfere with the MCJ's business, and therefore, influence the decision making process and the activities of the organization. Other public organizations in the city also have influences over MCJ's plans and activities either through the public services committees of local authority or through their direct relationships with MCJ.

The public frequently place pressure on MCJ through local newspapers in which they raise complains of the services provided by MCJ, provide suggestions, or discuss issues of public interest. The other path of the public influence on MCJ's activities is through the local authority. This is usually involves personal complains against MCJ

that citizens bring up to the Governor of the province in person how directs MCJ with the required action in that matter. Although the public influence is generally limited, yet it can affect major decisions in MCJ.

With respect to the use of IS and the development of information systems in MCJ, IT vendors, IS service providers, and IS consultants are all playing influential roles in this domain. They all have a direct affects on the organization decisions of utilising IT innovations and developing IS applications. They sustain strong relationships with key actors involved in decision making in the organization. They often form sort of long-term allies with key actors in the organization, providing them with timely IT update, and support. They achieve their influential status by filling the common technological knowing-how gaps at the top management level of the organization. Table [7-1] lists the main external stakeholders of MCJ and their potential area of influence.

External Stakeholders	Area of Influence
The Government	Decision making
The Ministry Presiding MCJ	Decision making + General activities
Local Authority	Decision making + General activities
Other Public Organizations	Decision making + General activities
The Public	General activities
IT Vendors	IS decision making
IS Service Providers	IS decision making
IS Consultants	IS decision making

Table [7-1]: External Stakeholders of MCJ and Their Areas of Influence

7-2-3- Organizational Process

The organizational process in MCJ is highly complex. While the process by which the activities in MCJ are carried out is generally based upon prescribed rules and regulations of the government, the execution of these activities is a quite complex process. Other informal practices in MCJ although do not follow any specific government's regulations remain problematic. Two examples will be introduced in the following to illustrate the complexity of the organizational processes of MCJ. The first is concerned with the budgeting process by which the projects proposed by departments incorporated into the organization's annual budget. The second example involves the corporate strategy formation which is an informal practice that not governed by any prescribed government rules or regulations.

It is important in this context to distinguish between organizational process, which refers to any institutionalized formal activity used to coordinate management activity, and organizational practice, which refers to more informal activities carried out by workgroups or professional communities within the organization to accomplish more specific deliverables. The distinction between organizational process and practice is useful in describing behaviors and values associated with the reactions of the organization's members to the use of formal processes and the attempt of establishing new practices. The first of the following two examples represents the organizational process, whereas the second represents the organizational practice. The intent is to explore the dynamics of embedded values in organizational processes and practices by interpreting factors relating to them. This helps informed realizing how organizational context embody values and meaning in organizational processes and practices.

7-2-3-1- Budgeting Process

The preparation for the annual budget in MCJ starts at an early stage of the fiscal year. All MCJ's agencies and departments study and define their financial needs of the following fiscal year individually. It is recently however that the required projects are defined according to the work plans of each agency and department in the organization. The required projects are then discussed by the head of the organization with the heads of the agencies, senior managers in all departments, and the officials in the Finance Department to determine priorities. The proposed budget once approved is ready for the second stage of the authorization process. The second stage involves presenting discussing, and approving the budget with the ministry overseeing MCJ. The process includes several sessions of detailed discussions with the officials in the ministry. The project's priorities at this stage are determined within the frame of the ministry's overall budget. The ministry overall budget is then discussed with the officials in the Finance Ministry for allocating in the necessary fund from the state budget. This is also involves several sessions of detailed discussions. The discussions at this level are concerned with the association of the required projects in the budget with the status of the national economy and the national development plan.

The discussions of the annual budget with the ministry preside over MCJ or with the Ministry of Finance are carried out by the senior officials in MCJ. Those are, most probably, the heads of the agencies, senior managers from of concerned departments, and officials from the Finance Department. Despite the understanding of those officials of the importance and role of the requested projects, it is difficult for them, for example, to discuss the structure, premise, and correlation of the requested IS projects. Therefore,

they cannot defend those projects adequately to guarantee their accreditation. One senior manager in MCJ described that matter as follow:

“We sometimes faced with difficulties in including some of the requested projects in the organization's annual budget, for we could not convince the officials of our ministry or the Ministry of Finance. We had previously explained this problem to the head of the organization, and requested the attendees of members from each department when discussing their projects. Moreover, we proposed the preparation of presentations of the importance of the projects to the organization to be introduced when discussing the requested projects. Anyway, the Finance Department recommended a preparation of a paper forms in which each department presents detailed information of the projects and their importance. The form is to be used in discussing the organization budgets with the ministry and with the Ministry of Finance. The use of those forms as I see it had not enhanced the situation.”

Throughout these long bureaucratic finance processes, the required projects are subject to be disapproved, postponed, or canceled either by the ministry overseeing MCJ or by the Ministry of Finance. This might cause radical amendments in the required projects, or impede the execution of the department's work plans.

7-2-3-2- Corporate Strategy Formation Practice

It wasn't until recently that MCJ formed its first corporate strategy. The work on the first corporate strategy started in 2002 soon after the recent head of MCJ started his four years service period. The new head of MCJ was interested in establishing new organizational practices. The corporate strategy was in the top of his list.

At first, MCJ's senior managers have been asked to develop work plans for their departments and present them in the corporate strategy meetings. The corporate strategy was a new concept for most of the executive in MCJ. Its formation process was a new experience that the organization had to learn and practice. Consequently, most of the early versions of the departments' work plans were inadequate and hard to comprehend. Later, a series of workshops have been held to help senior managers with the corporate strategy formation process. It was through these workshops that MCJ was able, for the first time, to define its vision and mission and put forward a coherent corporate strategy.

The structure of the MCJ's corporate strategy consists of two levels of plans, long-term plan and short-term plan. The long term plan serves a four years period, while the short term plan services a one year period. The long term plan, based on its goals and objectives, is to provide directions for the main activities that the organization should be concerned about in the next four years. It is to serves as a guideline for the organization annual budget. The short term plan, which is a break down of the long term plan, specifies the details of the programs that each department will embarks on each year to achieve its objectives. It includes the details of the projects that each department is working on and its implementation procedure for that fiscal year.

Each department in MCJ was responsible of forming its won work plans, that is, the long term and short term plan. Each department then introduces, discusses, and approves its plan in the corporate strategy meeting. The corporate strategy meetings usually take place four times a year. The first meeting was to introduce and approve the departments work plans, while the other three meetings are to review the department's

progress on their work plans. The corporate strategy, however, was lacking effective implementation, monitoring, and control system. Beside the quarterly meetings, there wasn't hardly any formal procedure for implementing the strategy. Most of the top managers do not look at their work plans until the time of the quarterly meetings in which they discuss its progress. Failures in achieving objectives were always attributed to lack of requested resources. The corporate strategy formation process is carried out at the top management level without any involvement from other groups in the organization. Not many of the organization's members have been aware of the content of the organization's corporate strategy or even of their department's work plans.

The process by which the corporate strategy forms in MCJ can be broadly seen as to follow the traditional rational top-down approach. The adoption of the top-down approach that MCJ, like most of public organizations in the region, prefers can be related mainly to the organizational culture which favouring autocracy. In this form of organizational culture, there are always fears of loss of central power from the leadership of the organization. The top-down approach, therefore, is more suitable to this cultural attitude and the autocracy nature of leadership.

It was remarkable, however, to find that a considerable part of the latest work plans of nearly all the departments in MCJ involve some sort of IS activities. The level of the IS projects in work plans of the departments was growing fast from the first plan to the next. When reviewing the first work plans of most of the departments of MCJ, the IS initiatives have been limited to certain departments only. This has been dramatically changed, IS projects were started to appear in most of the department's work plans in

the following year. In 2003, it was the norm of most of work plans of the MCJ's departments. Although these IS projects were fragmented and in some cases inconsistent, yet, it signify the remarkable change in the management perception of IS and its exploitation throughout the organization's activities.

The corporate strategy, therefore, was an important aspect of the internal context that has a considerable influence on the content and process of the IS strategy in MCJ. The corporate strategy has played a reciprocal role. On one hand, it represented an important factor in advancing the IS initiatives in the organization. It was employed effectively, for example, to gain support and commitment of the top management towards the GIS initiative. On the other hand, it created a new context employed by other executives to challenge the GIS initiative and to place pressures on the IS department to reduce its domination of the IS services in the organization. With the increasing pressure from the head of MCJ upon all departments to advance the use IS in their daily activities, the difficulties that the IS department was facing in providing the IS services was mobilized by other department's managers to legitimize their rash attempts of developing their own IS applications. This new attitude has a noticeable influence on the IS environment in MCJ which will be discussed next.

7-2-4- IS Environment

Based on the highly centralized and structured form of government system in KSA, one would reasonably anticipates that the centralized nature of the government system would likely lead to a relatively contained and coordinated exploitation approach of information technology in the government organizations than that

witnessed in other less centralized government systems in other countries. Assessment of the efforts to adopt information technology within public organizations in KSA, conversely, reveals that information technology has been adopted in a fragmented and uncoordinated manner. This fragmented approach, it has been argued, would seriously hinder the potential capacity of information technology proliferation to provide a unifying framework to establish and maintain the flow and dissemination of information within government organizations in KSA (Al-Sudairi, 1994). The IS environment in MCJ was no exception. It was, for a large extent, disorganized, unstructured, and not well planned.

MCJ can be regarded as an information intensive organization in that it is greatly dependent upon timely information for planning and delivering its service to the public. Giving that information is central to the undertaking of MCJ's services. It was, therefore, not surprising to find that MCJ started its efforts of utilising information technology and its applications ahead of many other public organizations in the country. It was 1982 when MCJ established its computer department. In its first project, the Computer Department installed its first mainframe computer system. Since then the utilization process of information systems in MCJ went through several stages of change which will be discussed in the following.

Until 2001, it was difficult to define a clear strategic vision for the exploitation of information systems in MCJ. In the 1980s, at the early stage of the introduction of the information technology in MCJ, the leadership of the organization although was not sufficiently aware of the capabilities of the information technology, they were interested

in utilising the innovative technology either to improve some of the organization activities or to leverage the organization image as an advance technology user. However, the leadership of MCJ then was not directly involved in the IS development and implementation process. This can be reasonably related to unfamiliarity with the new technology, or to the lack of understanding of the value of participating in the process. Although there was an initial attempt to develop advance IS applications using the GIS technology, the general level of IS utilization in MCJ at that time was limited to common administrative applications such as personnel, payroll, and inventory system. It seems that the MCJ leader's perception of the new information technology and its applications at that time was mainly as useful tools that can help in enhancing some of the organizational activities. No significant strategic values have been found to be attached to the IS use in the organization.

The rather limited interest and narrow perception of IS use in MCJ in 1980's had become even worse in the 1990s. This deterioration in the organization's interest of IS use is largely attributed to the change of leadership that took place at that time. The new leadership at that time seems to have no real interest in supporting the advancement of IS use in the organization. Some of the organization members have related this to the lack of practical understanding of the significance of IS for the organization from the side of the head of MCJ. Others believe that the deficiency in the country income in the 1990's as a result of the Gulf war and its consequence on the government annual budget has led public organizations to reconsider their projects priorities. Much of the IS projects, at that time, had to be either suspended or rescheduled.

Later, in the year 1999, there was a new leadership in MCJ. The new leadership although was aware of and interested in advancing the use of IS in the organization, the priority was to complete the city infrastructure projects that have been on hold for most of the 1990's era as a consequence of the Gulf war. There has been, nevertheless, some limited initiatives to introduce new IS projects to MCJ at this period. Most of the IS projects, however, were preliminary studies and pilot projects.

From the year 2001 onwards, with the continuance improve of the oil price, the interest of the government in exploiting new technologies as means of advancing the country economic and social development has begin to crystallize. Several national infinitives in that direction have been introduced. The government's orientation towards the utilization of new information technology in public organization has been clearly emphasized in the country development plans.

A new leadership has been appointed to MCJ to carry out the desired change. The new head of MCJ was IS oriented with sound previous experience. The highest priority of the new leadership, therefore, was to boost up the utilization of IS in all aspects of the organization activities. For the first time in years there was a clear vision of the role of IS in MCJ. Several important IS projects has been introduced in all departments of the organization at this era. IS use quickly became a vital issue of the organization culture. As one of the managers observed,

“The level of IS applications was the main measure by which the head of MCJ evaluate the overall performance of the department's managers.”

Table [7-2] summarize the historical development of IS use in MCJ from the leadership perceptions, the organization vision of IS use, the nature of IS application, and the broad shared meaning of IS use in the organization.

Period	Leadership	Vision	Applications	Perception
1982 - 1990	Interested but not familiar, and not involved	Enhance performance and organization profile	Administrative, less technical	A useful tools
1990 - 1999	Not interested	None	Administrative	Not effective
1999 - 2001	Interested and familiar, but not active	Work efficiency and effectiveness	Technical	Important but not a priority
2001 - 2004	IS oriented, active, and fully involved	Organizational change	More technical and less administrative	Vital for success

Table [7-2]: Historical Development of IS in MCJ

With respect to the IS services, the Computer Department in MCJ was formally responsible of providing the IS services to all departments of the organization. In 1998, CPA established its own IS department to serve its new GIS initiative. Lately, several

other departments started to undertake their own IS activities apart from the central computer department. The departments' individual IS activities includes installing local area networks, purchasing servers, PCs, and other computer equipments. In justifying their actions, department's managers placed the blame on the deficiency of the services provided by the central computer department. They argued that with the increasing pressure from the new head of MCJ to advance the use of IS in all the departments' activities, they had no choice but to develop their own local IS facilities.

The new head of MCJ in fact encouraged this behaviour. He award high credit to any IS initiatives by department's managers with out any consideration to systems integration and other technical issues related to the existing system in the Computer Department. He justified this behaviour by saying:

“I cannot hold any IS initiative from any department just because the computer department is not ready to handle that initiative. Those who are behind have to follow those who lead.”

Consequently, the recent IS architecture in MCJ is comprised of variety of systems with multiple platforms at several locations. Some are connected to the computer department through the organization central communication network. Others are standalone systems that serve a particular activity of the organization. There are local area networks in almost each agency, branch, and department of MCJ. They are, however, not necessarily talking to each other. The central communication network, nevertheless, connects main departments and all of the organization branches to the mainframe system in the computer department. This network is mostly used for legacy enterprise systems that serve some of the main activities of the organization.

In general, there was a negative impression about the Computer Department performance in MCJ. The Computer Department was criticized, for example, for not having an adequate enterprise communication network, using rigid centralized system, lacking efficient user support, and suffer from slow and insufficient responses to the increasing needs of IS services from all organization departments.

With all the criticisms it was remarkable to find that, with very few exceptions, most of the Computer Department staff has not been changed since the establishment of the department back in 1982. It is even more surprising to find that there were no changes in the structure, process, or human and financial resources of the department to accommodate the increasing demand on its services. Beside the ongoing maintenance projects, no major IS development project has been introduced through out the years.

The management of the Computer Department while admitted the inadequacy of their services, they argued that there is several organizational issues involved. In a discussion with the manager of the Computer Department regarding their poor IS services, he pointed out that much of the problems that they have been encountering were organizational rather than technical. He explained that at the early stage of the Computer Department, during its initial IS efforts, the department was facing a strong resistance against the use of IS applications from most of the departments. It took along time, for example, to convince the human resource department to formally use the personnel system that they develop for them. At one stage of this lengthy struggle, he adds, the human resource department manager had to be changed by the head of MCJ to facilitate the use of the system.

This kind of resistance from the users at all levels was one of the major obstacles that the Computer Department has to deal with in its effort to introduce IS services to the organization. For the most of the previous era, apart from occasional backing, there was no real support for the department role in the organization. In 1996, for instance, a project has been proposed to develop IS strategy for MCJ. The head of MCJ then rejected the idea doubting the benefit of such project for the organization.

It was clear that the extensive resistance from the users, along with the lack of top management support and the absence of clear vision for IS role in the organization have undermined the Computer Department role in the organization for some time. Now that this situation has been dramatically changed, it seems that the Computer Department is too weak to manage the pressing requirement of the growing change of perceptions of IS use that the new leadership has brought to MCJ.

Lately, however, MCJ has embarked on a large scale project to enhance its IS services. The IS project, which started in late 2003, was to study the IS situation in the organization as a whole, to define its recent and future IS needs, and to introduce an enterprise framework for the IS services upon which each department can plan its IS specific programs. In addition, the head of MCJ appointed an IS advisor and established and headed an IS steering committee to oversee the project. The IS steering committee consisted of six members including the heads of the two agencies of the organization. The IS services development project, although titled differently, was basically to form a new IS strategy for the organization. The work on the project was still in progress at the end of this research.

One of the major strategic IS decisions that has had a significant impact on the IS environment in MCJ was the new initiatives of utilising GIS technology. MCJ has a long experience with the GIS technology started back in 1983. Unfortunately, the first GIS initiative, as will be describe in the following section, was not a successful endeavour. The initial decisions of revitalize the GIS technology has been carried out by IS leaders in CPA, which is the main agency in MCJ. The Information and Development Department in CPA was entirely responsible of the development and the implementation of the GIS projects. The Computer Department has not been involved in the GIS initiative at any stage.

The lack of collaboration between CPA and the Computer Department has raised several technical and organizational problems that significantly influenced the IS activities in the organization at large. Although there was a fibber-optic communication channel between CPA and the Computer Department, the systems at each end could not communicate with each other due to systems integration problems. The high-speed communication channel, therefore, could not be used to allow other departments of MCJ to access the GIS databases.

Lack of integration isolated the GIS efforts in CPA from the other departments in MCJ. Other problems such as data sharing and duplication have been encountered. As the digital base map which is the core component of the GIS technology was under the total control of CPA, the IS applications development efforts in the other departments, that are mainly GIS based, were hindered by the lack of communication with the GIS service in CPA.

In addition, the success of CPA in detaching its IS activities from the Computer Department in MCJ has led to several essential changes to take place at the organizational level. For example, the structure of the organization has to be modified to add the Information and Development Department to CPA. Later the other agency in MCJ created its own IS unit as well. Some departments, such as the Administrative Development Department had to change its structure in order to include IS development tasks into its core activities. The departments' work plans also reflect the new IS perceptions. Each department in MCJ now has an IS development agenda in his annual work plan. Moreover, most of the main projects in MCJ now have a considerable parts that involves IS development issues.

The most important consequence of the new GIS initiative by CPA, however, was the change in the organization perceptions of IS use. It was not long before other departments in MCJ started its own IS projects based on the argument that the computer department services were not sufficient for their rapidly growing IS needs. The quick changes in the organization perceptions of IS use, the slow response, and lack of vision have led the Computer Department to loss much of its control over the IS services in the organization as whole.

The GIS use was gradually expanding in MCJ. It was started with simple applications that serve some basic needs of the technical departments such as allocating main civic facilities on the digital base maps of the city. This applications although were basic and simple, they yet had an enormous effects on the sheared perception of the organization's members of the IS use in their departments. The GIS technology was then

used in more advance applications such as analysing the underdeveloped areas in the city, and in updating the city urban development plan. Later, in 2003, more sophisticated GIS applications such as vehicle tracking systems were in use in MCJ. The GIS applications now serve a number of departments and branches of MCJ.

Several departments and branches in MCJ are planning to use new GIS applications soon. On the other hand, increasing pressure from internal and external interest groups has been started to be placed on the GIS leaders in CPA to force them to provide access to the digital base maps and GIS databases. The increasing pressure bushed CPA to open up its GIS services to a wider range of users.

The above highlights some aspects of the GIS initiative as part of the IS efforts in MCJ. A fuller account of the actions, reactions, and interactions surrounded the strategic decisions of reviving the GIS technology in MCJ will be provided next.

7-3- Strategy Formation Process

This section contains a description of the process of the GIS strategy formation in MCJ. It first investigates the historic events associated with the GIS development in MCJ as it become apparent that these were important to the understanding of the process of strategy formation. The section then describes the GIS strategy formation process and subsequent implementation of the system which provided the focus for the researcher period of engagement, this being a prerequisite for validity in case study research (Pettigrew, 1985). In particular, the section describes important events that relevant to the strategy formation process within the context of the organization and the

action, reaction, and interaction of the actors involved in the process. The description of the case study below is very much influenced by the research investigative framework and the ideas expressed in Chapter Four.

7-3-1- Historical Background

The first decision for developing a GIS at MCJ goes back to 1983. At that time, MCJ like most of the public services sectors in the region was far from having serious organized attempts to use information technologies in its activities. (F K) who used to work as the manager of the Computer Department which was newly established at that time, when asked about the situation then explained:

“None of the government agencies that I know have any IS activities at that time. The Computer Department in MCJ was one of the first to be established in the public services sector. It was more an in-house endeavor than a governmental initiative.”

However, MCJ then was about to undertake a large scale Aerial Photo Survey (APS) project through which new survey maps was to be produced to serve the needs of its demanding activities. When asked of who decided on using the GIS technology in APS project, (F K) the head of the Computer Department then explained:

“The project was awarded to a large international company which proposed to (B B), the head of CPA at that time, the idea of producing a digital version of the aerial survey maps and importing a GIS technology to handle the digital maps as part of the APS project.”

The idea behind implementing of the GIS technology, according to the project documents, was to:

“establish the necessary means for maintaining and updating the survey maps so as to keep them current. . . Using the system to update the maps eliminates the need for the costly APS projects in the future . . . The system was to be used also to build spatial databases and to develop applications to serve the agency demanding daily activities.”

The idea of using GIS was marketed through a presentation made to senior managers in MCJ. The presentation reflected the system capabilities, and its implication for the organization. The marketing of the GIS, as can be anticipated from the project documents, was accompanied by an offer to organized visits for some of the senior managers in the organization to the companies that producing these systems in the USA. The senior managers returned from the visits with a report including a list of the hardware and software of the proposed system. The proposed system was approved by the head of MCJ at the end of 1983 based on the recommendations of the senior manager's report.

It was noticed that the available documents about the ASP project did not point out to the existence of any technical studies of the needs of MCJ for the system or its abilities to implement the system. MCJ did not use any IS consultant to study or evaluate the proposed system. When (F K), was asked what was the role of his department concerning the decision of using or selecting and importing the proposed system he answered:

“The aerial photo survey project was not belonging to the Computer Department, but it belonged to the Survey Department. The head of the Construction and Projects Agency was in charge of all aspects of the project . . . We did not know about the system or its components until subsequent stages when it was imported through the aerial photo survey project.”

The APS project and the production of the digital map took two years to complete. The maps were completely produced at the contractor's site. The role of the officials in MCJ was the administrative follow-up over the project. Some samples of the project outputs used to be transported to MCJ to allow the officials go over them without discussing any technical details. In this regard, (F K) commented:

“At that time we had no clear idea of the nature of the digital version of the aerial survey maps . . . when we asked the technicians of the contractor about it, the answer was that what we are seeing on papers would be seen on the computer's monitor. We were not in position to discuss any detailed technical issues in that respect.”

The work on the APS's project was completed by the end of 1985. MCJ formed an internal committee to verify the project outputs. The committee agreed on receiving the paper copy of the aerial survey maps. The newly formed Computer Department, at that time, was assigned the task of receiving the GIS hardware, software and the digital version of the aerial survey maps. The Computer Department received the system's hardware and software components at the beginning of 1986. The GIS's manufacturing company installed and tested the system on the Computer Department site.

(F K) describes the first test of the digital aerial survey maps on the new GIS equipments saying that,

“At first, the system was seemed to be working fine with the manufacturer demo data. However, the system was running remarkably slower after loading the digital aerial survey maps form the APS project. The system had to run for considerably a long time before displaying one sheet of the digital maps.”

The considerably large volume of technical reports that has been found in the GIS project files indicate that a series of difficulties and unpredicted requirements started to surface and confront the GIS implementation efforts. The difficulties were ranging from technical complexity such as the inadequately formatted digital maps files and the lack of descriptive data to an appropriate hardware performance. (F K) answered the question about the reasons of the GIS implementation difficulties as follow:

“When the technicians from the GIS's manufacturing company came to check out the problem, they said that the digital maps files need several modification processes in order to be suitable for use in the system. These modification processes require a professional work of experts in this field. Those experts were not available in the region at that time.”

Financial difficulties have been also mentioned in some of the organization memos about the GIS project. The financial difficulties mentioned associated with several issues including the high cost that the manufacturing company charges for maintaining and operating the system, and also leasing its expensive operating system and other software.

No potential benefits of the system at any aspect of the organization's activities seem to be realized. (H T), the recent manager of the Computer Department, the assistance manager of the Computer Department at that time, described the situation then as follow:

“Our understanding at the time of was that it only requires hardware, software, and digital maps to operate the system. I have not heard about other requirements . . . Later, we found out that much more is required to implement the system . . . What even more disturbing with all the efforts to implement the system was the increasing doubt of the officials about the real value of that system.”

The attempts continued to revive the system throughout the subsequent years. According to (H T), several attempts carried out to benefit from the system, yet it was in vain. All what the system has been able to do at that point was to display the available digital base maps and to print them. These functions did not serve any significant activities within MCJ in any practical and useful way. Consequently, the procedures of maintaining and updating the digital base maps were completely neglected. Thus, the functions that the system was principally imported for were not implemented at all.

Despite the series of the technical difficulties that faced the development of the GIS project, (H T) claimed that the GIS functions of maintaining and updating the digital base map data were available and was possible to use, but for many reasons it has not been effectively utilized. When (F K), the former manager of the Computer Department, was asked about that issue, he respond:

“We had been totally busy tackling the technical complexities of the system. Moreover, the procedures of maintaining and updating the survey maps were the responsibility of the Planning Department. No updating requests for the digital base map had been made . . . All the update activities are carried out on the paper copies of the maps by the Planning Department.”

The GIS's manufacturing company was very much interested in making that system a success. The project documents indicate that they presented a considerable technical support to the Computer Department and to the contractors of the system maintenance and operation's projects. At late stages, this support reflected in free-leased software in a desperate attempt to reduce the system operational costs so as keep it active until possible solutions are available. Nevertheless, all those attempts were fruitless. From 1991, the interest in the system started to retreat with the retirement of (B B) who was the main supporter of the system. In 1996, the work on the system was completely terminated. That coincided with the emergence of the new strategic decision of utilizing the GIS technology in CPA. This new GIS initiative will be described in the following section.

7-3-2- The New GIS Initiative

In 1991, (K A) was appointed as a head of MCJ. Few months later, (B B) the head of CPA retired and substituted by (H M). The new leadership created a series of successive changes in the organization posts. In 1994, there was a comprehensive change in many of the major posts in the organization. The changes aimed at boosting the organizational performance through creating vast administrative changes. (M B) was amongst those managers who were relocated. He was appointed as a General Manager

of the Planning Department in CPA. Moreover, the changes included (J A) who was appointed as an assistant to (M B). One of the senior managers commented,

“The administrative changes in the 1994 were of the largest in MCJ history. With few exceptions, it covered almost all the departments of the organization.”

Documents concerning the performance of the organization at that era indicate that CPA was suffering from several work performance problems. Those problems in many cases associated with the ever increasing work-loads, scarce human resources, and lack of innovation in work procedures. That resulted in a remarkable decrease in the work efficiency of the agency. Consequently, the agency came under saver criticisms for its weak performance. The growing criticisms have led (K A), the head of MCJ, to take the above-mentioned repositioning action.

Early in 1995, (J A) who has a previous IS experience lays his primary vision for introducing information technology into CPA's activities. He discussed his prospect with (M B) who did not hesitate to approve it and presents his full support for implementation. (J A) said that the initial strategy that he formed at the beginning of 1995 contains essential principles reflecting many of the lessons learned from the organization previous IS experience. The most important of these principles can be summarized, as seen by (J A), in attaining the full support of the head of the organization, avoiding high-cost projects, expanding gradually on IS applications, and establishing users confidence and management involvement. (M B) described the strategy as follow:

“It represents a first true attempt to execute a program with clear vision for organizational development that reflects a new concept for improving organizational activities by exploiting information technology.”

The proposed strategy was focused on adopting innovative information technology, primary the GIS technology and its wide range of application in public services sectors, as means to achieve the required enhancement of the work performance.

CPA, as mentioned earlier, was facing a vast criticism on the deterioration of its public services. Various complaints from the public came as results of the increasing delay in handling their affairs within CPA departments. This has led to mounting pressure on the agency from the government authorities, the public sectors, and the local media. The pressures were largely aimed at improving performance and enhancing work procedures within the departments of the agency. In an interview with one of the local newspapers, (K A) said:

“We realize that there is a significant inadequacy in the services we provide. There is also a considerable delay in performing public assignments. But we are in the process of reforming our organization in order to improve performance and enhance the services provided to the public.”

(M B), in particular, was under enormous pressures from the head of MCJ to make swift changes in the work environment within the Planning Department which has the most direct connection with the public. Thus, it was the major source of criticism.

The required change in work environment was a problematical task under the condition of scarce human resources and lack of proper IS services. In a discussion about this issue, (M B) commented:

“The problem of the work performance have been repeatedly studied and extensively discussed, but without reaching to a clear vision of the suitable solutions.”

With respect to the GIS initiative, (M B) interest at that stage was to present the initiative as the innovative means by which the required renovations of the work environment can be bring about. The GIS initiative in this sense was proposed as part of the plan to relieve the increasing pressures form the public upon MCJ.

CPA was faced with two main obstacles in the process of forming and implementing the GIS strategy. The first involves the procedures of authorizing and financing the required GIS projects. The second obstacle was related to the organization structure which demands that the Computer Department is responsible of all the IS projects in all sectors of the organization including CPA.

The role of the head of CPA was central in authorizing the required GIS projects and convincing the officials in the Finance Department in MCJ to allocate the necessary founds for the required projects through the organization budget, which at that time was facing complication related to the difficult national economic situation. At that stage, the required GIS projects were mostly pilot studies of the requirements of establishing the system infrastructure.

In order to ensure the success of the GIS initiative, the head of CPA was certain of the importance of implementing the GIS strategy and carrying out the required projects from inside the agency. He was keen that the GIS projects not to be carried out by the Computer Department which was suffering from enormous difficulties in delivering sufficient IS services. The Computer Department was claiming the responsibility for undertaken the GIS projects as part of his duty. In this regard, (M B) said:

“Currying out the GIS projects within the agency was our main concern. The organization structure designates the Computer Department as responsible for all projects related to information technology within the organization. We all realize, however, that this would complicate the processes of implementing the GIS strategy to a far extent, if not terminate it completely.”

In 1996, the Ministry that oversees MCJ formed a committee consists of team of consultants to study the performance problems of the Planning Departments in the public services sectors. The committee studied the situation in CPA in order to define the requirements of developing its performance. The study included several field visits to CPA and many interviews with several senior managers. (J A) was appointed as a coordinator of this committee. He describes the role of this committee as,

“an important factor that profitably employed to accelerate the GIS strategy formation and implementation processes. It was also employed to transcend the possible confrontation with the Computer Department in undertaken the required GIS projects.”

(J A) describes his role with the committee as significant and influential in directing their recommendations to support the new GIS initiative in CPA.

The study presented by the committee strongly recommended the use of GIS technology for enhancing the performance of the Planning Departments in CPA. The study has suggested the use of specific technology for developing the GIS applications to be consistent with the one in use in the ministry. The aim was to unify the GIS platforms between the ministry and all sectors of public services. Most important was that the study assured the importance of undertaking the GIS development within CPA. Several justifications backed up these recommendations. It was clear that the committee was totally convinced with the CPA's point of view in this matter.

The committee was directly under the custody of the Minister. The committee recommendations therefore were influential and compulsory. According to (J A),

“The ministry committee recommendation participated greatly in convincing the head of MCJ to adopt the proposed GIS strategy. It also facilitated the financial support for the required projects. It was employed efficiently to prevent the internal resistance against the proposed strategy. It also used to legitimize the execution of the GIS projects outside the Computer Department in MCJ.”

In 1997, the Ministry assigned the task of preparing the city preliminary urban plan to CPA. The ministry, for the purpose of enhancing the urban planning capabilities in the public services sectors, requested that the developing of the urban plan to be carried out internally within the Planning Department in CPA. The officials in CPA had faced many difficulties in preparing the required plan. As (M B) explained, they faced with work over-load, shortage in proficient humane resources, and lack of proper means to undertake the task.

The struggle with developing the required plan had presented an exceptional opportunity for (J A) to introduce the GIS technology and convince staff members in the agency of the significance of GIS in solving their work problems. Moreover, he took this opportunity to introduce the GIS strategy in practical and direct way. (J A) had coordinated with (M B) to prepare the required city urban preliminary plan using the GIS technology. High-resolution satellite imageries had been utilized as a substitute of the unavailable up-to-date digital maps. (J A) said that he managed to convince a GIS company to provide him with the technical support to carry out the task. Working with a small team and in relatively short time, he was able to produce the required urban plan.

Although the produced urban plan was a primitive task comparing with the more sophisticated capabilities that the GIS technology can provide, the GIS based plan produced a remarkable impact within CPA. (J A) commented on this as follow:

“The success of producing the city urban plan pushed the GIS strategy into the frontage. The strategy gained considerable support from managers and interest from all the staff.”

The GIS produced urban plan was then presented to the head of MCJ. Later, it was presented by the head of MCJ to the governor of the region and officials from several other public services organizations. (J A) commented,

“Whilst the presentation was primarily about the city urban plan, the notable comments of the head of MCJ about the use of GIS in producing the plan were a definite indication of the influence that the use of the GIS have had upon the head of MCJ and the audiences.”

In 1999, (N N) was appointed as head of MCJ after (K A) had retired. Subsequently, (H M) the head of CPA retired as well, and (M B) was assigned as a substitute. Soon after that, (M B) established a new department that directly connected to him. The new department was responsible of the GIS strategy formation and implementation in the agency. (J A) was appointed as director of the new department. His first task was to review the GIS services and to extend its scope to include all the departments of CPA. In answering a question about his vision of the GIS strategy after he was appointed as director of the new department, (J A) said,

“My first task was to review the GIS services and to extend its scope to include all the department of CPA. The plan to expand the GIS services was prepared earlier. It was not been implemented for several reasons. Additional studies have been carried out to bring the previous work on GIS plans up to date. This includes a new GIS pilot study to consider the new requirements of the other departments.”

Earlier, in 1998, two GIS pilot studies have been carried out. The first was concerned with identifying of the requirement for creating the GIS databases. The other was concerned with the data conversion process. That is to convert the paper-based maps into a digital format. However, after expanding the scope of the GIS strategy to include all the activities of CPA, another pilot study project executed in 2000. The project aimed at surveying and evaluating spatial data in all departments in the agency and the GIS requirements for processing this data. The project included a preparation of a detailed plan to capture these spatial data and link them to the system. Moreover, the project included the study and development of the necessary means to assure the continuous updating of the digital base map as to keep it current and complete.

The lack of new digital base map created a serious obstacle for the GIS implementation process. The digital base map represents the backbone for the system. CPA was suffering from numerous difficulties in its operations because of lacking new survey maps of the city. The most current available digital base map was the one produced by the aerial photo survey project in 1984. These digital maps were technically out dated when it first received by MCJ in 1986. These digital maps have not been updated since then. This was considered by many as one vital consequence of the failure of the previous the GIS initiative. As one of the IS consultants observed,

“While the Computer Department still claims that they have digital maps database, we warned that the database they have was absolute long time ago. In fact, it was absolute the day they received it from the Aerial Survey Project. It was already two yeas old then. The city was growing enormously fast. Keeping the digital maps updated was a fundamental task that the pervious GIS project failed to accomplish.”

Formerly, the Ministry over looking MCJ assigned one of its departments the responsibility of executing aerial photo survey projects in order to produce maps for all of its public services sectors. The Ministry was undergoing hard confrontation with a number of other governmental institutions, to control the survey maps production projects, as yet there were no specific governmental body in dealing with these tasks. Until then, the aerial photo survey projects and the production of survey maps have been implemented through and according to the needs of each sector. The Ministry, at that time, has been working on a strategy to impose its control over the development of GIS in all its sectors. The aim, as seen by the officials in CPA, was to serve the Ministry objective of establishing a countrywide lands information database. This lands

information is highly sensitive. It is also a source of so many problems and complications in several public services sectors. As one member of staff involved in the aerial survey project observed,

“It is through the control of the aerial photo survey projects and the production the digital survey maps that the Ministry intends to dominate the GIS services in all its public services sectors and those dominate the lands information databases.”

The Ministry approach, as can be assumed from the exchanged memos between the Ministry and MCJ about the subject, was to develop a central GIS based lands information system in their site. The system then can be accessed and used by all sectors through the Ministry's communication network. The database of the lands information was supposed to be under the direct control of the Ministry. This approach however faced several organizational and technical complications. These complications have delayed the execution of the Ministry's GIS strategy. In one of the several meetings regarding the new aerial survey project between the officials in the Ministry and MCJ, the head of the survey department in the Ministry acknowledged that the decision still not settled on the department that should be responsible of the intended lands information system and its highly sensitive databases.

As for CPA, the execution of new aerial photo survey project was the pivot of the GIS strategy. The pilot studies conducted assured that the existing digital base map that produced from the former aerial photo survey project in 1986 was useless. Any attempt of update them would be in vain. Therefore, a new aerial photo survey project had to be executed for producing new digital base map.

In 1996, CPA requested the Ministry to execute a new aerial photo survey project. The Ministry's estimation of the cost of the project of the aerial photo survey and the production of new digital base map was relatively high. The Ministry, accordingly, rejected the request several times for financial reasons. The officials in CPA believe that the reason for the Ministry holdups of the project was not its high cost, or the government budget deficit, but the intention to direct them according to their GIS strategy that was not in place yet.

In 1998, as the need for the new digital base map become critical and pressing issue in the GIS development process, and to overcome the conflict of interest with the Ministry with regard to the GIS activities, CPA prepared a study about the possibility of using an ortho-rectified aerial photos technology as temporary solution to provide a base for building primary GIS applications while the new digital base map can be produced by the Ministry in a later stage. This was the only possible way to overcome the conflict with the Ministry as (J A) explained,

“The ortho-rectified aerial photos were not suitable to develop sophisticated GIS applications such as the lands information system that the Ministry was interested in. Therefore, the use of the ortho-rectified aerial photos was a reasonable solution that the Ministry has no reservation against. Yet, we had to pay several visits to the Ministry to convey this message clearly.”

The ministry finally agreed on undertaking the aerial photo survey project to provide CPA with the ortho-rectified aerial photos as first stage of the project. The digital maps were to follow at later stage.

Soon after the ministry approved the new aerial photo survey project, CPA executed its first major GIS project in 2001. The project aimed at establishing the system infrastructure. The project included providing the hardware and software, preparing the data, setting up databases, developing primary applications, and providing training and technical support. The ministry was to deliver the ortho-rectified data to CPA at the time of the execution of the GIS project so that the primary applications can be built upon the ortho-rectified data. In an e-mail received from the GIS project manager in early 2003, he said,

“The project is about to end, yet, we haven't received the final ortho-rectified data from the Ministry utile now. This caused us a lot of problems in testing and delivering the required applications.”

The GIS project was to be concluded in the beginning of 2003. Yet, CPA did not receive the final ortho-rectified data from the Ministry utile then. This caused a total disorientation in the GIS project objectives and scope of work. In a later e-mail, the project manager acknowledges that,

“The Ministry finally sent the final version of the ortho-rectified data. However, they did not enclose lots of the technical information required for processing the data.”

CPA began in accordance with the GIS strategy to execute a series of major projects. These projects were involved developing and updating master plans for the city including, urban development, transportation, sewage water, and streets naming and numbering. It was designed to include massive data collection and constructing of large

spatial databases comprising essential information about the city. Thus, they were the core source to establish much of the city central GIS databases. The GIS applications should have been developed in parallel to these major projects as to facilitate the data capturing and building the spatial databases and to provide the mechanism to maintain and update these data in regular bases. The delay in receiving the ortho-rectified data generated a substantial disruption in these projects and caused a heavy and harmful loss of valuable data, despite all the efforts exerted to overcome the consequences. One of the GIS consultants asserted that:

“The process of recuperating these data and incorporating them within the central GIS databases would be a complex, lengthily, and very costly process.”

Many officials in CPA agreed that recuperating those data and linking them with GIS databases would be a challenging and prolonged operation due to the nature and the size of the data. What even worse according to (M B) was that CPA has promised officials in various other service sectors to provide them with those important data of the city for their operations as soon as they are available in the system.

“The spatial data that the master plans projects provide are of significant value not for MCJ alone but for all other public services in the city. It contains essential information about the city that is critically needed for infrastructure and services development. We promised to provide them in a digital form through our GIS services.”

Beside the technical and financial losses, the loss of the spatial data caused a considerable uncertainty of the process of developing the GIS services.

CPA was under tremendous pressures imposed by officials from several other sectors as a result of their desperate need for new maps and essential data of the city. The CPA failure to provide the required maps and data on time and in the format required resulted in the emergence of several initiatives calling for other organizations to take on the responsibility of developing the city spatial databases and provide the GIS services. One of the most significant initiatives that received backup from some of the influential local officials was that presented by a private sector company. This company forwarded a proposal for building a central GIS databases for the city and to provide integral GIS services for both public and private sectors. The company went along way with propagating the idea and putting pressures upon all local services sectors to adopt it. The initiative was terminated after along dispute in which CPA convinced the company of the impracticality of such services off CPA's borders. One of the engineers involved in the issue noted,

“We had to demonstrate to them that keeping the digital base maps updated, which is the soul of the GIS services, is an impossible task to do out side MCJ as most of the changes in the land is done by MCJ. Thus the base map is changing in almost a daily base. It is not possible to track all these changes form out side MCJ.”

Another similar GIS initiative was launched later by a government firm that provides survey and mapping services for government organizations. Again, the GIS initiative was terminated based on the previously introduced rationale which claims that for technical and administrative reasons such service is not possible to provide from other sources but MCJ.

In 2000, (N N) had to resign from MCJ and replace by (A M). This change has led to a noticeable shift of focus in the work environment in MCJ. Unlike his predecessors, (A M) was characterized by his appreciation of the role IT plays in organizational change, as well as his understanding of its adoption issues. Shortly after saddling presidency, (A M) perused the work of CPA and its progress in adopting the GIS technology in its activities. He showed great concern of the GIS strategy details, the projects executed and the difficulties that the agency has been confronted with.

(A M) placed a great deal of pressure upon all executives in MCJ to quickly consider using the GIS technology in their departments. Consequently, several sectors of MCJ demand CPA to provide them with the GIS services, whereas others considered working independently. The director of Finance Department in MCJ describes the situation as follows:

“We have been receiving many requests from several departments asking for budgeting GIS projects . . . It was a phenomenon that starting to spread quickly among executives in the organization.”

The quick changes in the context of MCJ placed CPA in a critical situation. On one hand, CPA has to face the increasing internal and external demand on the GIS services that yet not complete. On the other hand, it was confronted with the ministry holdups of the essential digital base map that hindered its efforts to fully implement the GIS strategy. This situation raised uncertainty about the GIS development process and CPA's capabilities of providing the service. This forced CPA to rethink its strategy and search for an alternative approach to provide the GIS services required.

At the end of 2002, CPA prepared a study for alternative GIS strategy. The study addressed much of the emergent contextual aspects that challenged the GIS development process. The study reviewed the position of the GIS projects and outlined the objectives of the alternative strategy and its characteristics and implementation approach. The principal idea that the alternative strategy advocated was the concept of strategic partnership with GIS service providers. The concept was based on commercializing the GIS development activities and the services associated with it.

The alternative GIS strategy introduced several new ideas that correspond to the emergent changes in the internal and external context of MCJ. For example, there was a shift in the strategy focus from short-term to long-term solutions, and from providing the GIS services to receiving the services. It also transforming the GIS services into a financial resource rather than being a financial burden. In addition, the proposed strategy was concerned with expanding the GIS services from the MCJ domain, where they serve the organization internal needs, to the external context, where they can serve the needs of all other related sectors. Most importantly, from the point of view of (M B), was that the strategy aimed at redirecting the increasing pressures upon CPA towards the external stakeholders to oblige them to get involved and to contribute in costs and efforts of developing the system and the services it provides. As (M B) observed,

“We have been criticized by others in several occasions for not providing the long waited digital maps and spatial data through the GIS services we are developing. We have tried to explain to them that this is along term investment that requires time, cost and effort to accomplish. It is the time that they all share that responsibility with us.”

The provided document of the proposed GIS services partnership strategy summarized the main objectives of the strategy as to provide the means necessary to carry on with GIS applications development, to maintain and update the digital base map, to emancipate the system development process of administrative and financial complexity, to provide MCJ and other external public and private sectors with a wide range of GIS services, to cover the expenses of providing the services, and to make reasonable profits out of the process. The study was presented to the head of MCJ early in 2003. He endorsed it with no reservations since it was in consistent with his new vision of the organizational change, which aimed at increasing the financial independency of MCJ from the government budget through efficient investment and profitable service's projects.

The new GIS strategy, nevertheless, has faced several difficulties throughout its process. On one hand, the procedures to undertake the ideas proposed in the strategy were problematic hence, the subject was not a familiar one with straightforward administrative steps to follow. On the other hand, the process must be carried out through formal and authorized administrative procedures that, yet, do not exist. The manager of Contracts Department described the situation as follows:

“The suggested notion of strategic partnership was not a project in the common definition of the traditional projects which require specific regular procedures, such as the authorization and budgeting. Furthermore, the contracting regulations of the organization do not have the arrangement of such procedures . . . there has been no previous case to follow, not in our organization, or any other government organization I know.”

In other concern, the IS services companies that have been qualified for undertaken the proposed strategic partnership of the GIS services expressed the fear of the absence of the necessary legislations and the ambiguity of the administrative procedures that govern the strategic partnership initiative. In a meeting to discuss the proposed strategy, a director of one of the candidate companies commented:

“Not for a single moment would I have hesitated to accept the concept of the strategic partnership had it been in other country where there is a will established regulations for such activities, but here we are talking about entirely different situation . . . We have to be cautious in considering such initiative.”

In a side discussion, the director explains that in some countries there are legislations and procedures for such activities that guarantee the rights of all sides. He adds that there is a well-established IT infrastructure and large dynamic market that facilitate the successful implementation of such ideas. Whereas in the potentialities and circumstances of the local environment, the risk rate is high, and the chances of success are rather limited. The head of MCJ, on the other hand, commented:

“We are fully aware that we are not working in perfect circumstances, but there is a start for every thing. We present an unprecedented case here and we have to afford the expenses so as to gain the privileges for being the first.”

Until writing this thesis, The GIS services in CPA was still suffering from not receiving the final digital base map from the ministry. The GIS strategic partnership initiative was still experiencing legislation and administrative difficulties.

Table [7-3] summarizes the critical events at MCJ that though to be relevant to the process of GIS strategy formation.

Time	Critical Events		
1982	May / The establishment of the Computer Dept.		
1983	February / MCJ decided on undertaking a new aerial photo survey project to produce new survey maps for the city.	March / The aerial photo survey project contractor proposed the idea of using GIS technology.	November / The idea of using GIS technology was approved.
1986	March / The new GIS technology installed in the Computer Dept.	June / Delivery of the digital version of the aerial photo survey maps.	July / First run of the GIS with the delivered digital data.
1991	April / (K A) appointed as Head of MCJ.	May / The head of CPA retired and substituted by (H M).	
1994	May / Comprehensive changes were taken place in many major posts in CPA.	June / (M B) appointed as GM of the Planning Department, and (J A) as his assistant.	
1995	July / (J A) proposed the GIS strategy for CPA.	September / The GIS strategy approved by the Head of CPA.	
1996	February / The Ministry formed a committee to study the performances of CPA.	March / (J A) appointed as a coordinator of this committee.	December / The study about the performances of CPA was presented to the head of MCJ by the committee.

Table [7-3]: Critical Events Chart and Time Line

Time	Critical Events		
1997	March / Development of the city structure plan using the GIS capabilities.	September / The first GIS pilot study carried out.	
1998	April / Establishment of the IS Department in CPA.	July / The work on the old GIS completely stopped.	
1999	July / (K A) retired and (N N) was appointed as head of MCJ.	October / (H M) retired, and (M B) appointed as head of CPA.	November / The IS Department in CPA connected to the head of the agency directly.
2000	January / A company from the private sector proposed the idea of providing a public GIS services.	March / The Ministry approved the new Arial Photo Survey Project for MCJ.	May / The seventh National Development Plan released.
2000	June / MCJ carried out its new GIS project.	September / A public organization proposed the providing GIS services.	
2001	March / (N N) resigned and (A M) appointed as Head of MCJ.	March / The first GIS maintenance project carried out.	June / MCJ developed its first corporate strategy.
2002	February / The digital maps production project approved.	July / The other agency in MCJ carried out a GIS pilot study.	
2003	January / The alternative GIS strategy approved by the head of MCJ.		

Table [7-3]: Critical Events Chart and Time Line (Contained)

Table [7-4] contains major events in MCJ and explains its possible consequences on the content and process of GIS strategy. It helps in understanding the interactions between aspects of context with strategy content and process over time.

Events	Impact on Content	Impact on Process
(J A) formed the first GIS strategy for CPA.	To use GIS as means for changing business culture.	Start first organized initiative toward the required change in organizational culture.
Development of the city structure plan using the GIS capabilities.	Promoted the GIS strategy and convinced the organization of its efficiency as means for change.	Encouraged the move from the conceptual to the practical stage of GIS strategy formation.
The establishment of the IS Department in CPA	Institutionalized the concept of GIS in the organization structure and culture.	Formalized the GIS implementation process.
The first GIS pilot study carried out.	The focus shifted towards technical aspects of the strategy.	First tangible step for implementing the GIS initiative.
(N N) appointed as Head of MCJ.	The vision for change extended to include changes in IS services.	Provides important shift in top management support for strategy.
(M B) appointed as Head of CPA.	The vision for change elevated from departmental to organizational level	Significant support to the GIS strategy formation and implementation process.
The IS Dept. connected to the Head of CPA directly.	Expanded the scope of the strategy to include all the CPA departments.	The GIS strategy included in all the projects of CPA.

Table [7-4]: The Impact of Events on IS Strategy Content and Process

Events	Impact on Content	Impact on Process
CPA carried out its first GIS project.	Draw attentions toward implementation issues.	Concentrated the formation process efforts on building up the GIS infrastructure.
(A M) appointed as Head of MCJ.	Extended the scope of the GIS strategy to include all MCJ.	Significant support from the head of the organization to the strategy formation process.
The first GIS maintenance project carried out.	Raised the issue of institutionalizing the GIS formation process within the organization structure.	Provided valuable resources for GIS process. However, it draws official's attention to the high operational cost of the system.
The first corporate business strategy for MCJ developed.	Incorporated GIS strategy within the organization corporate strategy.	Provided support for the strategy formation, but also caused problems as new actors involved.
The digital maps production project approved.	Provided the base to focus upon developing more general use applications and extend the service beyond CPA departments.	Important step in implementing the strategy, however, it raises problems with internal and external stakeholders.
MCJ other agency carried out a GIS pilot study.	The focus shifted towards sharing the system resources with the others interest groups in MCJ.	Enforced the need to consider the needs of other groups.
New strategy for GIS services approved by the Head of MCJ.	A major shift in the strategy content, from internal vision toward an external one.	The new GIS strategy has been confronted with legislation issues that delayed its formation process.

Table [7-4]: The Impact of Events on IS Strategy Content and Process (Continued)

7-4- Case Analysis

The previous section provided a detailed description of the interconnectedness of events and actions surrounding the strategic decisions of adopting GIS technology in MCJ over time. The evolving vision for change, the context from which ideas for change proceed, and the actions, reactions, and interactions of the actors involved in the activities of the strategy formation and implementation have been discussed. In this section, the aim is to derive a greater understanding of the strategy by relating its formation process to important aspects of its context. The analysis of the case study has been carried out in terms of the research investigative framework discussed in Chapter Five. Key concepts of the web model analysis have been used to structure the section. The historical context will be analyzed first. This is followed by the infrastructure issue. Lastly, an analysis of the social relationships is provided. The ideas of the web model approach as applied in this analysis are illustrated in Figure [7-2].

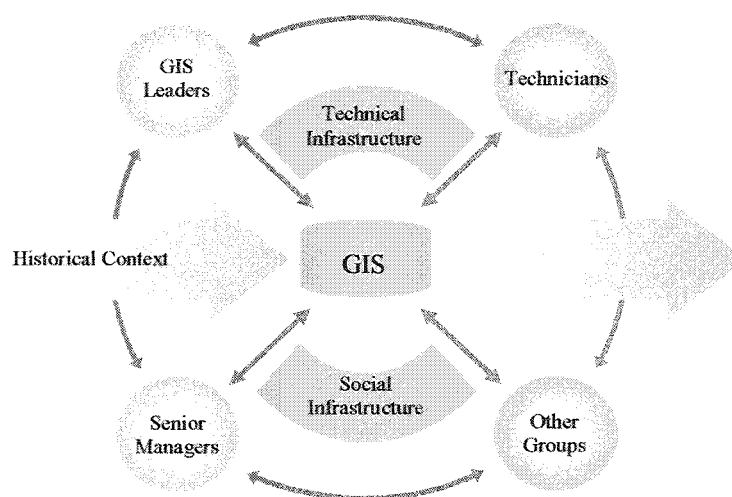


Figure [7-2]: Applying the Web Models Approach

After Kling (1987)

7-4-1- Historical Context

In the first initiative to adopt the GIS technology in MCJ back in 1983, the large picture was that (B B), the head of CPA at that time, was interested in using the new information technology to improve the organization performance, but this interest was a personal view rather than a definite corporate strategy. At that stage, MCJ had no corporate strategy, no explicit work plan for action, and no previous experiences or specific view for adopting new technologies. In fact, there was hardly any certain perspective towards information technology in the minds of the management in the service sectors in general. It seems that the persuasion of (B B) by the capabilities of innovative technologies was real and deep. Some employees at the Computer Department stated that (B B) at times leaves his office and goes to the Computer Department to look at the screens of the IS applications and sits with the IS specialists and argues with them about their work aspects and their important role for the future of the organization. (B B) faith was deep that the future of the organization would be strongly linked to the exploitation of new technologies, which should be considered as a credit for him in view of the prevailing situation in which much of the senior officials were suspicious about the possibilities of using information technology.

The attitude of (B B) towards using the new technology encouraged the APS project's contractor to introduce the idea of producing digital base maps and implement GIS technology to handle the base maps. As a result of either the lack of sufficient knowledge of the GIS from the side the officials in MCJ to allow detailed discussions of the proposed system, or perhaps to avoid any complications for the plan to sell the idea, the contractor did not provide MCJ with the actual needs for implementing the system.

Although there was a strong commitment from (B B) to support the first GIS initiative and sufficient resources allocated to assure its success, all that efforts were in vain. It seems the problem was that the first GIS initiative concerned none of the organization members except (B B) himself, and he could not convince anyone of sharing his vision. A simple yet important observation that worth mentioning here is the fact that the organization members have showed no real interest in the GIS initiative, yet, they were pride of the general public impression of their organization as one of the IS leaders in the public services sector. This represents the strong symbolic nature of the system and its reflection on the social context of the organization.

With exception of the few senior members of the organization who have participated in the first GIS project, not many members of the organization have clear ideas of the project objective, scope, and outcomes. They broadly have different interpretations of what happened. While few members perceive it from positive stances, several others hold negative perceptions and meanings of the experience. Thus, it can be argued that the GIS history was rather ambiguous and hard to make sense of for many of the organization members.

While for the first look it seems that the previous GIS initiative had a little impact on the internal and external context of the organization, the initiative certainly was a learning process from which the organization implicitly and explicitly accumulated organizational knowledge. The gained organizational knowledge was then surfaced in the second GIS initiative in form of as a more mature and profound understanding of the contextual and processual issues surrounding the development of the GIS services.

Although not explicitly recognized by members of the organization, but the previous GIS initiative had produced some kind of IS capabilities that otherwise could not exist without going through such reach and informative experience. A good example of such organizational IS capabilities is the knowledge and experiences reflected in the work of (J A) in proposing the second GIS initiative and the using GIS technology in developing the city preliminary urban development plan. It was obvious that the experience from the first GIS initiative was deeply imbedded into the memory of the involved members of the organization. Indeed, it is now part of the organizational knowledge as it accumulates through experiences over time.

7-4-2- Infrastructure

Prior to 1996, no IS infrastructure was available in CPA at all. However, the situation was rapidly changed with the introduction of the new GIS initiative. With the progress in implementing the proposed GIS strategy, an advanced IS infrastructure has been established with a fast communication network, powerful workstations, and PC's in all departments in CPA. Several levels of IS training programs have been offered to many of the staff members in order to provide them with the basic knowledge and necessary skills. By the end of 2001, CPA has established the Information and Development Department to serve its needs of the IS services. Later in 2002, the GIS services have been extended to include other sectors in MCJ. Several GIS applications have been developed in MCJ to serve specific needs of the organization activities. However, these applications were limited to the availability of the digital base maps. The work on producing an updated digital base map was still in progress in the Ministry overseen MCJ.

Establishing a modern IS infrastructure from the outset was an important advantage for the new GIS initiative in CPA as some of the GIS consultants believe. They argue that it would be very hard to build on a legacy system such as the one that the Computer Department in MCJ used to have. The development, operation, and maintenance of the system and its infrastructure in CPA are completely outsourced through a series of GIS projects.

An important aspect of the social infrastructure is the skills of the staff members and their knowledge and experience of information technology. At the user's level, there were available limited experiences in using CAD systems by several engineers and technicians. However, there was no previous experience in using GIS at any level. The GIS training programs that carried out at different stages of the GIS development process were helpful in enhancing the staff member skills in GIS and related technologies. At the management level, although they were aware of the importance of the GIS technology for their department's activities, they had no previous experience with information technology in general and with GIS technology in particular. Thus, they have not been fully aware of the technical and organizational issues involved with introducing the GIS technology to their departments.

The limitations in the IS knowledge and the skilled human resources have imposed the need for the employment of the IS consultants and outsource all the GIS projects. These arrangements have led to several consequences. An example of these consequences is the influential role that the IS consultants start to play at different stages of the GIS strategy formation and implementation process. This unconstructive

role helped advancing the idea of rethinking the GIS strategy and has led to the emergent of the GIS services partnership strategy.

In general, there was a lack of understanding of the long term nature of the implementation process of the GIS strategy, and lack of understanding of the scale of the resources it requires. These misunderstandings encouraged criticizing the GIS strategy and its implementation process from several groups in several occasions. Such misunderstandings can be detected from the increasing pressures that the other sectors in the organization have been placing on CPA to immediately provide them with GIS services that practically required considerable resources to provide.

Another important aspect was the organization's corporate strategy. The corporate strategy had a double role. From one side it provided the GIS strategy with the support it needs to facilitate its implementation process. It has been effectively utilized to gain support and commitment to the strategy from senior managers of the organization. From the other side, the corporate strategy formed a new context used by several actors in the organization to exert pressure on CPA to eliminate its total control over the GIS initiative. The relatively newly initiated corporate strategy emphasized the fundamental importance of using information technology in general and GIS technology in particular in all aspects of the organization activities. Thus, CPA was faced with increasing pressure to provide other sectors of the organization with the GIS services that was not well established yet. Consequently, several groups exploit the circumstances of the delay in providing the GIS services by CPA to legitimate their independent attempt of establishing their own GIS solutions.

7-4-3- Social Relations

Whilst (B B) championed the first GIS initiative in MCJ, Both (M B) and (J A) were the main players of the second GIS initiative. They set its content and direct its formation and implementation processes, predominantly after (M B) was appointed as the head of CPA in 1999. (M B) clear vision of the organization context helped in defining the desired change in the work environment. He used his profound understanding of the effective aspects of the internal and external context of the organization to give meaning to events and actions and thus managed to give meaning to the organization reality, not only for him self, but also for those working with him. The organization contextual aspects were steadily mobilized by (M B) to strengthen his position and authorities. (J A) on the other hand used his experience in information technology in advancing the GIS strategy formation and implementation processes. Consequently, he was able to establish his role in the organizational changing process. He also managed to control number of important organizational resources, in particular the key projects in CPA, on the pretext of their direct relation with the GIS development process. His role has been extended to involve projects in other sectors of the organization by linking them to the GIS strategy.

The success that (M B)'s had achieved produced a new symbol in the organization culture that altered the organization system of shared meaning. The new system of shared meaning motivates other senior managers to explore opportunities to accomplish similar success. This new meanings were clearly manifested in the organization corporate strategy that started in 2001 after (A M) appointed as head of MCJ. Most of the presented departmental strategies were focused upon using information technology

as a vehicle of their potential work plans. It is understood that the head of MCJ attitude toward information technology was a key reason behind the focus of senior managers upon using information technology. However, this information technology exploitation phenomenon was readily accepted by most senior managers as a result of the new symbol that (M B) established in the organizational culture and the new meaning that widely accepted about the use of information technology.

(M B) has managed to assemble the necessary support for his strategic decision of adopting GIS technology to achieve the desired change in the work environment by mobilizing a number of influential aspects of the organization context. The most important aspects that (M B) successfully employed were his leadership style and his ability to gather different groups around collective aims and to win their commandment and support. (M B) managed to mobilize these aspects to influence visions of other members of the organization, and thus, formed new systems of sheared meaning. As a result, many members of the organization accepted his assumptions. They believed that his decisions and actions suit their values and therefore legitimate and necessary and serve their own interests and the interest of the organization as a whole.

The successful initiation of the new GIS initiative, in particular, the use of the technology in preparing the city preliminary urban development plan, and the impact it produced upon the organizational culture have encouraged many members of the organization to express their commitment to its implementation. Other expressed their desire to participate with the successful team of (M B) and (J A). They were ready to accept the team definition of the organization reality and to commit themselves to the

team vision for change. It is through this effective mobilization of perceptions and meanings of members of the organization that (M B) managed to legitimize his decisions and actions in the eyes of the internal and external stakeholders, and enforce the role he plays in the organizational change process.

In addition, the leadership style of (A M), the new head of MCJ, represented an important change in the internal context of the organization. The particular interest of (A M) to undertake a major change in the organizational culture using, among others, information technology to achieve the desired change was a significant aspect that affects the GIS development process. This leadership attitude greatly influenced the way the members of the organization perceived information technology, and thus accelerate the alteration process of the system of shared meaning in the organization, which has already started to reform through the series of actions associated with the GIS strategy formation process. The leadership style of the new head of MCJ has changed the senior managers' perceptions of the importance of their commitment to the GIS strategy from just a positive stance into a matter of job survival. Later, (A M) used this new system of shared meaning to legitimate his large scale change in several positions in all sectors of MCJ. This is an example of the consequence that the arrival of a senior figure has upon the formation and implementation process of IS strategy, an issue which has been noted elsewhere (Walsham, 1993; Sillince and Mouakket, 1997).

The leadership style of the head of MCJ had been mobilized to gain more power to advance the GIS strategy, and to gain more control to achieve other objectives through making changes on the structure of the social relations. The changes on the

structure of the social relationships enabled (M B) to control resources without the need to return to the traditionally controlling authorities. An example was the direct interference of CPA in the specification of the projects of other sectors in MCJ to add the necessary requirements for linking them with the GIS services in CPA. (M B) used the leadership attitude of the head of MCJ to influence power relations with other senior managers in his favor, and to advance his control over the organization's resources.

At later stage, however, the leadership attitude of the head of MCJ that has been mobilized to maintain power and control turned into internal tensions that (M B) had to struggle with. Senior managers of other sectors in MCJ have passed on the IS exploitation pressure that the head of MCJ has been practicing upon them to (M B) by impatiently requesting him to provide them with the GIS services that he control. That was ahead step that the GIS initiative in CPA was not yet ready to deliver. As a result, there was a major shift in the GIS strategy content and process, which will be further discussed at a later stage in this section.

The four years limit presidency period of the head of MCJ was a noteworthy aspect that has an immediate influence upon the decision making process in the organization. Despite the definite awareness of the head of MCJ of the importance of long term's projects, his priorities usually for short term's projects that more serve his immediate needs to accomplish certain results during his presidency. This leadership attitude is part of the norm that shapes the perception of the priorities of the projects in MCJ. It governs the top management relationships with respect to the priorities of the organization's projects. The officials in CPA developed their own approach to deal with

this attitude and its possible impact on their work plans. For instance, the GIS initiative has been divided into several short terms projects that not exceeding tow years limit at most. An example is the GIS development project that has been broken into stages of two years each. At the end of each stage, tangible result was to be delivered as an achievement of the organization. This might be at the expense of the project effectiveness as some of the IS consultants claim. However, it seems to be an important requirement for those involved to achieve objectives and keep the momentum needed to the continuation of the GIS strategy process.

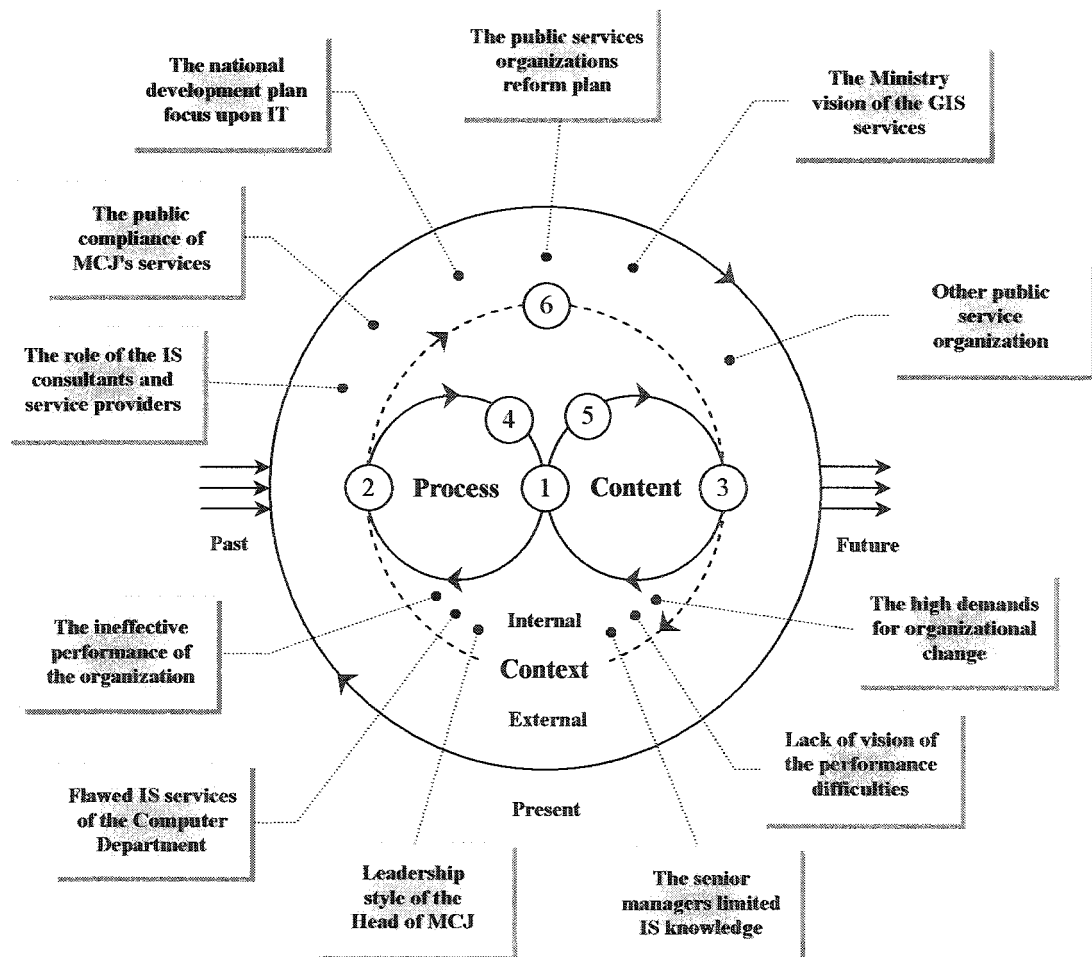


Figure [7-3]: Major Influential Contextual Aspects of MCJ

Another aspect of the context that had a significant consequence on the GIS strategy formation and its implementation process was the organizational conflict with the Computer Department over the content of GIS strategy. The sheared view of members of the organization about the deficiency of the Computer Department in providing proper IS services and its faulty historical reputation of implementing the previous GIS initiative were advantageously utilized to gain commitment and support to the strategic decision of undertaken the new GIS projects internally in CPA. The major influential contextual aspects of MCJ are diagrammatically illustrated in Figure [7-3].

Through out the course of GIS strategy formation process, relationships with several kinds of social groups were found to be imperative. The social relations with these groups were seen as being influential aspects according to those interviewed. In the internal context, there were three main social groups. (M B) and (J A) considered by others as a powerful group that influence other groups. The second is the senior managers in the organization. The third social group was the technicians who are responsible for much of the daily activities in the organization. It has been noticed that (M B) and (J A) dealt with these groups in different ways to influence there perceptions of what happening and convince them to accept the proposed strategy.

(M B) has mobilized two important aspects when dealing with senior managers with regard to the GIS strategic decision. The first aspect was the uncertainty of the senior managers of how the desired change in work environment should be carried out. The issue of the insufficient work performance in MCJ was a source of anxiety and a direct threat to the senior manager's positions in the organization.

All senior managers were convinced of the importance and necessity of the change in the work environment. However, they provide no suggestions to overcome the work performance problems. They all have been facing difficult organizational circumstances and consequently were ready to accept (M B) proposed strategy and present it to the head of the organization as an initiative to implement desired changes in the work environment. This reflected in the following statement by one of the senior managers when he said:

“In our meeting with the head of the organization we face strong pressures for change in the work environment in order to boost work performance. We have presented our reports about the difficulties that we are faced with and we asked for more employees to face the increasing work load . . . Some suggested that it is not a practical solution to increase the number of employees . . . However, there were no sound initiatives of how the desired change would be achieved.”

The second aspect that (M B) has mobilized was the senior managers lacking of familiarity with information technology. The strategy proposed was built on advanced information technology, particularly GIS and other related technologies such as aerial photography, satellite photography, remote sensing, and GPS technology. The technical nature of the strategy represented a strong barrier that handicapped senior manager from express reservations about the proposed strategy or discuss details of its exploitation's requirements. The senior managers' lacking of proper knowledge of the field of IS, was a contextual advantage that (M B) and (J A) managed to use to surpass much of the GIS strategic decision details without any significant internal resistance.

As a result of the previous experience of (J A) in the field of IS management, he realized the significance of the engineers and technicians, particularly the technicians, and their strong role in the success of the GIS development process. They were the main users of the system, and they can decide on the success or the failure of the system. In this context (J A) says:

“Despite the importance of role of the senior managers in accepting the proposed strategy, my concerned was to appropriately prepare the engineers and the technicians in all the departments to accept the system. I was convinced of their power to frustrate the whole process.”

The technicians, as an influential social group, have been the focus of attention in the early stages of the formation of the GIS strategy. As stated in one of the IS reports in CPA, many personal computers have been provided to a number of the technicians in different departments, at an early stage, to be used for general propose, even before the development of any applications. In later stage, several applications with limited functions such as map archiving and CAD system have been provided to several individuals from the technicians group. It seems that these arrangements have succeeded in achieving the goals. It helped to reduce resistances and to assure commitment for the GIS strategy.

Another example of the careful consideration of the technicians group was expressed in the execution of a number of training programs at different stages of the GIS development process. These efforts have lead to an increased awareness of the system and more understanding of its significance to the organization.

Other influential social groups from the external context are the ministry overseen MCJ and the IS service providers and consultants. The social relations with the ministry can be thought of in terms of exercise of power through the manipulation of resources. The control of the ministry over the annual budget of MCJ illustrates this power relation. The annual budget process can be seen as a ritual, through which norms of how the budget authorization should be practiced.

The establishment of such organizational norms should not be seen as a one off event, but rather as part of an ongoing process of construction and reconstruction of social practice in the organization (Pettigrew, 1985). However, this was a two-way relationship. For instance, by advancing the process of the GIS initiative; CPA was actually exercising power over the ministry to takeover control of some of the important resources that the ministry traditionally controls. The ortho-photo production project was an example of such dynamic relation.

The strategic decision of CPA and its action with regard to the ortho-photo production project was less a demonstration of opposition on the part of CPA against the ministry's hold up of the digital base maps project that the GIS applications critically required, but rather an indication of the dynamic nature of the relationship between the different groups.

The nature of the relationship with the IS service providers and consultants groups was interesting one. This relationship, while officially a contracting relationship between the IS companies and MCJ, the competition between these groups over projects

in MCJ had a direct effect on the GIS strategy process. These groups have managed to change the social relationship structure within the organizational culture by mobilizing aspects of information technology expertise. The lack of experience of information technology from the side of the senior managers was one of the important aspects that (M B) utilized to impose the GIS strategy as have been discussed earlier.

However, with the resistance concerning CPA's control over the GIS services was developing, the IS service providers and consultants groups add pressure on the process at several occasions by providing senior managers in other sectors in the organization with alternative GIS solutions. These alternative solutions were usually incomplete and inconsistent with the standard GIS platform that CPA was adopting. The role of the IS service providers and consultants has been a destructive one in general as described by (J A). The IS service providers and consultants represented a direct and serious threat to the GIS efforts in CPA.

It seems that there was a broad sense of acceptance in MCJ that these groups are part of the system. These groups form the web of relations within which the reality of organizational practice is constructed and reconstructed. Such organizational specific perception of the influential groups, their interaction, and the role they play in the organization life can be seen as part of the social relations against which GIS strategy formation took place. The notion of relations between groups in organizations is important, but it is the interaction, the dynamism in such relations that we must remain sensitive to. In Figure [7-4] all major influential groups from the internal and the external context of MCJ are illustrated.

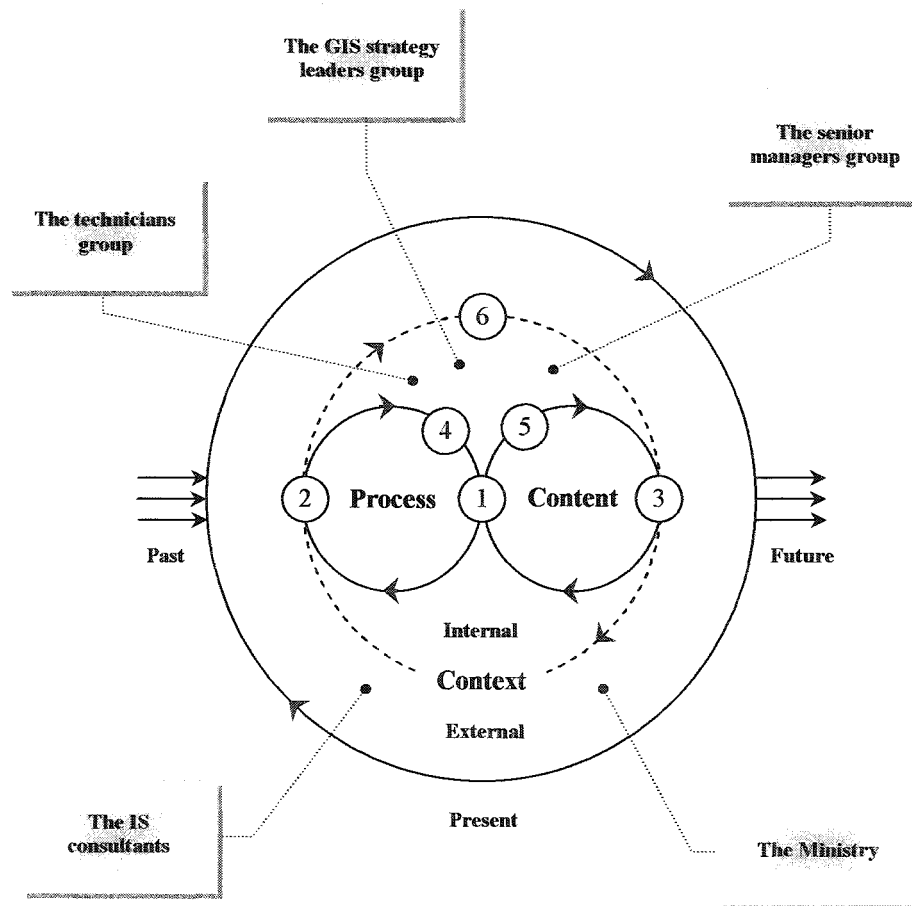


Figure [7-4]: The Main Influential Groups in MCJ

The content of the GIS strategy had to be modified in several occasions to adapt to the emergent changes in the organizational context that, to an extent, has been influenced by aspects of that content of the strategy in the first place. Several factors have been found to play important role in defining and redefining the content of the strategy. For example, as a result of the pressure that the new head of MCJ placed on senior managers to exploit IS, there was a growing need to consider expanding the scope of the GIS strategy to contain other sectors in the organization.

Expanding the scope of the GIS strategy, according to (J A), serves several purposes. It secures further commitment and support for the GIS strategy, permits mobilizing further resources, and most importantly, restrains attempts to develop standalone GIS solutions that may harm the process of the strategy, in addition to the fact that the system needs significant data from those sectors to function properly.

(M B) however was with the view of keeping the GIS services within the boundaries of CPA as long as possible. Extending the GIS services as (M B) perceived it would mean sharing the distinctive status it grants with the others. The tight control of CPA over the GIS services had led to the emergence of internal resistance to the initiative. Consequently, a new context developed in the organization in which members from other sectors in the organization established their own common vision of the reality of the GIS strategy not as a means of enabling organizational changes, but as a way of achieving personal success. An example of this new attitude was the firm attempt of the head of the other agency in MCJ to implement an independent GIS solution to serve the growing IS needs of his agency.

The emergent changes in the context of MCJ and its increased effects on the process of GIS strategy have forced (M B) to rethink his viewpoint. Thus, the strategy content modified again to respond to the changes in context. Later, further modification was required to respond to further internal and external contextual pressure. The alternative GIS strategy was based on the concept of strategic partnership discussed earlier in case description section. Over time, strategy formation influence and is influenced by aspects of the context in which it takes place.

7-5- Understanding IS Strategy Formation

Central to this research is to understand the social practices associated with the formation process of IS strategy. It has been realized however that to understand IS strategy formation process in its entire social complexity is beyond the capacity of this research. Accepting this, the attempt was to abstract, by means of the research investigative framework, principal themes that thought to be valuable for understanding IS strategy formation in practice. The themes are selective instead of exhaustive. The aim is to establish a coherent explanation of the subject that can provide a basis for a new perspective of IS strategy formation.

An analysis of the issues discussed in relation to the case study has led to the identification of five principal themes. The process by which the themes abstracted has been explained in the research methodology in Chapter Five. The five themes are:

- 1- Dynamics of the social process of IS strategy formation
- 2- Ambiguity and uncertainty
- 3- Manipulation of perceptions and meanings
- 4- IS strategy formation capabilities
- 5- knowledge building in IS strategy formation

Each of the five principle themes is profoundly rooted into the empirical field data as they presented in the description and analysis of the case study. Ideas from the work of Miles and Huberman (1994) and Rubin and Rubin (1995) have been used to help focusing the analysis efforts, and to provide a structured approach in which the research moves from data to themes.

In the following, the principle themes abstracted will be illustrated in a diagrammatic form in Figures [7-5] to [7-9]. The diagrams symbolize the themes and illustrate the linking of the themes to other related themes and the various concepts inductively derived from the case study. The rationale structure of the theme is provided in Appendix VI. The diagrams also points to the coding reference of the evidences that support each concept and theme from the case study. Table [7-6] provides descriptions of the symbols used in the diagrams of the themes. In the next chapter, each theme will be discussed in detail.




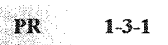
	Principle theme that synthesised from the case study that thought to help building an integrated explanation of how IS strategy is actually formed in practice.
	Other related themes form the case study that linked to the subject of the principle theme. Each emphasizing some concerns of the principle theme.
	The various main concepts inductively derived from the case study that provides support to the related themes and thus to the subject of the principle theme.
	The coding references of the evidences from the case study that support the concepts relevant to the subject of the principle theme.

Table [7-5]: Symbols of the Themes Diagrams

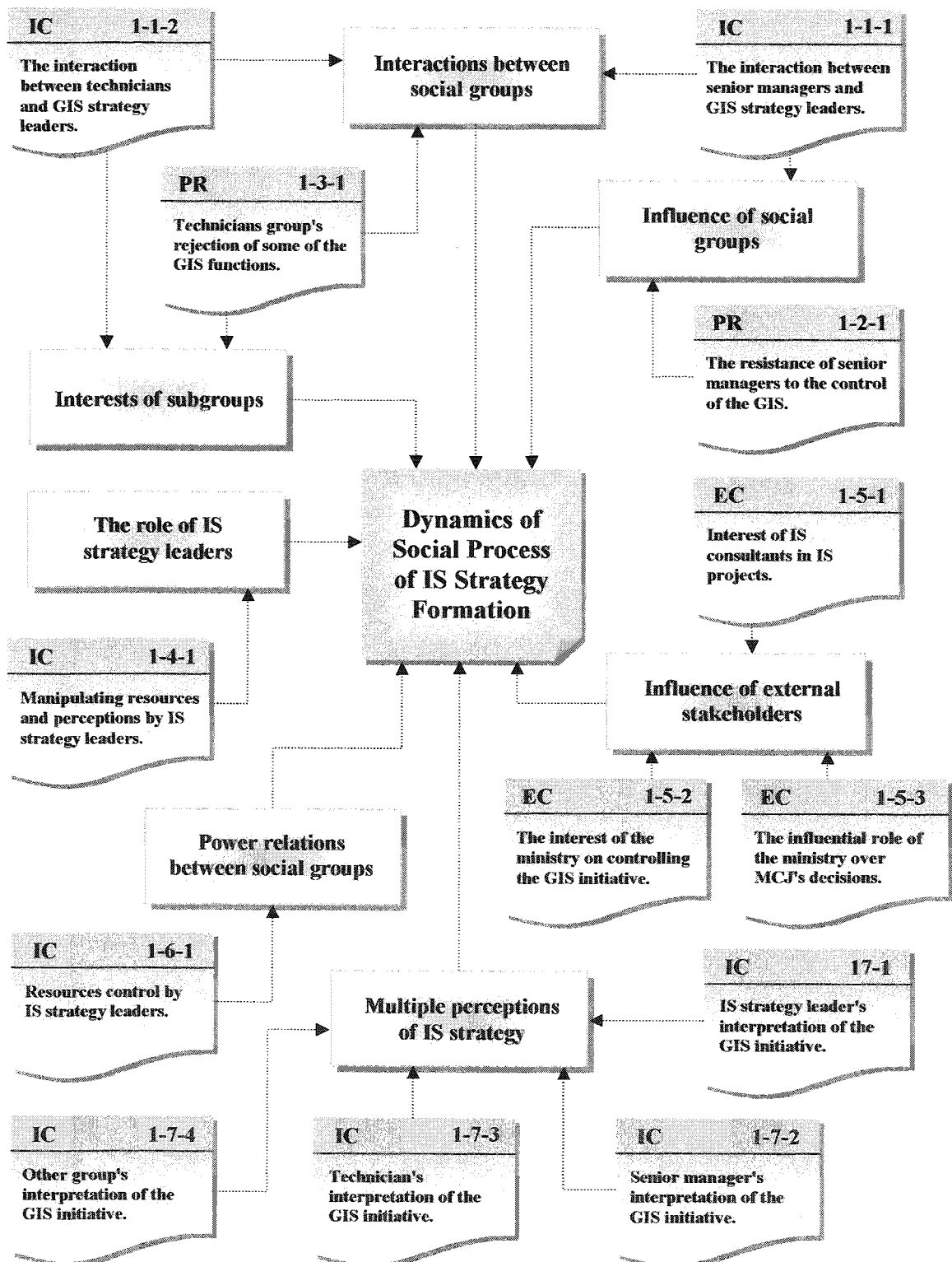


Figure [7-5]: Dynamics of Social Process of IS Strategy Formation

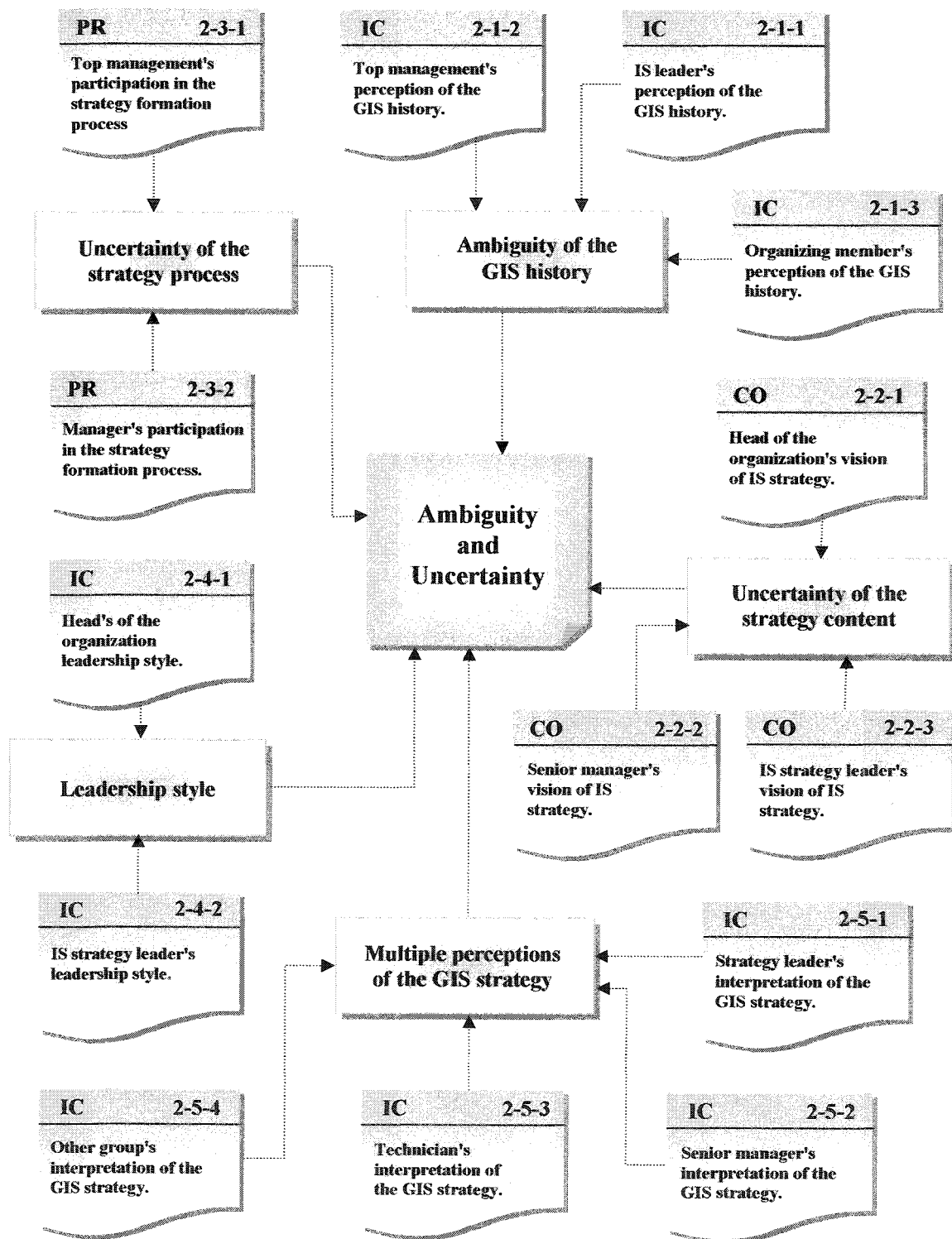


Figure [7-6]: Ambiguity and Uncertainty

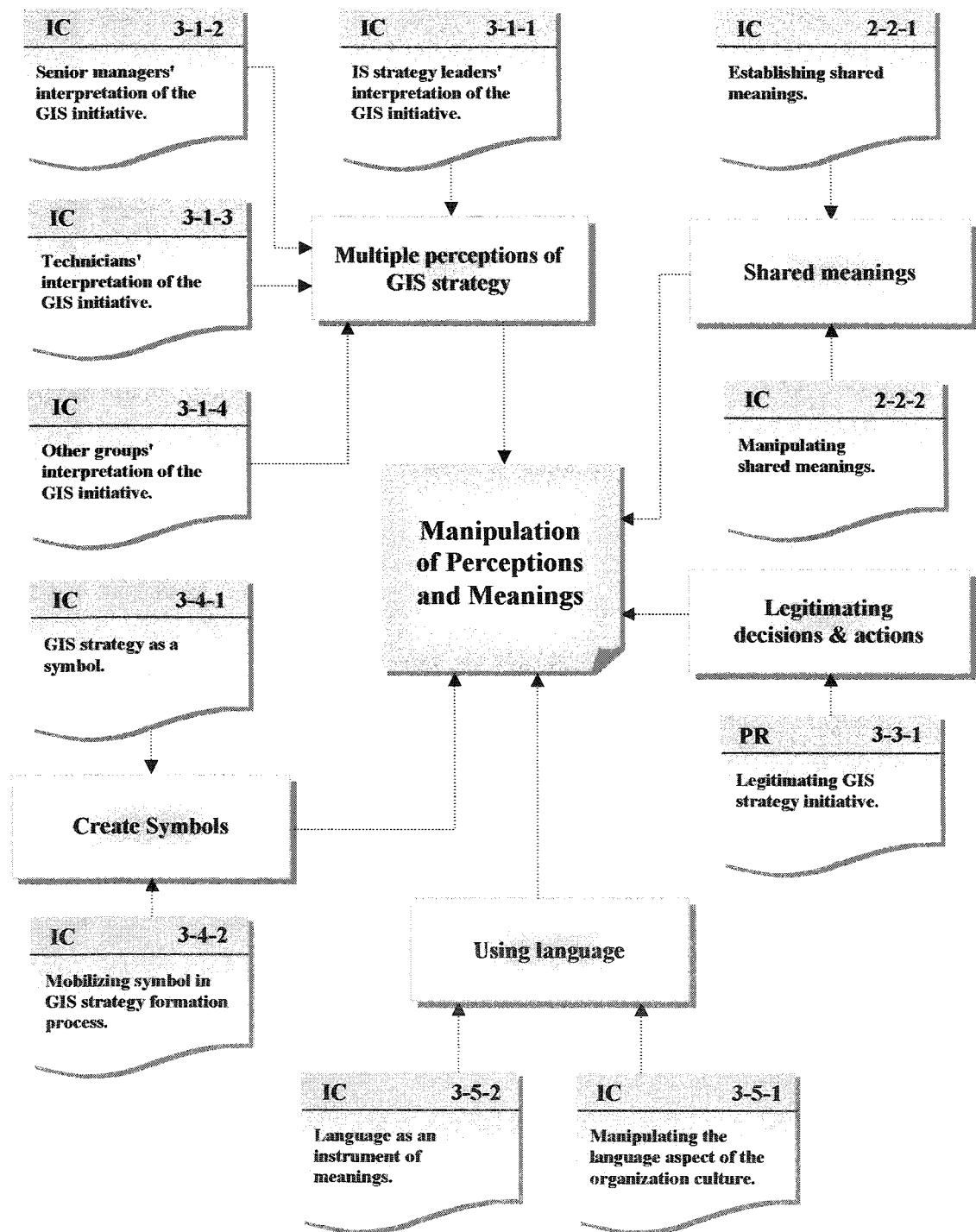


Figure [7-7]: Manipulation of Perceptions and Meanings

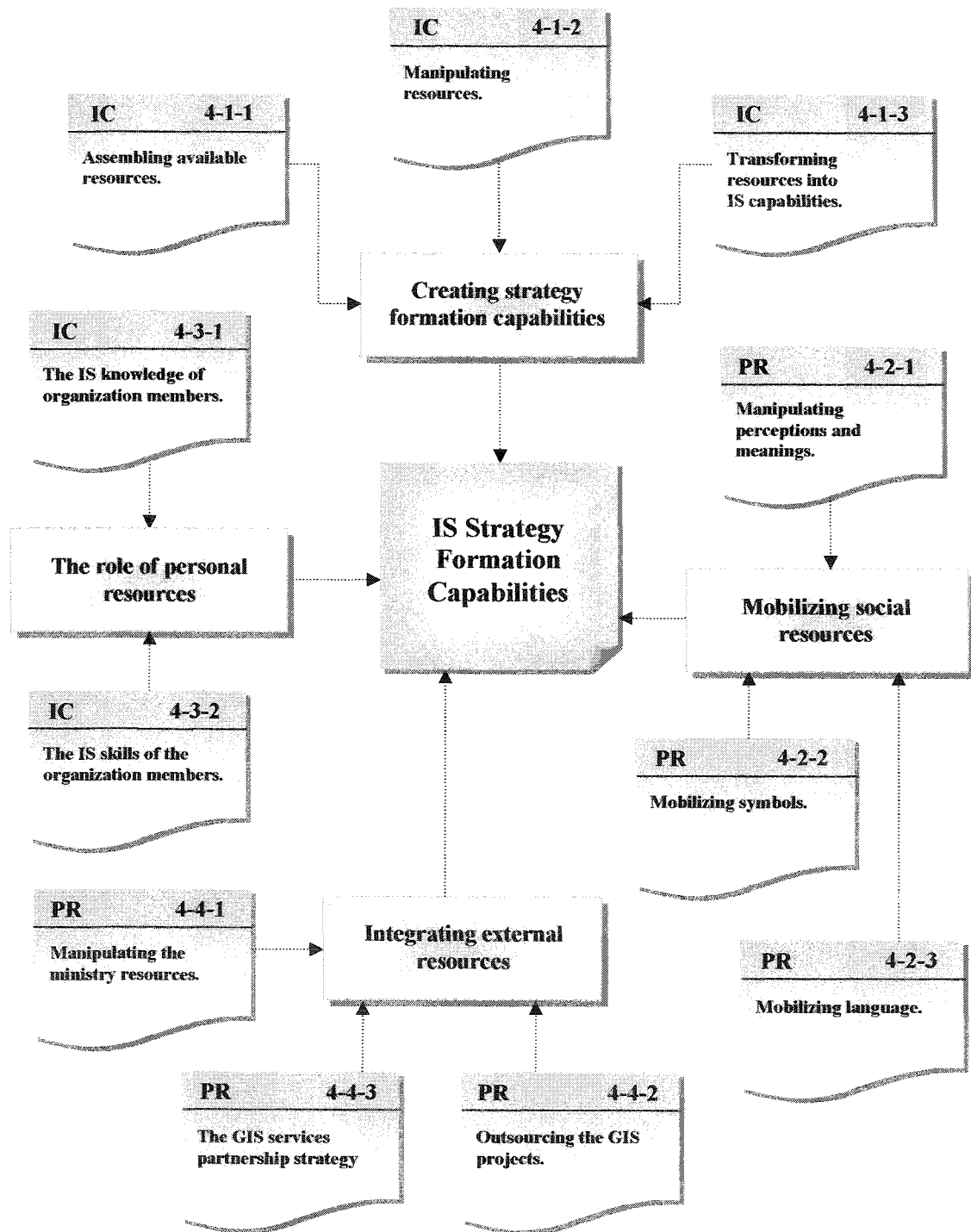


Figure [7-8]: IS Strategy Formation Capabilities

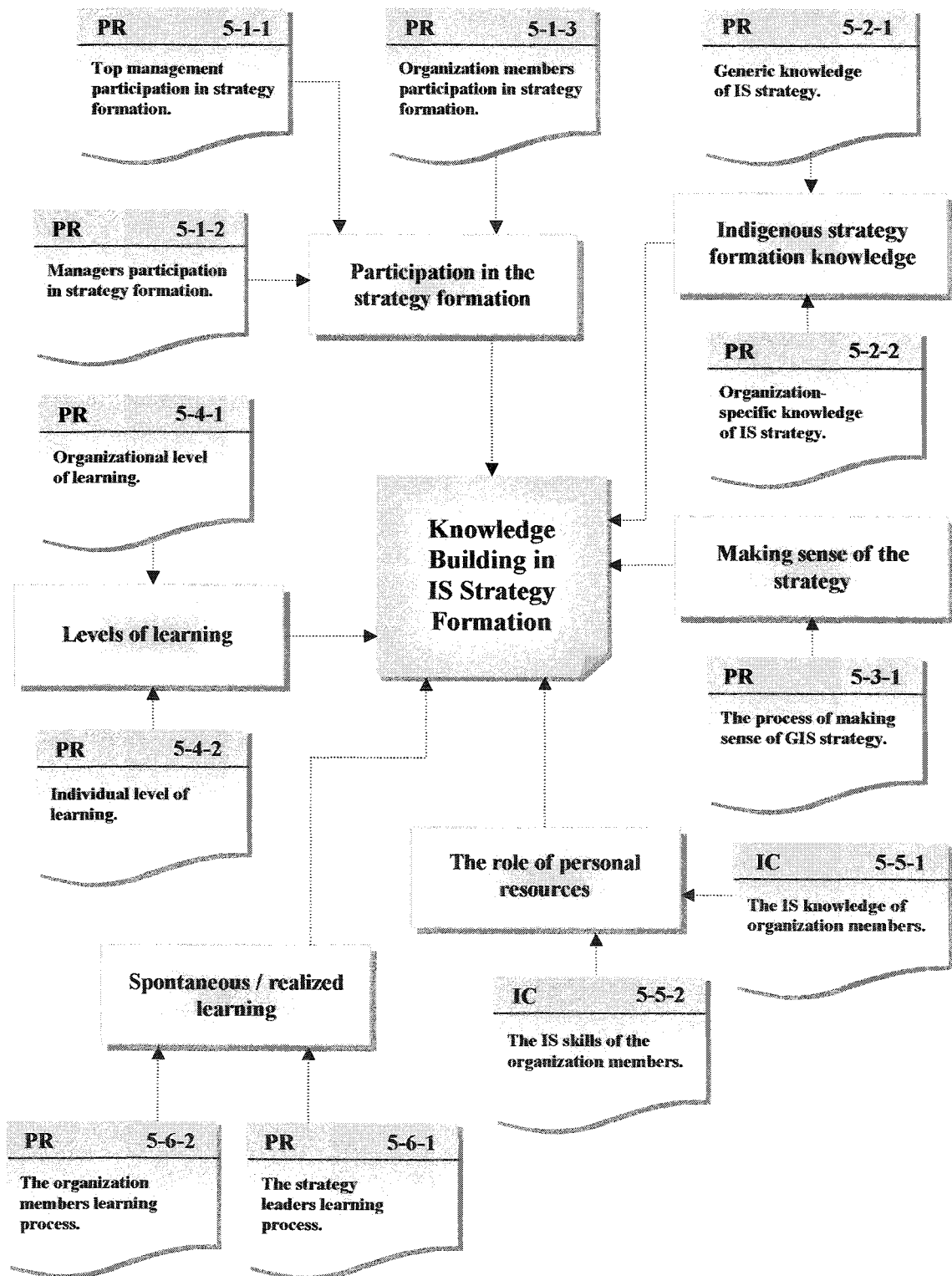


Figure [7-9]: Knowledge Building in IS Strategy Formation

The themes as abstracted by the means of the research investigative framework are thoroughly linked to the theoretical assumptions underlying the framework. The theme about the dynamics of the social process of IS strategy, for instance, is materialized as a result of the analysis of the process dimension of the research investigative framework and its interactions with the social aspects of the context. The theme about the ambiguity and uncertainty, which is an outcome of unclear organizational vision of the IS strategy and vague formation process, has been abstracted from the analysis of the interactions between the content and the process dimensions of the research investigative framework. The manipulation of perceptions and meanings theme is also abstracted from the analysis of the interactions between the content and the process dimensions.

Drawn on the research investigative framework, the contextual and processual analysis of the case study suggested that IS strategy capabilities develop as social and cultural aspects of the context as well as the other tangible resources of the organization are utilized in the process of IS strategy formation. The contextual and processual analysis of the case study also suggests that IS strategy formation knowledge emerges as a consequence of the IS strategy social process. This is when involved members of the organization build up knowledge as a result of the actions, reactions and interactions surrounding IS strategy formation in the organization.

The five principle themes have been particularly selected as they found pertinent for providing a sense of the social complexity surrounding the formation of IS strategy in practice. The themes are intended to provide a coherent explanation of the

multifaceted nature of the social aspects of the IS strategy phenomena. They jointly should provide a basis for a new holistic perspective of IS strategy that consider the contextual, processual, and social dimension of the phenomena, which is the weak link in current perspectives of IS strategy formation. The linkage between the themes and the research investigative framework is illustrated in Figure [7-10].

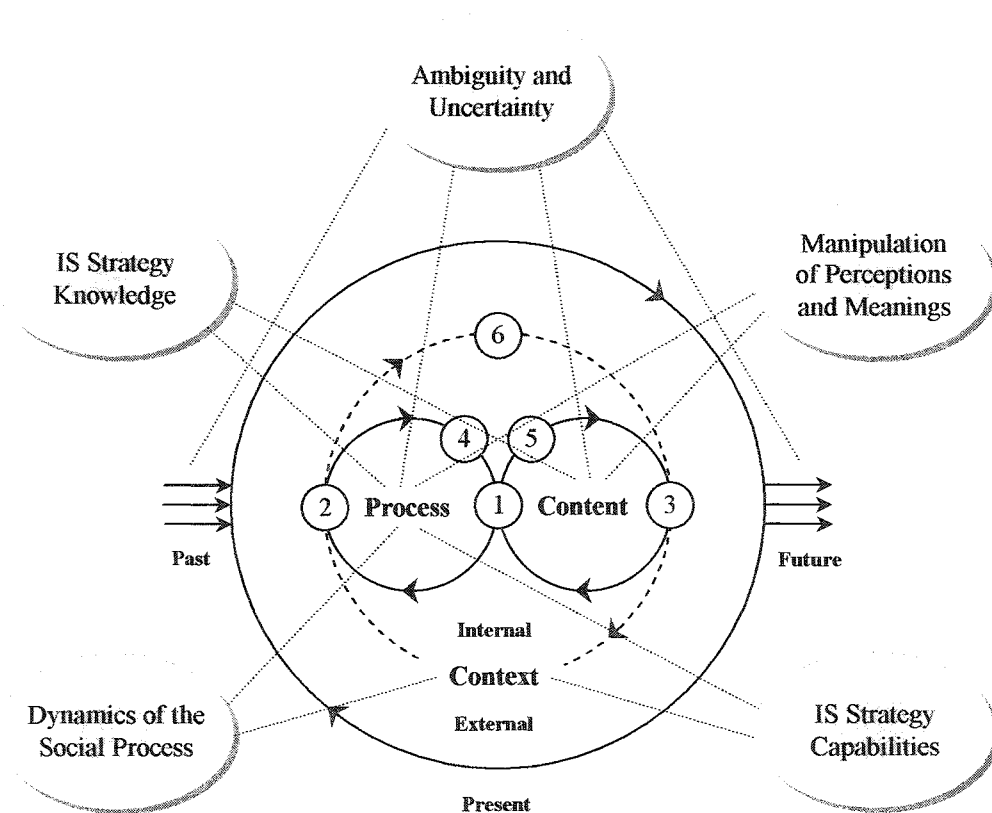


Figure [7-10]: Themes Linkage to the Research Investigative Framework

Each of the abstracted themes will be discussed in detail in the following chapter. The attempt in the discussion is to put the themes in the context of broader theories, and to consider how they are related to each other to create a clear description and build an integrated explanation (Rubin and Rubin, 1995).

7-6- Summary

This chapter provided an evaluation of the internal context of the public service organization under investigation. Influential aspects of the internal context have been discussed with focus upon organizational structure, culture, process, and IS environment. The chapter also provided a detailed description of the interconnectedness of events and actions surrounding the strategic decision of adopting GIS technology in the organization. The chapter described the evolving organization's vision for change, the contexts from which the organization ideas for changes proceeded, and the actions, reactions, and interactions of the actors involved in the activities of the GIS strategy formation. The case analysis section was structured around concepts taken from the theory of web models. It started by considering the previous history of GIS, and the commitments made in its implementation. The organization's technological and social infrastructure issues are then discussed. In the technological aspects, the concern was with the physical infrastructure of the GIS technology, while the social infrastructure involves contextual aspects such as the available skilled personnel, and the role of corporate strategy. With respect to social relations analysis, the focus of the analysis was upon the cultural and structural aspects of context and the social relationships between involved actors and influential groups. The interaction between context and process was explored by examining key aspects of context which have been drawn on in social process, and thus how these aspects of context were maintained or changed. Principle themes that inductively abstracted from the case study and its link to the data are diagrammatically represented. The principle themes will be thoroughly discussed in the following chapter.

CHAPTER EIGHT

DISCUSSIONS

8-1- Introduction

In this chapter, the understanding of IS strategy formation in practice that has been gained through out this research will be discussed. Having undertaking fieldwork in a specific public services sector in a particular society, the researcher is aware of the potential social and sectoral distinctiveness in relation to the research findings. However, the research intension is not to develop generalizations to wider organizational settings, but rather to focus upon developing analytical propositions to a wider body of theory (Miles and Huberman, 1994; Walsham, 1995) which form the basis of the research contribution to knowledge.

Core ideas and concepts emerged from the iterative analysis of the field data have been evaluated against the theories underlying the research investigative framework and crystallised into analytical themes. In sections two to six, principal analytical themes that have been abstracted from the iterative analysis of the case study will be discussed in details. In section seven, the research findings are synthesised into a conceptual scheme that intended to work as an epistemological device to help making sense of IS strategy formation in practice.

8-2- Dynamics of the Social Process of IS Strategy Formation

The case study analysis section in the previous chapter provided detailed discussion of the nature of the social relationships surrounding the IS strategy formation process. Using ideas taken from web models theory (Kling, 1987), the discussion has been particularly focused on the social relationships between key actors and social groups how are affected by the system. It has been argued that the notion of the social relationships between groups is important, but it is the recognized dynamism in such relationships that we must remain sensitive to.

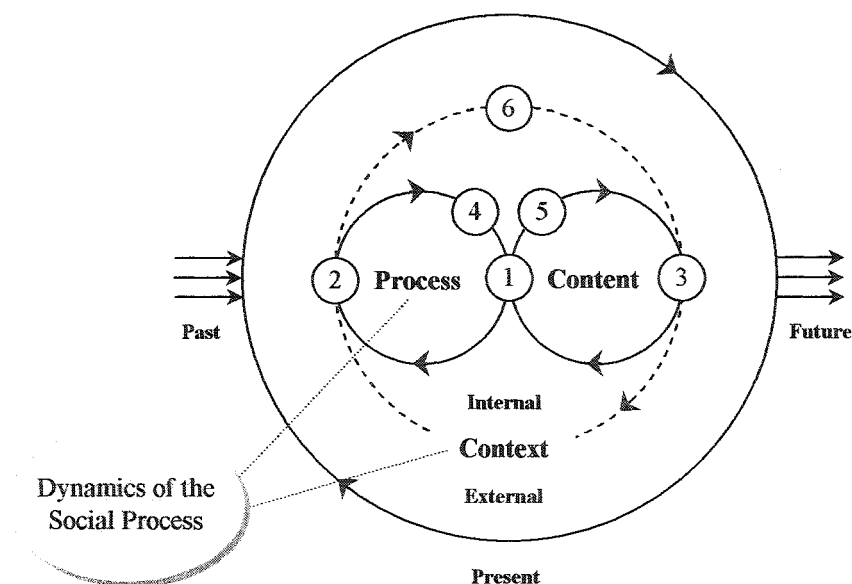


Figure [8-1]: The Link of the Theme of Dynamics of the Social Process of IS Strategy Formation to the Research Investigative Framework

Thus with respect to the research investigative framework as illustrated in Figure [8-1], the dynamism of the social relationships surrounding the IS strategy formation process can be perceived as a function of the continuous discourse about IS strategy

formation process between various involved social groups from the internal and external context of the organization over time.

The concern here is with the dynamic social interactions between social groups concerning the formation process of IS strategy, the way in which the boundaries between groups have been changed by IS strategy, and the processes whereby this groups maintain their distinctive character.

In the case study discussion and analysis, several social groups have been identified in the organization whose varied perceptions of events and actions were of great importance in determining IS strategy formation process. In forming the GIS strategy for example, there were several influential groups such as the GIS strategy leaders group, senior managers group, and the technicians group. Each group holds its own shared meanings and cultural assumptions, and their own perceptions of what GIS strategy is and what it could provide.

The case study suggest the mutual nature of the interactions between IS strategy formation and social groups. That is, while the interests of the groups affect the acceptance of IS strategy, the IS strategy in turn affect the groups interests. An example from the case study is the social relationship between the technicians group and the GIS strategy leaders. Although the technician's group role was limited in the strategy formation process, they greatly frustrated the implementation process by rejecting some of the system applications that they perceived as interfering with their traditional control over essential data. They were willing to use the system to help them manage their

massive amount of data, but they were not willing to openly share the data with other groups through the system. They wanted to filter the data and ascribe their own interpretation to it before making it available to other groups. While this practice was acceptable as part of the organization culture, the system intentionally or otherwise was a challenge to such organizational practice. The system draws attention to the issue that became unacceptable practice by other groups as they realized that the data could be easily accessed through the system and can be interpreted differently.

Another example from the case study was the GIS consultant's ongoing social interactions with senior managers in the organization in order to maintain the GIS consultant's interests in the GIS projects in CPA. A further example from the case study was the dynamic interactions between the senior manager and the GIS strategy leaders that were reflected in the build up of implicit resistance of senior managers to the GIS strategy leader's requests of connecting their projects to the GIS database in CPA. The interest of the social groups was to avoid losing bargaining power by losing control over important resources. However, concerned social groups will continually seek to press their own interests over IS strategy and mobilize it to expand and strengthen their boundaries which place a considerable pressure on the strategy formation and implementation processes.

It is important to reflect upon the historic and current relationships between involved actors and groups where political, cultural, and social relationships are conditions of, and outcomes of sense-making process. Sense-making can be seen as an ongoing social process that is focus upon cues which surround people from which they

develop a larger sense of what may be occurring (Weick, 1995). Actions surrounding IS strategy formation must be seen in terms of the sense that people make of those actions before they take a course of action. It is this process of action / sense-making / action that forms the essence of dynamic social process of IS strategy.

8-3- Ambiguity and Uncertainty

All organizational activity is inherently ambiguous and uncertain. Whereas ambiguity arise at the intersection of examining the past in order to make sense of the present, uncertainty arises when the organization scan the future in order to take action in the present (Choo, 1998). Crucial to understand IS strategy in practice, therefore, is to recognize the ambiguity and uncertainty that challenge its formation process. Weick (1995, p. 91) argues that “in the case of ambiguity, people engage in sense-making because they are confused by too many interpretations, whereas in the case of uncertainty, they are ignorant of any interpretations”.

Martin (1992) argues that ambiguity is perceived when a lack of clarity or high complexity makes multiple explanations plausible. Information about the past invariably supports more than one plausible interpretation, and it is this elusiveness that give rise to ambiguity.

Uncertainty about the organization internal and external context can impact organizations detrimentally. In order to anticipate environmental uncertainty and reduce its damaging effects, organizations perform strategic business planning as an organizational learning process (Grant, 2003).

Researchers have suggested that more extensive IS strategy planning in an uncertain environment produces greater planning success. Newkirk and Lederer (2006) argue that more extensive IS strategy formation is no more effective in either a more or less uncertain environment but depends on the nature of the uncertainty.

A central task of the IS strategy leaders therefore is to reduce ambiguity and uncertainty about the strategy they forming. Ambiguity is lack of clarity, but in this research it has more to do with confusion of multiple plausible meanings that the organization members hold of IS strategy.

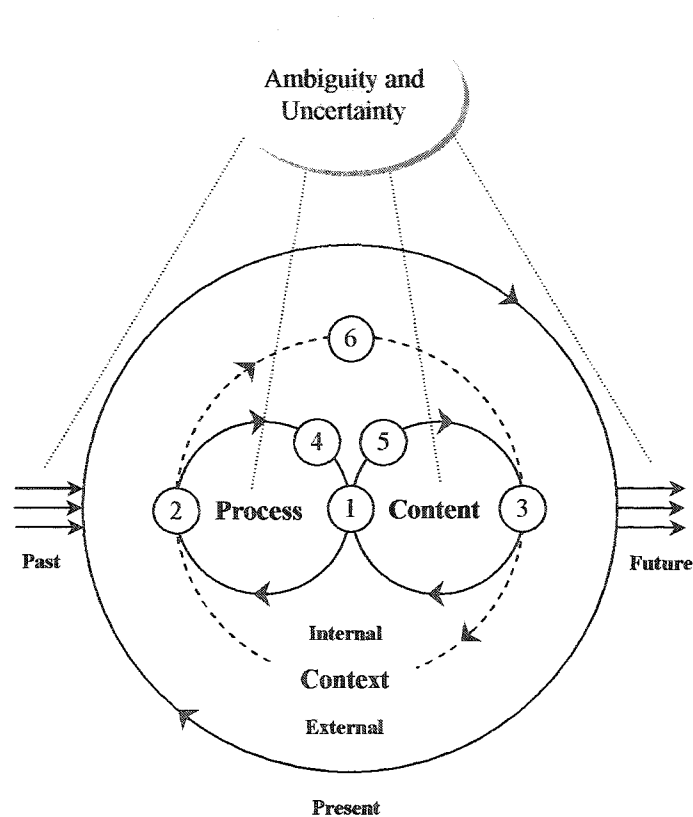


Figure [8-2]: The Link of the Theme of Ambiguity and Uncertainty to the Research Investigative Framework

Figure [8-2] illustrates that ambiguity about the past and uncertainty about the future may confuses the meanings that organization's members hold of the content and process of IS strategy. The IS strategy leader's task, accordingly, is to reduce ambiguity and increase clarity so that participants can construct meaning about the IS strategy content, as well as their identity and role in its formation process.

In the case study, it has been found that there was a certain level of ambiguity about the history of the GIS efforts in the organization. While some members of the organization perceive the previous GIS initiative as a total failure, such those the leaders of the new GIS initiative, other members of the organization, particularly those involved in the pervious initiative, believe that previous GIS initiative has several constructive consequence for MCJ. They argue that the organization had already accomplished a lot out of that reach and informative experience. This variation in interpreting the previous IS strategic decisions is one of the main sources of the ambiguity surrounding the formation process of IS strategy.

The multiple perceptions about the GIS strategy that has been found in MCJ were another source for ambiguity and uncertainty. Each social group holds his own perception of the strategy. This lead to a confusion in the organization system of sheared meaning about the GIS strategy. It raises many doubts about the strategy and makes others rather uncertain of its content and process.

Other sources of the ambiguity and uncertainty as found in the case study were the leadership style of the head of the organization and the strategy leaders. For example,

the attempts of controlling all aspects of the strategy formation and implementation by the GIS strategy leaders was a source of the ambiguity of the strategy content and uncertainty of its formation process. It kept other influential social groups from participating in the strategy formation, and thus, they develop their own perception of the strategy. However, ambiguity and uncertainty was in itself an important aspect of the leadership style of the GIS strategy leaders

Clarity and certainty are important qualifications for collective action in IS strategy formation. Nevertheless, a certain level of ambiguity has been found important to retain in order to provide a space within which participants can play, experiment and improvise (Choo, 1998).

The level of ambiguity or certainty in IS strategy formation depends on the dynamism of the social relationships within context which has been argued is derived essentially by the organization member's perceptions and the meanings that they attribute to IS strategy. Accordingly, one can argue that balancing ambiguity with certainty is the function of perceptions and meanings manipulation.

8-4- Manipulations of Perceptions and Meanings

Perceptions and shared meanings provide the social order, temporal continuity, and goal directed clarity for organization's members to sustain and relate to their organizational activities. Where information is lacking or ambiguous, perceptions and shared meanings fill in the gap or lower ambiguity sufficiently for organization's members to be able to act collectively (Choo, 1998).

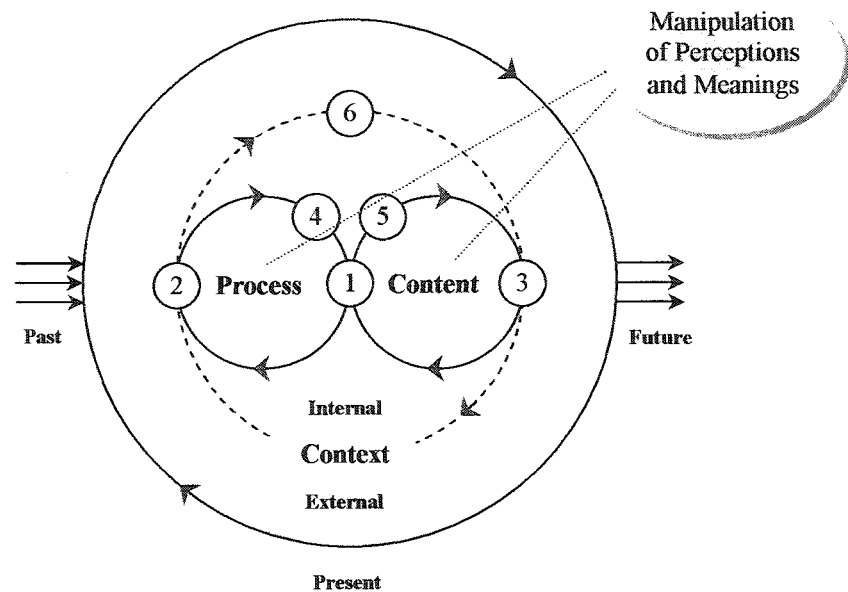


Figure [8-3]: The Link of the Theme of Manipulation of Perceptions and Meanings to the Research Investigative Framework

Collective actions is an important concept for successful IS strategy formation. Shared meanings are the means that stimulates collective actions. Sense-making is the process by which individuals maintain or altered system of shared meaning. Nevertheless, this processes of enactment, or the ways in which people make sense of the events and actions surrounding IS strategy can vary considerably which represent a problem for collective actions in IS strategy formation process. Thus, manipulation of perceptions and meanings is of particular importance for effective IS strategy formation.

The way in which social groups can seek to legitimise their demands through the manipulation of perceptions and meanings has been noted by Pettigrew (1973). In the investigative framework as illustrated in Figure [8-3], this involves manipulating

perceptions and meanings about the content of IS strategy and the process of its formation. The case study illustrated several examples of these kind of use of systems of meanings which can be conceived as means of legitimating decisions and actions concerning IS strategy formation. For example, in the GIS strategy formation, (M B) mobilized the symbolic aspect of the successful use of GIS in developing the city urban plan to affect the organization members perceptions of the proposed GIS strategy. Another illustration of the manipulation of perceptions was the circumstances where the officials in CPA manipulated the perception that the IS department was facing difficulties in delivering sufficient IS services to legitimise their demands of undertaken the GIS strategy implementation projects internally.

Weick (1995) considered the use of language in conversation as an important aspect of the dynamic processes of constructing meanings. Thus, language can be seen as a significant cultural aspect that can be efficiently used in manipulation of perceptions (Morgan, 1998; Choo, 1998). In IS strategy, Walsham (1993) draw attention to the importance of the use of language with relation to the strategy formation process. In this study, however, the extensive use of information technology terminology within the organization culture has been evident. The use of vocabularies such as "digital maps", "orthophoto", and "spatial data" symbolized the appreciation and increasing interest in GIS technology in CPA. This has a close influence on the way in which individuals make sense of the formation and implementation processes of IS strategy. By manipulating the language aspect of the organization culture, IS strategy leaders can influence the perceptions of organization members (Levine and Rossmore, 1995), and determine the extent of interest in IS strategy.

IS strategy leaders, therefore, can influence perceptions and meanings by manipulating instruments of meaning such as symbols, rituals, and language by which people understand the history of their actions and their place in it (March, 1994), in order to establish sufficient cognitive consensus for collective actions. The nature and level of the consensus is a function of the dynamism of the social relationships between social groups how are affected by the strategy formation and implementation process.

In this study, it has been noticed that the consensus about IS strategy formation is localized within the organization internal groups. It has been also noticed that the nature and level of the group's consensus were changing over time based on the issue and interest. Establishing cognitive consensus about IS strategy can be facilitated by organizational capabilities that allow assortment of perceptions and meanings to merge.

8-5- IS Strategy Formation Capabilities

This theme is concerned with the influence of the organization's resources and capabilities on IS strategy formation. The argument here is that IS strategy formation require particular organizational capabilities. Available organizational resources can be combined to create organization-specific IS strategy formation capabilities. Such capabilities can lead to superior organizational performance with respect to IS strategy formation and implementation. Furthermore, social resources relevant to the organizational culture such as symbols, perceptions, and meanings are more influential in creating capabilities than other resources such as IS infrastructure. The resource-based view (RBV) of the firm is used here to help reflecting upon the issue of resources and capabilities in IS strategy formation.

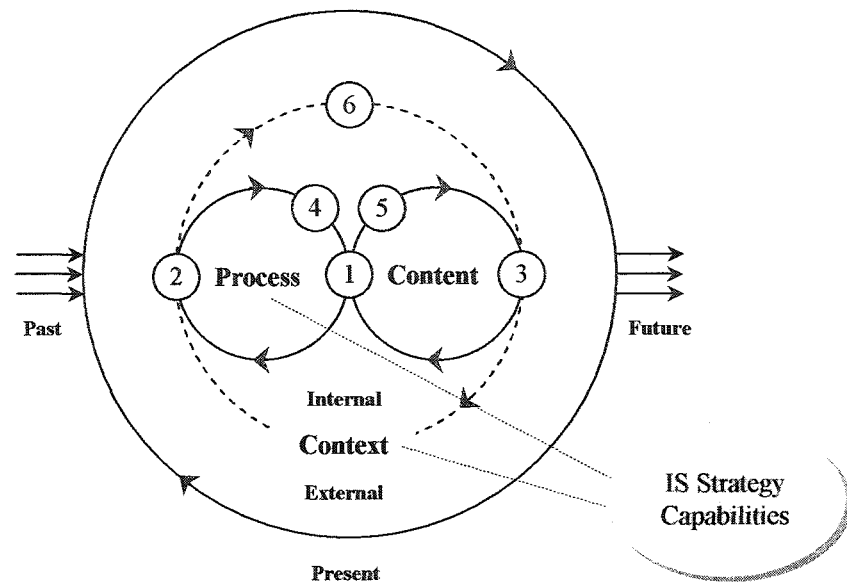


Figure [8-4]: The Link of the Theme of IS Strategy Formation Capabilities to the Research Investigative Framework

The RBV subscribes to the view that a firm is a collection of resources and capabilities, and it is these resources and capabilities that determine the firm's performance. Barney, Wright and Ketchen (2001) describe resources and capabilities as bundles of tangible and intangible assets, including a firm's management skills, its organizational processes and routines, and the information and knowledge it controls. Grant (1991) distinguishes between resources and capabilities. He classified resources into tangible, intangible, and personal-based resources. Tangible resources include aspects such as equipments, stocks, and raw materials. Intangible resources comprise assets such as organization reputation, image, and products quality. Personal-based resources include skills, knowledge, and aspects such as organizational culture.

There is largely a lack of clarity within the literature of the terms and concepts surrounding the RBV (Nanda, 1996). For the purpose of this discussion, the definition of Grant (1991) has been used, as it is more precise in distinguishing between the concept of resources and capabilities.

The resources by themselves can serve as the basic units of analysis. Nevertheless, by assembling them to work together to create capabilities the organization can create advantage (Grant, 1991; Makadok, 2001). Capabilities, hence, can be defined as the organization's ability to assemble, integrate, and deploy valued resources, usually, in combination or co-presence (Amit and Schoemaker, 1993; Russo and Fouts, 1997).

The RBV theory has become influential in several management disciplines such as strategy and marketing (e.g. Fahy and Smithee, 1999; Barney, 1991). Little discussion on the RBV has been conducted in the field of IS (e.g. Santhanam and Hartono, 2003; Teo and Ranganathan, 2003). The emergent stream of research on IT capabilities stress the importance of mobilizing and deploying IT based resources in combination with other organizational resources and capabilities (Bharadwaj, 2000; Sambamurthy et al., 2003).

Much of the resource-based view in IS research has attempted to identify and define IS resources. For example, Powell and Dent-Micallef (1997) divided IS resources into human resources, business resources, and technology resources. Feeny and Willcocks (1998) organized IS resources into four areas which include business and IT vision, design of IT architecture, delivery of IT service, and a core set of capabilities

which include IS leadership and informed buying. Bharadwaj (2000) alternatively classified firm specific IT resources as IT infrastructure, human IT resources, and IT-enabled intangibles.

Pavlou and El Sawy (2006) proposed focus on the leveraging dimension of IT capability to introduce the notion of 'Collaborative IT Tools Leveraging Competence.' This is defined as the ability of groups to effectively leverage the IT functionalities of collaborative IT tools to facilitate their group activities.

Peppard and Ward (2004) develop a comprehensive theory of IS capability. The strategic implication of IS no longer lies in search for strategic IS, or information systems planning methods, but rather in the organisational development of IS capability both within the IS function and throughout the organisation. Peppard and Ward suggest that this new focus on IS capability represents a new era of IS management.

Resources *per se* do not provide much advantage to IS strategy formation. It is the manner in which IS strategy leaders assemble available resources to create superior capabilities that affect the overall IS strategy formation and implementation process. Thus, the interest here is on the process by which resources are developed into capabilities, rather than on the use of developed capabilities for competitive advantage.

IS strategy formation it has been argued can be seen as a craft that required certain capabilities to perform. The required capabilities are based on various resources that range from tangible resources such as IS hardware and software, and intangible

resources such as IS vendors and consultant relationship, to personal-based resources which include knowledge, skill, and other aspects such as organizational culture.

Drawn on the research investigative framework, the case study description and analysis indicate that intangible and personal-based resources, the organizational culture in particular, were of a greater significance than the tangible resources such as the IS infrastructure. It has been noticed for example that much of the available resources that the IS strategy leaders mobilized were personal-based resources such as knowledge, skill, and social resources including symbols, perceptions, and shared meanings. Thus, the IS strategy formation capabilities, as illustrated in the investigative framework in Figure [8-4], emerge as social and cultural aspects of the context are used by IS leaders in the process of IS strategy formation.

Knowledge and skill are scarce resources and hard to obtain and maintain in many societies over the world. Consequently, they are not easy to assemble to create organizational capabilities. Like in most public services sectors in the developing nations, IS knowledge and skill in this research setting were largely lying in the hands of the IS vendors and consultants. This was a consequence of the outsourcing approach that the organization espousing.

The coordination and integration of knowledge and skill resources with other internal resources, therefore, was based on the nature of the relationship with IS vendors and consultants. For example, it has been noticed in the case study that (J A) has relied greatly on the GIS vendors and consultants working for the organization for obtaining

the required GIS skills to initiate the GIS strategy. At later stage, managers of other sectors in MCJ coordinated and mobilized knowledge and skill resources from the GIS vendors and consultant to create certain capabilities that permits them to develop resistance to CPA's approach to GIS strategy.

In addition, it has previously argued that manipulation of perceptions and meanings is of particular importance for effective IS strategy formation. IS strategy leaders can influence perceptions and meanings by manipulating aspects such as symbols, rituals, and language in order to establish sufficient cognitive consensus for collective actions that lead to superior IS strategy formation performance. Drawing on the RBV concepts, perceptions and meanings can be seen as important resources that must be integrated with the organization internal stock of resources. The organization ability of assembling, integrating, and manipulating perceptions and meanings in combination or co-presence of other organizational resources can create what may be referred to as the organizational strategy formation capabilities.

The organization capabilities with respect to IS strategy formation, therefore, can be seen as created through a transformation process by which undifferentiated resources are used and combined with aspects of the organizational context to produces the required capabilities (Andreu and Ciborra, 1996). The IS strategy capabilities are rooted in the organization's processes and business routines. These organizational processes and routines embed organizational knowledge acquired through learning (Nelson and Winter, 1982; Grant, 1992). The transformation process is evidently complex and often spontaneous. Whoever, organize it should be a core activity of the IS strategy leaders.

Feeny and Willcocks (1998, p. 467) argue that “there is, as yet, little agreement on the labelling or definition of the building blocks, or even on the level at which a capabilities is most appropriately identified”. The findings of this study suggest that some of the resources necessary for creating capabilities that lead to effective IS strategy formation such as IS skills are found outside the organization's stock of resources. These external resources need to be coordinated and integrated with the organization internal resources to create the required organizational capabilities.

The findings of this study also suggest that the social resources inherent in the organizational cultural such as symbols, perceptions, and shared meanings are valuable resources that organizations need to carefully consider in creating capabilities. Value for IS strategy is created by the organization's capabilities to mobilize and utilize those social resources as they evolve over time. Lastly, the practices by which those social resources end up being components of organizational capabilities involve knowledge building process that will be discussed next.

8-6- Knowledge Building in IS Strategy Formation

A significant body of literature on organizational learning and knowledge management emphasizes the creation, accumulation and exploit of appropriate organizational knowledge. Knowledge is the state of fact of knowing. It is the understanding gained through experience or study, the sum or range of what has been perceived, discovered or learned. It is, therefore, considered to be a significant organizational resource. Knowledge exists into two forms. The first, which is explicit, is passed on by conventional learning and training methods used to fully understand a

subject. The second, which is tacit, is not readily apparent, but makes information available (Snyder and Wilson, 1997).

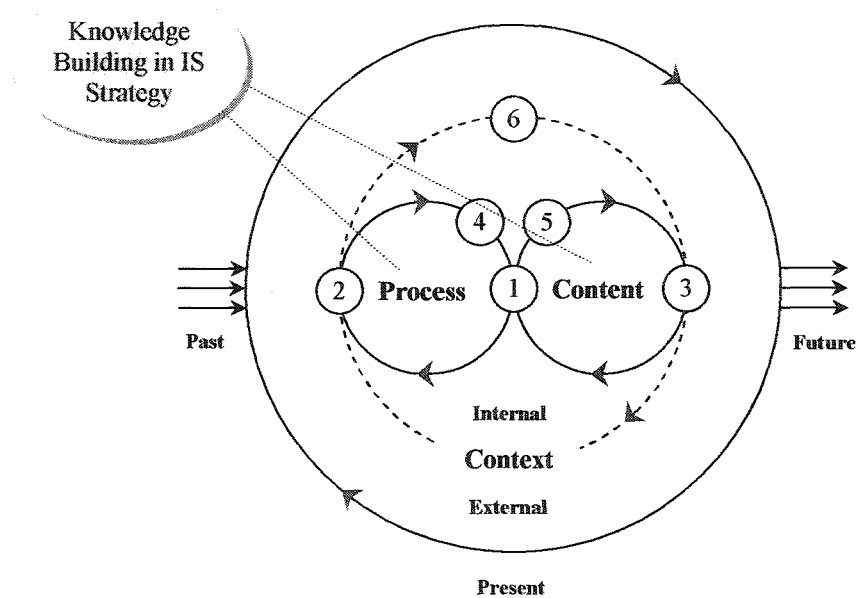


Figure [8-5]: The Link of the Theme of Knowledge Building in IS Strategy Formation to the Research Investigative Framework

Knowledge management implies that there is a systematic process for assembling and controlling organizational knowledge as a resource (Manville and Foote, 1996). Thus, Knowledge management can be seen as involve capturing, distributing, and effectively using knowledge. For knowledge to be effectively managed it has to be captured by the organizational systems, processes, products, rules, and culture. Organizations around the world have identified the need for knowledge management, however, they have not identified the appropriate processes to extract, retain, and refresh the knowledge.

In IS literature, it has been found that IS exploitation influenced by the level of managerial IS knowledge (Boynyon, Zumd and Jacobs, 1994; Schultze and Leidner, 2002). With respect to IS strategy, Jones (1994), for example, analysed the IS strategy process in terms of four different levels that of strategic resource, of the strategic process, of the discourse of strategy, and of broader social discourse. He suggests that each involves a particular perspective that individuals need to understand if they to act strategically. IS strategy process, accordingly, may be seen as involving knowledge building at each level. Jones (1994) suggests that much of the knowledge obtain by direct practical experience. That is, through the engagement of individuals in strategic action from which they learn more about issues relevant to strategy at different levels.

It has been noticed in this research that effective IS strategy requires a substantial level of knowledge of contextual issues concerning its formation. This organizational-specific knowledge cannot be obtained from the marketplace, but could only be created, maintained, and mobilized through practice over a period of time. The argument here is that while generic IS strategy formation knowledge are available in the marketplace, it is the organization-specific knowledge of IS strategy formation issues that can be advantageous. The capability of creating and mobilizing indigenous IS strategy knowledge can evidently determine the level of success that IS strategy formation may achieve in any setting, yet, indigenous IS strategy knowledge is perhaps the most challenging organizational resource to create and maintain.

Drawn on the research investigative framework as illustrated in Figure [8-5], the findings of this research suggest that IS strategy formation involves actors and other

interest groups in building knowledge out of a process of making sense of the content of the IS strategy and their action and reaction and interaction with its formation process. This inherent sense-making process intellectually informs the organization of what is practically achievable in term of IS strategic decisions within its complex social context. For instance, during the course of GIS strategy formation and implementation, GIS strategy leaders' awareness of both potential and difficulties of the GIS technology to support their vision for change was gradually enhanced. Knowledge developed from practical experience facilitates, for example, proposing the orthophoto solution to resolve the conflict with the ministry over the digital base maps.

Nevertheless, the findings of this research also suggest that this characteristic of IS strategy seems to be yet not consciously exploited as means of creating organizational capability that can be purposefully used to manipulate perceptions and meanings of IS strategy. Knowledge building has been, to large extent, spontaneously occurring. Thus, transferring knowledge into capabilities was not actually realized.

Whilst there was a considerable improvement in the organization understanding of the strategy and the GIS technology that it adopts, it was evident that the knowledge building was at the individual level rather than the organizational level. That is, few involved members of the organization such as (J A) and (M B) developed a richer and more profound understanding of the issues surrounding the strategy formation and implementation process. The knowledge building curves seem to vary between participants according to the extent of their involvement in and interest of the strategy formation and implementation process.

8-7- A Sense-Making Scheme for IS Strategy Formation

In discussing the dynamic nature of the social process of IS strategy formation in the previous section, the discussion emphasized the importance of reflecting upon the historic and current relationships between social groups where political, cultural, and social relationships are conditions of, and outcomes of sense-making process. It has been argued that actions surrounding IS strategy formation must be seen in terms of the sense that people make of those actions before they take a course of new action. It has been also argued that it is this process of action / sense-making / action that forms the essence of the dynamic social process of IS strategy. In the view of that, IS strategy can be perceived as reflects an ongoing process of sense-making of the activities surrounding its formation and the consequences of these activities on context. This sense-making process guides the construction and reconstruction of what the organization takes to be IS strategy at any point of time. Thus, any actions the organization takes with respect to IS strategy formation and implementation has to be derived from this sense-making process. In other words, the actions that the organization takes, both individually and collectively, is based on its constructed perceptions of the social reality of IS strategy, and thus form the root of the IS strategy formation practice.

Manipulation of perceptions and meanings therefore is important for effective IS strategy formation. However, manipulating perceptions and meanings entail profound understanding of the dynamic nature of the social relationships surrounding IS strategy formation. This knowledge principally occurs unconsciously as a consequence of the sense-making process associated with the IS strategy formation practice.

For this knowledge of the social complexity of IS strategy formation to be profitably utilized in manipulating meanings, that is, to be transformed into organizational capabilities, it is important to consider the way in which we recognized, appreciate, and exploit the sense-making process that derive this awareness. This involves a process of systematic observation and informed appreciation of the dynamic nature of the social relationships in IS strategy formation, and in particular its social consequences on context.

The findings of this research, and those of others, confirm the emergent nature of IS strategy formation. The emergent perspective on strategy is focused upon the unpredictable consequences of the strategy formation. According to the research findings, however, IS strategy has both predictable and unpredictable consequences. The scope of each is dependent on several contextual aspects. Some are external, such as the characteristics of the information technology in use. Other are internal such as the changes in the perceptions and interest of key actors and groups with respect to the IS strategy, the level of ambiguity and certainty surrounding IS strategy formation, the organization abilities to exploit the proposed technology, and the accumulation of knowledge about IS strategy in the organization. It can be argued therefore that the organization has to be capable of observing and interpreting the contextual consequences of the IS strategy formation process, and to effectively respond to them.

Sense-making can be described as the mutual interaction of information seeking, meaning ascription, and action (Weick, 1995). These elements can be seen as involving observing, reading, and responding. These three modules constitute the base of the

sense-making scheme for IS strategy formation. The proposed sense-making schema is illustrated in Figure [8-6]. The observing module monitors the dynamic interplay between IS strategy formation process and context over time. The observing module identifies circumstances when IS strategy formation process are constrained by aspects of context and when it influence aspects of context. It detect emergent themes that might embody opportunities or threats for IS strategy. The observing module can use a set of conceptual pointers that helps focusing on relevant themes. These pointers incorporate key contextual aspects that have to be organization-specific in order to correspond to the organization distinctive context and serve its exclusive needs.

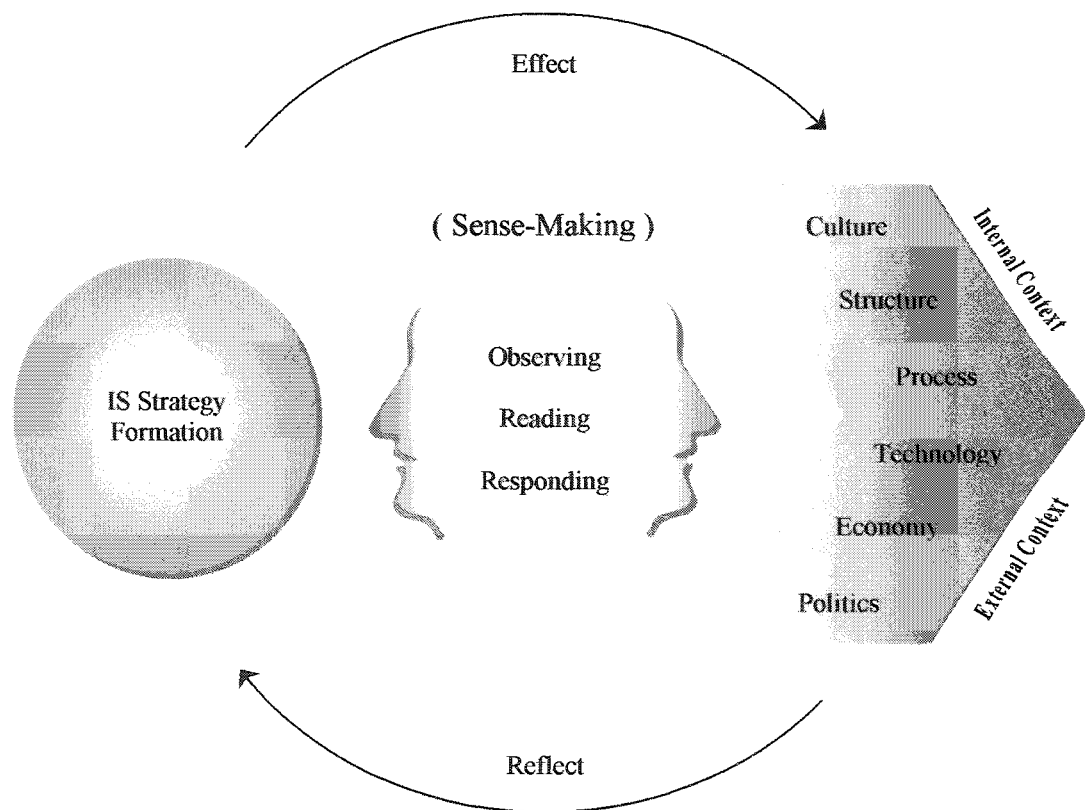


Figure [8-6]: A Sense-Making Scheme for IS Strategy Formation

The reading module is then interprets and assign plausible meanings to the observed contextual signals (Blanco et al., 2003). IS strategy leaders decide what signals are important and should attended to. They interpret contextual signals and assign meanings to them based on their previous experience and assembled knowledge. The third module is concerned with responding to the contextual signals and emerging themes. When there is sufficient understanding and knowledge, the organization is in position to respond (Kearns and Sabherwal, 2006). However, actions affect the context and produce new streams of experience to adapt to which result in a new contextual signals to emerge, thus a new cycle begin. All the three modules are dynamic social processes that continuously construct and reconstruct themes, meanings, and actions.

The aspiration of the scheme proposed here is to help IS strategy leaders in making sense of IS strategy formation process and its unpredictable consequences on the organization context. That is, to construct the unknown (Waterman, 1990). The important questions within this context are how they construct what they construct, why, and with what effects. Sense-making starts either with the action or the outcome, but in both cases, beliefs are altered to create a sensible explanation for the action or the outcome (Weick, 1995). In line with this, the proposed scheme can be used to make sense of the actions surrounding the IS strategy formation and implementation as well as the consequences of these actions on context.

The IS strategy leaders task according to the proposed scheme is to generate a clear and adequate representation of what the problem situation is (Galliers and Newell, 2003), and to form from a set of incoherent and disorderly events a coherent structure

(Shotter, 1993). That is, to reduce ambiguity and uncertainty surrounding IS strategy process by creating a more consistence systems of shared meaning, which in turn leads to establishing sufficient cognitive consensus that stimulates collective actions (Choo, 1998; Gover and Segars, 2006). IS strategy leaders can iteratively use this sense-making scheme to observe evolvments of attitudes and relationships between key actors and social groups that influence IS strategy and its formation and implementation processes. IS strategy leaders then can use the knowledge gained in manipulating perceptions and meanings, mobilising resources, and influencing social structure within the organization in order to provide support for their strategy when necessary.

The extent to which IS strategy leaders perform observations, and their ability to advance their skills in reading contextual signals and responding to what they observe, is a focal process for building organization-specific knowledge resources and creating essential IS strategy formation capabilities. IS strategy leaders should use this sense-making scheme to facilitate the organization vision for change, rather than control it. They do this by setback for observing, reading and responding to the consequences of their IS strategy initiative profoundly and more satisfyingly.

The proposed sense-making scheme suggests that the success of IS strategy formation depends on a profound understanding of the dynamic interactions between IS strategy formation process and social aspects of its context. It is the appreciation of these dynamic social interactions that forms the basis of the researcher's reservation expressed about the prescriptive approaches to IS strategy formation, and thus the basis of the rationale of the subject of this research.

8-8- Summary

In this chapter, the understanding of IS strategy formation in practice that has been gained through out this research have been provided. Five key themes that have been identified as important for understanding IS strategy formation in practice have been discussed. The first theme is concerned with the dynamic nature of social relations in IS strategy formation. The second theme involves the issue of ambiguity and uncertainty surrounding the formation process of IS strategy. The third theme is about the manipulation of perceptions and meanings of organization's members by IS strategy leaders. The fourth theme is concerned with the creation of the IS strategy formation capabilities. The last theme is a bout knowledge building in IS strategy formation. From that, a sense-making conceptual scheme for IS strategy formation have been constructed. The conceptual scheme is based on the notions emerged from the research finding. It argues that IS strategy formation can be considered as a reflection of a sense-making process of organizational social reality. The conceptual scheme has been constructed to be used as an analytical device to help making sense of IS strategy formation in organizations. It should make IS strategist more self-aware of the frames and assumptions under which they are working.

The implications of the abstracted themes and the sense-making conceptual scheme for theory and practice will be considered in the following chapter.

CHAPTER NINE

CONCLUSIONS

9-1- Introduction

A primary contribution of this research to knowledge is the empirical understanding that it introduces about the social complexity of IS strategy formation in practice which has been not sufficiently understood. The findings of this research provide a new perspective of the phenomenon that can help in bridging the evident gap between theory and practice. The analytical themes that inductively derived from the empirical data are linked to stronger themes and wider theoretical debates in the literature. Analytical themes such as the ambiguity and uncertainty surrounding IS strategy formation process and the importance of building knowledge and creating capabilities of IS strategy provides valuable premise for debate and basis for further research on the field of IS strategy formation.

This chapter starts by providing reflections on several areas of learning that have been derived from the work undertaken in this research. The learning points provided cover several research elements including the issue of the research, aspects of the research process, and the researcher role. This is followed by considering the implications of the findings of this research for theory on and practice of IS strategy formation. The research contribution to knowledge is then addressed. The chapter concludes with suggestions for further research.

9-2- Learning Derived From the Thesis

This section provides an account of the critical evaluation of the programme of research and learning that has taken place. The elements of the research that the evaluation covered include the subject of the research, the research methodology, the researcher role. Learning about the subject of the research involves issues relates to the research findings. Learning about the research process focuses upon the selection of the research theoretical framework. Learning about the researcher's role covers issues related to the researcher relationship with the subject, his preconceptions, and the issue of the researcher investigating his own organization.

Reflective evaluation of the main elements of the work undertaken in this research should lead to rich and convincing explanation of the research outcomes. Both novice and veteran researchers may benefit form the learning emerges form such process.

Primary learning points include:

- The Idiosyncrasy of IS Strategy
- The Social Consequences of IS Strategy
- Revisiting My Preconception of IS Strategy
- The Selection of the Theoretical Framework
- The Researcher-Subject Relationship
- The Role of Researcher Preconceptions
- Searching My Own Organization

In the following subsections, each of the seven learning points will be discussed in some details.

9-2-1- The Idiosyncrasy of IS Strategy

The review of the IS literature reveals that there are substantial differences between organizations with respect to IS strategy formation (Eral, 2003; Smits and Van der Poel 1996). In this study, it is noticed that due to its social consequences IS strategy formation varies not only between organizations but also within an individual organization over time. These variations manifest themselves both in the content of IS strategy and its formation process. The distinctiveness in vision and process between the two GIS initiatives were evident in the case study. An essential learning here is that IS strategy is a context specific phenomenon, that is, each IS strategy has its own idiosyncratic characteristics no matter how similar contexts are in any two organizational situations.

While the differences in the GIS strategic decisions during the two periods in the case study can be attributed to changes in several aspects of the organization context, the differences can be seen as directly linked to the broader theoretical themes discussed in the previous chapter. For example, unlike the second GIS initiative, the first GIS initiative in MCJ characterized with low dynamic social interactions. It was rather an isolated process with no significant interactions between interest groups within the organization. Indeed, there were no interest groups but the head of CPA at that time. Thus, the first GIS initiative can be seen as representing a personal vision rather than an organizational vision for change. While both initiatives suffer from high level of ambiguity and uncertainty, this aspect has been usefully utilized in the second initiative by the GIS strategy leaders to manipulate other group's perceptions of the strategy and the meanings they attached to it. Manipulation of perceptions and meanings,

accordingly, was higher in the second initiative. While the IS strategy formation capabilities of the organization was low in the first initiative and continue to be low in the second initiative, the level of the organization knowledge about IS strategy formation was remarkably higher in the second GIS strategy initiative. This can be attributed to the high dynamic social interactions that characterized the second GIS strategy formation process.

Table [9-1] illustrates the idiosyncrasy of each GIS initiative with respect to the abstracted theoretical themes.

Themes	First GIS Initiative	Second GIS Initiative
Dynamic social interactions	Low	High
Ambiguity and uncertainty	High	High
Manipulation of perceptions and meanings	Low	High
IS strategy formation capabilities	Low	Low
IS strategy formation knowledge	Low	High

Table [9-1]: The Idiosyncrasy of each GIS Initiative

An important learning point here is that organizations acquired the IS strategy formation capabilities that they have through a lengthy process of learning. This inference suggests organizations with apparently similar contexts may vary in the way

they approach IS strategy depending upon the rate in which they accumulate their IS strategy formation knowledge and capabilities.

The leanings derived from this research dose not fit well with the view that organizations can be wholly described by generic contextual characteristics that much of prevailing rational perspectives usually assume. The argument here is that the neglect of important indigenous social aspects of the organizational context has lead much of the previous work on IS strategy to an insufficient understanding of the social complexity associated with its formation in practice. Appreciating IS strategy formation practice in any particular setting, as Walsham and Sahay (1999) advice, should draw on locally relevant social aspects of its context, and carefully consider how they implicated in the evolving process of its formation.

9-2-2- The Social Consequences of IS Strategy

Indeed, there seems to be very little relevant guidance available from the literature that could help organizations such as MCJ in their quest for exploring better ways of forming appropriate strategies for adapting new information technology to their distinctive organizational context. One important reason why IS practitioners face difficulties in reconciling what they read in the prevailing IS literature with what they may had experienced in real life situations, is the lack of understanding of the social consequences of the formation process of IS strategy. This general conclusion form this research, although relatively broad and recognized by other researchers, is focal for understanding the social complications that associate with the formation of IS strategy in practice.

Organizations usually do not systematically evaluate the consequences of the IS strategy that they implement at a micro-level of their context, that is, answering questions like what are the consequences of IS strategy on the organization structure, business processes, or IS functions. They definitely do not ask what are the consequences of IS strategy formation on the organizational social context. Effects of IS strategy on organizations usually monitored at the projects level. Monitoring at corporate level may occurs in a situation of relative stability and high investments (Smits and Van der Poel, 1996).

In the case study, the social context of the organization was definitely touched by powerful social groups, but with no comprehensible vision of the possible consequences of that process. Although intended to advance the organization performance, the organizational changes associated with the IS strategy formation may also cause negative results. They surly have unpredictable social consequences on the organization as indicated in the case study. In the view of the considerable influence of the social complexity associated with the formation process of IS strategy on organization context, the consequences of this dynamic process deserves more serious attention by both IS researchers and practitioners.

9-2-3- Revisiting My Preconception of IS Strategy

Now that I have carried out an empirical investigation into IS strategy formation in practice, it is sensible to ask what have been changed about my understanding of the concept of IS strategy? In order to answer this question it is necessary to consider my preconception of IS strategy.

As an IS manager struggling with IS strategy that taking the organization to nowhere, I was in the position to lay the blame on IS strategy theories, approaches and methodologies the IS consultants utilize that not applicable in practice. The literature review reinforces this position. The review of prevailing approaches and methodologies of IS strategy confirmed the disparity between theory and practice.

Following the conduct of this research, my preconception of IS strategy has been considerably altered. While still arguing for the gap between IS strategy theory and practice, the responsibility of this gap has been reconsidered. In the view of the findings of this research, IS practitioners have been found as responsible for the inconsistency between their practices and IS strategy theories. No matter what approach or methodology we are using, it is the way in which we perceive the concept of IS strategy and the way in which we make sense of its social reality that make the difference.

Essential learning here is that until IS strategy theories are able to appropriately handle the social complexity of IS strategy formation, IS practitioners have no alternative but to deal with the issue on their own. However, understanding the nature, rationale and extent of the issue that findings from empirical research such the one reported here provides can certainly help in confronting the challenges of the social complexity that associates with the formation process of IS strategy.

Thus, following the conduct of this research, I am with the view that IS strategy is a complex set of organizational social activities that reflect a philosophy rather than a narrow set of steps prescribed by a simple methodology or techniques. Realizing this

reality, it can be argued, is fundamental qualification for closing the gap that this research argues to exist between practice and theory in IS strategy field.

9-2-4- The Selection of the Theoretical Framework

An interesting learning emerged from the process of selecting of the theoretical framework from which the research investigative framework constructed. As explained in Chapter Four, several relevant and alternative theories have been carefully explored before selecting the contextualism approach as a theoretical basis to construct the research investigative framework. Structuration theory and actor network theory are of the primary alternative theories considered for this research.

A useful concept that found helpful in selecting the research theoretical framework is based on Walsham's (1993, p. 6) argument that "in interpretive tradition of research there is no correct and incorrect theories but there are interesting and less interesting ways to view the world". In order to view the world in an interesting way, it is argued, the theoretical framework has to be of the author interest and expectation. Such framework, accordingly, would be derived from the author own interest, experience, and knowledge, and rationally believed to provide guidelines and structures for conceptualize, investigate, and gain insight to the phenomena of interest, and provides ways of encapsulating results. It is with these ideas in mind that the researcher should cautiously select the theoretical framework of the research.

Another valuable learning point is concerning the fit between the theoretical framework and the research methodology. As the main purpose of the investigative

framework is to guide the empirical research, that is, to structure the data collection and the resulting case description and analysis, an appropriate fit between the research methodology and theoretical framework therefore is an important qualification for a successful research.

An appropriate fit between the research methodology, that based on the interpretive longitudinal case study, and the research investigative framework, that based on the contextualism methodological approach, was achieved due to: (1) the interpretive and subjective orientation of both; (2) the interpretivist research methodology and the contextualism approach are both concerned with the social aspects of the phenomena under investigation; (3) the interpretivist research methodology provides a more flexible means for applying the contextualism approach.

While the framework has been found sufficiently capable of providing IS researchers with a usable and useful tool to investigate IS related processes in organizations, yet, further testing of the framework in other research settings certainly can help refine its utility.

9-2-5- The Researcher-Subject Relationship

The subjectivity of the interpretation according to the research methodology refers to how the meanings and perceptions of the participants about the research subject are reflected in the case description and analysis. This view, has been argued, stresses reliability rather than rigour in conducting the research. Thus, the researcher focus is on the quality of the data and the process of its selection (Weick, 1984).

Acknowledging the importance of the quality of the data and its selection process implies the importance of the nature of the social interaction between the researcher in one side and the participants in the research setting in the other.

In addition, the interpretivism tradition suggests that the facts are produced as part and parcel of the social interaction of the researcher with the research participants. Thus, the account of the fieldwork presented in this thesis can be seen, in a sense, as a reflection of this social interaction of the researcher with the participants. That is, the depth and faithfulness of the participants' viewpoints presented in the case description were largely governed by the nature and the level of the social interaction of the researcher with the participants.

The principle of the social interaction between researcher and participants entail deep understanding and sincere consideration of the social and cultural values of the research setting. It is this understanding and consideration, it has been argued, that determine the nature of the rapport with participants. In this research for instance, the way in which the interviews with participants carried out was more like informal conversations. The reason for that is the interest to achieve openness and sincerity with participants in a culture that is highly sensitive towards expressing personal opinion about official or general issues. Thus, the interviews were more like informal conversations between colleagues within the organization in which the informants were encouraged to express their views fully. Another example of the cultural considerations of the research setting is the use of the audio recording that has been found not favourable in such society. The assumption was that the presence of the audio-recorder

will enforce formal responses, and thus one may end up with superb record of biased data. This suggest that the principle of appreciating the cultural values of the research setting would contributes to creating confidence, trust and openness that in turn would release more truthful and less biased data from the participants.

The experience gained from the social interactions with the participants in this research support the argument that the researchers who are useful sources of information for the involved members of the organization under investigation are more likely to be perceptible, and to be kept informed by involved participants when events pertinent to the research subject occur. Supplying the participants with useful information from the research findings, although facilitate the researcher interaction with participants, it can also support the validity of the data interpretation by recycling findings back through participants. However, the researcher should be aware that the information he provides to any of the participants might constitute an intervention that may bias future responses.

Several evidences from this research indicate that while the social interactions with the participants in the research setting is important to gain their trust and confidence, it is also important to remain sufficiently detached so as not to become entirely native to the research setting and thus may consider for any particular reason as a threat to any of the participants. The role that the researcher play has to be carefully designed and managed which stress again the importance of the appreciation of the research setting cultural values.

It is important that the researcher reflect, throughout the course of the field data collection, upon the ways in which the data were created through his interaction with the participants and to try to read and consider the influence of his intervention on the participants, in particular, the emotional and intellectual reactions that the researcher brings to the research setting.

9-2-6- The Role of Researcher Preconceptions

One important principle from the interpretive research tradition is the sensitivity to possible contradictions between the preconceptions guiding the research design and the research actual findings, or what Klein and Myers (1999) referred to as the principle of "dialogical reasoning". In this research, the researcher previous experience in practice has shaped much of his initial preconceptions of the research topic and context. These explicitly acknowledge preconceptions formed the intellectual bases for the research design, and provide an important starting point for developing understanding.

Much effort has been given in this research to avoid the affects of the researcher preconceptions of the research topic and context. However, the experience from this research indicates that it is not possible to be entirely unbiased about the research topic or context throughout the research process. For example, during the fieldwork in this research, all possible precautions have been taken throughout the conversations with the participants to avoid imposing the researcher's preconceptions. Yet, the believe is that the way in which the conversations were steered by the researcher to keep it in track in several occasions reflected, in way or another, the researcher preconceptions of the topic under investigation.

It has been argued that the suspension of our preconceptions is particularly necessary if we are to begin to understand a text or text analogue. It can be asserted here however that it would be a challenging task for the researcher to totally set aside his preconceptions and adopts a value-free position throughout the research process of data collection and analysis.

It was interesting in this research to observe the way in which the researcher preconceptions were evolving throughout the stages of the research process. When I looked back at the end of this study to the initial conceptions about the research topic and evaluated them against the research findings, I found that the problem with my initial conceptions was not that they were not valid, but rather overly superficial. The research process has provided the profundity that was missing from the initial conceptions of the topic. The argument here is that the insightfulness has been gained at several stages in the research process in which the improved understanding of one stage becomes the preconceptions of the next.

This conclusion is in contradiction with some of the social science assumptions that claim that the researcher preconceptions are a source of bias and therefore an obstacle to valid knowledge. It is more aligned with the hermeneutic theory that recognizes the importance of preconceptions for understanding (Gadamer, 1976). Critical from the hermeneutic point of view to distinguish between true preconceptions by which we understand from the false ones by which we misunderstand, a task which found tricky to accurately practice in this research. Writing comments of how the researcher conceptions are influenced by the data could be helpful in this matter.

Boland (1991, p. 73) explain that “when we do interpretations, we bring our own knowledge, experience, and concerns to our material, and the result, we hope, is a richer, more textured understanding of its meaning”. The important learning point here is that we cannot refute our prior experience and knowledge or totally ignore them, instead, we should be explicit in acknowledging them, and carefully reflect upon their possible implications on our research process.

9-2-7- Searching My Own Organization

Main issue in conducting research in one's own organization is that the researcher may will not see the taken-for-granted that only an outsider can look at with an unbiased lens. In this research, I found it difficult, during my participant observation, to tend not to impose anything on the participants. The efforts to avoid the role of the self can be described as form of self-deception. The problem here is seemed to be that the researcher cannot separate himself from the community of which he is a part.

My role as researcher has undoubtedly influenced the way I have occasionally participated in the organizational activities of the research setting. For instance, the way I have interacted in the executive meetings that I had the chance to attend. I have noticed, for example, that I have been more abstract in my discussions than been practical, more critic than participative. I am sure that I had no intention to impose any of my conceptions on the others. However, I am not sure if my presence has been perceived by others as a colleague or as an observer. I can come to no precise conclusion about this experience. I have been with these people for some time in the past, I have worked with them, and I have even a role in the stories that they telling me

now. What they say is not very strange for me, but the insights that our discussions generate now has not been recognized before. It was obvious that there is something that has been slightly changed in my relationships with these people. I am not sure though why and how the change exactly happened. I have started thinking about this remarkable experience at a later stage of the research. It would be an interesting learning point if a researcher can trace a similar experience as he or she goes through a research process of his or her own organization.

9-3- Implications

While the outcomes of this research should be interpreted through its limitations as it is based on a single case study in a single society, there are implications arising from the research requiring further consideration. This section discuss the implications of the outcomes of this research for theory on and practice of IS strategy formation as a means of further elaborating the research contribution to knowledge.

9-3-1- Implications for Theory

A principle finding of this research, as pointed out earlier, is the theme concerning the dynamic nature of the social process of IS strategy formation. It has been argued that the success of IS strategy formation depends on our understanding of the dynamic social interactions between IS strategy formation process and aspects of its context. It is the appreciation of these dynamic social interactions that form the premise of this research. It forms the theoretical basis of the suggested sense-making scheme of IS strategy formation. It also embodies the rationale for the reservation the researcher hold about the traditional prescriptive approaches to IS strategy formation.

The examination of the nature of the social process of IS strategy formation in the case study reveals that IS strategy is a complex socially constructed phenomenon that produce from both direct reflections of external contextual forces and internal social interactions. It is more accidental in its formation rather than planned or consciously designed. It emerges as the organization adapts to the evolving social complexity of its context. This conclusion is in contradictory with the normative prescriptive approaches that dominate much of the prevailing IS strategy literature. The prescriptive approaches, for instance, assume that IS strategy formation is formal process that can be carried out using objective, normative, and analytical methods to drive intended strategy to which the members of the organization contribute, and this process is a straightforward activities that proceeds systematically through stages (e.g. Lederer and Salmela, 1996; Ward and Peppard, 2002). In real life situation, actions surrounding IS strategy formation involve the sense that people make of those actions before they take a course of action. The dynamic social process of IS strategy, as this research suggests, is a process of action / sense-making / action. Thus the IS strategy formation process is certainly not a straightforward activities that proceeds systematically through stages as much of the perspective approach assumes.

The findings of this research are also in contradiction with theories assuming that organizations can be wholly described by generic contextual characteristics. This view is common in much of prevailing IS strategy formation prescriptive approaches. This research argues that the neglect of the particularity of the social process of each IS strategic decision has lead much of the previous research to an insufficient understanding of the complexity associated with the formation of IS strategy in

organizations. It can be argued that understanding of how IS strategy do forms in any particular setting should draw on indigenous contextual aspects of that particular setting at that particular time, and should carefully consider how they implicated in the evolving process of IS strategy formation.

The findings of this research have implications for the theory of organizational capabilities. The ideas adopted from the resource-based view suggest that organizations acquired the capabilities that they have by means of time-consuming and expensive processes of organization-specific knowledge building. The findings of this research suggest that IS strategy formation can be perceived as a process of innovation that embodies the generation of new organizational knowledge. From this perspective, IS strategy formation can be seen as evolutionary innovation, rather than revolutionary innovation. This, it can be argue, can help explaining why apparently similar organizations may vary in their rate of success in forming IS strategies. The notion of organization-specific capabilities provides further support for the argument that IS strategy is a context specific phenomenon and its formation process differs from one organization to another. An important reading here is that the IS strategy formation process is largely a function of the organization-specific capabilities that created from assembling a range of organizational resources through a period of time. This conclusion means that IS strategy formation is far more complex and difficult to perform than much of the traditional rational perspectives suggests.

The research findings also implies that the extent to which the concept of IS strategy can be appreciated and absorbed by an organization is a function of both, the

web of social relationships through which perceptions and meanings spread, as well as the knowledge building process of the receiving organization (Huysman, Fischer and Heng, 1994). For instance, it has been noticed in the case study analysis that the MCJ success in adopting the GIS technology in the second initiative was not a result of efficient IS strategy, nor an accident. The success can be attributed largely to the organizational capabilities that have been developed through spontaneous processes of identifying, assembling, and manipulating internal and external knowledge. This knowledge building notion was reflected for instance in (J A) statement that the new GIS strategy have had into consideration all the lessons that the organization learned from its previous GIS experience. IS strategy, it can be argue, has greater a chance for success when the knowledge embodied in its formation process matches the available knowledge resources in the given organization.

Another significant implication arises from the research finding is concerned with using ideas from reference disciplines of knowledge management as useful means to understand IS strategy formation process. No theory on knowledge management has yet been established. Existing literature, however, suggest that organizational context do effects the process of knowledge building. The evidences from this research do tend to indicate that although knowledge about the methodological and technical aspects of the strategy formation are important, it is the knowledge about the social and cultural aspects of the organizational context and the way its influence and is influenced by the strategy formation process that create the essential part of the organizational knowledge base of IS strategy formation.

Knowledge in IS strategy formation gradually accumulates and transformed to develop organizational capabilities. As the organizational capabilities improved, it then becomes possible to overcome much of the faults in IS strategy formation. An innovation within innovation may occur (Sahal, 1981). Investigating the social interactions by which the knowledge developed by involved actors is legitimized and transformed into capabilities, it is believed, can help understanding the fundamentals of the organizational IS strategy formation capabilities.

9-3-2- Implications for Practice

Much attention has been devoted in this research not to fall into the trap of providing prescriptions for IS strategy formation for IS strategies, but rather to consider highlighting issues that need careful thoughts. The research findings presented previously are deemed to embody broad range of implications for practice concerning IS strategy formation. In the following, specific insights will be considered to further complement the broad implications of the research findings for practice.

This research argues that the concept of manipulating perceptions and meanings can facilitate the organizational ground for conducting IS strategy formation. Manipulating perceptions and meanings requires a leadership that can define reality for others and at the same time permits others to ship their own reality. It is important for IS strategy leaders to verbalize a sense of vision and intention and to communicate dedication for that vision through careful but clear mobilization of instruments of perceptions and meanings such as symbols, rituals, and language in order to establish sufficient cognitive consensus for collective actions. An example of such leadership

practice from the case study is the work of (M B) in CPA. A careful consideration and profound understanding of the organizational context are essential factors to prevent possible resistance. That is, to recognize those who depend on senior management definition of reality and those who participate in defining reality.

The organizational knowledge and its role in creating organization-specific IS strategy formation capabilities is a valuable conception for practice. IS Skills are important resources for effective IS strategy leadership. IS strategy leaders how understand technical aspects of the proposed technology as well as their business implications could have been more valuable in facilitating communication of the IS strategy to wider groups of the organization (Earl, 1989). However, IS strategy leader's mounting knowledge of contextual issues surrounding IS strategy formation such as the consequences of the interactions of IS strategy process with the social aspects of the organizational context, is vital for achieving the desired changes in the organizational social and cultural context. Assembling this knowledge with other tangible and intangible organizational resources and mobilizing these resources creates organization-specific capabilities that leads to a superior IS strategy formation and implementation performance. Such capabilities facilitate a more coherent vision of where the organization heading, which resolve many potential resistances and conflicts arising from ambiguity and uncertainty.

Building sufficient knowledge and transform them into capabilities entails a sense-making process to develop an understanding of how IS strategy formation process links with context. IS strategy leaders, for instance, need to understand how the strategy

process affects and is affected by the organizational culture and its existing system of shared meanings. This can be realized by detecting possible resistance or conflict and attentively interpret them as pointers of possible change of organizational culture.

Thus, there is a need for the IS strategy leaders to thoroughly observe the situation and identify, interpret, and respond to emergent themes and signals from the context in which they operate. This is where the proposed sense-making scheme comes to work to assist IS strategy leaders to achieve such capabilities.

9-4- Contribution to Knowledge

The purpose of this section is to articulate the contributions of the findings of this research to existing knowledge. The focus in this research is upon providing a theory based description and analysis of the social complexity of IS strategy in practice, and on developing analytical propositions to a wider body of theory that pertinent to the field of IS strategy (Miles and Huberman, 1994; Walsham, 1995). These particular ambitions form the basis of the research contribution to existing knowledge that can be summarized as follow:

- By conducting this research in a public service organization in KSA, The research contributes to exiting knowledge by providing an exceptional longitudinal case study of IS strategy formation that addresses both the public sector and the international perspective of the subject. Both perspectives, as argued in Chapter one, are under-studied and under-represented in the IS literature. The findings of this research therefore are valuable addition in that direction.

- Another primary contribution of this research to existing knowledge is the empirical understanding that it generates about the social complexity of the IS strategy formation process in practice, as presented the case study description and analysis in Chapter seven. The social complexity of the IS strategy formation process in practice, it is argued, yet has been not sufficiently understood.
- The detailed empirical understanding of the social complexity of IS strategy formation in practice, as discussed in Chapter three, has been recognized as an essential qualification for the efforts towards closing the evident gap between theory and practice in the IS strategy field. The empirical insights that this research generates about IS strategy formation in practice contribute in that important direction.
- The analytical themes that inductively derived from the case study description and analysis, as described in Chapter seven and linked to broader theoretical debates in the literature in Chapter eight, form the basis for the contribution of this research to exiting knowledge in the form of analytical propositions to more general theories.
- The discussion of the analytical themes that have been identified as important for understanding IS strategy formation in practice in Chapter eight provides a coherent description of the phenomenon. This coherent description should profitably contributes to the development of a new holistic perspective of IS strategy formation.

- The analytical themes discussed in Chapter eight provides a sound theoretical basis for revising exiting and developing new IS strategy theories, approaches and methodologies that explicitly incorporates the important social aspects of IS strategy formation.
- The kind of thick processual and contextual description of the actual practice of IS strategy formation in organizations that this research provides in Chapter seven is broadly lacking in the IS literature. This theory based case description and analysis can contributes significantly to exiting knowledge of IS strategy formation in practice.
- The research provides a well-structured and proven theory based methodological approach. As described in Chapter four, it places IS strategy formation process in its social context. Such theory based methodological approach, it is argued, is lacking in much of the previous IS strategy research.
- The proposed sense-making scheme for IS strategy formation, discussed in Chapter eight, provides both IS research and practice with a convenient analytical instrument for making sense of IS strategy formation process and its unpredictable consequences on the organization context. The concern is not to generate a neat theory, but a good practice of IS strategy.

9-5- Suggestions for Further Research

The scope of further research is wide. However, only some issues that draw rather directly from the key themes discussed earlier will be considered here. Although the focus in this research was upon developing analytical propositions to a wider body of theory (Miles and Huberman, 1994; Walsham, 1995) rather than developing generalizations to wider organizational settings. Nevertheless, there is a potential for transferability of new meaning and knowledge generated by this study. This should however be further investigated through research in other settings to see to what extent the findings emerged from this research are relevant, recognisable, supported or contradicted. The research can be extended to cover other areas of public sectors, or similar public sectors in other societies. It can be repeated in private sector. This would be particularly interesting from a comparative perspective to see whether the key themes identified are common across sectors.

The suggestions for specific directions for further research are focused upon significant issues associated with the research findings. For example, it may be argued in this research that improved understanding through knowledge building and better communication of perceptions and meanings, on the part of IS strategy leaders, should significantly assist in creating an organizational context where there are a more coherent system of shared meaning. This in turn should improve the chances of IS strategy formation and implementation success. Nevertheless, it is acknowledged that the empirical data of this research provides only limited evidence in support of this argument. Thus, further research undoubtedly required before firm statements can be made on the subject.

Further empirical research can draw on ideas from resources-based view to consider new perspectives on IS strategy formation that specifically addresses how organizations can develop IS strategy capabilities, what resources are required, and how such capabilities can be embedded within the fabric of the organization. Indeed, further research along these lines appears to be warranted. Another possibility is to concentrate on the social and cultural barriers that affect the process of creating IS strategy formation capabilities. To that end, a survey instrument to identify the most important socio-cultural barriers could be developed. The survey may be followed by interpretive, case study in order to evaluate the survey findings. Specific research could investigate the role of ambiguity and uncertainty in the process of the social construction and reconstruction of the reality of IS strategy. To date the IS literature has not defined IS capabilities, nor has it described the fundamental components or characteristic of organizational IS capabilities (Peppard and Ward, 2004). While this research can present only tentative conclusions in this respect, it certainly can provide a new prospect for further research along this line.

Knowledge building is another interesting area for further research. Ideas from reference disciplines about knowledge management can be utilised to investigate the role of organizational knowledge in IS strategy formation. Further research may investigate how experience in IS strategy formation gradually accumulates, assembled, and maintained. It could investigate how the established knowledge is then used to overcome faults in the formation process of IS strategy. It is interesting to find out the role of other internal and external resources such as IS skills on creating IS strategy formation capabilities.

The findings of this research and the proposed sense-making scheme for IS strategy formation could provide the foundation for developing and testing appropriate generic tools that help those interested in advancing their understanding of IS strategy formation process in context. Forthcoming studies may possibly put special attention on the validation of the provisional conceptual scheme in several occasions with a view for further development.

Although the need for full range of research approaches in examining any organizational problem in IS strategy field is not denied, it can be argued that the continues use of interpretive, longitudinal case studies provides a suitable means of developing an accumulated body of knowledge that based on alternative perspective of IS strategy formation. It was argued that alternative perspective to IS strategy formation is broadly lacking conceptual and empirical evidences to challenge the predominant rational perspective (King, 1994). Using interpretive longitudinal case study research, it can be argued here, would help in building up the essentially required cumulative research tradition.

The interpretive longitudinal case study approach appears well suited not only for understanding selected relationships between IS strategy formation process and organizational setting, as suggested by prior IS research, but also for understanding the dynamic interconnectedness of the IS strategy content, process, and multilevel context of organizations over time. It therefore reasonable to recommend the interpretive, longitudinal case study as an approach for the further research on IS strategy formation suggested above.

The final suggestion for further research arises from the conceptual investigative framework used in this research to interpret IS strategy formation in its context. The research investigative framework, which based on Pettigrew's (1987, 1990) contextualism methodological approach, proves to be valuable in overcoming much of the limitation of the rational perspective that underline a great deal of the IS strategy formation research. In addition, the theoretical ideas used in the framework including ideas from the web models approach and the metaphor of cultural were found to be valuable in providing insights into IS strategy formation process. It was found that each dimension of the framework contains an assortment of research themes and issues. It is reasonable therefore to suggests using the investigative framework for undertaking further research on issues concerning IS strategy formation in practice.

APPENDICES

APPENDIX I
(Interviews Conducted)

Interviews Conducted

	<u># of people</u>	<u># of times</u>	<u>Session</u>	<u>Duration</u>
<u>1- Organization Members:</u>				
1- Head of MCJ	1	2	1	1 hr
2- Head of CPA	1	4	1+2	1.5 hr
3- General Managers	4	4	1	1 hr
4- Departmental Managers	5	5	1	1 hr
5- Computer Dept. Manager	1	2	1+2	1 hr
6- IS Project Managers	2	4	1+2	2 hr
7- IS Project Consultants	1	3	1+2	1.5 hr
8- IS Projects Engineers	4	4	1	2 hr
<u>2- Consultants:</u>				
1- IS consultant				
(Vice President)	1	1	1	1.5 hr
2- IS consultant				
(Office Manager)	1	2	1+2	1 hr
<u>3- Vendors:</u>				
1- IS Service Provider				
(Director)	1	1	1+2	3 hr

APPENDIX II

(Data Sources Coding Scheme)

Data Sources Coding Scheme

Sr.	Document	Code
1	Government Reports	GR
2	Organization Reports	OR
3	Business Plans	BP
4	Studies Reports	SR
5	Letters & Memos	LM
6	Projects Reports	PR
7	Journals Articles	JA
8	Others Documents	OD
9	Observation Notes	ON
10	Interview Transcripts	IT

APPENDIX III

(Data Coding Categories)

Data Coding Categories (1/2)

Code	Description
1	Content
1-1	Visions for Change
1-1-1	Top management vision
1-1-2	IS Management vision
1-1-3	Departmental management vision
1-1-4	External stakeholder visions
1-2	Interactions
1-2-1	Interaction with process
1-2-2	Interaction with internal context
1-2-3	Interaction with external context
2	Internal Context
2-1	Culture
2-1-1	Shared systems of meaning
2-1-1-1	Changes in systems of meanings
2-1-2	Recognized Symbols
2-1-2-1	New Symbols
2-2	Structure
2-3	Process
2-4	IS Culture
2-4-1	IS Social Relationships
2-4-2	IS Infrastructures
2-4-3	IS History

Data Coding Categories (2/2)

Code	Description
3	External Context
3-1	IT environment
3-2	Governmental environment
3-3	External stakeholders
3-4	Interactions with content
3-5	Interactions with process
4	Process
4-1	Approach
4-2	Events
4-3	Actions
4-4	Reactions
4-5	Interactions
4-5-1	Interaction with content
4-5-2	Interaction with internal context
4-5-3	Interaction with external context
5	History
5-1	Events chronology
5-2	Affects on content
5-3	Affects on internal context
5-4	Affects on external context
5-5	Affects on process

APPENDIX IV

(Data Coding Samples)

(ملاحظات المقابلات الشخصية)

الاسم	ف خ	الوظيفة	مدير إدارة الحاسب الآلي
التاريخ	١٤٢٣/١٢/١٧	الوقت	١ - ١٢

- 2-2 - تتضمن معظم المؤسسات الحكومية في المملكة العربية السعودية ضمن تشكيل هيكلها الإدارية إدارات متخصصة في تقنيات المعلومات قد تحمل مسمى مركز المعلومات أو إدارة الحاسب الآلي أو إدارة التقنية أو ما شابه ، وتكون مرتبطة في الغالب برئيس المؤسسة مباشرة ، وتكون هذه الإدارات مسؤولة مباشرة عن جميع الأنشطة المتعلقة بتطوير وإستخدام تقنيات المعلومات في المؤسسة الحكومية.
- 2-4 - تعاني معظم هذه الإدارات المسؤولة عن تقنيات المعلومات في المؤسسات الحكومية من عجز كبير وواضح في قدراتها الذاتية على التعامل مع إدارة تقنيات المعلومات في مؤسساتها نتيجة لعوامل كثيرة لعل أهمها عدم توفر القدرات البشرية المحلية المؤهلة.
- 2-4 - في سبيل معالجة هذا العجز في القدرات الذاتية تلجأ معظم المؤسسات الحكومية إلى التعاقد مع شركات متخصصة من خلال مشاريع متنوعة لتطوير وصيانة وتشغيل تقنيات وأنظمة المعلومات ويقتصر دور المسؤولين في إدارات التقنية في كثير من الحالات ، كما في هذه المؤسسة ، على التنسيق والمتابعة الإدارية والمالية لهذه المشاريع ، بينما تتولى الشركة المتعاقدة المسؤولية الفعلية للإدارة الفنية لهذه التقنيات وتطبيقاتها في المؤسسة.
- 2-4 - يترتب على أسلوب المعالجة هذا العديد من المشاكل والصعوبات الفنية والإدارية والمالية والتي تؤثر بشكل مباشر وحاسم على مدى استفادة المؤسسات الحكومية من استخدام تقنيات المعلومات.

(ملاحظات المقابلات الشخصية)

الإسم	ف خ	الوظيفة	مدير إدارة الحاسب الآلي
التاريخ	١٤٢٣/١٢/١٧	الوقت	١ - ١٢

2-4-3 - يرجع قرار تطوير نظام المعلومات الجيوغرافية إلى عام ١٩٨٣م ، في ذلك الوقت كما هو

2-4-3 [الحال في معظم مؤسسات قطاع الخدمات العامة الحكومية في المنطقة لم يكن هناك أي محاولات جادة لإستخدام تقنيات المعلومات في أنشطة هذه المؤسسات.

- لم يكن هناك إي مؤسسة حكومية على حد علمي لديها أنشطة متعلقة بإستخدام أنظمة

2-4-3 [المعلومات في ذلك الوقت ، إدارة الحاسب الآلي هي الأولى التي تنشأ في قطاع الخدمات

2-4-3 [العامة الحكومية ، لقد كانت عبارة عن إجتهد من داخل المؤسسة أكثر منه مبادرة حكومية.

- كانت المؤسسة على وشك طرح مشروع تصوير جوي مساحي كبير يهدف إلى إنتاج خرائط مساحية جديدة للمدينة والتي كانت في حاجة ماسة لها.

1-2-2 - تم ترسية المشروع على شركة عالمية كبرى والتي إقترحت على الوكيل فكرة إنتاج نسخة

2-4-3 [رقمية من خرائط المصورات الجوية ، كما إقترحت توريد نظام معلومات جيوغرافية للتعامل مع الخرائط الرقمية كجزء من المشروع.

2-4-3 - مشروع التصوير الجوي المساحي لم يكن يتبع إدارة الحاسب الآلي ولكن يتبع إدارة المساحة

2-4-3 [وكان الوكيل هو المسؤول عن كل تفاصيل المشروع مباشرة ، بما فيها أعمال إنتاج الخرائط

الرقمية وتوريد نظام المعلومات الجيوغرافية وغيره من متطلبات المشروع ، لم نكن نعرف

2-4-3 [عن النظام أو مكوناته حتى مراحل لاحقة عندما تم توريده من خلال مشروع التصوير الجوي المساحي.

(ملاحظات المقابلات الشخصية)

الإسم	ف خ	الوظيفة	مدير إدارة الحاسب الآلي
التاريخ	١٤٢٣/١٢/١٧	الوقت	١ - ١٢

2-4-1 - من الواضح أن مشروع إعداد خطة إستراتيجية لأنظمة المعلومات الجيوغرافية قد فرض

2-4-1 على إدارة الحاسب الآلي ، فهناك عدم رضى واضح عن فكرة الخطة الإستراتيجية وشكوك كبيرة في أهدافها وتأثيرها المحتمل على دور إدارة الحاسب الآلي وبرامجها وتوجهاتها.

1-1-2 - لا يرى مدير إدارة الحاسب الآلي أن هناك جدوى حقيقة في إعداد خطة إستراتيجية لأنظمة

المعلومات الجيوغرافية للمؤسسة ، ويعتقد أن ما يجب عمله فيما يخص تطوير إستخدامات أنظمة المعلومات الجيوغرافية في المؤسسة واضح ومحدد ولا يتطلب سوى توفير الإعتمادات المالية الكافية لتطوير وتوفير المزيد من الأجهزة والبرامج التطبيقية وإستكمال بنية النظام لخدمة إحتياجات المستخدمين في المؤسسة.

1-1-2 - ينظر مدير إدارة الحاسب الآلي إلى عملية التخطيط الإستراتيجي لتقنية المعلومات على أنها

عملية توثيق رسمي لبرامجهم وتوجهاتهم في مجال إستخدام تقنيات المعلومات الجاري تنفيذ بعض منها فعلياً.

4-4 - نتيجة للتأخر في تنفيذ مشروع الخطة الإستراتيجية لأنظمة المعلومات الجيوغرافية تم طرح

مشروع لاستمرار صيانة وتشغيل الحاسب الآلي لمدة سنة بتكلفة أربعة مليون وخمسمائة ألف ريال تضمن استبدال جهاز الحاسب الرئيسي بجهاز خادم ملفات وأنظمة اتصالات لاسلكية عالية السرعة.

APPENDIX V

(Main Areas and Sub-areas of Modern Technology)

Main Areas and Sub-areas of Modern Technology (1 / 4)

1- Education and Culture	
Sub-areas	Definition
Preparing reliable national cadres in the field of information technology	Education, rehabilitation and training programmes implemented by government and the private sector for preparing national cadres in the field of information technology, their relevance to present and future needs, and how to achieve quantitative and qualitative improvements in order to support the transformation to the information society.
Information technology in education and computer literacy	Optimum use (including initiation, establishment, development, selection and evaluation) of information technology at all stages of education (general, technical, vocational, graduate, post-graduate, and continuous education), as well as in training and how to improve information awareness in order to eradicate computer illiteracy for all the segments of the society.
Arab and Islamic cultures in the digital era	Using information technology for promoting the spread of the basics of Arab and Islamic cultures, and encourages institutions and individuals to adopt such techniques in their advocacy, educational and cultural endeavours.

Main Areas and Sub-areas of Modern Technology (2 / 4)

2- Trade and Economy	
Sub-areas	Definition
IT industry adaptation	Developing IT industry in relevant areas, providing the prerequisites for creating a national industry capable of competing at the local, regional and international levels, and ensuring the country strategic needs.
e-Commerce	Using IT for developing commercial activities, supporting transactions between trading institutions and customers.
Remote use of IT	Executing information, procedural and managerial tasks, or any other professional tasks, through a communication media between two sides, and ensuring that such media would be the meeting point of the two sides regardless of the whereabouts of either side.

Main Areas and Sub-areas of Modern Technology (3 / 4)

3- Communications and Information Security	
Sub-areas	Definition
Communications and the Internet	Benefiting from Internet and communications technologies and infrastructures in meeting national needs for the transformation to the information society.
Information security	Securing the requirements for information saving security, interchange, etc. through techniques, policies and institutions leading to the transformation to the information society.
Rules and regulations governing information technology	Rules and regulations covering electronic crimes, protecting national industries and protecting the consumer, encouraging investments and opening up competition, supporting the provision of services through the internet, as well as all efforts leading to the information society.

Main Areas and Sub-areas of Modern Technology (4 / 4)

4- Management and Services	
Sub-areas	Definition
e-Government	Effective complementary use of IT for facilitating interaction between government sectors (Government to Government), between the government and the citizens (Government to Citizens) and between the government and the business sector (Government to Business).
Informatics standards	Ensuring the standards required for users, products and services, with a view to improving services and products, protecting the consumer, and promoting the transformation to the information society.
IT in the military and the national security sectors	Using IT in supporting the state's efforts in the national security and military sectors, in order to increase their productivity and ability in the fields of surveillance, follow-up, control, planning and decision-making; improving services rendered to all users, and adapting IT in both sectors, as an important requirement for national security.
IT in the public and private sectors	Using information technologies in the public and private sectors for increasing efficiency, productivity and allowing for proper follow-up, surveillance and decision-making, as well as improving medical services provided to all beneficiaries.
IT in the health sector	Using IT closely related to the provision of medical services, such as medical information systems, improving managerial and financial performance, procurement systems and stock control. This would include connecting the various health sectors such as the e-medicine and smart cards, and establishing databases to support medical planning in KSA.

APPENDIX VI

(Rationale Structure of the Abstracted Themes)

(Rationale Structure of the Abstracted Themes)

(Ambiguity & Uncertainty)

2- Ambiguity & Uncertainty
2-1- Ambiguity of the GIS history
<p>2-1-1- Heads of the organization perception's of the GIS history</p> <ul style="list-style-type: none"> - As they frequently changing, heads of the organization usually do not have a clear track recorded of the GIS development in the organization. - Their perceptions of the GIS history derived mainly from the broad interpretations they obtain from different sources. - Thus, the head of the organization perceptions of the GIS history can be seen as more ambiguous than clear.
<p>2-1-2- Senior managers perception's of the GIS history</p> <ul style="list-style-type: none"> - None was seriously interested or involved in any IS strategy issues until (A M), the new head of MCJ, was appointed. - Each has a different interpretation of the previous and current GIS initiatives. - Thus, for them the IS strategy history is broadly ambiguous.
<p>2-1-3- IS strategy leaders perception's of the GIS history</p> <ul style="list-style-type: none"> - They perceive the previous GIS initiative as a complete failure. - They tailored their own perception of previous GIS work, and then they built upon it in proposing the new GIS initiative. - For them, they have their own understanding of the GIS history.
2-2- Uncertainty of the strategy content
<p>2-2-1- Heads of the organization vision's of the strategy content</p> <ul style="list-style-type: none"> - Until (A M) became the head of MCJ, there was no broad organizational vision to follow. Each head of the organization had his own vision of the content of IS strategy. - (A M) vision was to use the GIS technology for introducing his comprehensive organizational change.

<p>2-2-2- Senior managers vision's of the strategy content</p> <ul style="list-style-type: none"> - As presented to them by the GIS strategy leaders, it was about recovering the organization performance problem. - For some other senior managers, it was about controlling the organization resources.
<p>2-2-3- IS strategy leaders vision's of the strategy content</p> <ul style="list-style-type: none"> - While they present it as a means for enhancing organizational performance and image, and to bring about changes to organization culture, it was also a means to achieve success, power and control.
<p>2-3- Uncertainty of the strategy process</p>
<p>2-3-1- Top management participation in the strategy process</p> <ul style="list-style-type: none"> - As a result of the IS strategy leaders approach, no much room was available for others to participate in the formation process. Thus, top management involvement in the strategy formation process was rather slight and slow. - Beside the occasional presentation of the Head of the organization, little information about the progress in the GIS projects was available for senior managers.
<p>2-3-2- Managers participation in the strategy process</p> <ul style="list-style-type: none"> - Most managers have now complete idea of the status of the strategy or its process. - None of them had the chance to participate in the strategy formation process. - Again, little information about the GIS strategy progress was available for managers.
<p>2-4- Leadership style</p>
<p>2-4-1- Head's of the organization leadership style</p> <ul style="list-style-type: none"> - The leadership notion that the rest will follow those who lead the IS initiative was a main sources of inconsistency and confusion of the IS vision in the organization - Considering the level of IS utilization as a measure of success raise the IS symbolism in the organization culture. This changed exiting perceptions and sheared meanings. - Enforcing the utilization of the GIS services with out considering its status and requirements increased ambiguity and uncertainty of the service.
<p>2-4-2- GIS strategy leaders' leadership style</p> <ul style="list-style-type: none"> - Controlling all aspects by the GIS strategy leaders was the main source of the ambiguity of the strategy content and uncertainty of its formation process. - Ambiguity and uncertainty of the strategy was in it self an important aspect of the leadership style of the GIS strategy leaders.

<p>2-5- Multiple perceptions of the GIS strategy</p>
<p>2-5-1- Strategy leader's interpretation of the GIS strategy</p> <ul style="list-style-type: none"> - While they interpret it as a source of the required organizational change, it is obvious that it is a source of success and power for them. - They indirectly pressing their own interests over the GIS strategy and mobilize it to expand and strengthen their power boundaries, this raise many doubts about the strategy and makes others rather uncertain of its content and process.
<p>2-5-2- Senior manager's interpretation of the GIS strategy</p> <ul style="list-style-type: none"> - For the senior managers in CPA, it is a means for enhancing their departments performance, yet, they no that this is not going to be easy. - Senior managers of other departments realized that essential data can be easily accessed through the system, but they not certain if CPA is capable or willing of providing the service in the first place. - Senior managers in CPA will definitely avoid losing bargaining power with other parties in the organization by losing control over important resources.
<p>2-5-3- Technician's interpretation of the GIS strategy</p> <ul style="list-style-type: none"> - Although their role was limited in the strategy formation process, they greatly frustrated the implementation process by rejecting some of the system applications that they perceived as interfering with their traditional control over essential data. - The technicians were willing to use the system to help them manage their massive amount of data, but they were not willing to openly shear the data with other groups through the system.
<p>2-5-4- Other group's interpretation of the GIS strategy</p> <ul style="list-style-type: none"> - For some of the officials in MCJ, the ministry may interpret the GIS strategy as a challenge for their intended control over the GIS services in its public services sectors. Thus they are not certain of the future of the strategy. - Other local public service organizations encouraged by MCJ promises of providing them with essential digital maps and spatial data through the GIS services, but they are not sure of how or when this will happened. - For the IS consultants and service providers and IT vendors it is a potential source for a long term business relationship with MCJ. However, the ambiguity of the content of the strategy as it is changing through time makes them uncertain of its formation and implementation process.

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