



The
University
Of
Sheffield.

**Sustaining dynamic strategic alignment between business and
information systems in a rapidly changing environment:
An exploratory case study**

By:

Zefeng Wang

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

Information School
The University of Sheffield

June 2015

Abstract

Strategic alignment and strategic planning of information systems (IS) have been considered as significant topics in the IS field for the past twenty years. Abundant research has been conducted to understand how strategic alignment and strategic planning of IS support business operation and strategy in organisations and to develop frameworks to study strategic alignment. Nevertheless, there are still issues that need to be tackled, and one of them is environmental dynamism. Environmental dynamism or the changing environment can pose a serious threat to the success of IS planning and lead to alignment failure. Therefore whether and how organisations can sustain strategic alignment in a changing environment is a concern of many. This research aims to investigate the influence of changing environment, if any, on strategic alignment and strategic planning of IS, and how organisations can sustain strategic alignment of IS in a changing environment. The core research question of the research is: How can organisations adapt their strategic planning of IS and sustain strategic alignment in order to respond to the dynamic and competitive environment?

A qualitative research strategy was employed for this research in order to achieve a better understanding of the impact of changing environments on organisations' IS planning and strategic alignment. An interpretive case study was carried out in a Chinese state owned company located in Shenzhen, Guangdong. 27 employees from various departments were interviewed and documents relevant to the study were collected. The data was analysed following the steps of thematic analysis and with the assistance of the research framework which was developed and presented in Chapter 3. The framework was built on the co-evolutionary theory and the dynamic capability perspective, which considers that strategic alignment is a continuous process. The framework also examines the process at different levels (strategic level, organisational/operational level, and individual level) in the context of changing environments.

The findings of the research show that the internal environment of an organisation which is less turbulent may play a more influential role than a more changeable

external environment does in sustainable strategic alignment. The findings also show that organisational resources can become potential barriers to making attempts to achieve strategic alignment. The framework describes the process of sustainable strategic alignment and the findings demonstrate how such a process can be affected by various factors, and how intended strategic alignment can easily be unrealised because of the combined effects of these factors. In addition, this study identifies and describes four challenges for sustainable strategic alignment (Attitude to IT/IS, Risk management, Lack of IS professionals and Lack of IS outsourcing options) and two dynamic capabilities for sustainable strategic alignment (IT flexibility and organisational agility) which can significantly affect sustainable strategic alignment.

The results of this research contribute to the existing knowledge by extending the concept of strategic planning of IS and strategic alignment in dynamic environments; examining the relationship between strategic alignment and changing environments, as well as the significance of the sustainable strategic alignment; and investigating the process of sustainable strategic alignment in changing and competitive environments. In particular, this study proposes a process-based sustainable strategic alignment framework based on co-evolution and dynamic capabilities perspective. The study also identifies organisational resource as an internal environmental factor, affecting strategic alignment process, explores the effect of sustainable strategic alignment, identifies four potential challenges for sustainable strategic alignment, and extends sustainable strategic alignment concept in a state-owned enterprise context.

This study also has implications for practice and future research. IS executives/planners and top management can learn from this study how organisations can achieve sustainable strategic alignment by the process-based view and considering the challenges and dynamic capabilities identified in this research. The results of this research also provide a fertile ground for continuing research into sustainable strategic alignment. Future researchers may use the framework developed in this study to further investigate sustainable strategic alignment in dynamic environments. Also, the findings of this study need to be validated in

different contexts to see how well the framework and the results can explain sustainable strategic alignment.

Acknowledgment

I would like to thank my supervisor Dr. Angela Lin for her kind advices and great supports at different stages during the development of this Thesis. Dr. Angela Lin has spent so much time and effort in helping me. When I am depressed, she always provides me supports not only in academic but also in daily life. Without her helps, I could never finish this PhD thesis. I learnt a lot of things from her, which is essential in my development as a researcher.

I also would like to thank all of the research students in the Room 224 and staffs in Information School, who have helped me to progress my work. Their helps are also essential for finishing this thesis. I am grateful to all my friends who have helped me and motivated me to work hard and efficiently during this period of time. Finally, I would like to thank my parents who give me unlimited supports and encouragement.

Table of Contents

Chapter 1 – Introduction	11
1.1 Introduction	11
1.2 Background	11
1.2.1 Chronological review of literature on strategic planning of IS from 1970s to 2000s	13
1.3 Research aims, objective and questions.....	19
1.4 Structure of the thesis	20
Chapter 2 – Literature review	23
2.1 Introduction	23
2.2 Strategic planning of IS	24
2.2.1 Definition of strategy	24
2.2.2 The role of IS strategy	27
2.2.3 IS Strategic frameworks	31
2.2.4 Summary	47
2.3 Strategic alignment.....	47
2.3.1 Definition of strategic alignment.....	49
2.3.2 Strategic alignment models	50
2.3.3 Critiques of strategic alignment	56
2.4 Sustainable strategic alignment	60
2.4.1 Difference between sustainable strategic alignment and conventional strategic alignment.....	64
2.4.2 Co-evolution	67
2.4.3 Dynamic capabilities perspective	71
2.4.4 Factors related to sustainable strategic alignment (dynamic capabilities)	78
2.4.5 Summary	83
Chapter 3 – Research Methodology	84
3.1 Introduction	84
3.2 Research Framework	84
3.2.1 Theoretical background.....	85
3.2.2 Framework description.....	86
3.3 Research philosophical assumptions.....	95
3.3.1 Ontology	96
3.3.2 Epistemology	97
3.3.3 Human nature.....	99

3.3.4	Methodology	100
3.3.5	Interpretive approach.....	101
3.4	Research design	102
3.4.1	Direction of theorising	102
3.4.2	Research strategy: quantitative vs. qualitative	103
3.4.3	Five qualitative research designs to inquiry	105
3.4.4	Case studies	109
3.4.5	Sampling and Background of the companies	113
3.5	Data collection and data analysis	116
3.5.1	Data collection methods.....	117
3.5.2	Data analysis	123
3.6	Research Ethics	126
Chapter 4 –	Data analysis of the case study	128
4.1	Internal environment.....	128
4.1.1	Organisational structure.....	129
4.1.2	Organisational culture	133
4.1.3	Organizational resource	134
4.1.4	IS infrastructure	136
4.2	External environment.....	138
4.2.1	External environmental factors for business.....	138
4.2.2	External environmental factors for IS.....	145
4.3	Dynamic strategic alignment	147
4.3.1	Organizational agility	148
4.3.2	IT flexibility.....	149
4.3.3	Three levels of strategic alignment	150
4.3.4	Strategic alignment process	161
Chapter 5 –	Discussion	176
5.1	Framework revisions	177
5.2	Environmental factors	179
5.2.1	Internal environment.....	179
5.2.2	External environment.....	194
5.2.3	Summary.....	202
5.3	Sustainable strategic alignment	203
5.3.1	Process of sustainable strategic alignment	203

5.3.2	Effects of sustained strategic alignment	207
5.4	Factors affecting sustainable dynamic strategic alignment	213
5.4.1	The challenges for dynamic strategic alignment	214
5.4.2	Dynamic capability affecting sustainable strategic alignment	222
5.5	Summary	224
Chapter 6 – Conclusion.....		225
6.1	Summary	225
6.2	Limitations	232
6.3	Research contributions.....	233
6.3.1	Contributions to knowledge	233
6.4	Research Implications.....	238
6.4.1	Implications for practice	238
6.4.2	Implications for future research	241
REFERENCE		243
Appendix A: Research ethics approval		286
Appendix B: Information Sheet for interview		287
Appendix C: Consent form.....		294
Appendix D: Interview script and timetable.....		296
Appendix E: Coding scheme and Categorisation.....		302

List of Figures

FIGURE 2.1 REALITIES OF STRATEGY DEVELOPMENT (JOHNSON AND SCHOLES, 2002)	27
FIGURE 2.2 THE INFORMATION SYSTEMS STRATEGY TRIANGLE (PEARLSON AND SAUNDERS, 2009) ...	29
FIGURE 2.3 INFLUENCE BETWEEN IT, IS AND ORGANIZATIONAL CULTURE(CLAVER ET AL, 2001)	42
FIGURE 2.4 COMPETING VALUES FRAMEWORK (COOPER, 1994)	43
FIGURE 2.5 STRATEGIC ALIGNMENT MODEL (HENDERSON & VENKATRAMAN, 1993).....	51
FIGURE 2.6 IS STRATEGY FORMULATION: A MULTIPLE METHODOLOGY (EARL, 1989, PP.71).....	55
FIGURE 2.7 CO-EVOLUTIONARY IS ALIGNMENT (BENBYA & MCKELVEY, 2006)	70
FIGURE 2.8 A MODEL OF STRATEGIC ALIGNMENT PROCESS WITH DYNAMIC CAPABILITIES PERSPECTIVE (SUN & CHEN, 2006)	77
FIGURE 3.1 A PROCESS-BASED SUSTAINABLE STRATEGIC ALIGNMENT MODEL.	87
FIGURE 4.1 ORGANISATIONAL STRUCTURE OF THE CASE COMPANY	131
FIGURE 5.1 INITIAL FRAMEWORK OF PROCESS-BASED STRATEGIC ALIGNMENT MODEL AND REVISED FRAMEWORK OF PROCESS-BASED STRATEGIC ALIGNMENT MODEL	178
FIGURE 5.2 STAGES OF DYNAMIC STRATEGIC ALIGNMENT PROCESS	204

LIST OF TABLES

TABLE 1.1 TRENDS OF STRATEGIC PLANNING OF IS RESEARCH IN THE IS FIELD	18
TABLE 2.1 ROLES OF IS STRATEGY IN LITERATURE	30
TABLE 2.2 IS STRATEGY RELATIVE FRAMEWORKS	33
TABLE 3.1 ELEMENTS OF EXTERNAL ENVIRONMENT AFFECTING STRATEGIC ALIGNMENT	88
TABLE 3.2 ELEMENTS OF INTERNAL ENVIRONMENT AFFECTING STRATEGIC ALIGNMENT	89
TABLE 3.3 FUNDAMENTAL DIFFERENCES BETWEEN QUANTITATIVE AND QUALITATIVE RESEARCH...	104
TABLE 3.4 FIVE QUALITATIVE RESEARCH DESIGNS.....	105
TABLE 3.5 A SUMMARY OF HOW THE CASE CHOSEN MET THE SELECTION CRITERIA	115
TABLE 3.6 CONTEXTUAL INFORMATION OF THE CASE COMPANY (CHINESE SMALL AND MEDIUM SIZE SOES).....	116
TABLE 3.7 LIST OF DOCUMENTS PROVIDED BY THE CASE COMPANY	117
TABLE 3.8 GENERAL INFORMATION OF THE INTERVIEW PARTICIPANTS IN THE CASE STUDY	121
TABLE 5.1 SUMMARY OF INTERNAL ENVIRONMENT FACTORS.....	179
TABLE 5.2 EXTERNAL ENVIRONMENTAL FACTORS	195
TABLE 5.3 EFFECTS OF SUSTAINED STRATEGIC ALIGNMENT.....	207
TABLE 5.4 SUMMARY OF CHALLENGES FOR DYNAMIC STRATEGIC ALIGNMENT FROM FINDINGS	214
TABLE 0.1: CODING SCHEME	302
TABLE 0.2: CATEGORISING CODES.....	315
TABLE 0.3: AN EXAMPLE OF CODED TEXT	318

Chapter 1 – Introduction

1.1 Introduction

Information systems (IS) are becoming increasingly important to organisations, who adopt IS not only for efficiency gains but also for strategic reasons, e.g. for business sustainability, competitive advantage, innovation, management, and so on. Indeed, coupled with business strategy, strategic planning of IS has been proved to have significant impacts on organisations' performances (Chan et al., 2006; Reich & Benbasat, 1996; Sabherwal & Chan, 2001); thus it has attracted attention in both academia and practice and is high on the research agenda in the IS field, as well as Business Studies. This PhD project has been conducted in order to contribute to the research agenda by focusing on adaptability and sustainability of strategic planning of IS, and strategic alignment. The remainder of this chapter provides more information about the research background and potential significance of this PhD research, and the research questions, aim, and objectives. The chapter is organised as follows. The next section presents the research background and is followed by Section 3, which identifies the research aims, objectives and questions. Section 4 provides a brief outline of the organisation of this thesis.

1.2 Background

Strategic planning of IS is one of the most essential issues in both the IS and business research fields, as well as in the modern management of organizations. Most scholars agree that it has crucial effects on an organizations' performance, particularly in the business context (e.g. Pearlson & Saunders, 2009; Chan et al., 1997). To study this topic, it is first necessary to clarify what is meant by strategic planning of IS. In the business domain, strategic planning can refer to the process by which organisations develop their own strategy or direction, and make decisions on

distributing and using its resources to achieve this strategy (Argenti, 1968). Accordingly, strategic planning of IS can be defined as the process of planning an organisations' strategy regarding IS. More specifically, Lederer and Sethi (1996, p. 35) define strategic planning of IS as "the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realizing its business goals". It is an essential organisational activity which can help decision-makers to identify strategic applications and align IT with business needs.

Strategic alignment is frequently mentioned when discussing strategic planning of IS. Strategic alignment, also known as IS alignment and IT business alignment, is the process and the result of linking IT/IS or IT/IS strategy with business or business strategy (Luftman, 1993; Ward & Peppard, 2002). According to Jahnke (2003), the practitioner community has treated strategic alignment as the 'Holy Grail of IT'. This shows that they pay significant attention to strategic alignment and believe that a successful alignment between business and IT/IS tends to bring better business and financial performance. In the IS field, strategic alignment has remained the top concern of executives and managers for over twenty years (Chan & Reich, 2007; Niederman et al., 1991). Luftman and Ben-Zvi (2011) reported that strategic alignment has been the number one issue of concern in the IS field six times in the last nine years (from 2002 to 2011). Besides, Vessey and Ward (2013, p. 283) assert that strategic alignment could be the most 'vexing' issue in IS, which is still largely unaddressed and needs to be recognised, not only theoretical, but also practically in some specific aspects, such as sustainable dynamic strategic alignment.

This research is concerned with strategic planning of IS and strategic alignment, so it is important to clarify the concept of strategy. 'Strategy' is an essential term in this study, and it can be a very difficult concept to understand. According to Ward and Peppard (2002, p. 276), strategy is "an integrated set of actions aimed at increasing the long-term well-being and strength of the enterprise relative to competitors". Unlike a plan, a strategy is not simply a continuous process but is also a learning process. Johnson and Scholes (2002) suggest that strategy can be affected by imposed changes, new opportunities, unexpected constraints or options, and failed

implementation. This is to say, strategy is not strictly linked to rules, but to changes in the environment.

Strategy issues in the IS domain are treated as being of high importance by organisations. For example, Ward and Peppard (2002, pp. 26-35) assert that the strategic use of IS/IT could help organizations in their work of “linking to customers and supplier”; “improving integration of internal processes”; “enhancing the information-based products and services”; and “managing and implementing information systems”. All of these are vital for business organisations to survive in competitive environments.

1.2.1 Chronological review of literature on strategic planning of IS from 1970s to 2000s

The following part presents a brief review of strategic IS literature over the last 40 years, in order to clarify the academic background and identify the research tendency of this topic.

The 1970s

In the 1970s, ‘strategy’ started emerging in the IS field. Anthony firstly (1965) extended the role of IS from data processing to strategic IS by observed evolution of applied information technology. Since then, IS strategy as a concept has begun to be developed and was mentioned continuously by scholars in the 1970s. For example, Zachman (1977, 1982) developed an ‘architecture’ based view of IS strategy which reflects the interests of the major incumbent suppliers, especially IBM. Similarly, Nolan (1979) established a ‘six stages of growth model’ for IS strategic management, which provides a guide for IS Strategy development, by adopting the latest available information technologies. However, a number of scholars (e.g. King & Kraemer, 1984; Lederer & Sethi, 1988) criticized these early concepts and models, as they are developed without empirical evidence. In addition, according to King (1978) and Ward (2012), in the 1970s, the concept of strategic IS focused on organization, rather than business. This was caused by the fact that, in the 1970s, views of IS strategy

were dominated by IT manufacturers and consultants who suggested that IS/IT should mainly support functional activities and organisational management, rather than business needs. However, this situation changed in the early 1980s as academics began to pay attention to this topic. Generally, the early concepts and knowledge of IS strategy was not rigorous.

The 1980s

In the 1980s, an increasing number of scholars started to study strategic issues in IS research. They started to define the concept of strategic planning of IS (e.g. Lederer & Sethi, 1988; McFarlan, 1981; Zmud et al., 1987). For instance, Earl (1989, p. 67) defines strategic planning of IS as “long term, directional plan which decides what to do with IT”, while Lederer and Sethi (1988) stated that it refers to the process of identifying the goals of IT that the organisation should adopt. These definitions of IS strategy focus on the prevailing IT-centric perspective (Ward, 2012). The role of IS has been transformed from strategic into corporate strategic. Scholars started to treat information as a strategic resource and the deployment of information (IS) as a strategic weapon to incorporate with business strategy (e.g. King, 1983; Doll & Vonderembse, 1987). A number of strategic IS planning methodologies and models were established and developed in this period (e.g. Earl, 1989; Highsmith, 1981; King, 1985; Lederer & Sethi, 1988; Sullivan, 1985; Ward, 1987). These approaches generally focused on efficiency and development of strategy, and were mainly designed to support business strategy as corporate strategy. For example, Earl (1989) develops a classical IS strategy model: a multiple methodology for an IS strategy. This framework shows the development of IS strategy based on the business plan, current systems, and IT opportunities. This is to say that the framework can help to align IS/IT with business. A number of subsequent studies started to attempt to test or develop such IS strategy frameworks as well (King, 1988; Galliers, 1991; Earl, 1993). For example, Earl (1993) conducted an empirical research study using his own IS strategy framework (Earl, 1989). The research examined strategic planning of IS experience in 27 companies by interviewing IS managers and general managers. The findings tested and supported his previous work. The literature started to highlight the significance of strategic alignment (Lorin et al., 1987).

The 1990s

In the 1990s, IS strategy began to be integrated with business strategy (Merali et al., 2012), and alignment of IS with business was the dominant issue on the management agenda (Galliers et al., 1994). Strategic alignment became the most frequently discussed theme in the IS field. Compared with the 1980s, strategic planning of IS literature in the 1990s was concerned more with its integration. Definitions of strategic planning of IS developed in this period started to be concerned with aligning IS with business. For example, Earl (1993, p. 63) developed his previous definition by adding the purposes “aligning IS development with business needs and seeking advantage from IT”. The IS role in this period became significantly important, and tended to integrate with business. Emery (1990) asserted that organisations and their leadership need a more integrated IS-Business relationship. A large number of classic and influential strategic alignment models were developed in this period. For instance, Henderson and Venkatraman’s strategic alignment model (1993) developed the ‘strategic alignment model’, which is one of the most frequently applied frameworks in the IS field. This model shows the horizontal and vertical relationships between business strategy, IT strategy, organisational infrastructure and process, and IT infrastructure and process. Compared with models developed in 1980s, models in this period tended to develop strategic IS for the integration of IS with business and for integrated systems (ERP, CRM) (Davenport, 1998; Lacity et al., 1994; Merali et al., 2012).

Furthermore, changing issues emerged in the strategic planning of IS literature. IS researchers realised that the advances in strategic planning of IS and IT could lead to dramatic organisational changes within companies (Morton, 1991). Based on Business Process Re-engineering (BPR), which refers to a business management strategy emphasising the analysis and design of workflows and processes within an organization, Hammer (1990) suggested that the strategic role of IS had dramatically grown, to the extent that organisations needed “revolutionary change”. Also, due to the emergence of the Internet, e-business models emerged in the 1990s which looked at how IS/IT could change the marketplace. IS strategy researchers started to study the electronic marketplace and the transformational impact of IT on business

performance (Bakos, 1991; Baets, 1992; Chan et al., 1997). In addition, strategic perspectives began to look at 'sustainable' issues (Andreu & Ciborra, 1996; Clark et al., 1997; Lederer & Hannu, 1996). For instance, Apte et al. (1990) advocated the adoption of resource-based views which suggest that organizational resources and capabilities were at the root of organisations' long term success (Wernerfelt, 1984). This is one theoretical perspective and an explanatory framework that is frequently applied to sustained competitive positioning (e.g. Peppard & Ward, 2004).

Although IS researchers started to recognise the changing issues and sustainable issues in strategic planning of the IS theme, none were related to the dynamic environment. They were more likely to focus on how IS/IT changed and affected organisations or businesses, rather than the dynamic factors affecting strategic planning and strategic alignment. Furthermore, the changes involved in this area were end-stage changes, rather than continuous dynamic changes. This means the change was a one step process that could be studied through static approaches.

The 2000s

In the 2000s, strategic planning of IS research continued to explore the main themes of the 1990s. Strategic alignment remained a top issue in the IS field (Chan & Reich, 2007). However, there were some changes and developments in strategic planning of IS. The definition of such IS planning in this period had a broader perspective. For instance, Ward and Peppard (2002, p. 118) defined it as "thinking strategically and planning for the effective long-term management and optimal impact of information in all its forms: information systems and information technology". The role of IS started to change from being integrated with business to co-evolving with business. Scholars (Baker et al., 2009, 2011; Benbya & McKelvey, 2006; Vessey & Ward, 2013) considered that IS and organisations continuously changed and evolved in dynamic contexts. They believed that IS and business could co-evolve to adapt to the complex dynamic world. IS strategy research in the 2000s was extended to include networks and dynamic circumstances in the competitive context (Merali et al., 2012). The impact of dynamics and uncertainty on strategic planning of IS and strategic alignment began to be discussed, particularly so in recent years (Baker et al., 2011;

Markus et al., 2002; Oh & Pinsonneault, 2007; Vessey & Ward, 2013). Merali et al. (2012) assert that one of the future trends of IS strategy research is developing strategic IS for complex and dynamic contexts. This is a reflection of the existing literature on competitive dynamics (changing environments, technological changes, and uncertainty) (Li & Atuahene-Gima, 2002) offered a resources-based view (RBV) of the firm; a theory widely applied to dynamic themes as the foundational theory in the IS field over this period (e.g. Oh and Pinsonneault, 2007; Peppard and Ward, 2004; Tian et al., 2010; Wade and Hulland, 2004). However, a number of scholars (e.g. Baker et al., 2009; Wade & Hulland, 2004) claimed that RBV was a static theory, so it was not appropriate to research the dynamic issues based on this theory. Some (e.g. Baker et al., 2009, 2011) employed a dynamic capabilities framework which had been developed based on the resources-based view by Teece et al. (1997) to study dynamic issues in relation to strategic alignment. Others (e.g. Benbya & McKelvey, 2006; Vessey & Ward, 2013) have applied a co-evolutionary approach. However, little empirical research has been carried out on these new theories. These two theories are discussed in detail in Section 2.4. Also, some IS strategy literature in this period was concerned with the dynamic strategic alignment and maintaining a balanced approach to investments in exploration, and exploitation for organizational learning and innovation (e.g. Galliers, 2006; He & Wong, 2004; Merali et al., 2012).

As discussed previously, there have been a large number of studies and research related to strategic planning of IS and strategic alignment, but most were proposed in a relatively simple and static context, which is quite different from the reality (Zhao, 2005). Trends in the literature (Table 1.1) have shown the importance of dynamic issues in IS strategic planning and strategic alignment. However, a few researchers have considered that strategic alignment and strategic planning of IS needs to be understood in a dynamic context in recent years (Hirschheim & Sabherwal, 2001; Baker et al., 2011; Vessey & Ward, 2013). Modern enterprises are not only facing a rapid development of information technology, but also dealing with continuously changing markets, economics, competitors, and even internal organisational structures. Therefore, strategic planning of IS and strategic alignment

should be established and developed with consideration of changing environments, in which the current literature is relatively limited.

Table 1.1 Trends of Strategic planning of IS research in the IS field

Dimension of changes	1970s	1980s	1990s	2000s
Role of IS	From data processing to strategic thinking	Corporate strategy	Integrated with business	From integrated to co-evolved
Definition	none	Focus on IT perspective	Concern with aligning IS with business	Broader perspective
View of strategic IS	Organisational view	Corporate strategy view	Integrated	Resources
Research focus	IS planning model	IS strategic models	Strategic alignment models	Dynamics
Specific issues	IT practical perspective	SPIS support business, Strategic alignment	BPR, e-business, IT/IS change	RBV, co-evolution, dynamic capabilities

In the very recent literature, there is a small amount of research on strategic alignment which has begun to focus on dynamic contexts. For instance, Baker et al. (2011) conceptualize dynamic strategic alignment competency. They provide a theoretically-motivated explanation of this and demonstrate the use of conceptualization and operationalization of the construct. Also, Vessey and Ward's (2013) study addresses the dynamics of sustainable IS alignment, which focuses on the theoretical perspective (complex theory worldview). Both studies (Baker et al., 2011; Vessey & Ward, 2013) consider the dynamics of the environment and the maintenance and sustainability of strategic alignment. However, they only concentrate on sustainable alignment, and pay little attention to the dynamic environment. Moreover, they both lack empirical evidence to support their theories. This means that both Baker et al. (2011), and Vessey and Ward (2013) develop their own ideas theoretically. As a result, their theories need to be proven by empirical studies, such as case studies, not only by examining the diverse domains of enterprise architectures and IS development projects.

1.3 Research aims, objective and questions

The aim of this study is to investigate the influence of changing environments on the strategic planning of IS and strategic alignment and the way to sustain strategic alignment in changing environments. With the rapid development of information technology and continuously changing environments, strategic alignment has faced plenty of new challenges, since it is difficult to achieve over time in continuously changing environments in which IS serves (Ward & Peppard, 2004). Accordingly, the core research question is: How can organisations adapt their strategic planning of IS and sustain strategic alignment in order to respond to the dynamic and competitive environment?

To answer this core research question, the following research objectives were set:

- To identify factors which can influence strategic alignment process in complex and dynamic enterprise environments;
- To examine the significance of sustainable strategic alignment in changing environments;
- To investigate the process of sustainable strategic alignment in changing and competitive environments.

In order to better investigate the influence of changing environments on strategic planning of IS and strategic alignment, the following research questions were considered:

1. What are the (both internal and external) environmental factors that can influence strategic alignment process and how do they affect the strategic alignment process?
 - What are the elements in the environments that have significant effects on the strategic alignment process?
 - How do they affect the strategic alignment processes?

2. What constitutes a process of sustainable strategic alignment and why is it important to the performance of an organisation in a dynamic environment?
 - What is sustainable strategic alignment and what are the processes of sustainable strategic alignment?
 - How is sustainable strategic alignment different from the conventional understanding of strategic alignment?
 - What effects does sustainable strategic alignment have on an organisation's performance?

3. How can organisations achieve sustainable strategic alignment?
 - What can be the challenges for sustaining strategic alignment in rapidly changing environments, and why?
 - What are the critical success factors affecting sustainable strategic alignment?

1.4 Structure of the thesis

This thesis has six chapters, and this introductory chapter introduces the related research background context; the research aims and objectives; the research questions; and the significance of the proposed study. Also, it provides a brief navigation to show the structure of the thesis.

Chapter two presents a literature review which will provide a systematic and comprehensive overview of the topic of strategic planning of IS, strategic alignment, and the dynamic issues in strategic alignment. This chapter introduces the concepts and key issues of strategic planning of IS in organizations, by presenting definitions of strategy, the role of IS strategy in organisations, and the IS strategy frameworks. After this, strategic alignment will be discussed, including definitions of strategic

alignment, strategic alignment models, and a review of critical responses to strategic alignment. Also, the sustainable strategic alignment section is presented. In this section, the difference between sustainable strategic alignment and conventional strategic alignment is discussed first. Next, two theoretical approaches to sustainable strategic alignment are discussed (i.e. co-evolution and dynamic capabilities). Furthermore, the factors affecting dynamic strategic alignment presented in literature are reviewed.

Chapter three describes the methodological approaches and issues of this study. First, it includes research philosophical assumptions and foundations. Then, we develop a research framework from the literature as the foundation underpinning and guiding this research. Next, research design is presented by introducing research strategy and choosing suitable research design (case study) for this research. Data collection (i.e. interview and documentation) and data analysis (i.e. thematic analysis) methods are also presented. Finally, ethical issues related to the research are considered and discussed.

Chapter four brings the data analysis of the case study. This chapter shows the findings from the thematic analysis of the interview and documentation from the case study: the strategic planning of IS and the strategic alignment of a company in a dynamic environment (i.e. Shenzhen, China). It outlines both external and internal environmental factors which affect the strategic planning of IS and strategic alignment of the case company. The dynamic strategic alignment of the case company (including organisational agility, IT flexibility, three levels of strategic alignment and strategic alignment process) is also presented.

Chapter five presents a discussion of the findings of this research in relation to the existing literature. It synthesises the findings from the previous chapter and compares them to the literature on sustainable strategic alignment. The environmental elements which affect the strategic alignment process are discussed. The importance of sustainable strategic alignment is also depicted by discussing the effects of sustainable strategic alignment on an organisation's performance and the challenges for sustainable strategic alignment. Finally, the process framework is

revised, based on the results of the study, and the critical success factors for sustaining strategic alignment are discussed in order to answer how to sustain strategic alignment.

Chapter six is the conclusion, which summarises the key ideas of this study and how the research questions were answered. Also, the limitations of this research are presented. Then the contribution of the study to knowledge is summarised. Last but not least, implications for practice and future research are provided, based on the findings of the study.

Chapter 2 – Literature review

2.1 Introduction

This chapter reviews the available academic documents on the topic which contain information, ideas, data and evidence, in order to gain command of the subject area and understanding of the problem, as well as helping to justify the research topic, design and methodology. This literature review attempts to explore and discuss some of the most vital issues regarding the dynamics of strategic planning of IS and sustainable strategic alignment in changing environments.

Firstly, it is essential to clarify strategic planning of IS in this study. In order to gain a better understanding and a basic knowledge of the research topic it is necessary to explore the concept of strategy. Then, the role of IS strategy in organisations from strategic perspectives and IS strategy is presented. Moreover, IS strategy frameworks are presented. Some elements of these frameworks, such as business strategy, organisational strategy, organisational context and business environment, are discussed for a better understanding of strategic planning of IS, as they could be very critical issues in relation to the topic.

The second issue considered here is strategic alignment, also known as IS alignment, or business IS alignment. In recent years, many scholars' attention has been drawn to this topic. IT executives have ranked it as one of the top ten IS issues since its inception (Luftman & Ben-Zvi, 2011). In this part, the definition of strategic alignment and its characteristics, including levels of alignment, and alignment measures, are presented. Strategic alignment models developed by scholars are discussed as well, in order to explore strategic alignment holistically and prescriptively. Critics and challenges from scholars are also presented, to illustrate gaps in the existing literature.

In the third part, the research concentrates on dynamics issues regarding strategic alignment. The significance of sustaining dynamic strategic alignment is discussed

first. Then, two theories frequently applied to dynamic strategic alignment are presented. One is the co-evolution approach; the other is the dynamic capabilities framework. This part shows how previous research has studied sustainable strategic alignment based on these two theories. Factors affecting sustainable strategic alignment which have emerged from existing literature are also discussed.

2.2 Strategic planning of IS

This section presents some key concepts and frameworks of strategic planning of IS in the existing literature, in order to gain a brief view of strategic planning of. First of all, a definition of strategy is presented. Then, the definition and the role of IS strategy are discussed. Also, an IS strategy framework is presented, and some key concepts of IS strategy frameworks, including information strategy, business strategy, organisational strategy, organisational contexts (environment), and business environments, are clarified.

2.2.1 Definition of strategy

The word “Strategy”, according to the Oxford English Dictionary, refers to “a plan of action designed to achieve a long-term or overall aim; or the art of planning and directing overall military operations and movements in a war or battle”. In academic fields, “strategy” can be treated diversely for different purposes. In the business and management domain, “strategy” is a frequently used term. In the management literature, the concept of strategy is interpreted in different ways, without a consistent definition. Mintzberg (1994) concludes that there are four types of definitions of strategy. Firstly, like the dictionary’s definition, many scholars in the business domain define strategy as a plan (e.g. Boudreau & Ramstad, 2005; Pearlson & Saunders, 2009). Secondly, some experts treat it as a pattern (e.g. Mintzberg, 1978). Pattern here means consistency in behaviours over time. For example, a company may want to target the rich persons’ market in its industry perpetually,

which is called a high-end strategy. Thirdly, Porter (1980, 1985) and his followers see strategy as position. Position can be the determination of specific products in certain markets, which means organisations should perform different activities to their rivals, based on their own 'position'. Fourthly, scholars, like Drucker (1974), claim strategy can be a perspective. Perspective means the organisation's way of doing business. This is to say that strategy can be how organisations view business.

In the IS field, strategy is also viewed differently. Ward and Peppard (2002) consider that strategy is the product of a number of processes or activities. These aim at enhancing the long-term well-being and strength of the organisations. Similarly, Baets (1992, p. 205) defines strategy as "a proposed action or sequence of actions intended to have far-reaching effects on the company's ability to achieve its business objectives". It can be concluded that the definitions of strategy in the IS field tends to focus on two aspects: the formulation processes and purposes (Chan & Huff, 1992).

Generally, definitions from different scholars from both the management domain and the IS field seem to have similarities. For instance, most of the definitions are long-term and include sets of action to achieve aims or purposes. It seems that strategy could be viewed as some kind of long-term plan. However, the question is whether a strategy is actually similar to a plan at all.

We want to clarify "plan" and "strategy" in this study, in order to avoid the misconception and confusion that exists in many organisations about these two terms. It is essential to distinguish these two concepts in the IS field. A plan, according to Armstrong (1986), refers to any diagram or list of steps with timings and resources which is used to achieve particular objectives. Some scholars in the IS domain treat strategy as a plan (e.g. Chaffey & Wood, 2005; Pearlson & Saunders, 2009). For example, Pearlson and Saunders (2009, p. 40) state that IS strategy refers to "the plan the organisation uses in providing information systems and services". Besides, Chaffey and Wood (2005, p. 275) define IS strategy as "the formulation of approaches and planning needed to deploy IS resources to support organizational strategy". On the other hand, Ward and Peppard (2002) argue that there is a

significant difference between strategy and planning. Unlike planning, strategy is more creative, and it can give entrepreneurial insight into the ways the enterprise might develop (p.69). Besides, Hamel (1996, pp. 69-71) claims that strategy is about discovering, while planning is more about programming. He notes that, in the strategy process, “you cannot see the end from the beginning” (p. 71). This could mean that planning is more concrete and strategy is broader, more flexible and more open (Hamel, 1996; Ward & Peppard, 2002).

Furthermore, since organisations exist in a continuously changing environment, strategy has to be a developing process in order to adapt to the current reality (Mintzberg, 1994; Johnson & Scholes, 2002; Johnson, 2008). According to Mintzberg (1978), there are two types of strategy: intended strategy and realised strategy. Intended strategy refers to the organisations developing plans for the future, while realised strategy refers to organisations evolving patterns out of their past. He asserts that these two types of strategy can help researchers to consider more comprehensive and evolving views of strategy (Mintzberg, 1994). Intended strategy tends to be affected by emergent factors, such as new opportunities, so that the strategy needs to change and develop according to such emergent factors. The realised strategy is developed based on the past, including the emergent factors and the intended strategy. Therefore, emergent strategy appears between intended strategy and realised strategy, in order to allow strategy to be more realisable from the intention.

Johnson and Scholes (2002) develop their own perspective on strategy, based on Mintzberg’s (1994) work. They describe strategy implementation as processes. They also develop a model that illustrates the realities of strategy development (see Figure 2.1). An organisation can provide its own intended strategy, based on its knowledge and experience. But things will not just go as predicted. While intended strategy is being implemented, four types of issues affecting the implementation of intended strategy can occur. Imposed changes will occur due to the action of others; new opportunities will emerge unpredictably; unexpected constraints or new options will appear; and some parts of the intended strategy may fail in implementation. To deal with such unexpected factors, organisations need emergent

strategies while the intended strategy is being implemented. Based on the emergent strategy and the combination of processes, organisations can develop a realised strategy which is more suitable for them. When the original strategy becomes unrealisable via emergent strategy, the organisations need to stop pursuing the strategy.

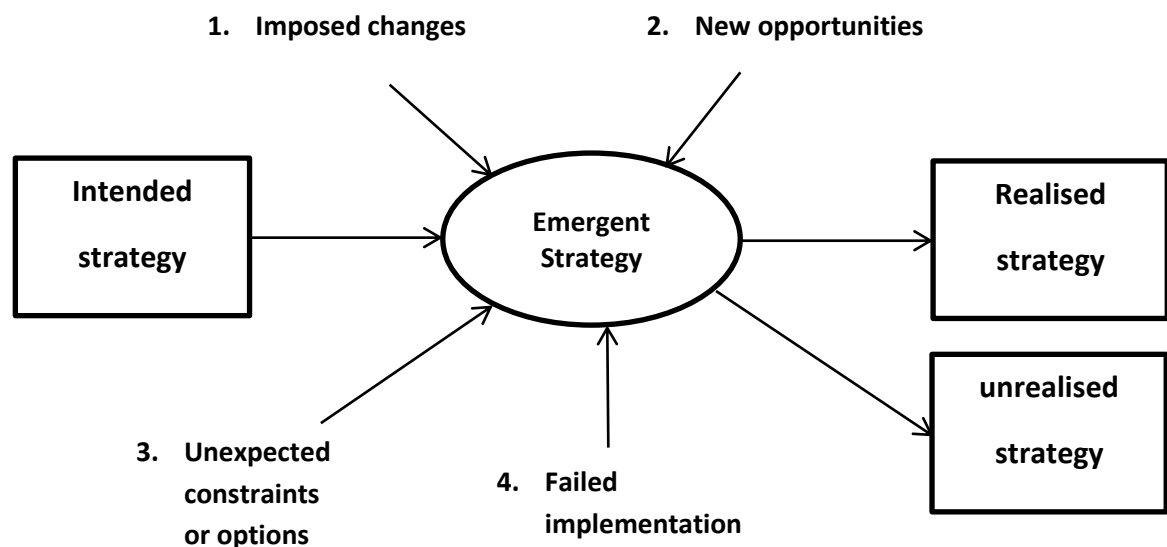


Figure 2.1 Realities of strategy development (Johnson and Scholes, 2002)

2.2.2 The role of IS strategy

It has been widely claimed that IS is of vital importance to organisations, and IS strategy has continued to grow in importance since its inception. To develop and maintain an IS in organisation concerns one of the main stages of an IS's lifecycle – IS planning (Avgerou & McGrath, 2007). Recent IS planning research has focused on IS strategy (Merali et al., 2012). Since IS strategy is one of the most important concepts in the IS field (Glliers, 1993; Luftman et al., 2005; McGee et al., 2005; Watson et al., 1997), it is essential to review the literature on this issue. There are numerous different points of view within such literature. For example, Chan et al. (1997) claim that IS strategy should be defined as a concept related to business strategy, while Henderson and Venkatraman (1999) suggest that it should be seen as an

independent concept within organisations. According to Chen, Mocker and Preston (2010), IS scholars also hold different perspectives on whether it should be planned in advance or emerge as a pattern, or whether it can be both, as well as which level IS strategy should focus on (functional level, business level, organisational level or across organisational boundaries).

Due to those different, non-unity perspectives and the importance of IS strategy, a comprehensive understanding of the nature of IS strategy is urgently needed. In order to achieve this, the current section firstly introduces some concepts related to the role of IS strategy. Next, some influential frameworks of IS strategies and the main elements of these frameworks will be examined.

2.2.2.1 Concepts and the role of IS strategy

According to Ward and Peppard (2002), IS strategy defines organisations' requirements or 'demand' for information and systems to support the overall strategy of business. That is to say, the key implication of IS strategy is IS 'demand', in order to achieve business goals. Therefore, the main function of IS strategy could be to support business objectives. Moreover, it can control the IS and IT, helping users to work efficiently and effectively (Ward & Peppard, 2002). Besides, it can lead to systems integration, which contributes more suitable communication and coherence among information resources (Abdul-Gader, 1997). Furthermore, it can help managers to set priorities for IS project or resources, which significantly help to enhance productivity (Brown, 2004; Philip, 2007). Also, IS strategy can enhance Information management's capabilities in accuracy, efficiency and consistency (Mason, 1991). In addition, Codington and Wilson (1994) have conducted an empirical study on how IS strategy helps communication between users and IT specialists. The results show that the better developed IS strategy significantly strengthens the organisation's performance. Table 2.1 illustrates the roles of IS strategy within organisations, according to the existing literature. All of these can be reasons that organisations need an IS strategy. The roles of IS strategy in organisations can be categorised according to its implications for business strategy

(to support business strategy), organisational strategy (to increase performance) and information strategy (to enhance IS function, to make use of information resource, to share view of IS role) (Pearlson & Saunders, 2009). Figure 2.2 shows the three important strategies in an organisation (business strategy, organisational strategy, and information strategy). Business strategy refers to a strategy articulating the business goals and how to achieve such goals, while organisational strategy is a strategy articulating how firms organise to achieve their own goals and implement the business strategy. Information strategy here refers to IS strategy and how an organisation makes use of information resources. From this framework we can see the relationship and interaction between these three strategies. IS strategy and organisational strategy should both complement business strategy. IS strategy can affect and be affected by business strategy and organisational strategy, which means IS strategy should be adjusted by the change of organisational strategy and must accommodate the overall business strategy. IS strategy also always involves consequences within business strategy and organisational strategy (Pearlson & Saunders, 2009). Many scholars, such as Orna (2004), Henderson and Venkatraman (1992), and Morton (1991) agree that there is a significant connection between IS strategy and business strategy, which can refer to strategic alignment. For example, Henderson and Venkatraman (1992) highlight that IS strategy has a bivariate fit and cross-domain alignment with business strategy.

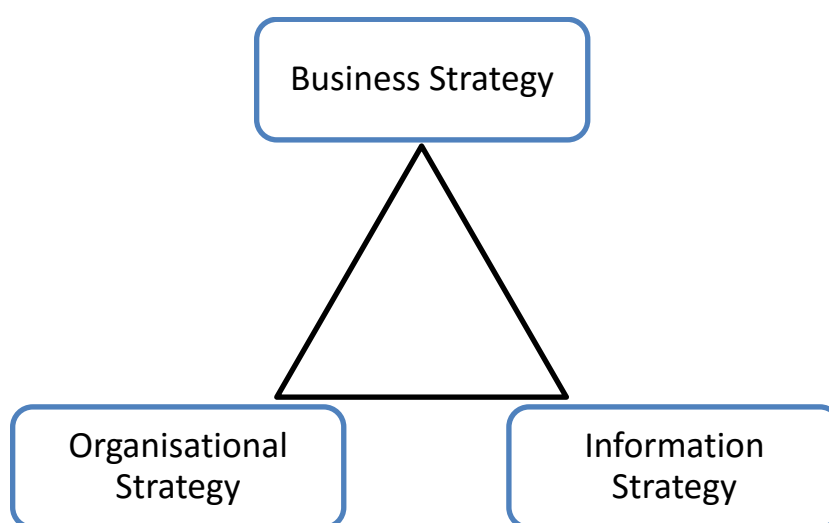


Figure 2.2 The Information Systems Strategy Triangle (Pearlson and Saunders, 2009)

Table 2.1 Roles of IS strategy in literature

benefits of IS strategy	Reference (e.g.)
To support business strategy	Duhan et al., 2001; Hatten et al., 1997; Brady et al., 1995; Hidding, 2001; Atkins, 1994; Wilson, 1989; Codington & Wilson, 1994; Chan et al., 1997
To enhance IS function	Tai et al., 2000; Henderson & Venkatraman, 1999; Bajjalay, 1998; Bacon, 1991; King, 1978; Peppard & Ward, 2004; Ragu-Nathan et al., 2004; Smits et al., 1997; Lederer & Hannu, 1996; Smits & van der Poel, 1996; Brady et al., 1992
To share view of IS role	Tai et al., 2000; Bajjalay, 1998; Ward, 1987; Ragu-Nathan et al., 2001; Kanungo et al., 2001; Nolan & McFarlan, 2005; Codington & Wilson, 1994; Gralliers, 2004
To make use of information resource	Abdul-Gader, 1997; Brown, 2004; Phillip, 2007; Peppard & Ward, 1999, 2004; Grover & Segars, 2005
To increase performance	Ward & Peppard, 2002; Pearson & Saunders, 2009; Braodbent & Weill, 1993; Chan et al., 1997; Sabherwal et al., 2001

What role an IS strategy plays in an organisation will depend on the context where it is developed. The development of IS strategy is affected by both internal and external contexts (Ward & Peppard, 2002; Laudon & Laudon, 2009). Therefore, to understand the role of IS strategy in the organisation, the internal context where it exists should be explored first. Sullivan (1985) develops a simple matrix to explore the IS strategic internal organisational environment. He describes two axes in the model, infusion and diffusion. Infusion means the degree to which an organisation becomes dependent on IS to carry out its core operations and manage the business (dependence on the IS of the business), while diffusion refers to the degree to which IT has become dispersed throughout the organisation and decisions concerning its use are developed (decentralisation of IS control in organisations). According to Orlikowski (1992), technology not only supports the strategy of an organisation, but is also affected by the organisation. The development of IT provides new ways of organising, producing business innovations, and producing significant effects on IT development.

IS strategy is developed within its external context (Ward & Peppard, 2002; Sabherwal et al., 2001). For example, the dynamics of an industry and competitors have significant impacts on organisations and their IS strategies (Codington & Wilson, 1994). In addition, business environments, such as political issues, economics and social problems, appear to affect IS strategy (Ward & Peppard, 2002). Within this complex and dynamic context, organisations have to make use of technology and information resources, as this can determine whether they win or lose (Courtney, et al., 1997). The fourth section of this literature review chapter discusses the dynamic issues in depth.

Most of the literature (e.g. Chan et al., 1997; Sabherwal et al., 2001) shows that IS strategies have positive impacts on an organisation's IS/IT application, particularly the one aligned with business strategy. For example, Broadbent and Weill (1993) conducted an empirical study which explored business and IT/IS strategic alignment in the Australian banking industry. They found that those banks with the most effective management of IS/IT occurred when information resources were managed by those closest to business needs. Venkatraman et al.'s (1993) work shows that a company which has an even IS/IT strategy and the best available technology to restructure the organisation could fail, without a consideration of the alignment between business strategies and IS/IT strategies. Henderson and Venkatraman (1992) suggest that strategic alignment can influence organisational transformation in a descriptive sense, a prescriptive sense, and a dynamic sense. Chen and Reich (2007) claim that IT/IS strategy and strategic alignment should be a primary concern of management, due to its potential impact on performance. Strategic alignment is present in detail in the third section of this chapter.

2.2.3 IS Strategic frameworks

Many IS strategy relative frameworks have been established by scholars (e.g. Morton, 1991; Maes, 1999; MacDonald, 1991). These frameworks can, to some extents, help us understand the theoretical structure of how IS contributes to an organisation and

provides some management and strategic perspectives. This section provides some examples and discusses them briefly.

It can be found from the literature that most IS strategy relative frameworks show IS strategy is used to support the business. Orna (2004) develops the engine framework for information strategy, which also explores the relationship between organisational, business and IS strategies. Orna (2004, p. 103) treats IS strategy as the engine of change and development, which drives interchanges of information internally and with the outside world. It also brings in intelligence about change, leads to integrated responses, promotes creation of new knowledge through internal interactions, and gives rise to initiatives, directed both internally and externally. Besides, the strategic alignment model, which is one of the most frequently employed IS strategy models in the IS domain, also shows the relationship between business strategy and IS strategy (Henderson & Venkatraman, 1992). This framework also views the IS strategy as a support to business strategy. Ward and Peppard (2002) also develop a framework to illustrate the relationship between business strategy, IT strategy and IS strategy. IT strategy provides infrastructure and services to enable IS strategy to support business strategy.

Numerous IS strategy relative frameworks exist in the academic literature. Table 2.2 displays some of the IS strategy frameworks in the existing IS literature. Most of them, just like the frameworks mentioned above, link information systems and/or information technology to business and organisational context, and these frameworks are usually used to formulate and develop information systems strategies and align them with business (e.g. Mentzas, 1997; Levy & Powell, 2000). According to Chen et al. (2010), IS strategy literature focuses more on how to conduct strategic planning to align IS strategy with a given business strategy. Also, a large number of those frameworks contain organisational strategy, organisational context, and business environment. Due to the similarity among these frameworks, this section discusses some of the key components of such frameworks respectively (i.e. IS strategy, business strategy, organisational strategy, organisational contexts, and business environments).

Table 2.2 IS strategy relative frameworks

literature	Key components				description
	Business strategy	Organisational strategy	Organisational context	Business environment	
Baets (1992)	yes	yes	yes	no	Aligning IS with business
Chen et al. (2010)	yes	yes	yes	yes	The implications for contextual elements (i.e., process, impact, and business/IS alignment) of the IS strategy
Drucker (1994)	yes	no	no	no	The relationship between the business, IS strategy, management IS, and project and computer management
Earl (1989)	yes	no	yes	no	A multiple methodology for strategic planning of IS
Galliers (1999)	yes	no	yes	yes	For the incorporation of e-commerce/networking and knowledge management within information systems strategy.
Sullivan (1985)	yes	no	yes	no	The internal environments of IS strategy
Ward & Peppard (2002)	yes	yes	yes	yes	The building blocks of the IS strategy formulation and planning

2.2.3.1 IS strategy

There is no doubt that IS strategy is the key component of IS strategy frameworks. Our concern is that how the IS strategy positions in such IS strategy relative frameworks. As we have discussed the role of IS strategy before, this section focused on the ways in which IS strategy is designed and planned. According to Chen et al.,

(2010), IS strategy tends to be formulated to support business strategy and support organisational strategy. Laudon and Laudon (2009) also claim that IS can be planned at business-level, firm-level and industry-level. IS strategy should better align with business strategy and organisation designs to enhance organisations' performance (Brown, 1997). One of the key issues for this is to decide the degree to which IS responsibilities should be centralised or decentralised to business units (IS governance) (Brown, 1997). This means organisations need to decide who have the right and power to design IS and manage IS. The following part discusses IS governance in details.

2.2.3.1.1 IS governance

IS governance, also known as IT governance, is essential concept when we talk about strategic planning of IS and IS strategy. Weill (2004, p. 3) defines IS governance as "the framework for decision rights and accountabilities to encourage desirable behaviour in the use of IT". Boynton et al. (1992) consider that IS governance is about the managerial responsibilities and control of IT resources. Huang et al. (2010) suggest that IS governance aims to guide and monitor organisations' decisions and actions for IT. The literature introduce two basic designs of IS governance, which are centralised IS governance (e.g. Martin et al., 1994) and decentralised IS governance (e.g. Brown & Magill, 1994; Schwarz & Hirschheim, 2003). Centralised IS governance design focuses on centralising decision-making power regarding management of IT and use of IT in a central authority, while decentralised IS governance design distributes such decision-making power to individual business units (Brown & Renwick, 1996; Brown, 1997). Most scholars agree that centralised IS governance can provide more control over IT standards and realise the general economies of scale, while decentralised IS governance can provide more flexibility facing dynamic environment and better responsiveness to business units' needs (Huang et al., 2010; Kayworth & Sambamurthy, 2000; Lewis & Madon, 2004). Brown (1997) also introduce a hybrid IS governance design, which centralises decision-making power in the management of technology and decentralises decision-making power in management of use of technology, in order to gain both advantages of the two

design. In addition, it is believed that IS governance design can be affected by organisational structure. For example, hierarchical organisational structure design centralise decision-making power so that centralised IS organisation tend to emerge in this kind of organisational structure (Miles & Snow, 1978).

2.2.3.2 Business strategy

Business strategy is the element which most frequently appears within IS strategy frameworks. Laudon and Laudon (2009, p. 90) define business strategy as “a set of activities and decisions firms make that determine the following: products and services the firm produces, industries in which the firm competes, competitors, suppliers, and customers of the firm, and long-term goals of the firm”. That is to say that business strategy is about how a company makes use of its resources in order to carry out long-term goals of the company (Nag et al., 2007). Business strategy often contains a strategic planning process at least once a year, and this process provides the task of achieving certain goals (Laudon & Laundon, 2009). Such strategic planning processes need to adapt to the changing environments, as the company may not go towards the position they planned to be (Barney, 1986). Earle-Chaffee (1985) considers that business strategy occurs at two levels: the overall corporate level and the individual business level. Based on Earle-Chaffee’s two levels of strategy, Johnson et al. (2008) add an operational strategy which supports the previous two levels strategies at a functional and operational level.

There are a number of well-accepted business strategy frameworks that describe business strategy. Some such models were widely discussed in the literature to provide a clearer view of business strategy and the relationship with IS strategy (e.g. Ward & Peppard, 2002). One of the most popular models is Porter’s competitive strategy and competitive forces (1980, 1985). Scholars such as Pearlson and Saunders (2009) and Ward and Peppard (2002) agree that Porter’s frameworks can not only guide the business strategy for a company, but also lead its IS strategy, in

terms of supporting. For example, a company can use Porter's framework to analyse how an ERP system can help and support them to gain competitive advantages.

According to Chen et al. (2010), IS strategy literature focuses on how to conduct strategic planning and align IS strategy with a given business strategy. But what is the relationship between business strategy and IS strategy? Pearlson and Saunders (2009) consider that IS strategy not only allows a company to implement its business strategy, but also helps determining the firm's capability, which is part of business strategy. But that is not to say IS strategy is a part of business strategy. Instead, it must complement business strategy. Chen et al. (2010) treat IS strategy as an organisational perspective, because they consider that a perspective can be the most long-term view of strategy (Mintzberg, 1987). This is to say that IS strategy is the shared view of the IS role within the organisation, which can support business strategy. Also, according to Brown (2004), IS strategy is neither intentional, as implied in the strategic information systems planning literature, nor the IS strategic alignment literature, since an organisation could absolutely apply IS without an IS strategy, and IS strategy can be one part of a corporate strategy. Therefore, theoretically it should not be examined as a part of a business strategy. Chen et al. (2010) and Pearlson and Saunders (2009) present a similar argument. Ward and Peppard (2002) also claim that IS strategies are not a part of business strategies, suggesting that IS strategy is firmly grounded in the business, taking into consideration both the competitive impact and alignment requirements of IS.

On the other hand, a number of scholars assert that IS strategy should be a part of the business strategy, and it will unavoidably require resources and may require changes in working practices within the organisation (e.g. Chan et al., 1997; Holland & Lockett, 1992; Teo & Ang, 2000). However, this study tends to incline the previous view of relationship between IS strategy and business strategy, because treating IS strategy as a part of business strategy seems to narrow the relationship between them.

2.2.3.3 Organisational strategy

Organisational strategy is another element which frequently exists in the IS strategy framework. According to Pearson and Saunders (2009 p. 34), “organisational strategy includes the organisation’s design as well as the choices it makes to define, set up, coordinate, and control its work processes”. The organisational strategy is a plan that answers the question of how the company will organise to achieve its goals and implement its business strategy. On the other hand, Ferris (2008) holds an interesting opinion of organisational strategy which could be introduced here, as it provides a practical perspective and is based on the literature from the management field. He asserts that organizational strategy is a clear concept of how the organisation needs to develop over the long-term, in order to be able to deliver the strategy of the company, and a reasonable plan of how to make progress. This needs not only consideration and analysis to compare the current state to a desired state and define the gap, but also the implementation capabilities to make the appropriate changes happen. These two understandings of organisational strategy both assert that organisational strategy can be a plan, and that the first one might focus more on organising, and the second on change. As this study is about IS strategies and strategic alignment, we will focus on how organisational strategy can affect IS.

A number of frameworks have also been developed in order to understand the meaning of organisational strategy. For example, Hammer and Champy (1994) developed the business diamond framework that describes four major components (i.e. business process, tasks and structures, management and measurement systems, and values and beliefs) of an organisation’s plan. By adopting this framework, organisational strategy can be formulated in terms of organising a company and identify organisational problems. These frameworks could also help managers to review the current organisation and assess which important parts may be missing, as well as what future perspectives may be. Besides, such organisational strategy frameworks can, to some extent, help identify where the IS impacts tend to occur, which helps understanding of the relationship between IS strategy and organisational strategy.

Chen et al. (2010) also suggest that an organisational perspective strategy is a sign of the collective mind of all the organisational members, through their intention and/or by their actions, and people are a vital component of IS. This means organisational strategy can reflect the organisation's use of IS. An IS tends to be embedded in organisational planning and management. Also, Cash et al., (1994) point out that IS can be used to manage and change an organisation. That is to say that IS strategy can help implementing organisational strategy. To achieve this, Lanc and MacKinnon (2003) suggest that organisational strategy should align with IS strategy by involving key perspectives that impact on organisational behaviour, culture and activity.

2.2.3.4 Organisation contexts

Here, organisations tend to be the business firms and companies, since we are talking about the topic regarding business and IT/IS strategic alignment. We want to know how the organisation itself affects IS strategies. An organisation is a part of its own industry, which means there are competitors and business environments which affect the organisation. These external contexts (competitors and business environment) influence the strategies of the organisation (Ward & Peppard, 2002). Nevertheless, the organisation itself plays an essential role in strategic planning as well. In this section, the two most discussed organisational context elements, organisational structure and organisational culture, are discussed. These concepts can be the essential factors impacting on the IS strategy process.

2.2.3.4.1 Organisational structure

According to Robson (1997), the size and the environment of the organisation (internal environment) influence the nature of its strategic issues and the approaches available to the organisation to deal with the strategic issues. These internal environments, including organisational structure, significantly affect IS strategy. The structure of the organisation is the way of designing an organisation so that decision-making rights are correctly allocated, which can also affect IS strategies dramatically (Laudon & Laudon, 2009). Here, we want to focus on where the decision

rights are allocated, as IS strategies are established by the key decision makers within the organisation.

According to Miles and Snow (1978), there are four types of organisational structure: Hierarchical organisation structure, Flat organisation structure, Matrix organisation structure and Networked organisation structure. The reason for choosing this classification is that the decision-making right and the IS's role in these four types of structures is clear, in that it helps to explore how IS strategies are affected. Hierarchical organisation structure is "an organisational form based on the concepts of division of labour, specialisation, and unity of command" (Miles & Snow, 1978, p. 131). The decision making rights are highly specified and centralised in a small group of people (top leader). Many successful companies have a hierarchical organizational structure where top leaders steer the company direction (Lee & Yang, 2011). A flat organisational structure also has a highly centralised decision-making process, which is similar to hierarchical organisation structures. However, the flat organisational structure is more flexible and dynamic for a changing environment. Pearlson and Saunders (2009) assert that IS are very significant for Flat organisations, as IS is the key to the organisation's communication. Matrix organisation structure is different, as the decision-making rights are shared between the managers. Thus, IS are vital for matrix organisations to share information among different managerial functions (Mullins, 2002; Hicks, 1993). Nevertheless, matrix organisations also often make it difficult for managers to achieve their business strategies because they flood managers with more information than they can process. A networked organisational structure is a newer organisational form (Pearlson & Saunders, 2009). The decision rights are highly decentralised. Information and communication systems are utilised to maximise flexibility and adaptability in a dynamic and uncertain environment.

Bureaucracy, which is frequently discussed in organisational structure, also plays an important role in strategic planning of IS. Weber (1964) first developed a theory of bureaucracy, and it has become the foundation theory of the modern bureaucracy studies. He asserts that bureaucracy is the nature of power and authority that constitutes a significantly efficient and rational approach for organisations to organise human activity by applying systematically formalised processes and

organized hierarchies, maximising efficiency and minimising personal influence (Weber, 1964; Garrett et al., 2006; Daft, 2012). It is suggested that bureaucracy tends to emerge in more hierarchic and larger organisations (Mintzberg, 1979; Ritzer, 2000; Stazyk & Goerdel, 2011). Weber (1964) outlines the features of bureaucracy as regulations and procedures. Some scholars, such as Clegg (1990), call them “formalisation” and “standardisation”. IS appears to be able to help bureaucracy in terms of formalisation and standardisation (Leifer, 1988; Higgs, 2003). On the other hand, Zusman and Turner (2005) suggest that bureaucracy can lead to resistance to organisational changes, as the regulations and procedures from bureaucracy may make organisational changes fussy and slow. As a result, it is asserted that bureaucracy tends to lead to inflexibility in dynamic environments (Linstead et al., 2009). This may significantly affect the strategic planning of IS, when organisations plan to innovate their systems.

Besides, when organisational structure is discussed, organisational size is also frequently mentioned. For example, it is widely believed that larger size organisations tend to have a hierarchical organisational structure (Ein-Dor & Segev, 1978; Mintzberg, 1979). Levy and Powell (2000) suggest that organisational size can also affect the strategic planning of IS. Larger organisations may strongly need IS for their daily operation and administration compared with small size organisations. Levy and Powell (2000) suggest that small and medium size organisations have very different difficulties in strategic planning of IS from that of “large firms”. That is to say that, if an organisation become larger or smaller, its IS needs may change significantly.

Organisational structure is one of the important factors influencing the relationship between organisational members, the organizational performance, and the capability of organisations (Miles & Snow, 1978; March, 1991). IS strategy, as a cooperative strategy, is significantly affected by this internal environment.

2.2.3.4.2 Organizational culture

Organizational culture is another managerial lever that impacts on IS strategies and IS in an organisation. Hofstede (1986) develops the concept of organizational culture, which refers to what personality is to an individual: the distinctive constellation of beliefs, values, work styles, and relationships which distinguish one organization from another, which focus on the personality. There is not much difference between this and the national culture. However, according to Black (2003, p. 16), national culture and organizational culture are quite different. Unlike national culture, organizational culture concentrates on practices (“the symbols, heroes and rituals that are externally visible”). Obviously, people gain or ‘learn’ organizational culture within organizations. Hampden-Turner (1990) states that organizational culture is a behavioural guide for individuals to work in the organization. There are still lots of different definitions of organizational culture. However, Black (2003, p. 16) suggests that most writers would agree there are five characteristics of organizational culture, which are “holistic – the whole is more than the sum of the parts”, “decided by a group’s history”, “related to anthropology with respect to rituals and symbols”, “socially constructed – created and preserved – by groups of people who work together for an organization” and “largely ‘soft’ in nature, consisting of behaviours rather than tangible goods”.

According to Claver et al. (2001), there is a strong relationship between IT, IS and organizational culture. They developed a model (see Figure 2.3) which shows that an IS is responsible for transforming data into information to help the organization to make decisions, and how the IS would be affected by both information technology and organizational culture (Claver et al., 2001).

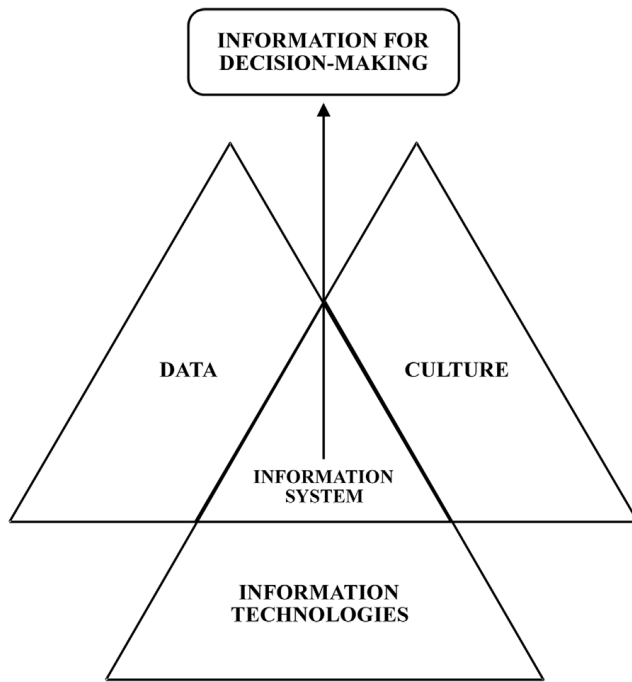


Figure 2.3 Influence between IT, IS and organizational culture(Claver et al, 2001)

Also, McGrath (2005) believes that organizational culture has a vital impact on the development of IS. Cooper (1994) has attempted to clarify the influence of organizational culture on IS by developing a theoretical model to measure the organizational culture – the Organizational Culture Assessment Instrument (OCAI). It is based on the competing values framework. It is clear from Figure 2.4 that there are four quadrants representing different types of organizational culture, while four directions represent two main dimensions of organizational culture (Twati & Gammack, 2006). Although this model does not include all the factors of organizational culture, it can provide a critical and general view on relationships between organizational culture and IS. The next paragraph presents how the framework explains the relationship between organisational culture and IS.

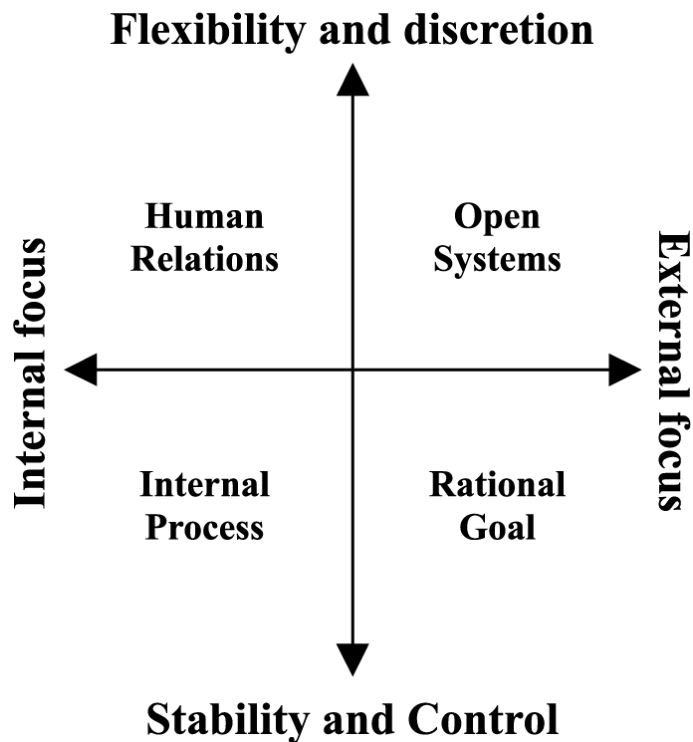


Figure 2.4 Competing values framework (Cooper, 1994)

According to Cooper (1994), four quadrants are created by four directions: flexibility and discretion; stability and control; internal focus; and external focus. If an organizational culture focuses on flexibility and internal focus, it will be in the human relations (Clan) quadrant. This kind of culture looks like an “extended family” and is concerned more with people (Cameron & Quinn, 1999), which might emphasize computer-aided instruction, interpersonal conferencing and group decision support (Cooper, 1994). It is “like an extended family where shared values, beliefs and goals, participation, individuality, and a sense of ‘we’ exists” (Twati & Gammack, 2006, p. 7). If an organizational culture focuses on flexibility and external influences, it belongs in the survival (Adhocracy) quadrant. Cameron and Quinn (1999) treat it as a dynamic, entrepreneurial and creative culture, and emphasize products and services, which may concentrate on environmental scanning, inter-organizational linking, and doubt and argument promotion (Cooper, 1994). If an organizational culture focuses on order and internal focus, it belongs in the stability (Hierarchy) quadrant. This quadrant is very formalized and structured, and focuses on secure employment and predictability (Cameron & Quinn, 1999), which might concentrate on internal

monitoring, internal controlling and record-keeping (Cooper, 1994). Its key values are maintaining efficient, reliable, fast, smooth-flowing outputs of products or services at a low cost (Twati & Gammack, 2006). If an organizational culture focuses on order and internal focus, it belongs to the productivity (Market) quadrant. This quadrant is competitive and goal-oriental, and concentrates on market share and market penetration (Cameron and Quinn, 1999), which might focus on modelling, forecasting and sensitivity analysis (Cooper, 1994). Its core values are competitiveness and productivity (Twati & Gammack, 2006). Twati and Gammack's (2006) research suggests that the hierarchical culture would probably affect the adoption of IS, because its key values can be significantly achieved by IS application.

Additionally, there are also empirical studies which examine the relationship between organisational culture and IS. For instance, Al-Gahtani (2004), in his study of Saudi Arabian organisations, found that various organizational cultural characteristics, such as age, educational level and gender, influenced how people perceived IT. Furthermore, Al-Gahtani (2004) confirms that public sector organizations tend to be less enthusiastic about the adoption and innovation of IS.

Organizational culture does produce impacts on the adoption of IS and IS strategy formulation, but this is not to say other factors are unimportant. There are still a lot of factors which are vital to the IS strategy.

2.2.3.5 Business environment

Many IS strategy frameworks include environment contexts (e.g. Morton, 1991; Orna, 2004). Most can be classified into external environment (business environment) and internal environment (organisational contexts). The external environment could be economic, political, industrial, or the competitive climate in which the organisation operates; information technology trends and opportunities; and the current IS/IT use of competitors, suppliers and customers. All of these are factors that can affect IS strategy formulations and processes.

2.2.3.5.1 Economics, politics, industrial and competitive climate

Organisations do not exist alone. They operate within their own industries with competitors. Meanwhile, the industries are located in broader environments, such as economics and politics. These can be concluded as the factors outside the organisational boundary affecting how organisations plan strategically. Ward and Peppard (2002) assert that economic environments can impact on strategic planning in terms of economic resources, levels of income, and distribution of income and wealth. They suggest that economics can be a very dynamic and complex factor that significantly affects the business of an organisation. Political environment refers to regulations, laws and policies that influence an organisations' strategic planning of IS (Merali, 2006). It is widely believed that politics can produce huge impacts on business organisations (Baron & Hall, 2003; Greening & Gray, 1994). Politics not only affects the business of an organisation, but also the strategic planning of IS (Ward & Peppard, 2002; Altholz, 2010). Merali (2012) asserts that, with rapid globalisation, the political context has become more and more essential for strategic IS, academically and practically. Industrial and competitive environments, according to Ewusi-Mensah (1981), can be defined as a set of elements or factors which are not part of organisations but are related to the industry and their competitors and can produce changes in organisations.

2.2.3.5.2 Information technology evolution

There is no doubt that the development of information technology significantly influences strategic planning of IS. The emergence and trends of IT from application portfolios to integrated systems (ERP, CRM) to web-based services (e-commerce) to cloud computing and web 2.0 have given rise to the fact that organisations change and develop their IS and business practices at a rapid rate (Merali, 2012; Ward, 2012). The pace of technological change has increased the strategic role of IS in organisations. For example, the rise of e-business and e-commerce has dramatically affected firms' ways of doing business. Selling products and services online can reduce costs remarkably. Therefore, plenty of business organisations have looked to improve their IS and IT to achieve competitive advantages. El Sawy et al. (2010) also

suggest that the new IT can lead to new concepts, models, and value propositions of IS strategy.

2.2.3.5.3 National culture

Hofstede (1980, p.24) defines culture as “the collective programming of the human mind that distinguishes the members of human group from those of another”. Myers and Tan (2003) suggest that national culture is important to IS research. It is widely considered that cultural issues can be increasingly important in strategic planning of IS and strategic alignment due to the globalisation (Cumps et al., 2009; Jarvenpaa & Ives, 1994). In spite of the huge amount of research on strategic planning of IS and the importance of national culture, there is very little research investigating the role of national culture in the process of strategic planning of IS, or in achieving strategic alignment (Leidner & Kayworth, 2006). Only Kanungo et al. (2001) find that companies which have delineable IT/IS strategy tend to have innovative type cultures. Grover et al. (1998) also suggest that culture at top levels of an organisation can significantly affect strategic planning of IS. Also, there is sufficient research examining the influences of national culture on other environmental factors (e.g. organisational structure, organisational culture) that significantly affect strategic planning of IS and strategic alignment (e.g. Hofstede, 2001; Smith et al., 1996; Tsang, 1998).

2.2.3.5.4 Dynamics and uncertainty of business environment

The business environment of IS strategy is considered to be dynamic, high-velocity, turbulent, uncertain and complex (Eisenhardt, 1990; Li and Atuahene-Gima, 2002; Vessey & Ward, 2013). In recent years, this opinion has been increasingly adopted. For instance, Galliers and Newell (2003) believe that strategic planning of emergent planning processes and change management have become increasingly significant, due to the rapid growth in complexity and dynamism of the business environment. Oh and Pinsonneault (2007), Tanriverdi et al. (2010) and El Sawy et al. (2010) also consider that there is a dynamic relationship between organisation and its business

environment, so that they adopt concepts from complexity theory and complex adaptive systems to deal with dynamic changes. In addition, increasing attention to dynamics and the sustainability of strategic alignment is paid by IS researchers (Merali, 2012; Ward, 2012). The dynamic issues regarding strategic alignment are presented in detail in Section 2.4.

2.2.4 Summary

This section has introduced the idea of strategic planning of IS, by presenting the definition of strategy, the concepts and role of IS strategy, and IS strategy frameworks. A strategy was distinguished from a plan, which helps avoid misunderstanding and confusion. The role of IS strategy has been explored through discussing the function, context and internal relationships of IS strategy. The IS strategy frameworks in the IS literature are messy, so the elements of these frameworks have been synthesised. The most frequently emerging elements, namely business strategy, organisational strategy, organisational context, and business environment, were discussed in turn. The IS strategy frameworks and the role of IS strategy show a strong connection between business (strategy) and IS (strategy). The next section presents this connection – strategy alignment in details.

2.3 Strategic alignment

When IS strategy is talked about, we frequently talk about business alignment or strategic alignment, which is the alignment between business and IS or the alignment between business strategy and IS strategy. King (1978) asserts that business strategy is an information set of managerial variables, such as a mission, objectives, strategies, willingness to accept change and important constraints. It is essential for a firm to have well-supported business strategies. Strategic IS planning is the process of turning this business organisational set into the IS strategy set, comprising the IS objectives, constraints and strategies. In other words, IS strategies

could be based on, and transferred from, business strategy sets (Chan & Reich, 2007). This relationship between IS/IT strategy and business strategy has been considered to be one of the most significant issues, both academically and in practice, and much research has been dedicated to examining the significance of strategic alignment and its impact on business performance (e.g. Henderson & Sifonis, 1988; Luftman et al., 2005).

In early studies, strategic alignment tended to refer to the link between business plans and IT plans (e.g. McLean & Soden, 1977). They focused on strategic business planning and long-term IT planning, viewing IT plans as the support for business. Later, scholars emphasised the relationship between business performance and IT performance (e.g. Chan et al., 1997). Some case study research empirically demonstrated strategic alignment (De Leede et al., 2002; Irani, 2002; Kearns & Lederer, 2003). For example, Kearns and Lederer (2003) attempted to explore how IT implications can help knowledge sharing between business and IT executives and achieve competitive advantage. Those studies focus more on the operational level and individual level. More recently, alignment tends to be emphasised at a more strategic level. For example, Chan et al. (2006) study how strategic use of IT achieves competitive advantage and enhances business performance. For the last three decades, strategic alignment has been widely accepted as a significant key to business success. However, many scholars have challenged the strategic alignment research by criticising the methods and approaches of alignment (e.g. Ciborra, 1997; Chan & Reich, 2007). These challenges may lead strategic alignment research to a new age.

This section presents different views on strategic alignment. Involving different perspectives can enable the development of a comprehensive understanding of strategic alignment.

Firstly, the definition of strategic alignment is introduced. Then, a review of different strategic alignment models is presented, as a holistic and deep exploration. Finally, criticisms of strategic alignment are presented and discussed.

2.3.1 Definition of strategic alignment

The alignment between business and IT/IS was mentioned for the first time in the late 1970s (Aversano et al., 2012). Alignment has been conceptualised in different ways since. For example, it has been viewed as fit (e.g. Chan, 1992; Henderson & Venkatraman, 1993), linkage (Reich, 1993), bridge (Ciborra, 1997), fusion (Smaczny, 2001), integration (Henderson & Venkatraman, 1993), and harmony (Luftman et al., 1999; Mckeen & Smith, 2003). According to Chan and Reich (2007), these terms are similar, and can all refer to the degree of coherence or relationship. Avison et al. (2004) also suggest that all these terms concern and focus on the integration of strategies related to the business and its IT/IS.

However, there are still subtle differences among these understandings of strategic alignment which can be the subjects of the strategic alignment (business and IT/IS or business strategy and IT/IS strategy). Henderson and Venkatraman (1993) define strategic alignment as the fit between IT strategy, business strategy, business infrastructure, and IT infrastructure. Mckeen and Smith (2003) suggest that the subjects of alignment are the organisation's goals and IS. Some assert the subjects are business and IT (e.g., Sauer & Yetton, 1997). Some claim that they could be IT strategy and business strategy (e.g., Reich & Benbasat, 1996; Chan, 1992). These inconsistent views of strategic alignment might have resulted from the different purposes of researchers. Due to the purpose and request of this study, business strategies and IS/IT strategies, as well as business and IS/IT, are the subjects of strategic alignment. This is because we want to view alignment from the strategic level to the operational and individual levels.

Chan and Reich's (2007, p. 300) definition of strategic alignment provides a broader scope to the subject of strategic alignment. They suggest that strategic alignment refers to "the degree to which the business strategy and plans, and the IT/IS strategy and plans, complement each other".

Some scholars argue that alignment should be viewed as a process (e.g. Burn, 1993), since alignment is not static and needs to adapt to changing environments. Maes (1999) considered strategic alignment as a continuous process. He suggested that

strategic alignment includes the management and design sub-processes of consciously and coherently connecting all components of the relationships between business and IT, in order to sustain the organisation's performance over time. Viewing alignment as a process provides a path to study strategic alignment dynamically (Galliers, 2004). This research is concerned with the dynamic environments affecting strategic alignment, so it aims to treat alignment as a process.

The definition of strategic alignment in this study considers it to be a continuously dynamic process which links all relevant components of the alignment, between business and IS, from the strategic level to operational and individual levels. A good strategic alignment should be able to signify the IS management's understanding of business strategy (Reich & Benbasat, 1996). Furthermore, business processes and implementation can be better supported by IS and IT. This is to say not only business and IS strategy, but also business and IS need to be aligned. This gives rise to the fact that strategic alignment can illustrate an organisations' capacity for utilizing IT-based resources and helping business and management holistically (Bensaou & Earl, 1998). Also, treating strategic alignment as a continuously dynamic process can sustain an organisations' performance over time and provide direction and flexibility in order to enable it to react to new opportunities within dynamic contexts (Avison et al., 2004).

2.3.2 Strategic alignment models

Many strategic alignment models (e.g. Morton, 1991; Baets, 1992) have been developed and employed in empirical research and practice. Such models give a more holistic and prescriptive view of strategic alignment. In the following part, two influential strategic alignment models are presented and discussed.

2.3.2.1 Strategic alignment model

One of the most influential models is the Strategic Alignment Model (SAM), developed by Henderson and Venkatraman (1992; 1993). They established and

developed the SAM (see Figure 2.5) based on Morton's (1991) Managing IT Framework. They suggest that there are four domains of strategic choice: business strategy, information technology strategy, organisational infrastructure and processes, and IS, infrastructure and processes. Business strategies contain decisions about business scope (product/market offerings), distinctive competencies, and business governance (choices about structural mechanisms to organize the business). IT strategy decisions involve the dimensions of IT scope, systemic competencies (such as system reliability, interconnectivity, etc.), and IT governance. Organizational infrastructure and processes are oriented to the administrative infrastructure, business processes (including workflow), and organizational skills. Finally, IT infrastructure and process is about technology infrastructure, IT processes, and IT skills.

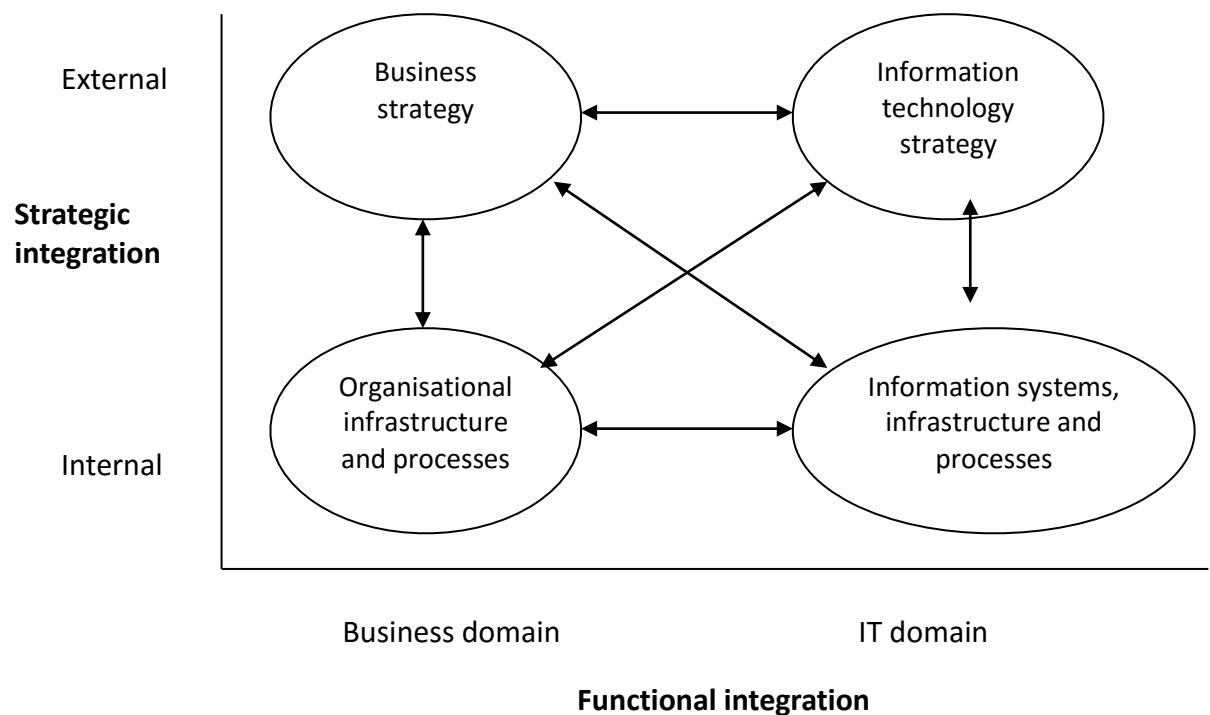


Figure 2.5 Strategic alignment model (Henderson & Venkatraman, 1993)

The relationships between the four components in SAM are classified into three types – bivariate fit (which means only two domains link), cross-domain alignment (which means three domains align) and strategic alignment. Bivariate fit shows the

horizontal and vertical relationship between the four domains (Henderson & Venkatraman, 1993). Cross-domain alignment is concerned with the relationship between business strategy and IS infrastructure and processes, as well as IT strategy and organisational infrastructure and processes, as these relationships need to consider one more domain. For example, business strategy can impact on the design of organisational infrastructure and IS infrastructure, while proper organisational infrastructure and IS infrastructure can help the implementation of business strategy. Strategic alignment is the holistic relationship linking all four domains with their own components, mentioned previously.

Strategic integration in this model concerns the inherently dynamic fit between external and internal domains. Business and IT domains are functionally integrated as well in this model. It has two building blocks. Strategic integration recognizes the need for any strategy to address both external and internal domains. This emphasizes the need to make choices that position the enterprise in an external marketplace and decide how to structure internal factors to execute a market-positioning strategy. These choices are the business strategy, and the organizational infrastructure and processes. The performance of the enterprise is defined by the extent to which these two strategies are consistent. Using IT to enhance these choices provides the opportunity for strategic advantage. Functional integration, or cross-domain alignment, on the other hand, refer to the fit between external positioning and the internal domain. As business strategies change, IT strategies and processes must keep adjusting. It is in such situations that different functional relationships are defined. Effective positioning of the firm in the technology market is crucial to its ability to adapt and effectively leverage technology. Functional integration gives IT the opportunity to provide competitive advantages (Reich & Benbasat, 1996). In addition, this dynamic alignment between the business strategic context and the IT strategic context shows that IS/IT strategies can be flexible and issue-oriented strategies, consistent with business needs and situations (Ward & Peppard, 2002).

Indeed, there is plenty of empirical and practical support for SAM in the literature (e.g. Goedvolk et al., 1999; Avison et al., 2004; Bleistein, et al., 2006). For instance, in

Avison et al.'s (2004) study, the SAM model was used in financial service firms. Data from completed projects were applied to the model to confirm whether SAM was useful as a management tool to develop and sustain strategic alignment between information technology and business. Similarly, Bleistein et al. (2006) also validated the SAM, using goal modelling and problem diagrams. However, according to some scholars (e.g. Ciborra, 1997; Smaczny, 2001), this model has its limitations. For example, Chan and Reich (2007) claim that its applicability may be different, depending on how IT-intensive an industry is. This can be caused by the fact that the assumptions of the SAM model may not hold (Burn and Szeto, 2000). Maes (1999) also criticises the SAM, stating that the model considers the mutual influences between business and IT to be direct, whilst in reality this relationship is more complicated. In addition, the SAM focuses only on the strategic level, while this research also considers lower levels.

A number of scholars have built on and extended this model (e.g. Luftman et al., 1996; Maes, 1999; Goedvolk et al., 1999). Avison et al. (2004) claim there are two key extensions of the initial strategic alignment model. The first is Luftman et al.'s (1996) study, which focuses on the concept of alignment perspectives and expands the research to identify enablers and inhibitors to alignment within organisations. The second is Maes (1999) and Maes et al.'s (2000) model, which enhances the SAM, producing a new unified framework that incorporates additional functional and strategic layers, in order to reflect the current need for information and communication. These models have solved some critiques of SAM. For instance, Maes et al. (2000) assert that SAM treats the relationship between business and IT as direct, while the reality is much more complex. Their refined model of SAM seems to consider more domains and factors. However, most do not consider environments and environmental changes as a significant factors affecting strategic alignment.

2.3.2.2 *A multiple methodology framework*

Besides Henderson and Venkatraman's ideas of strategic alignment, Earl (1989) also developed a classical framework: a multiple methodology for IS strategy formulation

(Figure 2.6). This model contains three issues for organizations to tackle: clarification of the business needs and strategy in IS terms; evaluation of current IS provision and use; and innovation of new strategic opportunities afforded by IT (Earl, 1989). He claims that there is no single method or technique which is likely to satisfy all three concerns or always be preferred. To a certain extent, it illustrates the impact of business plans, goals and strategies on developing IS strategies. In addition, Earl (1989) also highlights that there is a clear difference between IT and IS strategy. IS strategy, according to him, is concerned primarily with aligning IS development with business needs and with seeking strategic advantages from IT, while IT strategy focuses on technology and oriented supply (Peppard, 1993). This distinction can adjust whether alignment is more concerned with technology issues or identifying information applications that fit with business thinking (Ward & Peppard, 2002). Earl (1993) also developed and extended this framework in his later work. He describes five types of planning approaches: Business-led approach, method-driven approach, administrative approach, technological approach, and organizational approach (Earl, 1993).

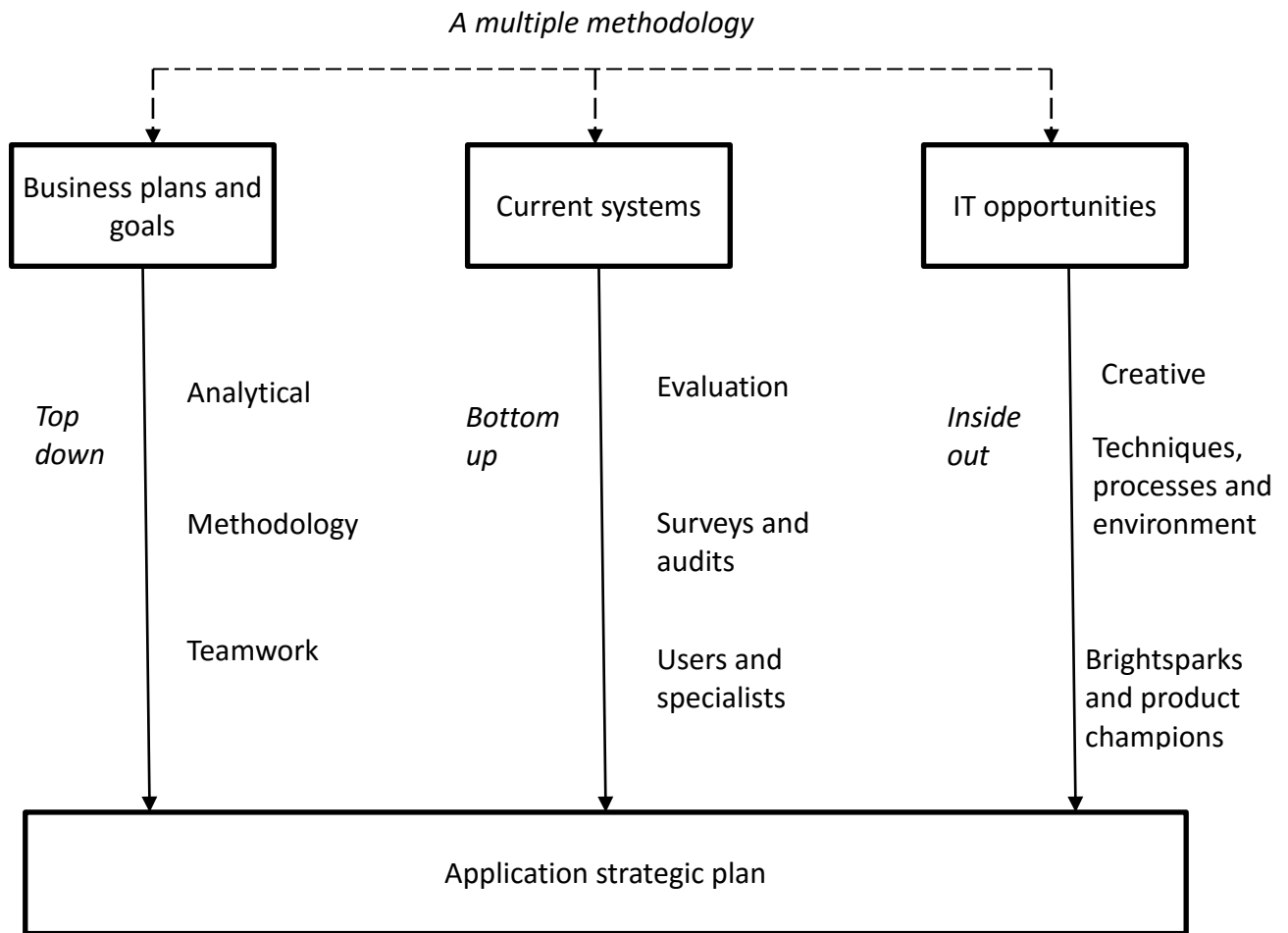


Figure 2.6 IS strategy formulation: a multiple methodology (Earl, 1989, pp.71)

It is believed that Earl’s work has begun to provide a more dynamic and incremental approach to IS strategy formulation, compared with SAM. Salmela and Spil (2002) state that Earl’s “multiple methodology framework” can provide a flexible and dynamic basis for actions.

Some scholars (e.g. Robson, 1997; Ho, 1996) also build their own strategic alignment framework upon Earl’s works. For example, based on Earl’s (1989) information systems strategy formulation framework, Robson (1997) explores the alignment between business strategy and IS strategy by discussing the planning environment and planning process. In the planning environment section, Robson (1997) presents a socio-technical planning environment and developmental environment frameworks to explore business alignment. He also classifies four types of IS strategy frameworks

by the nature of their planning processes: Top-down, Bottom-up, Innovative, and Eclectic (also referred to by Earl as multiple). “Top-down planning is proactive, whereas bottom-up planning is reactive, but both are intermittent ‘planning project’ based” (Robson, 1997, p. 181). Earl (1989) also examines these two ‘methods’ in his multiple methodology. In the Top-down approach, business strategies must be clarified first, and then the potential contribution of IT applications can be clarified. In Bottom-up, the coverage and value of existing systems and technical experience is evaluated through surveys. Robson (1997) asserts Innovation, on the other hand, is intuitive, interactive, instant and yet continuous in nature. The Eclectic planning approach refers to Earl’s (1989, 1993) work as discussed before. By exploring Ward’s (1987) work on IS strategy (Top-down) and Earl’s (1989, 1993) work (Eclectic), Robson (1997) concludes the importance of integrating IS strategies with business strategies, by highlighting the innovation and environmental contents in alignment.

However, in spite of environmental considerations, the models discussed above provide very limited explanations on dynamic issues, which are increasingly significant due to the accelerating pace of change, as well as the complexity of current global business environments.

Besides the models we mentioned above, there are many other alignment models (e.g. MIT90s model by Morton, 1991). Most of the models agree that enhancing IT/IS in organisations (e.g. IT investment) and keeping IT/IS aligned with business can bring about substantial rewards. However, very few such models have been developed in a dynamic context.

2.3.3 Critiques of strategic alignment

In spite of the demonstrated value of strategic alignment, there are still a number of counter-arguments which criticise and challenge strategic alignment. Early criticisms of strategic alignment concentrate on the infrastructure and implementation level. For example, Baets (1992) asserts that Earl’s (1989) strategic alignment methodology fails to integrate issues associated with IT infrastructure and application aspects.

Then, Ward et al.'s (1990) strategic framework for economic environments is criticised, as it considers the necessary information is known and managed accordingly, which is not necessarily the case in reality (Baets, 1992). MacDonald (1991) developed the Strategic Alignment Process which seems to avoid the problems above. However, he found that this strategic alignment framework is difficult to apply to particular situations, when he conducted preliminary research in a well-run European bank (MacDonald, 1991). In spite of such criticisms, researchers have developed or expanded on their strategy alignment methodologies and frameworks to overcome such drawbacks.

More recently a number of scholars, such as Sauer et al. (1997), have begun to suggest that alignment is not appropriate, as treating IT separately from business can lead to misalignment. Instead, integration between business and IT strategies is better, in order to achieve success. However, there is not much support for their argument (Smaczny, 2001). On the contrary, most scholars support strategic alignment (e.g. Luftman 1996; Chan et al., 1997).

In the meantime, strategic alignment is criticised as being too mechanistic (Baets, 1992; Ciborra, 1997; Chan & Reich, 2007; Smaczny, 2001). For example, Ciborra (1997) considers that strategic alignment can be mechanistic, which means it is too theoretical to capture real life, which is continuously changing. Also, the alignment can also fail due to various turbulent, unpredictable circumstances (Vitale et al., 1986). That is to say that, when the business environment changes suddenly, alignment can have difficulty adjusting to the new business environment. In a strategic perspective, Ward and Peppard (2002) agree that once a strategy is established and a strategy process instituted, the strategy should become a continuously evolving process. That means it should be refreshed regularly, based on environmental changes. Besides, Ward and Peppard (2002) assert that strategy is also a learning process, as organisations need to learn to identify and exploit opportunities within a cooperative environment. These all show that strategy is a process that might keep evolving and developing. For example, plans arising from the strategy need to be updated as required, according to changes of external forces, business needs, opportunities, etc. (Campbell & Alexander, 1997). However,

conventional strategy alignment does not focus on such issues and treats strategic alignment as a static end-state, rather than a dynamic process.

Smaczny (2001), on the other hand, suggests that a fusion of business and IS strategy can replace strategic alignment to overcome the mechanistic problem. Benbya and McKelvey (2006) developed this idea into co-evolutionary strategic alignment, which treats organisations as complex systems where all components co-evolve with environments. These arguments show that researchers have started to realise the importance of the impact of the changing environment on strategic alignment.

In addition, strategic alignment is sometimes considered to be too tight (Baker et al., 2011). This might significantly affect the organisation's agility when facing changing environments (Tallon & Pinsonneault, 2011). This limitation is likely to be caused by strong path dependency (pathological) on strategic alignment (Baker et al., 2011). Sauer and Burn (1997) suggest that strategic alignment can lead to pathological outcomes, meaning that organisations might retain their old strategies even when they are no longer suitable, due to the environmental changes. This can have numerous negative impacts on organisations. For instance, aligned IT is not internally consistent with business strategies; IT can stagnate; and alignment can be easily affected by cultural issues, due to the globalisation (Cumps et al., 2009; Jarvenpaa & Ives, 1994).

Furthermore, Strategic Management literature (e.g. SAM) and Contingency Theory are the most common foundations of strategic alignment studies, but these foundations do not provide abundant, comprehensive theoretical explanations of the dynamic contexts and processes by which firms develop and sustain strategic alignment in changing environments (Chan & Reich, 2007). Many strategic alignment studies (e.g. Tian et al., 2010; Levy & Powell, 2000) are built on the theories, such as resources-based views of the firm, which are static, giving rise to misalignment within dynamic contexts. Well-established theories, such as the co-evolutionary approach and dynamic capabilities framework, are seen as new, robust theoretical foundations for strategic alignment research to build on, particularly in dynamic contexts. In sum, stronger theoretical support is necessary for the concept of

strategic alignment itself, as well as to explain how it influences organizational performance (Baker et al., 2011).

In sum, Chan and Reich (2007) have differentiated four themes in these counter-arguments: alignment is mechanistic; alignment is not possible if business strategy is unknown or in process; alignment is not desirable due to frequently changing business strategies; and IT often challenges business. Nevertheless, they suggest that these issues are challenges to the attainment of alignment, not the reasons for giving up pursuing or studying alignment (Chan & Reich, 2007). Baker et al. (2011) also identify three general types of critiques of strategic alignment from the existing literature: “mechanistic”, “too tight”, and “atheoretic”. From the conclusions, most critiques of strategic alignment are based on the fact that alignment cannot adapt to frequently changing business environments.

As discussed above, many critiques of strategic alignment result from the nature of frequently changing business environments. Therefore, it can be claimed that one of the main reasons for failed alignments can be environmental change. Kearns and Lederer (2000) point out that alignment can fail due to external factors which produce potentially negative effects on organisations. Sabherwal & Kirs (1994) suggest that environmental uncertainty can be an inhibitor of strategic alignment, while Chan et al. (2006) argue that managers tend to rely more on IT in rapidly changing environments and environmental uncertainty can be the enabler of strategic alignment. It is clear that there is no consistent agreement regarding the impact of changing environments on strategic alignment. Nevertheless, it is widely accepted that changing environments do play an essential role in strategic alignment (Yayla & Hu, 2011).

These counter-arguments have not prevented increasing attention being paid to strategic alignment, though scholars have not ignored those critiques. Instead, they have treated some of them as challenges to attaining alignment. One of the most important and difficult challenges is the dynamics and sustainable strategic alignment in changing environments. Henderson and Venkatraman (1993) assert that strategic alignment is a process of change over time and continuous adaptation.

Business environments and technology change rapidly, so that an IS/IT might become obsolete, even when adopted only for a very short time. Some IS researchers (e.g. Galliers & Sutherland, 1991; Yayla & Hu, 2011) recognise this challenge. For example, Galliers and Sutherland (1991) develop a dynamic representation of the IS planning process within a company to adapt to the changing environment. However, there is little IS literature that pays enough attentions to dynamic environments in strategic alignment and sustaining strategic alignment, in spite of their significance.

In this study, strategic alignment is treated as one part of business success, rather than the only factor or process. That means other factors, such as changing environments, are also significant to both alignment and business. To involve various perspectives taken on alignment can enable a comprehensive understanding of strategic alignment from the existing literature. Merali et al. (2012) assert that unpredictable dynamic environments is one of the most essential topics in present and future IS strategy research trends. Since environmental issues are significantly critical for strategic alignment researchers, this study focuses on the dynamics issues in strategic alignment, as well as how to sustain strategic alignment in dynamic environments. These issues are presented and discussed in the next section.

2.4 Sustainable strategic alignment

As we have mentioned before, one of the critiques which has been frequently discussed is that strategic alignment is too “atheoretic”, tight and mechanistic (Baker et al., 2012; Chan & Reich, 2007). That means strategic alignment can hardly be achieved constantly in rapidly changing environments. However, that is not to say scholars ignore the critiques. On the contrary, they attempt to demonstrate the value of strategic alignment by overcoming the issues raised by these critiques. In the business domain, the effect of external factors, such as business environment, tend to be treated as one of the most difficult and important aspects of IS strategic planning (Lederer & Mendelow, 1986). Recently, in the IS field, researchers have

recognised the significance of rapidly changing environments and argued that companies should enhance the dynamic capability of IT and IT-enabled agility (El Sawy & Pavlou, 2008; Sambamurthy et al. 2003). A growing number of studies treat strategic alignment as a dynamic process (e.g. Benbya & McKelvey, 2006; Baker et al., 2009; Baker et al., 2011; Vessey & Ward, 2013). They attempt to find a way to sustain the sustainable strategic alignment in a changing environment. In other words, the relationship between strategic alignment and changing environments has been examined increasingly frequently in the present years.

Here, the changing environments refer to both internal and external environments where the organisation and IS are. External environment is one of the most frequently analysed aspects of the business strategy process (Ward & Peppard, 2002). The external environmental factors usually include PEST aspects (political, economic, social and technological, sometimes including legal and ecology) in analyses and academic studies. For example, technological change could be an essential external environmental factor. A new technology, such as cloud computing, is adopted by an organisation because they might prefer to use infrastructure services provided by professional information service companies, which is more convenient and efficient. As a result, enterprises may not implement significant parts of their own IS. Their business strategy, IT/IS strategy, business processes and information technologies should be re-aligned (Qing et al., 2011). Nevertheless, other factors are hardly mentioned and discussed in strategic alignment research.

On the other hand, the internal environment is normally described as the elements within an organisation itself. It usually includes the organisational culture, leadership styles and organisation structure. Internal environment, compared with external environment, has less dynamic capability (more stable), but it does influence the strategic alignment and IS strategic planning when it is changed. For instance, Burn (1993) investigates the relationship between organisational structure and IS strategy formulation. He develops a theoretical framework, based on the IS strategic process, to examine this relationship. By evaluating the framework in 56 organisations, the findings show that there is a significant relationship between organizational change and IS development, which reflects the pattern of strategic alignment. This evidence

supports the view that internal environment changes produce significant impacts on strategic alignment and IS strategies.

Environmental issues have been considered as essential factors affecting strategic alignment and strategic planning of IS since the first appearance of strategic alignment (Sullivan, 1985; Sampler, 1998). Morton (1991) develops his own strategic alignment framework, which was influential in the early 1990s. Many studies have used concepts from this model, including the most frequently applied model, the strategic alignment model (SAM), developed by Henderson and Venkatraman (1992). Morton's framework involves not only external technological and socioeconomic environment, but also internal organisational environments, such as organisational structure. Similarly, MacDonald (1991), Henderson and Venkatraman (1992), Baets (1992), and Maes (1999) develop their own strategic alignment frameworks, which contain environmental elements, such as industrial markets, customers, suppliers, and organisational infrastructure and processes. However, the environmental elements in those models are assumed to be stable and static, which may lead to "atheoretic" and mechanistic problems (Chan & Reich, 2007). This also results in relatively few studies examining the dynamics of strategic alignment.

With the rapid development of technology and increasingly complex business environments in the recent years, researchers have begun to be aware of the importance of dynamics in strategic alignment (Miller, 1992; Sabherwal et al., 2001; Agarwal & Sambamurthy, 2002; Chan and Reich, 2007). Strategic alignment research has changed from the end-state perspective (Venkatraman, 1989) to the process perspective (Agarwal & Sambamurthy, 2002). For example, Benbya and McKelvey (2006) attempt to improve IS alignment by using co-evolutionary and complexity theories. They view strategic alignment as a continuous dynamic process that the business, IS strategy, IS department, business department, IS, and users co-evolve and adapt to changing environments. But it only focuses on the co-evolution of the elements, rather than how strategic alignment can suit or adapt the change in enterprise environments. Also, Baker et al. (2009; 2011) investigate how sustainable strategic alignment benefits business performance, and provide an approach to conceptualising sustainable strategic alignment. By using the dynamic capabilities

framework, they conclude that a high degree of strategic alignment is a sustainable capacity that allows the organisation to respond to rapidly changing competitive environments. The dynamic capability to sustain strategic alignment is one of the key factors in achieving competitive advantage. Thus, they agree that strategic alignment is a dynamic process. To view strategic alignment as a process provides a way to sustain strategic alignment (Galliers, 2004). Based on the research questions and aims, this study also treats strategic alignment as a dynamic process.

It has been widely accepted that strategic alignment is one of the most important topics for business and IS in both academic and practices (Brancheau et al., 1996; Chan & Reich, 2007; Dickson et al., 1984; Luftman et al., 2005). More importantly, it seems likely that strategic alignment research will continue to be an essential research agenda in the future (Baker et al., 2009). Recently, some IS researchers, such as Baker et al. (2009; 2011), Diaz (2011), Orlikowski (1996), Thornley (2012), and Vessey and Ward (2013), have begun to focus on how to sustain strategic alignment, as they have realised the significance of today's rapidly changing environments.

As discussed before, strategic alignment benefits organisational performance but only when the alignment is sustainable (Vessey & Ward, 2013). An organisation may have already achieved alignment. However, its environment continues to change, leading to the fact that the organisations may not be able to adjust their alignment patterns to adapt to environmental changes. As a result, a misalignment may be occurring here, giving rise to losing competitive advantage for a firm (Chan & Reich, 2007). Baker et al. (2009) provides a theoretical explanation for how sustainable strategic alignment creates value and provides competitive advantages for a firm, by viewing extant research through the lens of Teece et al.'s (1997) dynamic capabilities framework. Sabherwal et al. (2001) also agree that strategic alignment needs to be able to recognise and respond to rapid changes. He claims that alignment success in the short-term period lead to inertia. When a market change occurs suddenly, strategic alignment tends to fail due to inertia. Therefore, a high level of strategic alignment has to be sustainable in dynamic environments (Greenwood & Hinings, 1996; Sabherwal et al., 2001; Tushman & O'Reilly, 1996).

The ability to maintain and sustain strategic alignment over time has become increasingly significant, due to the recent global business environment, which is characterised by turbulent interactions via advanced global networks systems and rapid and unpredictable changes in different areas. Nevertheless, in spite of the significance of sustaining strategic alignment, not much attention has been paid to this issue in the IS literature. The following parts present some of the highlighted issues and identifies the existing 'gap' within the literature.

In this section, the literature regarding dynamic issues of strategic alignment is reviewed, and we focus on the studies which treat strategic alignment as a process. This section is presented in four parts, which are classified by synthesising them according to the highlighted issues in the literature. First of all, the difference between sustainable strategic alignment and conventional strategic alignment is presented. The second part is co-evolution, which can be described as a fusion of business and IT/IS strategies, where simultaneous, rather than sequential, strategic development, occurs (Smaczny, 2001). Co-evolution provides an important insight for dealing with the emergent nature of strategic alignment in changing environments (Benbya & McKelvey). The third is a dynamic capabilities framework. Some scholars, such as Baker et al. (2009), provide a dynamic capabilities framework as the base of strategic alignment, which allows the alignment to be sustained. The last part focuses on the factors affecting sustainable strategic alignment, such as IT flexibility and organisational agility.

2.4.1 Difference between sustainable strategic alignment and conventional strategic alignment

The literature has criticised the conventional strategic alignment for being too static, tight and "atheoretic" (Baker et al., 2012; Chan & Reich, 2007). This means conventional strategic alignment can hardly be achieved in practice and rapidly changing environments. Therefore, some scholars (Vessey & Ward, 2013; Baker et al., 2009) introduce sustainable strategic alignment which treats strategic alignment as a

dynamic process to replace the conventional static strategic alignment. The following parts discuss and elaborate this difference.

The first difference between them is that sustainable strategic alignment is treated as a dynamic process, while conventional strategic alignment is seen as a static end-state. Most early (before 2000) literature on strategic alignment considers it as a static end-state (e.g. Earl, 1989; Delery & Doty, 1996; Henderson & Venkatraman, 1992, 1993). Since the emergence of internet and the rapid development of IT, business environments have been changing rapidly and significantly. Conventional views (static) on strategic alignment tend to not fit with the rapid changing circumstances. Therefore, sustainable strategic alignment has emerged. For example, Luftman and Brief (1999) suggest a six-step approach to maximise strategic alignment enablers and minimise strategic alignment inhibitors, thus: "Set the goals and establish a team", "Understand the business-IT linkage", "Analyze and prioritize gaps", "Specify the actions (project management)", "Choose and evaluate success criteria", "Sustain alignment" (Luftman & Brief, 1999, p. 115). Sabherwal et al. (2001) also examine the dynamics of strategic alignment, suggesting that strategic alignment evolves with the changing environment. Baker et al. (2009; 2011), Diaz (2011), Orlikowski (1996), Thornley (2012), and Vessey and Ward (2013) also treated strategic alignment as a continuous process which needs to be sustained and maintained. In this study, the findings suggest that organisations can easily fail to achieve satisfied strategic alignment, because the situations keep changing, affecting intended strategic alignment. Intended strategic alignment need to keep being amended when unrealised strategic alignment (misalignment) occurs (due to changing environment and unexpected challenges), in order to achieve sustainable strategic alignment. That is to say that strategic alignment is not a static target, but a continuously moving process.

The second difference between sustainable strategic alignment and conventional strategic alignment can be that the conventional strategic alignment appears to be too tight (Baker et al., 2011; Cumps et al., 2009), while sustainable strategic alignment focuses more on flexibility and agility (Tallon & Pinsonneault, 2011). Jarvenpaa and Ives (1994) find that conventional strategic alignment can restrict an

organisation's ability to recognise environmental changes, and limit the strategic flexibility. Allen and Boynton (1991) also claimed that tightly aligned IS can influence flexibility of an organisation. This is to say the business is affected by the tight strategic alignment. On the other hand, sustainable strategic alignment considers more on flexibility. For example, Benbya and Mckelvey (2006) suggest that IS modular flexibility is the key for sustaining strategic alignment and the ability of an organisation to adapt its IS to rapidly changing business. Vessey and Ward (2013) also assert that strategic alignment cannot be tightly planned. It is believed that the strategic alignment needs some spaces for future changes. That is also why IT flexibility and organisational agility are significantly important in sustainable strategic alignment.

The third difference between sustainable strategic alignment and conventional strategic alignment can be "atheoretic". Conventional strategic alignment has been criticised for lack of theoretical support (Bergeron et al., 2001; Chan & Reich, 2007). Most strategic alignment studies develop based on strategic alignment literature and contingency theory, which appear to lack comprehensive theoretical supports on how organisations develop and sustain strategic alignment (Chan & Reich, 2007). In recent years, a growing number of strategic alignment studies (e.g. Chan et al., 2006; Levy & Powell, 2000; Kearns & Lederer, 2003) employ well-established theories (e.g. Wernerfelt's (1984) resource-based view of the firm and DiMaggio and Powell's (1983) institutional theory) to support the concept of strategic alignment and explain how it occurs and benefit organisations' performance. Sustainable strategic alignment literature also employs rich theoretical explanation to support the studies.

There are two main theories employed in sustainable strategic alignment literature, which are co-evolution (e.g. Benbya & McKelvey, 2006; Vessey & Ward, 2013) and the dynamic capabilities perspective (e.g. Chen et al., 2008; Baker et al., 2009, 2011; Hiekkanen et al., 2012). Co-evolution can refer to a process whereby every element or component in an environment influences and is influenced by all other related elements or components in that environment (Vessey & Ward, 2013), while the dynamic capability perspective is an extension of the resource-based view of the firm, focusing on the strength and competency of resource reconfiguration in a dynamic

sense (Teece et al., 1997). Both these two theoretical bases provide comprehensive theoretical support for sustainable strategic alignment research.

In general, in today's rapidly changing environments, conventional strategic alignment theory can lead to organisations continuing to fail in achieving strategic alignment, while sustainable strategic alignment perspective can allow organisations to achieve and sustain strategic alignment.

2.4.2 Co-evolution

As mentioned above, alignment has been criticised for being too mechanistic and static, so that the alignment cannot adjust to the rapidly changing business environment. Facing this challenge, some experts (e.g. Benbya & McKelvey, 2006; Vessey & Ward, 2013) view alignment as a continuous co-evolutionary process to adapt to the dynamics. Co-evolution is a term first used in biology (Ehrlich & Raven, 1964). Kauffman (1993, p. 237) suggests that "the true and stunning success of biology reflects the fact that organisms do not merely evolve, they coevolve, both with other organisms and with a changing abiotic environment." McKelvey (1999, p. 299) claims that co-evolution refers to "mutual causal changes between a firm and competitor, or other elements of its niche, that may have adaptive significance". It is a multi-level phenomenon. Co-evolution brings perfect mutual adaptations of adaptive agents in their own environment. For example, butterflies and bees help flowers to disperse pollen, while flowers offer nectar for food. Vessey and Ward (2013) define co-evolution as a process where every element or component in an environment influences and is influenced by all other related elements or components in that environment. This definition is more suitable for this study as we view strategic alignment as a process.

In the IS field, co-evolution has been employed in strategic alignment research for a very short period. Smaczny (2001) first promotes a notion of fusion of business and IT strategy, which means Business and IT strategies have to be developed simultaneously and implemented simultaneously against the traditional static views

of strategic alignment. However, this study has only scratched and challenged the conventional notion of the strategic alignment model. It does not bring about any solid evidence to support his arguments. Nevertheless, further research has recognised the outdated notion of strategic alignment, and driven this emphasis into a further position. Agarwal and Sambamurthy (2002) encourage co-evolution of IT and the business. They assert that co-evolution is necessitated by rapidly changing environmental factors and technological capabilities. However, they focus on three organisational models which offer a specific organisational view of the role of the IT function, rather than from a strategic level.

Similarly, Benbya and McKelvey (2006) agree that applying co-evolution in strategic alignment study helps to sustain alignment within a changing context. They address strategic alignment as a continuous co-evolutionary process, and provide a view of alignment that draws and builds on McKelvey's (2002) co-evolutionary theory. By emphasising co-evolution-based self-organised emergent behaviour and structure, they consider strategic alignment as a series of adjustments at three levels of analysis: individual, operational, and strategic. They frame the process of mutual adaptation and change between business and IS strategy, business and IS departments, and IS infrastructure and business users, based on the co-evolutionary perspective (see figure 2.7). In their framework, it is clear that multiple level aspects can be seen. At the strategic level, business strategy aligns with IS strategy, not only relying on top-down flows and focusing on control but also on flexibility and adaptability of the planning system. At the operational level, Benbya and McKelvey (2006) assert that it is important to have a decent coordination and communication between business managers and IS planners, achieved by forming effective collaborative partnerships at all levels. At the individual level, it is believed that the IS infrastructure can be effective when it aligns with individual users' needs. There are not only multi-directional causalities between different levels of analysis, but also non-linear relationships emerge between the business and IS domains and among the infrastructure components within each. Also, they claim that strategic alignment via co-evolution can be sped up by considering principles of adaptation (Frist Principles of Efficacious, McKelvey 2004) and scale-free dynamics. The model they developed,

of multi-level co-evolution of strategic alignment seems to be adapted to the changing environment. But they do not put forth how the changing environment links to the alignment. Unlike Agarwal and Sambamurthy's (2002) research, Benbya and McKelvey (2006) focus more on strategic alignment and take the co-evolution idea of strategic alignment further in theoretical contexts. However, both of these studies have no empirical evidence to support their arguments.

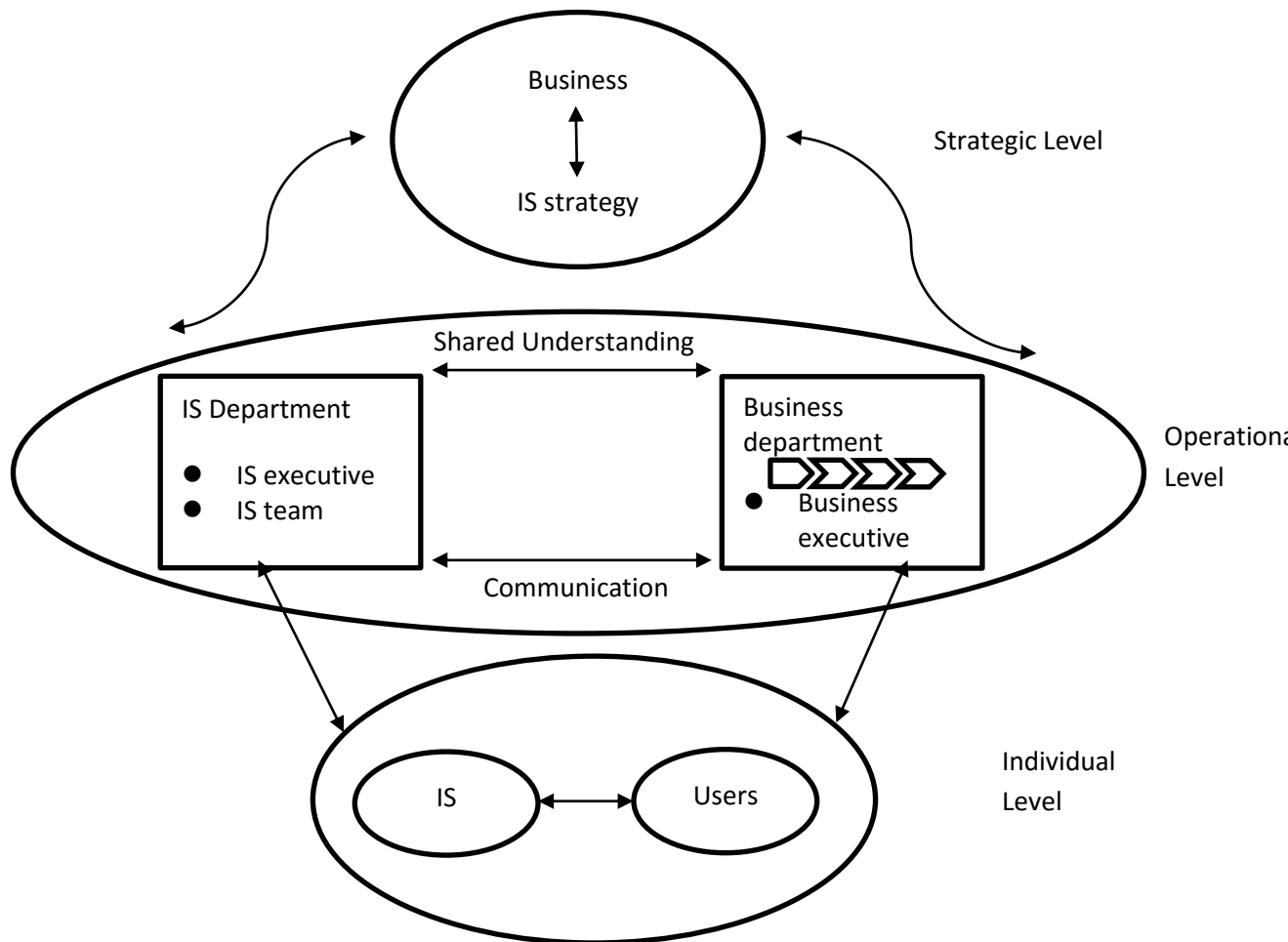


Figure 2.7 Co-evolutionary IS alignment (Benbya & McKelvey, 2006)

Tanriverdi et al. (2010) also propose a co-evolution quest to revise traditional strategic alignment. They suggest that firms have to be able to co-evolve with the changing competitive landscape's topography, by addressing corporate strategy (business strategy and IT/IS strategy) questions and issues, to continually reposition the firms to emerging profitable product-market positions in the competitive landscape. This means that strategic alignment is connected and evolves with the changing external environment. However, they only consider the competitive performance landscape as the changing environment without potential environmental factors, such as technological evolution. In addition, they concentrate on the co-evolution of firm's corporate strategy with the changing complex competitive landscapes, neglecting the co-evolution between IS strategy and business.

Also, Vessey and Ward (2013) use co-evolutionary theory as their study's theoretical background, in order to investigate how sustainable strategic alignment occurs. As with the previous strategic alignment literature related to co-evolution, Vessey and Ward (2013) view strategic alignment as a dynamic, non-deterministic, and multi-faceted co-evolutionary process. By employing complex theory as the theoretical foundation, they conclude that strategic alignment can be sustained when an organisation's adaptive IS adapts to remain IS alignment with the continually changing organisational goals. Compared with other co-evolution research mentioned before, they suggest an explicit role for management by addressing the dynamic, co-evolutionary process of strategic alignment in the context of broader management issues. Specifically, the theory they developed identifies that adaptive IS processes occur in the context of the organisational business processes. Treating organisations and their IS as complex adaptive systems provides IS research and practice with a way to contribute to realising the potential benefits of using IS to enable businesses.

In sum, some IS researchers have begun to revise strategic alignment by using co-evolution. The role of co-evolution in strategic alignment, to some extent, contributes to IS research in general and to research regarding strategic alignment, in particular (Vessey & Ward, 2013). Moreover, most of such researchers agree that co-evolution is the key of achieving sustainable strategic alignment. However, the existing co-evolution research of strategic alignment lacks consideration of environmental issues, such as which elements of changing environments have significant effects on the co-evolution. Furthermore, most of the theories above are developed without any empirical support, which means they need to be subjected to formal testing.

2.4.3 Dynamic capabilities perspective

The concept of dynamic capabilities has been frequently mentioned and applied in the sustainable strategic alignment research. For example, Baker et al. (2011) assert that strategic alignment research can be viewed through the lens of the dynamic

capabilities framework and suggest that the framework can be treated as a basis for future work in the area of strategic alignment. Hiekkänen et al. (2012) also advocate that the dynamic capability concept can contribute to the research on business-IS alignment especially in today's increasingly complex and technology-induced strategic context. Chen et al. (2008) assert the dynamic capabilities perspective can aid understanding of how firms develop IT and align IT with business strategy in dynamic contexts. It is argued that the perspective can help the strategic alignment research approach the alignment process with a dynamic rather than mechanistic view (Baker et al., 2011; Chen et al., 2008; Roberts & Grover, 2012).

Dynamic capability is an extension of the resource-based view of the firm, focusing on the strength and competency of resource reconfiguration (Teece et al., 1997). The resources and capabilities are defined broadly, and include assets, knowledge, competencies and capacity (Barney, 1991). A resource-based view emphasises the properties of resources and capability which are valuable and rare and cannot be imitated or substituted (Barney, 1991; Eisenhardt & Martin, 2000). The resource-based view overlooks that a firm's capabilities can change and developed over time and according to the circumstances (Teece et al., 1997), while dynamic capabilities perspective was developed partially in response to this limitation of a resource-based view (Teece et al., 1997; Wade & Hulland, 2004), which is about the diverse sets of resources and capabilities that companies possess (Wernerfelt, 1984; 1995). Unlike the resource-based view, a dynamic capabilities perspective concentrates on adapting, integrating, and reconfiguring skills, resources and capabilities (Teece et al., 1997). This is to say, dynamic capabilities focuses more on the significance of managerial capability in changing environments rather than on a firm's resources. According to Teece et al. (1997, p.516), dynamic capabilities refers to "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments".

In the IS field, dynamic capabilities perspective provides a theoretical base for researchers to go further. Early IS research focused more on how IT or IS impact and benefit organisational performance with relatively static view (Ravichandran & Lertwongsatien, 2002). In the recent years, a growing number of IS research

recognise that IT capabilities can change and develop over time in response to the changes in the environment and organisational learning; and their impacts on organisations also change accordingly (e.g. Kim et al., 2011; Chen et al., 2014; Fawcett et al., 2011). For example, many researchers (e.g. Kim et al., 2011; Chen et al., 2014) focus on how IT/IS capabilities have positive impacts on firm financial performance by employing dynamic capabilities perspective. They treat IT capabilities as the potential to transform IT resources into business value in dynamic contexts. Fawcett et al. (2011) also regard IT as an enabler of supply chain collaboration in a dynamic capabilities perspective. They consider that, by apply dynamic capabilities approach, IT/IS can be transformed into a dynamic capability which can help to achieve superior organisational performance in changing environments. Moreover, many researchers apply dynamic capabilities perspective on strategic alignment between business and IS (e.g. Wade & hulland, 2004; Baker et al., 2009; 2011; Sun & Chen, 2006). The followings discuss how the concept is applied in strategic alignment literature.

The strategic alignment literature on dynamic capabilities emphasises and highlights the process dimension, which can often deploy and reconfigure an organisation's IT resources, structure or procedures (Bhatt & Grover, 2005; Chen et al., 2008; Teece et al., 1997). The process dimension of dynamic capabilities framework developed by Teece et al. (1997) describes the patterns of practice and learning in a firm. Teece et al. (2007) assert that integration, learning and reconfiguration are the three keys of process dimension. Integration shows an organisation's ability to organise and manage in the process. During the process, an organisation can learn from repetitions and tests in order to achieve tasks effectively and efficiently as well as discover new opportunities. Reconfiguring organisational resources in the rapidly changing environment is also very important in process dimension, as it can help organisations to obtain competitive advantages with limited resources. Chen et al. (2008) apply the process view of dynamic capabilities perspective in their strategic alignment study. They assert that a strategic alignment process occurs via continuous adaption and organisational change (organisational processes and IT infrastructure). The process view allows intended alignment to be realised as

implemented alignment via dynamic capabilities (Brown & Magill, 1994; Henderson & Venkatraman, 1993). This tends to provide a way of achieving sustainable strategic alignment. On the other hand, Baker et al. (2009; 2011) present the process dimension of dynamic capabilities framework differently. They apply Agarwal and Sambamurthy's (2002) process perspective to reinforce Teece et al.'s (1997) process dimension of the dynamic capabilities framework. By doing this, they develop their own unitary conceptualization of sustainable strategic alignment. Baker et al. (2009; 2011) conceptualise strategic alignment as a dynamic management capability. They claim that strategic alignment is a process that is sustained over time, which can be understood as a dynamic capability to gain competitive advantages. Generally, the process perspective enables scholars to assess the maturity of the dynamic process by which the IT/IS strategy and the business strategy are aligned (Luftman, 2004; Luftman & Kempaiah, 2007).

"Paths" is another dimension of dynamic capabilities which contributes to the research on sustainable strategy alignment. According to Teece et al. (1997, p. 518), paths refer to "the strategic alternatives available to the firm, and the presence or absence of increasing returns and attendant path dependencies". Paths influence organisational capability development via path dependencies, which indicate the influence of previous positions on strategic decisions. Besides, innovative internal activities and technological opportunities in industries lead to organisational changes, including learning and developing. This exogenous change through paths is called technological opportunities (Eisenhardt & Martin, 2000; Teece et al., 1997; Wheeler, 2002).

Path dependence appears to have more impact on sustainable strategic alignment. Sabherwal et al. (2001) suggest that, if a revolutionary environmental change occurs in IS strategic management profiles, organisations should be able to move their path to offer a better performance potential, as the previous path may prevent the organisation from evolving their IS and IS strategy, leading to misalignment. Baker et al. (2011) assert an organization with a high degree of alignment might continue to follow its established trajectory, based on path dependence, even when market conditions have changed and the strategies are no longer appropriate. Because path

dependencies theory states that present decisions are constrained by decisions made in the past (Leonard-Barton, 1992) and that institutions are self-reinforcing and find it difficult to break out of patterns of institutional behaviour (Pierson, 2004), they argue that a high degree of alignment combined with a high degree of historical alignment can display the dynamic alignment competency, built on a mature planning process. That means if a firm had a well-aligned IT strategy and business strategy before business environments changed, the sustainable strategic alignment competency of this firm can mitigate the constraining effect of path dependency, maintaining a high degree of alignment when the previous strategies are no longer appropriate due to the environmental change. Therefore, path dependence helps them to develop the competency of dynamic capabilities which allows a firm to be flexible and to respond to the rapidly changing environment. Similarity, Chen et al's (2008) study also shows that the dynamic capabilities of strategic alignment tend to decrease path dependence constraints. They conducted a longitudinal case study on a Taiwanese semiconductor company. The empirical evidence from the longitudinal case study determined that path dependence is an impediment to dynamic sustainable strategic alignment. Furthermore, they also found that path dependence effects deteriorate with insufficient resources and lack of a long-term view. Hence, path dependence seems to be a critical issue affecting sustainable strategic alignment.

Compared with resource-based view, dynamic capabilities perspective concentrates on capabilities rather than resources, due to its dynamic process perspective and path perspective. Capabilities must be built over time deliberately, while resource is able to be acquired quickly (Teece et al., 1997). As a result, dynamic capabilities enable an organisation to maintain and sustain its strategic competitive advantages over time by adjusting its strategy and resources (Wade & hulland, 2004). In the lights of dynamic capabilities perspective, strategic alignment researchers are able to identify some capabilities which help organisations to achieve and sustain strategic alignment. Baker et al. (2009) suggest that the ability of an organisation's strategic planning processes to produce or maintain alignment can be quantified by treating strategic alignment as a dynamic organisational capability which is sustainable over

time. Gupta et al. (1997) asserts that the ability to achieve strategic alignment is based on a specific set of IT and IS management capabilities. Such capabilities should continue to be a part of capabilities to sustain strategic alignment on a high level over time (Street, 2006).

Some scholars attempt to identify and categorise the relevant dynamic capabilities for strategic alignment. By doing this, companies can find a way to achieve and sustain strategic alignment in a dynamic environment, as such capabilities are critical and the key for strategic alignment. For instance, Wade and Hulland (2004) identified eight dynamic capabilities for aligning IT with business which are “external relationship management”, “market responsiveness”, “IS-business partnerships”, “IS planning and change management”, “IS infrastructure”, “IS technical skills”, “IS development” and “cost effective IS operations”. Such capabilities are treated as the critical success factors for achieving strategic alignment. Karimi et al. (2007) also suggest some the dynamic IT capabilities, such as system development and IT planning, which are IT assets and competencies to cooperate with business over time. Gogan et al. (2010) categorise dynamic capabilities into three broad categories: outside-in, spanning, and inside-out (Wade & Hulland, 2004). Outside-in capabilities refer to organisations’ abilities to respond to the markets, which can also be known as organisational agility. Spanning capabilities focus on how IT can achieve the business requirements. Inside-out capabilities represent the IS capabilities (e.g. IT flexibility). Two of such dynamic capabilities (IT flexibility and organisational agility) mentioned in sustainable strategic alignment literature are presented in the next section (2.4.4).

Sun and Chen (2006) also develop a model of strategic alignment with dynamic capabilities perspective (See Figure 2.8). They integrate the concepts from the literature (e.g. Mitzberg, 1978; Reich & Benbasat, 2000; Brown & Magill, 1994) which suggests strategic alignment is a process that intended alignment can be realised as implemented alignment, as well as the literature (e.g. Teece et al., 1997; Wheeler, 2002) which considers dynamic capabilities perspective with strategic alignment. In this research, we focus more on the process of each stage due to the purpose of this study.

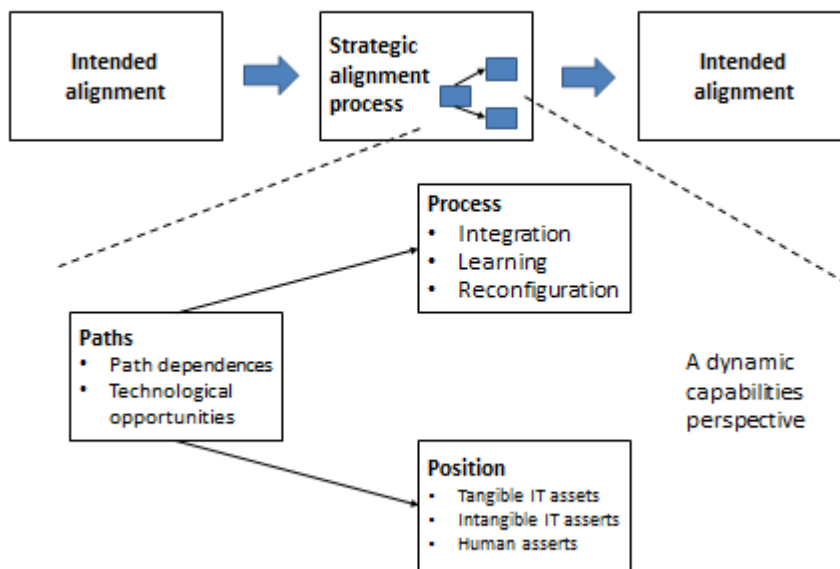


Figure 2.8 A model of strategic alignment process with dynamic capabilities perspective (Sun & Chen, 2006)

Generally, a dynamic capabilities framework has some similarities with the co-evolutionary approach discussed above. Although these two approaches arise from different disciplines, in sustainable strategic alignment research they are analogous with the timing of change that alignments evolve or develop with both internal contexts and external contexts simultaneously or congruently. However, the dynamic capabilities perspective focuses more on the resources and capabilities of a firm, which means strategic alignment can be described as a dynamic capability that enables organisations to adjust their own strategy and resources to maintain and sustain competitive advantage in a dynamic environment (Wade & Hulland, 2004; Wheeler, 2002; Zahra & George, 2002). The process dimension and especially path dependence are highlighted in the existing literature on sustainable strategic alignment regarding the dynamic capabilities perspective.

2.4.4 Factors related to sustainable strategic alignment (dynamic capabilities)

After looking at the approaches of sustainable dynamic strategic alignment in changing environments, we now review some critical factors that affect sustainable strategic alignment in the IS literature. According to Hiekkanen et al. (2012), the classic alignment models based on Porter's (1980) competitive strategy or resource-based view (Barney, 1991; Wernerfelt, 1984) are not enough to deal with recent agile, complex and rapidly changing business environment. Instead, organisational capabilities for efficiency and flexibility need to be enhanced in order to ensure sustained high performance. Chan et al. (2006) assert that managers tend to rely on IT flexibility to respond to the high uncertainty environment as an enabler of strategic alignment. Therefore, IT flexibility is one of the factors affecting sustainable strategic alignment.

2.4.4.1 IT flexibility

Since the 1990s, IT flexibility has been described as a core competency of the organization and an effective IT infrastructure should be flexible and robust (Davenport & Linder, 1994; Weill, 1993). Duncan (1995) conducted an observation on how organisations' IT flexibility influences systems developers' ability to design and build systems. He found that a firm which has high modularity, compatibility, and connectivity would tend to have high technical IT infrastructure flexibility, which helps to meet organisational business objectives.

Strategic IT flexibility is the organizational capability that enhances the adaptation of the IS to environmental changes by integrating new IT components into the existing IT infrastructure or by changing the configuration of the existing IS (Tian et al., 2010). In short, IT flexibility refers to a company's capability to respond to various IT and IS demands from dynamic competitive environments. Similarly, Tallon and Pinsonneault (2011) define IT flexibility as the adaptability and scalability of IT hardware, software, and networks, which are the elements of IT infrastructure. More detailed, Byrd and Turner (2000, p. 172) defined IT flexibility as "the ability to easily

and readily diffuse or support a wide variety of hardware, software, communications technologies, data, core applications, skills and competencies, commitments, and values within the technical physical base and the human component of the existing IT infrastructure". From the above, we can conclude that IT flexibility has been treated as necessary to accommodate a rapidly changing business environment. The flexibility of IT infrastructure should enable businesses to effectively use IT to prosper in dynamic environments (Chung et al., 2003).

Duncan (1995) first introduced IT flexibility to strategic alignment research in his study of IT infrastructure. He suggests that an organization's IT infrastructure should be considered flexibly, and that it enabled strategic innovations and alignment in business processes. Broadbent and Weill (1997) assert that IT infrastructure flexibility puts forth the foundation for competitive positioning of business initiatives. Moreover, IT flexibility could be one of the success criteria, as it provides the potential for revision in strategic choice (Luftman & Brier, 1999). Thus, these arguments allow the organisation's IT infrastructure flexibility to positively influence the organisation's strategic IT-business alignment (Chung et al., 2003). It is widely believed that IT flexibility plays an essential role in enabling alignment to have a positive impact on a firm's performance (Croteau and Bergeron, 2009; Croteau et al., 2001).

Furthermore, scholars such as Tallon and Pinsonneault (2011) suggest that IT flexibility is not only a positive influence on strategic alignment, but also helps the strategic alignment to enhance organisational agility to deal with rapidly changing environments. Empirical evidence to support this agreement is also provided in the existing IS literature. Tian et al. (2009) conducted an exploratory study to investigate IT deployment capabilities impact on competitive advantage. Their findings suggest that the effect of business-IT alignment on competitive advantage is significantly influenced by strategic IT flexibility and business-IT partnership. However, this study employed the resource-based view, which has already been seen to be too static, leading to inadequacy in dynamic conditions. In addition, there is still a lack of information as to how IT flexibility influences sustainable strategic alignment.

2.4.4.2 Organisational agility

Another factor that influences sustainable strategy alignment is organisational agility. The concept of organisational agility is widely used in management theories that are essential to firm success in turbulent environments, including the dynamic capabilities mentioned above (Teece et al., 1997), market orientation (Kohli & Jaworski, 1990; Narver & Slater, 1990), absorptive capacity (Cohen & Levinthal, 1990; Zahra & George, 2002), and strategic flexibility (Ansoff, 1980; Grewal & Tansuhaj, 2001). A number of management scholars, such as Goldman et al. (1995), McGaughey (1999) and Yusuf et al. (1999), have defined agility based on their own knowledge. In general, they suggest that agility is the organisational capability to respond to turbulent business environments. Some focus on knowledge management; some emphasise organisational resources, according to their own purposes. In the IS domain, agility has also drawn significant attention from a broad scale of IS researchers (Galliers 2007; Hitt et al. 1998; Overby et al. 2006; Rai et al. 2006; Sambamurthy et al. 2003; Tallon & Pinsonneault, 2011; Roberts & Grover, 2012; Weill et al. 2002). They also provide their own definitions of agility, which tend to concentrate on sensing and responding capabilities, and rapid and often unanticipated change, based on the evolutionary nature of IT.

Based on our research aims and scale, we apply Tallon & Pinsonneault's (2011, p. 464) definition, which views agility as "the ability to detect and respond to opportunities and threats with ease, speed, and dexterity, has emerged, next to alignment, as a key business imperative, facing rapid and unpredictable changes". This definition implies that sensing and responding abilities are significantly vital to a firm's success in turbulent environments (Gefen, 2000; Zaheer & Zaheer, 1997). Furthermore, it provides the potential to link agility with sustainable strategic alignment.

Although, there is little literature concerning the relationship between alignment and agility, an increasing number of studies in management and IS research realise the importance of the link between IT/IS strategic planning and agility (Tallon &

Pinsonneault, 2011). For example, Gibson and Birkinshaw (2004) studied the subject of “ambidexterity”, which means the capability to simultaneously achieve alignment and adaptability at business-unit level. However, there is not a consensus on the relationship between alignment and agility in the IS domain.

Some researchers (i.e. Kearns & Lederer, 2003; Preston & Karahanna, 2009; Reich & Benbasat, 1996) agree that there is a positive relationship between strategic alignment and organisational agility, since the shared understanding of IT and Knowledge between IT department and business, to some extent, makes it easier for a firm to sense changes before deciding a joint course of action for how best to respond (Barki & Pinsonneault, 2005; Lee, 2004). Knowledge-sharing can be treated as one of the essential antecedents of strategic alignment, and knowledge-sharing can enhance an organisation’s ability to detect changes. Therefore, the resulting strategic alignment between IT and business strategy can enable organisational agility. Furthermore, essential changes on business strategy can be effectively and efficiently communicated to IT executives, while IT evolution can redirect the business strategy, due to the high degree of strategic alignment. As a result, the potential path dependence is prevented, so that strategic alignment can enable increased adaptability and innovation (He & Wong, 2004; Lavie & Rosenkopf, 2006; Zahra & George, 2002).

Besides, various resources-based arguments also claim the positive relationship between strategic alignment and organisational agility (e.g. Tian et al., 2010). Tallon (2008) asserts that the higher degree of IT resources embedded in business process, the more agile firms appear in a rapidly changing environment. Also, strategic alignment can link IT with other resources in a way that encourages consideration of how existing resources can be strained to improve current performance or how the resources can be used in new ways to adapt and react to changes (Bharadwaj et al., 1999; Oh & Pinsonneault, 2007; Soh & Markus, 1995).

On the other hand, there exists a perspective in the literature that the relationship between strategic alignment and organisational agility is a rival one. Christensen (1997) claims that strategic alignment is useful, but it is based on past work, when a

firm faced different environmental changes. That is to say alignment lends itself to bringing about path dependencies, behavioural inertia, tunnel vision, and intransigence, which might negatively affect an organisations' capability of responding to rapid environmental changes (He & Wong, 2004; Kraatz & Zajac, 2001; Lavie & Rosenkopf, 2006; Miller, 1992; Nelson & Winter, 1982; Sabherwal et al., 2001). However, all of these arguments are based on the assumption that the strategic alignment is static and too tight, which is developed in the resource-based view theory. Our research views strategic alignment as a dynamic process rather than a static stage-end.

Tallon and Pinsonneault (2011) studied this relationship differently. They investigated both positive and negative relationships of strategic alignment and organisational agility, by conducting a matched survey of IT and business executives in 241 forms. The results uncovered a positive and significant link between strategic alignment and organisational agility. In addition, they also found that this relationship is not a simple two-way relationship. For example, IT infrastructure flexibility can be one of the potential factors affecting this relationship in a volatile environment.

Besides IT flexibility and organisational agility, there are still a number of factors affecting sustainable strategic alignment which are discussed in the IS literature. For instance, Thornley (2012) assert that the failure of organisational strategies, policies, and initiatives to translate into actual project execution and work results is one of the most vital threats to strategic alignment sustainability. Also, Newkirk and Lederer (2006) suggest that different strategy formulations give rise to different degrees of alignment success, and the effects differ with the source of the uncertain environments. It is believed that these factors which have already been considered to do well in normal strategic alignment models are not necessarily discussed here. This research attempts to focus on the dynamics of strategic alignment, so such factors do not draw much attention in this study.

2.4.5 Summary

In this section, a brief background of dynamic strategic alignment and its significance has been presented. Then, we introduced the co-evolution and dynamic capabilities approaches in IS research on sustainable strategic alignment. The co-evolution approach and dynamic capabilities perspective provide a possibility (theoretical foundation) for organisations to achieving sustainable strategic alignment in dynamic environments. The co-evolution approach emphasises the adaptation of enterprise architecture and IS development project, while the dynamic capabilities perspective focuses more on the resources and capabilities of a firm. In addition, we reviewed two main factors (IT flexibility and organisational agility) affecting sustainable strategic alignment in the existing literature, from which it can be concluded that achieving sustainable strategic alignment is an essential priority for organisations to deal with today's rapid and unpredictable environmental changes.

Chapter 3 – Research Methodology

3.1 Introduction

The main purpose of this chapter is to present the research framework and design of this study. The chapter is organised as followings. Section 2 is the research framework which provides description of the theoretical framework for this study. Section 3 presents research philosophical assumptions providing the basis of this research, which presents the researcher's assumptions about the most common attributes of the world. Section 4 presents the research design of this study. A qualitative research strategy is employed in this research. A case study research design is chosen from five qualitative research designs in order to investigate the dynamic issues on strategic alignment. The main data collection method of this research is interviews, while the data analysis method is qualitative thematic analysis, used in order to explore the strategic alignment process in dynamic contexts.

3.2 Research Framework

In order to answer the research questions a research framework based on the existing literature was developed for this research. The purpose of this section is to present and explain the research framework that was used to guide the data collection and analysis.

3.2.1 Theoretical background

The research framework integrated the concept of co-evolution and the concept of dynamic capabilities to emphasize and highlight the dynamic nature of strategic alignment process and to argue the necessity of sustaining strategic alignment.

As discussed in Chapter 2, the concept of co-evolution emphasizes the interdependencies between elements in the system and argues that any change in one element is likely to affect other elements directly and indirectly. The change can be triggered by the changes within the external environment as well as by events or changes within the organisation. Borrowing the concept of co-evolution for the research framework of this study allows us to examine changes in all elements within a system and the effects of these changes on other elements; as well as to view strategic alignment as a continuous process which constantly adapts to the changing environment. Moreover, the concept of co-evolution can also view strategic alignment process in a multiple levels way that all relevant elements are connected with complexity, which is more comprehensive.

However, the concept of co-evolution has weaknesses when it is applied in this research. Only applying co-evolution cannot answer the research question of this study: how can organisations adapt their strategic planning of IS and sustain strategic alignment in order to respond to the dynamic and competitive environment. This is because the concept only focuses on the interrelationship between the elements of a system and the environment where this system exists, and the concept does not provide a potential way to achieve and sustain strategic alignment on its own. That means it does not provide enough theoretical base to develop an effective guide or approach for strategic alignment in dynamic contexts. To solve this weakness from the co-evolution concept, dynamic capabilities perspective is brought in order to complement the framework. Applying dynamic capabilities perspective allows the researcher to identify dynamic capabilities that have significant influences on strategic alignment (e.g. IT flexibility and organisational agility). Such dynamic capabilities could help to answer how organisations can sustain strategic alignment over time. Besides, process dimension of dynamic capabilities helps strategic

alignment process occur continuously as a circle via reconfiguration of resources and learning process.

Based on the literature review and the theoretical resources which have been discussed before, a model is developed for the process-based sustainable strategic alignment by the researcher – summarised in Figure 3.1. From this Figure, it can be seen that there are two main differences from the previous relevant studies in this model. First of all, this is a process-based model that focuses on the alignment process. This process is displayed with three level of alignment, which are strategic, organisational/operational, and individual levels. Secondly, the environmental issues and factors are highlighted in this model. The environmental elements are seldom mentioned in the existing studies which often consider how strategic alignment can be flexible and dynamic, rather than what and how environmental elements can significantly affect sustainable strategic alignment. This study concerns those environmental elements that may be vital problems on this research area.

3.2.2 Framework description

The research framework of this study is depicted in Figure 3.1. The framework consists of four building blocks: external environment, internal environment, strategic alignment process, and dynamic capabilities. The remainder of this section discusses each building block in turn.

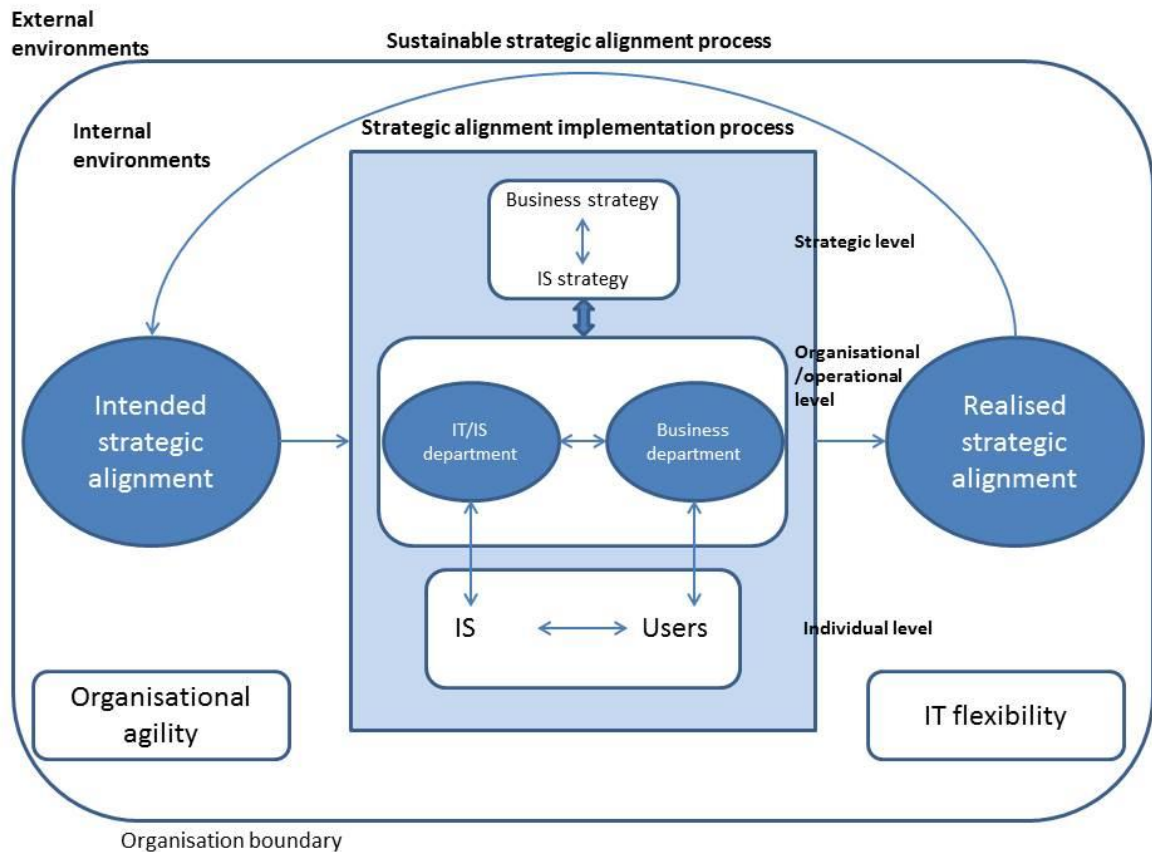


Figure 3.1 A Process-based sustainable strategic alignment model.

3.2.2.1 External environment

The term 'external environment' in this framework refers not only to the contexts outside of the organisational boundary, but also the elements in the environments that have significant effects on sustainable strategic alignment. As reviewed in Section 2.2.3.5, the external environment (business environment) contains politics, economy, information technology, and national culture. It is believed that in different contexts, such elements can be changed. For example, in some cases, such as large public transport state-owned enterprises in China, there may be less impact from the economy, but social factors can be the key phenomenon affecting strategic alignment, due to the main purpose of such companies. Also, other factors, such as ethical and legal factors, can also be added as elements in the external environment. Therefore, the elements of the external environment can be modified according to the contexts. From the co-evolutionary approach, strategic alignment continually

changes and co-evolves to adapt to the changing environment. There is a complex and unclarified non-linear relationship between the external environment and the strategic alignment process, particularly when it is changing. Table 3.1 shows some elements of the external environment.

Table 3.1 Elements of external environment affecting strategic alignment

External environment	Definition	Reference
Politics	The degree of government intervention in the economy and market, generally characterised as policy, regulations and laws	Affecting business (e.g. Baron & Hall, 2003; Greening & Gray, 1994); affecting IT and IS (e.g. Singh, 2002; Heeks, 2002)
Economy	Economic circumstances, including economic trends, interest rates, exchange rates, inflation rate and so on	Affecting business (e.g. Porter, 1985; Crucini et al., 2011); affecting IT and IS (e.g. Avison & Fitzgerald, 2003; Pavlou & El Sawy, 2006)
Technology	Techniques, methods and processes that help production or services	Affecting business (e.g. Chaudhuri et al., 2011; Rosemann & Brocke, 2015; Melville et al., 2004); affecting IT and IS (e.g. Melville, 2010; Davenport, 2013)
National culture	“The collective programming of the human mind that distinguishes the members	Affecting business (e.g. Johnson & Lenartowicz, 2006; Moran et al., 2011); affecting IT and IS (e.g.

	of human group from those of another” (Hofstede, 1980)	Chin & Dibbern, 2010)
--	--	-----------------------

3.2.2.2 Internal environment

In Chapter 2.2.3.4, we discussed how organisational contexts affect strategic planning of IS. Here, in this framework, internal environment is used as the term to describe the organisational contexts within an organisation. Any elements of organisational contexts can be the factors influencing strategic alignment process. Some researchers suggest that the internal environment can even be the component of strategic alignment that should be aligned with business and IS (e.g. Henderson & Venkatraman, 1993; Maes, 1999). Organisational structure and organisational culture are frequently mentioned and discussed in the current literature as elements of internal environment affecting strategic planning of IS and strategic alignment (Ward & Peppard, 2002; Laudon & Laudon, 2009; Pearlson & Saunders, 2009). But this is not to say other organisational contexts are not the internal environmental factors affecting the strategic alignment process. For example, Kearns and Lederer (2000) assert that the IS resource is the key to the success of strategic alignment. The IS resource, as one of the organisational resources, can be the internal environment. Just like the external environment, the internal environment also has complex non-linear relationships with strategic alignment according to co-evolution theory. The difference is that it seems to be more stable and to change more slowly than the external environment (Laudon & Laudon, 2009). Table 3.2 displays some elements of the internal environment affecting the strategic alignment process.

Table 3.2 Elements of internal environment affecting strategic alignment

Internal environment	Definition	Reference
Organisational structure	the way of designing an organisation so that	Affecting business (e.g. Nandakumar &

	decision-making rights are correctly allocated, which can also affect information systems strategies dramatically (Laudon & Laudon, 2009)	Ghobadian, 2010; Lee & Yang, 2011); affecting IT and IS (e.g. Mullins, 2002; Hicks, 1993; Pearlson & Saunders, 2009)
Organisational culture	The distinctive constellation of beliefs, values, work styles, and relationships which distinguish one organization from another, which focus on the personality (Hofstede, 1986)	Affecting business (e.g. Bititci et al., 2006; Gordon & DiTomaso, 1992; Scott et al., 2003) affecting IT and IS (e.g. Claver et al., 2001; Twati & Gammack, 2006)

3.2.2.3 IT flexibility

In this research, it is suggested that the IT flexibility can be seen as one of the dynamic capabilities for sustainable strategic alignment according to the dynamic capabilities perspective. IT flexibility is also involved in this model as critical success factors affecting sustainable strategic alignment. IT flexibility refers to the ability to support a range of hardware, software, IT, data, skills and human resource of the existing IT infrastructure in different circumstances. This flexibility enables businesses to align with IS easily and readily in dynamic environments (Chung et al., 2003; Tallon & Pinsonneault, 2011). Luftman and Brier (1999) suggest that IT flexibility is one of the most important factors affecting strategic alignment. Croteau and Bergeron (2009) consider that it is essential for organisations to ensure their IT infrastructure is flexible enough for IS innovation in dynamic environments. It has been discussed in Section 2.4.4.1 that this can be a factor which significantly influences sustainable strategic alignment.

3.2.2.4 Organisational agility

Organisational agility is another critical success factor and dynamic capability that affects sustainable strategic alignment in this framework. Organisational agility is considered to be the ability to detect and respond to environmental threats and opportunities (Tallon & Pinsonneault, 2011). This ability can be a key to sustainable strategic alignment, as only organisations are able to recognise the changes and deal with them, regarding their business and IS; then they can successfully sustain the strategic alignment influenced by the changing environments (Kearns & Lederer, 2003; Preston & Karahanna, 2009). Tallon (2008) also suggests that strategic alignment can benefit organisational agility. Section 2.4.4.2 has discussed the relationship between organisational agility and sustainable strategic alignment in detail.

3.2.2.5 Sustainable strategic alignment process

According to co-evolution and dynamic capabilities perspective, strategic alignment should be seen as a dynamic process. The process should be a co-evolutionary process which means the elements of the process and environment in which it exists co-evolve together affecting each other. We also focus on the dynamic capabilities that an organisation needs to achieve and sustain strategic alignment in this dynamic process over time. In the following sections, each stages of the process (Intended strategic alignment, strategic alignment implementation process and realised strategic alignment) are presented.

3.2.2.5.1 *Intended strategic alignment*

Strategic alignment in this research is viewed as a dynamic process. Based on Mintzberg's (1978) work on strategy, intended strategic alignment can be treated as a plan for the future without a thorough analysis on the past patterns of alignment. At this stage, companies are more likely to have an unsatisfied strategic alignment

situation when the intended alignment occurs (Chen et al., 2008). Nevertheless, not all the intended strategic alignments are realised in practice when the environment keeps changing (Hirschheim & Sabherwal, 2001). Also, unexpected challenges can affect and strangle strategic alignment. According to Mintzberg (1978) and Johnson and Scholes (2002), intended strategy can be significantly affected by unexpected constraints. IS strategy can also be affected by such challenges, leading to a failure of implementation and thus misalignment. These environmental changes and unexpected challenges tend not to be recognised until the stage of the strategic alignment process in which IS strategy starts to be implemented.

3.2.2.5.2 Strategic alignment implementation process

As mentioned previously, this study considers that strategic alignment should be presented at all levels of the organisation. This subsection introduces and discusses three levels of alignment synthesised by Chan & Reich (2007) that influence organisations differently, and are discussed and presented in the IS literature, which are system/strategic level (Woolridge & Floyd, 1990; Campbell, 2005); project/operational level (Jenkin & Chan, 2006); and individual/cognitive level (Tan & Gallupe, 2006), where strategic alignment should be presented.

Woolridge and Floyd (1990) suggest that strategies tend to be implemented at the higher levels of organisations, but the outcome should be present on the front line. The higher levels here are the strategic level, focusing on strategies and top-down planning. Alignment at this level concentrates on how the systems can help to achieve business goals. Campbell (2005) suggests that the strategic level of alignment should be able to link the lower levels (operational and individual levels), such as translating business unit goals into personal goals. Bleistein et al. (2006) also argue that the linkages between strategic level, operational level and individual level are essential.

Jenkin and Chan (2006) examine strategic alignment at the project/operational level. This level mainly considers the project's objectives and how the business is operating. They suggest that there are change triggers which negatively affect project

alignment, leading to overall strategic misalignment. Both internal (organisational) and external (environmental) changes can be change triggers.

The third level is the most micro level. It focuses on the shared cognition between business and IT executives (Tan & Gallupe, 2006). Chan and Reich (2007) also claim it reflects a view of strategic alignment in which IT mirrors ongoing business activities.

In this study, all three levels (system/strategic level, project/operational level and individual/cognitive level) are considered. According to Jenkin and Chan (2006) the operational level seems to be affected by environmental changes more palpably.

The strategic alignment implementation process in this framework is developed from Benbya and McKelvey's (2006) co-evolutionary IS alignment framework introduced in Section 2.4.2. We interpret the alignment in a holistic rather than a bivariate way, which also takes a multilevel co-evolutionary perspective: (1) strategic level – aligning business and IS strategies; (2) organisational/operational level – aligning IS/IT department with business department; (3) individual level – aligning IS infrastructure with users' needs.

At strategic level, if the business strategy change, IS strategy has to change in parallel to support the new business needs. It is suggested that IS strategy should continuously support business strategy (Chen et al., 2007). Business strategy tends to constantly change due to the new opportunities and dynamic environments. As a result, IS strategy should change accordingly, in order to sustain alignment with the business strategy. Benbya and McKelvey (2006) assert that both top-down planning and bottom-up planning are important to achieve strategic alignment at strategic level. Top-down planning focuses on rationality and control, while bottom-up planning concentrates on adaptation (Segars & Grover, 1999). Organisations need both rationality and adaptation to achieve strategic alignment at the strategic level. Vessey and Ward (2013) also claim that flexibility is significantly essential in IS strategy formulation and strategic alignment, due to dynamic changing contexts.

At the organisational/operational level, the IS/IT and business departments need a successful link that helps the business and IS strategy alignment and enables the IS infrastructure to align with users' needs. Benbya and McKelvey (2006) suggest that the IS/IT and business departments need to define and develop a basic understanding of each other's domains, and should also be clear about what they need to discuss and coordinate in order to sustain dynamic strategic alignment. To do this, communication and knowledge sharing between IS/IT department and business department should be emphasised and considered carefully (Tan & Gallupe, 2006). It is also suggested that alignment at this level can significantly impact on the daily operations of the organisations (Bergeron et al., 2004). This level is important as it links the strategic level to the individual level. Benbya and McKelvey (2006) believe that alignment at organisational/operational level provides the base for implementation of IS strategy. IS department tends to directly control and manage systems used in organisations. Users of such systems are mainly the staff of the business department. This level could be the bridge to linking the strategic level with individual levels, from planning to implementation.

At the Individual level of the sustainable strategic alignment, users' needs often change continually, as they often find new ways of doing things and come up with new things to do with the IS (Jiang et al., 2006; Benbya & McKelvey, 2006). The organisations need to reconsider the users' requirements for IS, based on these changes, in order to avoid the frustration and dissatisfaction of users due to the ineffective incorporation with IS. Kim and Kankanhalli (2009) suggest that user resistance to IS implementation can be caused by neglect of users' needs, leading to implementation failure. In addition, Huang and Hu (2007) also claim that users should meet the specific criteria (master key skills and knowledge) for using IS. When IS satisfy users' needs and users have key skills and knowledge to use IS, the individual level of strategic alignment is achieved.

3.2.2.5.3 Realised strategic alignment

With continuous adaptation and changes within organisations and strategic alignment, alignment can be implemented as realised strategic alignment. The

alignment links the organisational processes and IT infrastructure so that intended strategic alignment can be realised (Henderson & Venkatraman, 1993). That is to say that, after strategic alignment process, intended strategic alignment can be realised and IS strategy can be successfully implemented. The process, however, is not going to stop in this stage. The alignment keeps evolving when the external environment continuously changes, so that the realised strategic alignment is not the last stage of the process. When environments change, organisations may need to change their business accordingly. That could possibly result in misalignment. As a result, previous realised strategic alignment needs to go back to intended strategic alignment stage.

These three stages of strategic alignment are a cycle, since the alignment is dynamic. Chen et al. (2008, p. 367) assert that strategic alignment is “a moving target” that organisations need to continuously attempt to achieve or maintain. Strategic alignment needs to keep sustaining itself in the rapidly changing environments, through this cyclical process.

3.3 Research philosophical assumptions

Research philosophical assumptions is a foundation of the social science research, influencing the choice of research methods (Myers, 1997; Crossan, 2003; Creswell, 2007). Hammersley (1993) asserts that research philosophical assumptions can underwrite various research approaches to social science. According to Crotty (1998), research philosophical assumptions inform the research methodology and provide a context for the process and grounding its logic and criteria. Burrell and Morgan (2005) suggest that there are four sets of assumptions: ontology, epistemology, human nature and methodology. Epistemological assumptions concern the nature of knowledge and how it can be acquired (Snape & Spencer, 2003). Ontological assumptions reflect the researcher’s view about the nature of the world (Saunders et al., 2007). Human nature assumptions focus on the relationship between human beings and their environment (Burrell & Morgan, 2005). Methodology is the last set of assumptions concerning the selection of an approach to investigate and obtain

knowledge about the social world (Burrell & Morgan, 2005). To clarify the basis of the research methodology, these four sets of assumptions are explored based on Burrell and Morgan's (2005) philosophy of social science.

3.3.1 Ontology

Ontology is more likely to be concerned with the nature of social entities in social research (Bryman, 2008). Gruber (1993, p. 120) defines ontology as "a specification of a conceptualization". Burrell and Morgan (2005, p. 1) consider that ontology is about "the very essence of the phenomena under investigation". That is to say that ontology concerns whether reality is created by individual cognition subjectively or exists out there objectively. In general, an ontological assumption is concerned with what it is assumed to exist in the world (Creswell, 2007). According to Burrell and Morgan (2005), there are two main paradigms on ontology assumption in social science. One is nominalism (also known as conventionalism), which assumes the social world is made up of individuals' consciousness (e.g. names, concepts and labels) which structure the reality. The other is the realism position, which believes that the social world exists objectively as empirical entities, without the influence of individuals' cognition (Burrell & Morgan, 2005; Smircich, 1983).

A nominalist position indicates that the reality is socially structured with artificial creations (e.g. names and concepts) (Johnson & Duberley, 2000; Burrell & Morgan, 2005). This is to say, social phenomena are constructed based on individuals' cognition, which uses artificial creations to describe the world (Smith, 1983; Smircich, 1983). According to Burrell and Morgan (2005), nominalism is an ontological position which revolves around the assumption that social phenomena and their meanings are created by social actors (people). Nominalists point out that social knowledge is a product of human thought, experience, and the interpretation outcome (Jonassen, 1991). For instance, the culture as a concept that people apply to help understand human behaviours and the society can be viewed as a social product from the view of nominalists, rather than something objectively existing (Smircich, 1983). Strategic

alignment, similarly, can be one of the social products that has been built up by human thought, experience, and interpretation based on this notion.

On the other hand, realism considers that the social world exists externally and independently (Burrell & Morgan, 2005). Realists suggest that the constituting social reality is positively made up of tangible structures, which means the social world exists no matter whether humanity is aware of it or whether or not people label it and its tangible structures (Johnson et al., 2006; Smith, 1983). Therefore, based on realism's notion, the world can be studied independently without individuals' appreciation of it (Burrell & Morgan, 2005). As a result, the social world is not constructed by individual creations or cognition, but exists objectively, based on the realist view (Smircich, 1983). This research focuses on dynamic issues in strategic alignment which involve the individuals' interactions, people's values, personal experience, as well as subjective interpretations. All of these are difficult and inappropriate to represent independently, based on a realism notion. This research adopts the nominalist stance of ontological assumption, as the study assumes that the reality is socially constructed. This study investigates the sustainable strategic alignment and strategic planning of IS, which is clearly not independent from social entities, such as individuals' value and experiences. According to Burrell and Morgan (2005), nominalism allows the researcher to adopt such social entities to describe and understanding the reality. Furthermore, it is not suitable for this research to adopt a realism stance of ontological assumption, as the dynamic situation in this research is complex and uncontrollable. It is hard to see the phenomena as purely tangible and actual structures without artificial creations.

3.3.2 Epistemology

Epistemology is "a theory of knowledge" (Bryman, 2004, p. 711). Vaishnavi and Kuechler (2011) assert that epistemology refers to a philosophical claim about the nature of knowledge and how to obtain knowledge. In another words, it is concerned with how we know the world. In social science research, there are two

main stances of epistemology: Anti-positivism and positivism (Burrell & Morgan, 2005).

Positivism, according to Bryman (2004, p. 28), refers to “an epistemological position that advocates the application of the methods of the natural sciences to the study of social reality and beyond”. Positivists believe that they can separate the researcher from their own research (Clarke, 1999). They attempt to control observations of the social world objectively and attempt to explain and predict the social world by seeking for regularities and causal relationships (Burrell & Morgan, 2005). This is to say that the approach for studying the social world should be systematic, neutral and value-free (e.g. logical inference and mathematical formulas) (Lee, 1994; Dooley, 2001). By applying such traditional approaches, which dominate the natural science, to build knowledge in social research can avoid the values and biases which might affect the outcome of the research (Guba & Lincoln, 1994). However, positivism has its own limitations. It is very difficult or even impossible for researchers to be completely objective in some situations, particularly when research subjects are not independent and cannot be separated from the actual and natural context (Bryman, 2012).

Anti-positivism, also known as interpretivism is the opposite of positivism. Burrell and Morgan (2005) define anti-positivism as the epistemological position in which the social world is relativistic and can only be understood from the perception and values of individuals. Anti-positivists believe that researchers should be involved in the research as knowledge is obtained via interactions between researchers and the researched social world (Guba & Lincoln, 1994; Rosen, 1991). Furthermore, they assert that the methods from natural science are not suitable for social science research, as the social world is so complex and subjective that it cannot be objectively controlled (Lee, 1994; Burrell & Morgan, 2005). The social world is concerned with human actions, perspectives and meanings, so that knowledge in social research should be viewed as heavily reliant on individual experience, perceptions and values (Creswell, 2007). Anti-positivists suggest that, because the subject of social science research is people and their institutions, which are fundamentally different from the subjects of natural science research, the social

world needs a different logic in terms of research procedure (Bryman, 2004). Furthermore, in contrast to positivists, anti-positivists do not pursue objective universal laws or knowledge that can be applied to every social setting (Lee, 1994). Instead, they acknowledge the legitimacy of human subjectivity, which is seen as a bias in the natural sciences (Burrell & Morgan, 2005).

In the strategic alignment literature, most researchers (e.g. Diaz, 2011; Tian et al., 2010; Thornley, 2012) take an anti-positivist position of epistemological assumption on this topic, as they tend to consider that strategic alignment is a social product that contains human actions and thinking. Furthermore, in this research, it is necessary to understand the in-depth perspectives of both IT and business executives, in order to obtain credible evidence to support the study. For instance, the IT users' thoughts, behaviours and preferences might significantly affect IT upgrading and evolution. Such individual subjective perceptions and consciousness need to be considered and interpreted. By inclining towards an anti-positivist position, the knowledge can be learnt through such perceptions and consciousness of individuals (Burrell & Morgan, 2005). In addition, the dynamic contexts in this research are complex and uncontrollable, thus a replicable statistical method from a positivist perspective cannot be adopted. Therefore, this research adopts the anti-positivist stance on epistemological assumptions.

3.3.3 Human nature

According to Burrell and Morgan (2005), human nature is a set of philosophical assumptions concerning the relationship between human beings and the environment. There are two main views of this assumption: voluntarism and determinism, arguing which role human beings play in the situations they face (Burrell & Morgan, 2005).

Voluntarism is a human nature assumption that considers human beings to be completely free-willed in social phenomena (Burrell & Morgan, 2005). A human can develop his or her own thoughts and is considered as creator and controller of his or

her environment. On the other hand, compared with voluntarism, determinism is completely opposite to the human nature assumption that views human beings and their experience as the products of the environment (Burrell & Morgan, 2005). Determinists assert that man is conditioned, predominated or controlled by external circumstances. This is to say that human beings and their activities are fully determined by the environment in which they are located.

This research inclines towards voluntarism of the human nature assumption, because it believes that the environment is created by human beings, and human beings are considered to be autonomous (Bloomberg & Volpe, 2008; Giddens, 1976). Individuals and their activities in this research are considered to be free-willed, rather than determined by the situation or environment.

3.3.4 Methodology

Methodological assumptions are the last philosophical assumptions based on Burrell and Morgan's (2005) philosophy of social science which is related to the three assumptions discussed above. Methodological assumptions are concerned with the way in which knowledge in the social world is investigated and obtained (Burrell & Morgan, 2005). There are two paradigms of this assumption: the ideographic and the nomothetic (Burrell & Morgan, 2005).

The idiographic position of methodological assumption focuses on the analysis of the specific subjective phenomenon to understand the meanings of the social reality (Burrell & Morgan, 2005). This position is usually adopted when research emphasises the significance of the subjective experience of individuals, and the explanation and understanding of the unique and especial thing to individuals (Benbasat et al., 1987). On the other hand, a nomothetic stance of methodological assumption focuses on the analysis of relationships and regularities between elements of the social world to generalise universal laws or describe and explain the social reality (Burrell & Morgan, 2005). Nomothetic research heavily relies on methods and approaches from the natural science, such as quantitative techniques (e.g. surveys, questionnaires),

focusing on deductive processes (testing hypotheses) (Burrell & Morgan, 2005; Zevon & Tellegen, 1982).

This research adopts an ideographical position of methodological assumptions. In the IS field, the ideographic paradigm is widely adopted, since it allows IS researchers to examine IS events or phenomena in a particular context (Myers, 1997; Baskerville, 1999). Also, the ideographical position emphasises employing methods and approaches (e.g. interview and observation) which can explain and explore social phenomena in depth during the process of investigation (Burrell & Morgan, 2005). In addition, this research is about strategic alignment, which relies on individual experiences, perceptions and values, so that the ideographic posture is more appropriate for this study (Benbasat et al., 1987; Burrell & Morgan, 2005).

3.3.5 Interpretive approach

There are three major fundamental paradigms or approaches to social science: positivist approach, interpretive approach and critical approach (Neuman, 2007). According to what we have discussed above, this study inclines towards an interpretive approach as the fundamental paradigms of this research. For interpretive researchers, social life that they studied is qualitatively different from the subjects studied in natural science, so that they cannot just adopt methods and principles from natural science (Neuman, 2007). Most interpretive researchers believe that social science is based on individuals' ideas, beliefs, and perceptions about the social world (Bryman, 2008; Neuman, 2007).

Interpretive researchers rely on qualitative data rather than quantitative measures to capture the social reality; because they consider that social reality cannot be objectively measured and is socially constructed by perceptions that people hold about the reality (Neuman, 2007; Burrell & Morgan, 2005). In this study, we treat social reality (strategic alignment) as socially constructed, which can only be understood by reconstructing the context in which it exists and by interpreting the

meanings that the social agents (e.g. IS planners, business executives and IS users) assign to their activities (Neuman, 2007).

In IS research, an interpretive approach is also frequently adopted (Myers, 1997, Lee et al., 1997), since IS have been treated as social systems which are significantly affected by social factors (Lyytinen & Hirschheim, 1987). This research also sees IS as social phenomenon that influences communication between people and their performance of work. As a result, via this interpretive approach, this study can obtain knowledge from social reality which is constructed through the interpretation of individuals' perceptions, ideas and experiences regarding the social reality (Berger & Luckman, 1967).

3.4 Research design

This research employs an interpretive case study design to provide a framework for the collection and analysis data. In order to establish and clarify the research design, we firstly discuss the research strategy (quantitative vs. qualitative) we select in this study. We also introduce various research designs (narrative research, phenomenology, grounded theory, Ethnography and case study) for qualitative research. Next, we discuss the case study as a research design adopted in this study in detail. To do this, the concept and understanding of case study for this study are stated, and we examine the conditions where case studies are most appropriate as a research method in the IS field (why we are using a case study here). In addition, the sampling of cases is introduced.

3.4.1 Direction of theorising

In social science research, there are two main research directions to build and test theory: the deductive and inductive approaches (Bryman, 2008; Neuman, 2007). They show different relationships between theory and social research. A deductive

approach involves researchers testing their established theory, and deducing a hypothesis (or hypotheses) or a theoretical framework to confirm whether the theory applies to specific instances (Walliman, 2006). Neuman (2007) asserts that, in deductive approach, researchers start with abstract and logical relationships among concepts, and then use empirical data to support and test the theory. Inductive approaches, by contrast, refer to the process of theory building which commences with observations and findings then concludes with generalizable inferences about the phenomenon under investigation, in order to establish a new theory (Walliman, 2006). Neuman (2007) suggests that, in the inductive approach, researchers start with empirical data from detailed observations, and then develop generalisations into an abstract theory from the ground up. Snape & Spencer (2003) suggest that inductive approaches seek patterns and associations which are induced from observations of the world, while deductive approaches generate propositions and hypotheses theoretically, through a logically deductive process, and test them.

According to Creswell (1994), a deductive approach is suitable for research topics which have abundant literature to establish theories and hypotheses. On the other hand, when a research topic is new and there is not much related literature, theory should be inductively produced. This research adopts a deductive approach, but not a purely deductive one. New relevant concepts can also be built in, based on the data, to reinforce the theory (Neuman, 2007). There is plenty of strategic alignment and strategic IS planning literature. Besides, a growing number of researchers are focusing on this issue in dynamic contexts. As a result, a theoretical framework can be developed from such literature. This framework is tested by the empirical data. Also, the framework is revised and enriched based on the collected data.

3.4.2 Research strategy: quantitative vs. qualitative

Bryman (2012) asserts that it is helpful to distinguish between quantitative and qualitative research. There are many differences between these two orientations, the most common being the nature of the results. The results of quantitative research are more likely to be present as quantities or statistics, while the results of

qualitative research tend to be presented as discussions of trends and/or themes based on words (Patten, 2007). This is to say that quantitative research emphasises quantification in the collection and analysis of data. By contrast, qualitative research focuses on the words in the collection and analysis of data. Table 3.3 presented by Bryman (2012, p. 36) illustrates the fundamental difference between quantitative and qualitative research. However, not all researchers follow this table. For example, Adler and Adler (1985) investigated whether athletics was associated with higher or lower levels of academic achievement in higher education in the USA. They adopted a qualitative orientation, but they also applied a deductive approach which tended to test theory, rather than generate theory. For data analysis, quantitative researchers are more likely to summarise all responses with statistics, while qualitative researchers emphasise the individuals' responses (Patten, 2007).

Table 3.3 Fundamental differences between quantitative and qualitative research

	quantitative	qualitative
ontology	objectivism	constructionism
epistemology	positivism	interpretivism

This research adopts a qualitative research strategy. Strauss and Corbin (1998) claim that a valid reason for doing qualitative research is the nature of the research problem. As qualitative research can explore the nature of human's understanding and experience, as well as substantive areas about which little is known or about which much is known, to obtain new understanding (Stern, 1980), research problems such as dynamic issues on strategic alignment can be explored by using qualitative methods. In addition, this research needs intricate data from the dynamic strategic alignment process, such as IT/IS users' feelings on adapting new IT/IS. It is very difficult to obtain such intricate details about social phenomena through a quantitative research strategy.

3.4.3 Five qualitative research designs to inquiry

Creswell (2013) suggests that, in qualitative research, there are various research designs for inquiry. Five (narrative research, phenomenology, grounded theory, Ethnography and case study) are frequently chosen, due to the preference of researcher, research policy, characteristics of research subject, and research disciplines (Creswell, 2013). Table 3.4 displays these five common qualitative research designs, with some basic characteristics.

Table 3.4 Five qualitative research designs

Research design	Definition	Key strength	Key weakness	Research subject
Narrative research	Research design that focuses on field texts that give an event/action or series of events/actions, chronologically connected (Czarniawska, 2004)	Developing understanding of people creating meaning as narratives (telling stories of individual experience)	Requiring sufficient information from participants, enough knowledge regarding participants' background, and ability to readdress the texts or stories chronologically	Field texts such as stories, autobiography and journals
Phenomenology	Research design that focuses on describing experience of individuals on a concept or a phenomenon (Creswell, 2013)	Providing deep understanding of a phenomenon as experienced by individuals	Requiring a certain understanding of the broader philosophical assumptions, difficult to find proper	Individuals' experience

			individuals to be participants, strongly relies on subjective experience	
Grounded theory	Research design that focuses on generating or discovering a theory grounded in data (“unified theoretical explanation”) (Corbin & Strauss, 2007, p.107)	Offering a systematic approach (e.g. Corbin & Strauss, 2007, Charmaz, 2006), grounding a theory in data from participants without support from existing theories	Difficulty of determining when categories are saturated in data analysis, difficulty of planning due to unpredictable overcome of data	A process, an action or an interaction
Ethnography	Research design that focuses on examining sharing patterns – culture of a group (Creswell, 2013)	Describing and interpreting the culture of a group	Requiring understanding of cultural anthropology, time consuming, possibility of influence from researchers	Culture-sharing groups
Case study	Research design that focuses on cases within a real-life, contemporary context or setting to develop an in-depth description	Providing an in-depth understanding of a case or cases	Difficulty of identifying cases (including scope and boundary), possibility of influence from	Events, programs, activities or a group of people

	and analysis (Yin, 2009)		researchers	
--	--------------------------	--	-------------	--

According to Czarniawska (2004, p. 17), narrative research refers to a qualitative research design in which “narrative is understood as a spoken or written text giving an account of an event/action or series of events/actions, chronologically connected”. This is to say, narrative research focused on the experiences of participants that are expressed in narrative stories (Creswell, 2013). Moreover, the texts or stories of experience from one or more individuals need to be reported in a chronological order (Denscombe, 2007). According to Chase (2005), narrative research originated from literature, history, anthropology, sociology, linguistics, and education, but it has extended to other disciplines in social science (e.g. Daiute & Lightfoot, 2004; Lieblich et al., 1998).

Phenomenology, according to Creswell (2013), is a qualitative research design which focuses on studying experiences of individuals on a specific phenomenon. This specific phenomenon can be a particular circumstance, such as insomnia, anger or grief (Moustakas, 1994). Phenomenological design research can explain “what” the participants experienced and “how” they experienced such phenomenon (Moustakas, 1994). However, Denscombe (2007) claims that it cannot answer the “why” question for the emergence of the phenomenon. This qualitative research design is mainly used in philosophy, psychology and education disciplines (Creswell, 2013).

Grounded theory is a qualitative research design that goes beyond description to develop a theory grounded in data from participants for a process or an action (Corbin & Strauss, 2007). Grounded theory was developed in sociology in 1967 by Glaser and Strauss, based on an inductive approach. Strauss and Corbin (1990, 1998) further develop this qualitative research design by providing a systematically structured approach with specific steps. Charmaz (2006) also develops an approach for grounded theory which is less prescribed and structured. Both approaches believe that theories should be generated or grounded via interrelating categories of

information based on data collected from individuals (Creswell, 2013). Birks and Mills (2011) suggest that, in grounded theory design, the theory continuously develops, until the data is saturated or theory is sufficiently detailed.

Ethnography is another qualitative research design that focuses on examining the shared patterns of value, behaviour, beliefs and language in a specific place (Creswell, 2013; Harris, 1968). That is to say ethnography research focuses on a culture-sharing group (Creswell, 2013). Since ethnography is to develop a complex and complete description of culture of a group, the researchers may need to be involved in the group and observe for a long period of time to obtain data (Fetterman, 2010). In analysis of such data, the researchers attempt to understand “how the culture-sharing group works” based on the participants’ views (Creswell, 2013, p. 92). This qualitative design was developed in anthropology and is widely used in sociology as well (Creswell, 2013).

Case study, according to Yin (2009), refers to the study of a case (or cases) that comprehensively investigates a real-life contemporary phenomenon in depth by relying on multiple sources of evidence (e.g. interviews, documents and observations). A case here can be a bounded system (bounded by time and place), such as an event, a program, an activity or more than one individual (Creswell, 2013). In a case study, there can be a single case or multiple cases, which is the unit of analysis (Yin, 2009; Creswell, 2013). Bryman (2008) asserts that case study focuses on in-depth data analysis which involves a case description and case themes. As a qualitative research design, case study is widely used in social science (e.g. psychology, medicine, law, and political science) (Creswell, 2013).

In the IS field, case study is frequently used among these five research design, since it provides the ability to explore and explain the phenomenon regarding IS and people who are involved in the IS (Cavaye, 1996; Benbasat et al., 1987; Myers, 1997; Hevner & Chatterjee, 2010). This study also adopts a case study approach as the research design. The next section presents the key features of case study as well as giving the reasons for choosing case study as the research design of this study.

3.4.4 Case studies

Gorman et al. (2005, p. 47) define a case study as “an in-depth investigation of a discrete entity (which may be a single setting, subject, collection or event) on the assumption that it is possible to derive knowledge of the wider phenomenon from intensive investigation of a specific instance or case”. The case study is one of the most widely used and significant research designs in IS research (Walsham, 1995; Smith, 1990; Cavaye, 1996). Case study, as a research design, is the preferred strategy when “how” or “why” questions which are being posed (Shavelson & Towne, 2002). Yin (2009, p.18) defines the case study research as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. Gable (1994, p. 113) summarized the aim of the case study approach: “the case study approach seeks to understand the problem being investigated (where the word ‘understand’ is used in the phenomenological or hermeneutic sense, and where ‘understand’ the meaning held by a subject or group is contrasted with the ‘explanation’ produced by scientific observation)”. The Case might be of a group, an organization, a place or a person.

According to some counter-arguments (e.g. Kennedy, 1976; Feagin & Orum 1991), a case study design can have some disadvantages. Some scholars, such as Kennedy (1976), doubt that case studies can be the basis for scientific generalization, as they lack rigor and the sum of samples. For example, Feagin and Orum (1991) claim that studies of a small number of cases can offer no grounds for establishing reliability or generality of findings, and that the intense exposure to study of the case biases the research’s findings. Moreover, case studies take a long time to be conducted, and the results can be massive. However, there are still a large number of successful studies applying case study in the existing literature, which means these problems and issues could be overcome (Bryman, 2008). Besides, Yin (2009) asserts these concerns can be allayed by knowing the implications and explications of case studies. We discuss them in the following part in detail.

It is necessary for this research to consider the criteria for judging the quality, generalization, and different types of case study research design which could reduce the drawbacks of case studies. Before that, the epistemology and ontology of the case study should be considered, as they are the basis of research design (Stake, 1995).

Stake (1995) suggest that not all case studies are qualitative, since some case studies can also employ a method of inquiry boasting a positivistic epistemology and ontology. The main difference between a positivistic case study and an interpretive case study is the goals and criteria used to evaluate the quality of case studies (Cavaye, 1996). For a positivistic case study, Yin (2009) asserts that case studies can be treated as experiments, taking place not in a laboratory but in its natural setting using quantitative methods, but this is not to say all case studies should be positivistic as well. Cavaye (1996) suggests that case studies can be applied either within a positivistic research design or within an interpretive research design, based on different situations and purposes. In this research project, we adopt an interpretive case study design, due to the philosophical foundation of the study.

According to Walsham (1993), the ethnographic research tradition in anthropology is a valuable starting point for a consideration of the philosophical basis of interpretive case studies, as it has been widely drawn on by organisational researchers concerned with interpreting the patterns of symbolic action that create and maintain a sense of organization. Ethnographic methods can also help researchers to extract cultural knowledge, identifying actions and instruments that participants utilize in their everyday life (Schwartzman, 1993; Prasad, 1997). However, Yin (1994) claims that case studies should be distinguished from ethnographies. He, on the other hand, tends to focus on controlling the quality of case studies in order to enable generalizability and replication.

Yin (2009) suggests four criteria for judging the quality of case studies: construct validity: correct operational measures for the concepts that are being studied; internal validity: a causal relationship between certain conditions; external validity: a domain to which a case's findings can be generalized; reliability: demonstrating that

a study can be repeated with the same results. Bryman (2008) has similar criteria for case studies, which are measurement validity, internal validity, external validity, ecological validity, reliability, and replicability. These criteria guide and help the research plan, data collection, and the analysis of collected data. Therefore, it is vital to consider them while conducting the research.

In contrast to a positivistic approach, interpretive case studies are based on logical inference rather than statistical analysis (Mitchell, 1983). Smith (1990) points out that case studies' generalization of developing or testing a theory is not based on the representation of the cases but the case analysis convincing us that the theory 'makes sense'. Yin (2009) also suggests that the case study approach to generalisation is analytical not statistical. According to Walsham (1995), four types of generalisations from interpretive IS case studies should be explored, thus: "Development of concepts", "Generation of theory", "Drawing of specific implications", and "Contribution of rich insight". He asserts that such types of generalisations should be seen as explanations of particular phenomena derived from empirical interpretive case studies in IS research, which could be valuable in the future in other organizations and contexts (Walsham, 1995). Furthermore, Klein and Myers (1999) summarize and develop seven ideal principles for interpretive IS research.

Yin (2009) classifies case studies into single case designs and multiple cases designs, according to their numbers. Cases here could be organizations, groups, communities or individuals. Yin (2009) suggests that multiple cases designs may be preferred over single designs, as the analytic benefits from having two or more cases may be substantial, enhancing the reliability and vitality of the study. A single case is used when the case is representative or typical or a unique case. Donmoyer (2000) suggests that, via a single case study, a researcher can also generalise new knowledge, as long as the choice of case is justified. Case studies also could be embedded or holistic (Yin, 2009). Embedded case studies contain more than one sub-unit of study. For example, if an organization is considered as a case, there may be different departments or staff or projects which the researcher is interested in to analyze and study. A holistic case study contemplates a global program organization as a whole (Yin, 2009). In addition, case studies can also be classified into three types: explanatory case study, exploratory case study and descriptive case study (Yin, 2009).

There are several reasons why the study adopts an interpretive case study as the research design. For the purposes and aims of this research we have decided to adopt a case study design, as our main research question is to start with “how”. Shavelson and Towne (2002) assert that a case study is the preferred strategy for “how” or “why” questions. Moreover, we can attempt to gain in-depth and detailed data that can help to explore and investigate how environments affect strategic planning of IS and strategic alignment and whether and how sustainable strategic alignment occurs in a dynamic context, which case study design can provide. Moreover, via case study, the researcher can obtain a holistic understanding of sustainable strategic alignment in a dynamic environment, based on the participants’ experiences, views and comments (Flyvbjerg, 2004; Stake, 1995), as case study is suitable for the research which aims to obtain understanding of real-life contemporary phenomenon that cannot be controlled (Yin, 2009). That is appropriate for this study, as the aim of this research is to investigate and explore the influence of changing environments on sustainable strategic alignment from the experience of people involved in sustainable strategic alignment process. Also, Myers (1997) asserts that case study design is especially appropriate in IS research,

as the object of the IS discipline is the study of IS in organisations and case study allows researchers to emphasise an organisations' boundary. As a result, a single-case (embedded) exploratory case study design is employed, which is the most appropriate type for this study.

In addition, there are some suggested techniques for organizing and conducting the case studies research design given by experts, such as Yin (2009) and Dul and Hak (2008). This research designs the case study mainly based on Yin's recommendations and techniques.

3.4.5 Sampling and Background of the companies

In order to enhance the reliability and validity of this research, a typical and appropriate single case will be chosen. Conclusions of the case can then be used as information contributing to the whole study. This research carefully selects the case and carefully examines the choices available from among many research tools available (data collection methods and data analysis methods) which are mentioned in the later sections, in order to increase the validity of the study.

The criteria used to select a case company for this research are as follows. First, the company chosen here should not be unique in any way and should be considered as typical and representative. Second, the company should operate in an environment where changes happen constantly and rapidly. This is because the purpose of this study is to investigate dynamic issues on strategic alignment and how to sustain strategic alignment in rapidly changing environments. Third, the company should have clear business strategy and use information systems to support their operation.

China, as a developing country, is facing the revolutionary transformation of economics, politics, technology and even culture. Hence almost all companies in China are experiencing constant changing business environment and uncertainties associated with the changes. This is particular true to companies within the special economic zones, known as the windows and doors of China to the world trade. Special economic zones in China play an important role such as in pacesetting and developing country's export sectors. Shenzhen is one of the early special economic

zones and perhaps is the most successful one in China. Shenzhen was established as a special economic zone in 1980s and since then it has experienced earth-shaking changes, from being a fishing village to being an international financial centre in the past 30 years. Companies in Shenzhen have to face the constant changes in the environment and adapt themselves in order to survive. The influences from foreign companies and the competition in the special economic zone companies in Shenzhen are assumed more likely to embrace IS to support their work and familiar with strategic planning both in business and technologies. Therefore this study targeted companies located in Shenzhen and believed that they meet the criteria of using IS for their work and having business and IS strategies to guide their operation.

The case company of this research was established in 1983 and has witnessed and experienced rapid changes in Shenzhen. The company was a medium size real estate company specialised in commercial property development. It was a state-owned enterprise as the government owned 51% of its shares while the private investors held the rest of 49 percent. There are a number of companies partially owned (51%) by the government emerging after Chinese economic reform and SOE reform in China. Such companies are different from the SOEs, which are fully owned by the government, as they are also responsible for other shares from private. The company was identified as an AAA Capital credit enterprise by banks and government. It mainly operated in Shenzhen, but started to expand its business in other cities including Shenyang and Chengdu. It had developed more than 1.5 million square meters logistics property and warehouses. The company's total assets exceeded 3 billion Chinese Yuan, and the net assets were about 1.7 billion Chinese Yuan. The company aimed to be the leading business logistics enterprise that provides advanced logistics real estate services and maximum of value to shareholders, customers and employees in China. The company had two major development projects. One was an international vehicle industry park (more than 220 thousand square meters) and the other was an international home furnishing commercial mall (more than 1.5 million square meters). The total investment of the two projects exceeded 6 billion Chinese Yuan. Besides, the company also had projects in Chengdu and Shenyang. Regarding the use of information systems the

company had three main systems that they frequently used: office automation system, financial system and the system used by the parent's group. The case company claimed they had well-formulated business strategy and IS strategy.

The company had five wholly-owned subordinate enterprises. Three were located in Shenzhen, holding the international vehicle industry park project and the international home furnishing commercial mall project, as well as being responsible for estate management. The other two were in charge of the Chengdu and Shenyang projects. With the rapid economic development and expansion in China the case company faced a great opportunity to expand their business as well as challenges that threat their business if they do not adapt to the environment. Such position that the case company is in is not unique in China, as many companies also face the same situation. Hence it is argued that the company chosen can be seen as a typical and representative for this research. Table 3.5 shows a summary of how the case chosen met the selection criteria.

Table 3.5 A summary of how the case chosen met the selection criteria

Criteria	The case company
Typical and representative	There are numerous companies in China facing similar situation (e.g. Chinese small and medium size SOEs) compared with the case company.
Rapidly changing environment	Shenzhen, China has faced dramatic changes in the past 30 years.
Contain IS, business strategy and IS strategy	The case company has 3 main systems, and completed business strategy as well as IS strategy.

Although the case company was chosen to be typical and representative in terms of changing environments, there is no absolutely typical and representative case for all kinds of contexts. This is because the context that each individual case company faced with could have different outcomes (Bryman, 2008). Therefore, it is essential

for exploratory case study to clarify the contexts of the case as well (Yin, 2009). Contextual information of the case company is summarised in a table form below.

Table 3.6 Contextual information of the case company (Chinese small and medium size SOEs)

Cultural context	Very high acceptance of power distance, particularly in SOEs.
Political context	Compared with Western countries, Chinese government tends to heavily control the market. SOEs appear to be able to obtain competitive advantages from their SOE status easily.
Economic context	Amount of GDP of China increased about 7.5% per year recently. China seems to have a stable economic environment, but the true is that some markets, such as the real estate market, can be unpredictable (www.realestate.cei.gov.cn).
Information systems context	In China, information systems developments are far behind comparing with Western countries. There is a lack of IS professionals in Chinese human resource as well.
Environmental background	There is a dramatic change in the past 30 years in China. Shenzhen as the first and the most successful special economic zone which has developed significantly from a fishing village to an international financial centre. As a result, companies in Shenzhen are face rapidly changes.
Industry context (property sector)	In the last 30 year, property sector in China has experienced dramatically changes (not only increased rapidly, but also decayed). Also, property sector is heavily controlled by the government in China, which makes it more unpredictable.

3.5 Data collection and data analysis

3.5.1 Data collection methods

According to Yin (2009), there are six sources of evidence (documentation, interviews, archival records, direct observations, participant observation, and physical artefacts) for case studies. Each source is associated with an array of data or evidence. In this study, documentation and interview are employed to collect needed data. In order to face the contextual complexity of the cases, a rich set of data should be created by employing the following sources of case study information: documentation and interviews (Myers, 1997; Yin 2009).

3.5.1.1 Documentation

Documentation is one of the most common sources used in case studies. The most essential use of documents in case studies is to corroborate and support evidence from other sources (Yin, 2009). According to Hodder (1994), alternative documents can also reduce the bias of research from other sources. In this study, various written documents will be collected and consulted, such as annual reports, internal confidential reports, presentations, official website, electronic order forms and so on. Yin (2009) claims documentation in case studies is stable (can be reviewed repeatedly); unobtrusive (not created as a result of the case study); exact (contains exact names, references, and details of an event); and involves broad coverage (long span of time, many events, and many settings). In this research, documentation is only an assisting method, helping to develop knowledge of the background to the study and make up.

Table 3.7 List of documents provided by the case company

Document title	Description of document	Date of the document
Official website	Website that shows brief information about the case company	Accessed in March 2014

Annual reports	comprehensive report on a company's activities throughout the preceding year	For 2012 and for 2013
Strategic plan reports	Report of defining strategy	For 2014 and for 2013-2016
Strategic plan Meeting presentation	As an additional remarks for strategic plan reports in PPT slides format	Oct 2013

Table 3.7 shows the various documents that were collected from the case company. The official website was the first document that the researcher was interested in. It provides brief information about the case company and some specific information that could potentially answer the research questions, such as IS personnel recruitment. Annual reports for recent years (2012 and 2013) also provided information this study needs. For example, information about changing environments in that period can be found in the annual reports. The strategic plan reports for current environment (2014, and 2013-2016) were collected as well. These provided information about business strategy and IS strategy. Presentations slides of strategic planning meeting in Oct 2013 were also collected, in order to reinforce and supplement the strategic plan reports. These documents brought together information that can help to answer the research questions.

3.5.1.2 Interviews

This case study also applies a qualitative method – interviews – as its main data collection method. The reason for applying interview as the data collection method is that the use of interviews is consistent with the interpretive nature of this research (Creswell, 1994; Creswell, 2007). Interpretivists believe knowledge is socially constructed (Orlikowski & Baroudi, 1991), which can be developed in interactions between the interviewer and the interviewee (Guba & Lincoln, 1994). Furthermore,

the use of interviews can provide a voice to individuals, allowing them to freely present their knowledge in their own words (Kvale, 2006), and the way to understand actors' opinions (Clarke & Dawson, 1999).

Interviews also tend to be a significant technique in data collection in social science research. Bryman (2012) asserts that interviewing is one of the most important sources of case study information because the interviewees can provide essential insights, and also provide shortcuts to prior history and detailed information which helps you to identify and evaluate other sources of evidence.

Interviews are a very broad concept and widely used in different types of research. Both quantitative and qualitative research employs interviews as data collection techniques. Interviews in quantitative research tend to be used to test hypotheses, while qualitative interviews focus on greater generality in the formulation of initial research ideas and interviewees' own perspectives, rather than maximizing the reliability and validity of measurement of key concepts (Bryman, 2008). Moreover, qualitative interviews seem to be more flexible and follow the interviewees' replies to obtain the information needed. Also, it can gain deeper, richer and more detailed data.

According to the degree of structure and standardisation, there are three types of interview in social research: structured interviews, semi-structured interviews, and unstructured interviews (Saunders et al., 2007). The structured interview is commonly used in quantitative research, which has predetermined questions with fixed wording, usually in a pre-set order, while unstructured interviews only have a general area of interest and concern, but let the conversation develop without the restriction from predetermined questions (Patton, 2005). The semi-structured interview is the middle choice between these two extreme interview methods.

This study employs semi-structured interviews, since it provides both the flexibility and structure for the interview. This type of interview has a list of questions of fairly specific topics to be covered, often referred to as an interview guide, but the interviewee has a great deal of leeway in how to reply (Bryman, 2008). There is no strict schedule in this type of interview. Questions can be ignored or added during

the interview, according to the reactions of interviewees. However, by and large, most of the questions will be asked and a similar wording will be used from one interview to another. The reason for using semi-structured interview here is that it provides flexibility and enables the interviewees to give richer information and data for this study (Rapley, 2004). Also, this type of interview can avoid misleading questions and potentially leading responses from their own perspectives (Silverman, 2006). In addition, semi-structured interviews also suit the research questions of this study under investigation (exploratory research) (Matthews & Ross, 2010).

This approach adopted a purposive sampling method to select the interviewees. Maxwell (1997, p. 87) define purposive sampling as a sampling method in which “particular settings, persons, or events are deliberately selected for the important information they can provide that cannot be gotten as well from other choices”. It is clear that certain units or cases are selected according to specific purposes rather than randomly in purposive sampling. Teddlie and Yu (2006) suggest that purposive sampling can obtain most information about a specific phenomenon with selecting a small number of particular cases. Thus, the research can increase the possibility of gaining sufficient information and data for the study by employing purposive sampling. Also, Marshall (1996) claims that snowball sampling (also known as chain sampling) as a type of purposive sampling can allow research subject (e.g. interviewees) to suggest other candidates who may potentially provide valuable and useful data. This can also help the researcher to select interviewees. The main criterion to select interviewees was who had the experience of strategic alignment and participating in any activities relevant to the research questions. People who were involved in strategic alignment process at strategic level, organisational/operational level and individual level could be the potential interviewees. The president and deputy general manager of the company were interviewed to attempt to obtain strategic level data. The managers of all departments and two sub-companies were targeted as interviewees to gain organisational/operational level data. Some junior employees who were suggested by the managers were also interviewed in this research to gain individual level data. As a result, a total of 27 valuable interviews were conducted (2 of top level

management, 12 of middle level management and 13 junior employees). Table 3.8 shows the general information of the interviews.

Table 3.8 General information of the interview participants in the case study

Position	Department	Number of interviewees	Total time interviewed hours
Top management (president and deputy general manager)	Operation team	2	1.75
Middle-level managers (including 2 managers of sub-companies)	Investment, planning, project, operating, sales, risk, cost, financial, human resource, general office (IS and IT), sub-companies	12 (the managers of each department and 2 sub-companies)	8.5
Junior staff	Investment, planning, project, operating, sales, risk, cost, financial, human resource, general office (IS and IT), sub-companies	13 (junior staff of each department and secretary of the president)	6.5
Total number	All departments are included	27	16.75

The researcher used an audio-recorder to record all interviews, which were transcribed into text in Chinese, then translated into English for data analysis. According to Miles and Huberman (1994), in the process of transcribing audio records into text, there may be missing meanings which does not transcribe into the text, due to the lack of adequate knowledge and skills. To minimise this problem, the researcher has asked others (a Chinese PhD student and supervisor) to check the transcript to see if there were any missing meanings. Besides, rather than word-by-word transcription, meaning-led transcription can also reduce the potential errors and missed meanings (Esposito, 2001; Miles & Huberman, 1994). Thus, the researcher adopted meaning-led transcription in the final format of transcript (English) for data analysis to prevent misleading and misunderstanding.

3.5.1.3 Triangulation

However, there could be bias in interviews which significantly influences the reliability and validity of the research, so it is necessary for researchers to overcome this problem. Bias, which is considered to be a danger in using a qualitative research approach, can be solved by using data triangulation (Seale, 1999). Bryman (2008, p. 379) states that “triangulation entails using more than one method or source of data in the study of social phenomena”. To do this, 30 different types of interviewees (business managers, IS managers, IS users from different departments) were interviewed from different departments to enhance the data sources. People from different positions (both business and IT executives or staff) of the selected company can provide different levels of understanding of strategic alignment and IS. Also, the data collected from the interviews will be checked with other people who are in the same academic field, in order to reduce the bias from personal emotions and opinions, and make sure they make sense in relation to the aims and questions of this research. Furthermore, the documentation methods could, to some extent, help to reduce bias as well. Each type and source of data has its own strengths and weaknesses (Bryman, 2008; Patton, 2005). Using a combination of data collection methods and data sources provides the effectiveness of triangulation. In this

research, interviews can help to gain essential data, while documentation can avoid omissions and bias from the interviews.

3.5.2 Data analysis

The collected data will be analysed in order to connect the research object to the outcomes. To do this, interpretations of such data with continuous considerations of the research questions are used. Throughout the evaluation and analysis process, research questions can be answered (Yin, 2009). The case study design, with its use of multiple data collection sources and analysis techniques, offers researchers the possibility to triangulate data, which can enhance the reliability and validity of the research (Yin, 2009). The tactics and methods used in data analysis processes help researchers to gain reliable and valid outcomes from the initial impressions of the data. Creswell (2007, p. 148) states that most qualitative data analysis involve “preparing and organising the data, then reducing the data into themes through a process of coding and condensing the codes, and finally representing the data in figures, tables, or a discussion”. Case studies design often provides different kinds of data which can expose or create more comprehensive insights. This also can avoid inaccurate data analysis by looking at conflicting data from different sources (Yin, 2009). Researchers analyse data to answer the research questions. Data are classified, organised, and recombined to address the research objectives. Also, cross-checks of facts and discrepancies in accounts are conducted (Bryman, 2008). This part presents a common qualitative analysis method – Thematic analysis – which is employed in this research.

3.5.2.1 Thematic analysis

Thematic analysis is one of the most frequently used analytical methods in qualitative research. Walliman (2006) asserts that it can be thought of as the foundational method for qualitative analysis. Bryman (2012, p. 717) defines thematic analysis as “a term used in connection with the analysis of qualitative data to refer to

the extraction of key themes in one's data." Themes here refer to patterns from the data which are associated to the research questions (Braun & Clarke, 2006). Thematic analysis includes identifications, analyses and reports of themes via careful reading and re-reading of the data (Boyatzis, 1998; Rice and Ezzy, 1999). This is to say that thematic analysis combines and integrates components or fragments from data, which are often meaningless when viewed alone (Braun & Clarke, 2006).

According to Braun and Clarke (2006), thematic analysis can be distinct, depending on different research approaches. In the deductive approach, thematic analysis is driven by previous theories, or hypotheses, while in the inductive approach it is driven by collected data. For deductive thematic analysis, the previous theories or hypotheses are able to be used to interpret the collected data. This, to a large extent, can prevent missing potentially important aspects (Boyatzis, 1998), as all the vital themes have been involved in the hypotheses in the deductive approach. On the other hand, inductive thematic analysis sometimes might not have captured some significant aspects of the situation under study, due to the theoretical inductive process (Sarker et al., 2006). Inductive thematic analysis tends to ignore the themes that previous research might have found to be relevant, just focusing on coding data, without considering previous existing coding frames (Braun and Clarke, 2006). Therefore, the findings and new theory come from the collected data, and analysis is mainly driven by the research questions.

This research adopts the deductive research approach, so that a deductive thematic analysis should be employed. However, in order to avoid the possibility of missing essential aspects of the research, the new materials emerging from the data, which is not discussed in the current literature (e.g. organisational resource as an internal factor affecting strategic alignment process) are also considered, in order to drive the analysis with the data in this research. By doing this, relevant themes can emerge directly from the data; meanwhile themes from previous theories can be included.

This research adopted Creswell's (2007, p. 185-190) six main steps in qualitative thematic analysis:

Step one is organising and preparing the data for analysis. In this step, the interview conversations are transcribed. The transcription notes are organised and arranged in specific, order depending on the sources of information. In this research, interviews have been recorded using audio recorder, and all interviews were fully transcribed. The interviews were conducted in Chinese therefore the interview transcriptions were in Chinese, and the data was coded using Chinese transcripts. The transcription notes were translated into English from Chinese for further analysis.

Step two is reading through all the data. This step aims to gain an overview of the collecting data and also to consider its overall meaning, which provides a general sense of the data. The researcher read and re-read the transcripts many times, in order to gain a good understanding of the interview data prior to the coding stage. Based on the overall understanding of a mixed of data top-down and bottom-up coding approach was taken for this research. That is to say, although the codes identified from the data (bottom-up) the main categories or themes (e.g. external and internal environment) were guided by the research framework.

Step three is starting detailed analysis with a coding process. Rossman and Rallis (1998, p.171) define coding as a process to manage the data into certain “chunks” or “segments” of text before giving meaning to information. Charmaz (1983, pp. 111, 112) states that coding is “the process of categorising and sorting data”, and the codes are used to review, synthesise and categorise implicit and explicit ideas from the data. Thus, coding provides the connection between conceptualisation and data (Bryman & Burgess, 1994). According to Saldaña (2009), there are many types of coding, such as open coding and axial coding in grounded theory. In thematic analysis, a theme is an outcome of coding. In this research the coding process was repeated number of times in order to (a) ensure the consistency in the coding scheme, (b) avoid missing any useful information, (c) avoid misreading the information, and (d) avoid miscoding the data. In order to avoid over interpreting the data the researcher asked others (e.g. supervisor) to check if the meanings has been changed or over interpreted. This could to some extents reduce the biases from the researcher. A coding scheme for this study was developed by the research, which can be found in the appendix.

Step four is applying the coding process to generate themes for analysis. A description of setting or people, categories and patterns can be themes. In thematic analysis, this step is to identify the themes during the coding process, to develop them into a theoretical model. There were some codes in this research which were able to be categorised in many different themes. After discussed with supervisor, the researcher attempted to categorise the codes in many ways. Categories were confirmed in a more appropriate way after several attempts.

Step five is advancing representation of the themes in the qualitative narrative. Usually, a narrative passage is used to convey the findings of the analysis (Creswell, 2007, p. 189). This research followed the principle and presented the analysis using as narrative passages. In so doing the contextual influences can be better described and their effects on the process can be understood holistically. This is particularly important as one of the research objectives is to highlights the influences of contextual factors on the alignment process and outcome of the process.

Step six is interpreting the meaning of the themes. Lincoln and Guba (2005) suggest that it can be asked as a question “What were the lessons learned?” to interpret the meaning of the themes. The lessons here could be the meanings derived from an integration of the findings and previous theories.

Bryman (2012, p. 579) recommends a general framework (a matrix based method for ordering and synthesising data) for assisting a thematic analysis of qualitative data. The framework is to “constructs an index of central themes and subthemes, which are then represented in a matrix that closely resembles an SPSS spreadsheet with its display of cases and variables”. This could help in organising the analytical process.

3.6 Research Ethics

Ethics refers to the appropriateness of a behaviour in relation to the right of those who become the subject of your work, or are affected by it (Saunders et al. 2007). This appropriateness or acceptability of the behaviour of researchers will be affected

by broader social norms of behaviour (Wells, 1994; Zikmund, 2000). Ethical issues will be considered throughout the period of the research and the need to remain sensitive to the impact of the study on the people involved in this research who will be affected by the results is considered to be paramount (Saunders et al. 2007).

According to Neuman and Wiegand (2000), there are many types of ethical issue we need to consider, such as physical harm, psychological abuse, legal jeopardy and privacy. In this research, we might need to consider the privacy of participants, confidential information, and informed consent from the participant.

This research follows the University of Sheffield research ethics procedure and is approved by the Ethics Committee. The following shows the steps taken to ensure integrity of research ethics of this study. First of all, it is critical to provide information to all potential participants. Therefore, information sheets were given to potential participants with the invitation e-mail. These information sheets were designed to introduce the study and inform potential participants of their rights. Participation in this research was entirely voluntary. If the participants decided not to take part in the study, they could easily contact the researcher through the contact information provided within the invitation e-mail. They were asked to give an ethical consent in the interview as well. Participants could withdraw at any stage of this research project, without giving any reason. According to the aims of the research, the interview was designed to ask participants to provide their own comments, ideas, and personal feelings according to their experiences. No personal detail and confidential data were asked. Additionally, the participants were assured that the data collected would be kept in secure places and in an anonymous format. Also, the supervisor's contact detail was provided in case participants had any complaints regarding any improper treatment. Participant could also access the results of the study, if they required them.

Chapter 4 – Data analysis of the case study

This chapter presents a case study conducted in a Chinese real estate company located in Shenzhen. This company has faced dramatic changes in the past 20 years. 30 interviews were conducted, and 27 valuable interviews were considered as data resource to be analysed, in order to answer the research questions. Although the company was not that successful in strategic use of IS, the path and attempts to develop IS are of value to this research.

This chapter presents the internal environments of the case company by exploring organisational structure, organisational culture, organisational resource, and IS infrastructure. Then, the external environment of the company is presented. The external environmental influences on the company are explored by looking at the impacts on business and impacts on IS separately. Finally, we present the dynamic strategic alignment. The factors affecting dynamic strategic alignment, the three levels of strategic alignment, and the process of dynamic strategic alignment are presented.

4.1 Internal environment

This section presents the internal environment within the case company in the following parts (organisational structure, organisational culture, organisational resource and IS infrastructure). The internal environment can provide not only the background of the case company but also the internal environmental factors affecting strategic alignment. In order to explore and illustrate such internal environments, the elements of each internal environment are presented as well.

4.1.1 Organisational structure

The case company is a part of a state-owned real estate group. The parent group had 51% shares, which means that it had some control over the case company. In other words, the decisions made in the case company were, to an extent, constrained by its parent group's business scope and strategy. For example, the president of the case company claimed that they had to consider the parent's group's overall business strategy first when they formulated theirs. The case company itself owned five sub-companies and had overall control over these five companies.

The organisational structure of the case company was hierarchical (See Figure 4.1). The general shareholders' meeting had the highest authority in this company. Yet it was only responsible for the most important decisions and appointing the board of directors, which was delegated and appointed by the general shareholders' meeting. It was responsible for governing the organization by establishing company policies and objectives. Also it had rights to select, appoint, support and review the performance of the operation team (leaders). The board of supervisors and the government committee were two specific auditing bodies assigned by the government, as the government (parent group) had 51% share of the company. They were both responsible for supervising and auditing the company. The board of supervisors was more about the supervision of business performance, while the government committee concerned more about the government policy to ensure whether the company is under control by the government. The operation team of the company had decision-making powers and ran the business on a daily basis. In other words, the rights to make business decisions was centralised and held by the operation team, a small group of people. As pointed out by the director of the general office:

“The strategy is developed and drafted by the strategy planning group who are appointed by the operation team (the main members were the managers of the departments and the operation team), and conformed and approved by the operation team... The adoption of IS also needs to be approved by the operation team.”

Though the leaders of the case company had the power to make final decisions for strategy and IS issues, it is not to say that the issues were not discussed in the company prior to the decisions being made. It is stated in their official website that the company encouraged employees airing views. The president of the company also stated that:

“When we draft a strategy we would first discuss it in the company so that we can gather views from different parts of the company. The manager of each department would have a meeting to discuss the strategy first and then have another meeting organised by the operation team to express and discuss their views about the strategy. The strategy will then be proposed to and confirmed by the Board Meeting.”

Although the company claimed that it would not want to ignore the views of its employees, the opinions and ideas of junior staff were frequently overlooked and the decisions making mainly relied on leaders’ subjective judgment. A manager of the sub-company highlighted this issue:

“Whenever we receive market information we report it to the leaders. The problem is that not all the leaders would listen to you. Beside, some leaders (managers) reach their position due to their ‘guanxi’ (social network) instead of their capability, so that the decisions they made may be dreadful. This could affect the company a lot, especially in this unpredictable environment.”

It is interesting to note that the company’s decision making was not only constrained by its parent company’s business scope and strategy but also by government regulation, to an extent, since it was a state owned company. The manager of the cost management department claimed that they needed to report the cost information and data to the relevant department of the government for the supervision, so that the government could approve the company taking some important actions, such as purchasing a sub-company.

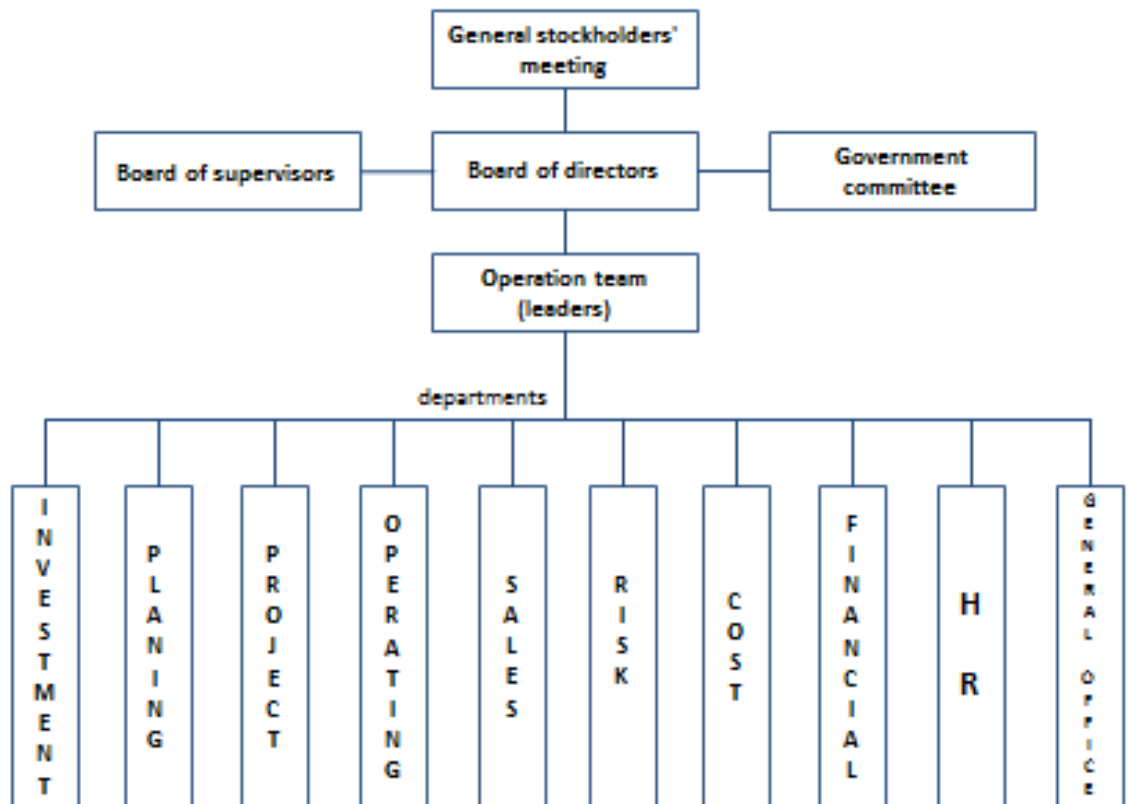


Figure 4.1 Organisational structure of the case company

The hierarchical structure leads to bureaucracy in the company, and lower level employees had limited decision-making capacity to respond to the changing environments and situations. The bureaucracy meant that any requests and changes would have to go through a long review and approval process before a decision was made. For example, the manager of the risk management department claimed that:

“There are many approval processes and approval authorities in the company, and you have to gain all of the approvals to do your jobs. These might potentially affect the reaction speed of the company.”

Furthermore, there were a number of auditing and supervisions in the company, which produced plenty of unnecessarily slow examining and approval procedures. A junior staff member of the cost management department stated that:

“There are many layers and stages of supervision and auditing in the company. The management call this risk management. However, most of the procedures of supervisions and auditing are very trivial yet complex. I think they just make our jobs harder.”

The bureaucracy made information flow slow in the company and had a negative impact on the company’s IS development and adoption, as the initiation of any IS development and adoption had to go through a long review and approval procedures. The manager of the operations department complained that they had requested a new system for their work before but the request could not be approved for various auditing reasons. Employees’ were also affected daily by the bureaucracy, as people had spend much time on preparing information in different format, in order to report to different levels of the hierarchy in the company, rather on their ‘real work’.

The interviewees considered that the leader’s management style was essential to the company. In this hierarchical structure, a good leader is critical to the company. The secretary of the president pointed out that:

“The new president is our company’s most valuable asset, as he brings about a huge amount of social resources, and he has very good commands of management skills. If he leave the company, it is hard to say if we can survive in the market. As is known to all the employees, his capability is very impressive.”

There were mixed views among the interviewees as to whether the company should invest in its information systems, given that it was not a ‘big’ company, despite in reality the company having more than 3 billion RMB assets and more than 100 employees. The interviewees believed that giving its current size, the company did not need to rely on information systems for business operation. Some even believed that they did not need to use computers for their work at all. Nevertheless, many

interviewees agreed that the company needed to upgrade its current information systems as they were 'poor'. Some pointed out new systems should be implemented for the growing business. This view was highlighted by the manager of operation department.

“When the company expands, the current systems may be no longer suitable because the systems were designed for the small size business. New systems need to be adopted, and old systems need to be upgraded, particularly when we have a number of sub-companies now.”

The interviewee suggested that the change of organisational size could be a factor affecting dynamic strategic alignment. He believed that small-sized organisations are likely to rely less on IS, and some organisations might even not need any computer-based IS for business operations. Therefore, the company overlooked the importance of strategic alignment before its expansion. Nevertheless, the company was developing rapidly in the past few years, and the request for IS was increasingly intensive.

4.1.2 Organisational culture

The organizational culture of the company was described as an honest, creative and friendly culture on their office website. They considered honesty to be the basis of a company, creativity to be significant for development, and friendliness to be the key to success. The interviewees highlighted the friendly culture in particular. They claimed that team-working was enhanced by friendly relationship between leaders, between leaders and employees, as well as between employees. The official website also claimed that they had a friendly organisational culture. An interviewee, who used to work for a foreign company, pointed out that:

“Compared with the foreign company I worked for before, the organizational culture of this company is much more friendly, and relationship between colleagues is better. In the foreign company, we saw each other as competitor which led to less

communication between employees. Besides, the staff turnover rate is low in this company”

According to this quote, the friendly culture, to some extent, kept the staff turnover rate low, and gave rise to better communication between employees. However, this might prevent IS development. According to the interviewees, people prefer face-to-face communication to a computer-based communication system. The same interviewee who used to work for a foreign company said that he often chose not to use the computer to communicate if he could talk to others face-to-face.

Many interviewees agreed that the organizational culture of the company was open and that the communication between people, especially with the top level, was good. For example, the assistant of the manager of the sub-company stated that:

“The leaders claim that they want us to keep communicating with them and provide valuable opinions and ideas for the companies. I think it is good for the company.”

The interviewee who used to work for a foreign company also pointed out that this friendly and open culture may contribute to the fact that people were less motivated in the case company compared with those who worked in the foreign company. He stated that:

“In a foreign company, you have to try your best to compete with others in order to survive. Such competitive culture makes the company more competitive in the market. In contrast, the working life in this company is easy and comfortable which may explain why employees are less motivated and inefficient the way in which they work.”

4.1.3 Organizational resource

Being partially owned by the government meant that the case company had inherent advantages which private companies did not have. For example, the case company was able to act upon the information that private companies did not have access and

gain competitive advantage as a result. The manager of the marketing department stated that:

“As a state-owned company, our company can potentially gain more information from the government. Moreover, we have better relationship with government compared with private companies. That means that we can receive important political information quicker, which is very essential to the company’s competition.”

The company also had an advantage over capital, in terms of being able to have access to bigger loans from the banks, as well as having its own land. The former is due to its state-owned status, as it guarantees the capacity to repay the loan and indicates low credit risk; and the latter is due to the fact that most land in China is owned by the government. In China organisations and individuals can only have leaseholds while the freehold is owned by the government. This system means that the case company had an inherent advantage of owning its own land resource (freehold) that the private companies do not have or have difficulties obtaining. As stated by the manager of the sub-company:

“Our company has its own lands which is very valuable to the business. In China, it is very difficult for businesses to have their own lands due to the national land policy. This is particularly true in the city like Shenzhen [where the case company is located]. This could be a significant advantage, since our main competitors need to rent our property. This gives us huge competitive advantage.”

An interviewee pointed out that the social resources and networks that the president of the company had, gave the company a competitive advantage too.

“The president of the company has a lot of social resource and “guanxi” that helped our business. This could be one of the most important reasons for the success of the company.”

The case company was aware of the inherent advantages that they had and recognised that their current success was largely due to these advantages.

4.1.4 IS infrastructure

There were 3 computer-based information systems in the company: office automation (OA) system, Jindie financial system, and an information system hosted in the parent group. An OA system was adopted in 2007 and used by all staff. The system had limited functionalities, such as email, document transfer, and some simple approval procedures (e.g. asking for taking leave). The Jindie financial system was used only by the financial department. All 3 interviewees from the financial department claimed that the financial system was good and they could not work without the system. The information system hosted in the parent group was an integrated system that had many features. For example, it contained a knowledge sharing system, a human resource management system, and business operational systems. However, the use of this system was low in the case company, partly because the parent group imposed restrictions on the access, partly because of users' resistance. The secretary of the president stated that

“The knowledge sharing system in the parent group was very helpful for my job, but only the leaders in this company have the authority to use it. I can only access to the system by using president's account and password. I think it is better to allow more people to use the knowledge sharing system.”

The manager of the investment department who used to work in the operations department also claimed that:

“When I was in the operation department, I asked to access the parent group's business operation system. However, we could not use most of its functionality, as it was developed for the parent group, and the parent group did not want to share their information with us. However the parent group expected us to use the system to key in the data for them. That made us refusing to use it.”

The computer-based systems within the case company were outdated, compared to their competitors. An IT staff member pointed out:

“The OA system was adopted in 2007, and it was the first system used in our company. At that time, the company had no project and only had a warehouse to

rent. Besides, there were much less staff compared to now. The system fitted the company very well at that time. But, there are 2 or 3 projects which are developing now, and the OA system is still almost the same as the one we used in 2007.”

From this quote, it is clear that the system was adopted in 2007 and the IT staff were happy with it, since the company was small. It seems that the company did not need a strong system to operate and manage in 2007. However, the company had developed rapidly in the previously 3 years, since they had a new president who was very ambitious. This led to the fact that the IS could not catch up with the development of the company.

“Compared with our sister companies [other sub-companies which are at the same level as the case company in the group] and other real estate companies, we are far behind in terms of IS development. According to the scale of our company we should have better information systems. The systems that we have only have financial, document, human resource and communication functionality. What we need is an information system that covers all business operations in the company” (The director of general office).

The manager of the risk management department reinforced the view and said that “the foreign company that I worked at before had a powerful system because almost all your work tasks are supported and can be done by the system. In this company, I use only OA system for email and document sending.”

The hardware and the network resources is another important issues in IS infrastructure. The hardware of the case company was generally acceptable, according to the users. According to the IT staff, the company had its own server, and there was no problem with the server so far. The company still used a Win XP system at the time the interview took place. The main reason for not upgrading to a more current version of Windows operational system was the lack of budget. An IT staff member claimed that they would only replace the computers or operations system when they cannot be repaired, since they did not have much budget. Some interviewees, such as the manager of planning department and a staff member of the financial department complained that the computers they used were slow and

they would like more memory space to store their documents. Other interviewees, however, were satisfied with what they had.

Besides, the computer network appeared to meet the basic requirements of file sharing and information transference. The company had Internet access, which allowed the employees to connect to external networks in the office and access to the systems via internet and use the system to communicate with others when they are not in the office. The network was also secured by Firewall and security software.

In addition, users and IT staff were regarded as a part of the company's IS infrastructure. Users and IT staff's IT skills and knowledge affected the value of IS and IS capability. Some interviewees believed that most system users in the company lacked computer knowledge and skills to effectively use a well-functional information system. Also, most interviewees agreed that the IT staff were one of the weakest part of the IS infrastructure, as only 3 people were working in the IT department and none had enough professional knowledge of IT or MIS.

4.2 External environment

External environments can influence the business as well as the strategic alignment. In this section the influence of external environments on business and IS (both strategically and use) will be discussed separately.

4.2.1 External environmental factors for business

According to most interviewees, the business strategy and operation were subject to the external influences. Political and economic factors are the two external environmental ones which affected the business most in this case study. Also, technology had impacts on their business.

4.2.1.1 Political environment

The political environment has significant effects on business operations in China, being a context within which policy makers draft and implement the policies as the Chinese economy and businesses are heavily regulated by central as well as by local government, changes in political environment, and hence policies which would have direct impact on businesses. Changes in policies are also the results of economic development in the country. The Chinese government constantly adjusts its policies and regulations in order to ensure its economic development. The case study company might feel the direct impact of policy changes most, being a state owned company. The secretary who was in charge of drafting the strategy stated that:

“The property development industry is tightly connected with the government policy, which can have huge impact on our strategy formulation. Therefore, government policy is a significant part which needs to be analysed and researched well in the strategy.”

It is reported in their annual report that the government introduced a positive policy in 2008 that treated the logistic industry as the national strategic industry. In 2010, a set of preferential policies was published for the industry which meant that the company could benefit from the preferential policies. On the other hand, since the government also tried to suppress and control the overheated property market in the past few years the company also faced the possibility of being affected by suppression. Nevertheless, thus far government’s suppressing and controlling policies seemed to focus on the residential properties mainly, rather than on commercial properties.

Government policy influenced the company differently in different departments as well. For instance, the HR Department was affected by policies such as the minimum wage, maximum working-hours, and holiday policy, while the Financial Department was influenced by policies such as monetary and tax policy.

External bureaucracy that is imposed on company’s business operation is considered to be significant. External bureaucracy here refers to a system for controlling or

managing a country which is operated by a large number of officials employed to follow rules carefully (Niskanen, 1974). Many interviewees claimed that they needed to deal with and satisfy the requests of many and different government agencies all the time. The manager of the risk management department stated that:

“There are many supervisions and auditing in the company not only from the parent group, but also from the government agencies... For example, we need to report to the construction department of the municipal government for all of our projects. The procedure of these auditing and supervisions is bureaucratic.”

One interviewee also mentioned that the diplomacy of the country also affected the company. He claimed that, because of the tension between China and Japan, many Japanese companies who had business relationships with the company withdrew their investment in China, which might significantly affect their plans and the strategy.

4.2.1.2 Economic environment

Ward and Peppard (2002) assert that economic environments can impact on strategic planning in terms of economic resources, levels of income, and distribution of income and wealth. In this case, most of the managers and the leaders agreed that the national economic situation was particularly essential to the company and its strategy. The secretary of the president confirmed that there was a chapter in the strategy that was dedicated to the analysis of the economic environment. The manager of a sub-company also stated that:

“The trend and the circumstance of the national economy, including the specific region economy where we are, have huge impact on our strategy formulation. Therefore, when we formulate the strategy, we will analyse how the economy of our country develop. It is very important to match your strategy with the economic environments.”

China was still developing very quickly (approximately 7.5% GDP increase per year at the time of writing), even when the whole world's economic situation was not very optimistic. According to the website of the State Information Centre of China (www.realestate.cei.gov.cn), the amount of investment in commercial real estate in China increased rapidly till 2012. In the next two years the investment slowed down and even started to decrease in some cities. The director of general office claimed that:

“We were quite worried about whether our strategy is too optimistic, since the industry is facing a bottleneck of development.”

The economic environment is constantly changing and the changes cannot always be foreseen, especially in a developing country like China. The director of the general office suggested that:

“We cannot predict what will happen in the next 10 years, as the environment is hugely uncertain and changes so fast. We can only predict and plan for the next 3 or 5 years. In order to adapt to the rapidly changing environment and face the market in the future we established a group responsible for strategy amendment.”

In China, the economic environments just change rapidly and unpredictably. This leads to the fact that Chinese companies have to change their business strategy constantly in order to adapt the environments. IS, accordingly, has to change, in order to align with the changing business strategy. The problem is that it is expensive to change IS constantly.

The interviewees frequently mentioned market and competitor two factors during the interviews and stressed that they affected the company in many ways. The following section examines these two factors respectively.

A. Market factors

The market trend in the commercial property sector was considered to be significant by many, in the sense of the company's strategic planning. For example, the general office director claimed that:

“The prediction of market trend is essential to the strategy planning. We predicted the market optimistically in our strategy. If the market changes to be depressed, it will negatively affect the industry. As a result, the strategy we formulated will be significantly influenced.”

The market in commercial property in China was analysed in the strategic planning report 2014 of the company. The growth rate of the gross of the industry is similar to the GDP increasing speed of China from 2002 to 2012. However, due to government policy and the global economic conditions, the development of the industry was affected, and slowed down in the previous two years. Nevertheless, the company was optimistic about the future, because they had found potential business opportunities in some specific markets in China (e.g. antique market in Chengdu). Besides, an in-depth research report on the Chinese commercial logistics property sector and investment strategy for 2013-2017 by the Qianzhan Institution suggests that the sector will benefit from the increasing domestic demand in China and will have great development potential. The report recommended businesses invest in the sector.

A number of interviewees claimed that market uncertainty would lead to anxiety, which in turn may affect the company's strategy and performance, such as the general office director, who said:

“The uncertainty of the market or the depression of the market could lead to anxiety that might affect the strategic planning”

Also, the interviewees suggested that the case company focused on a specialized market (e.g. Commercial real estate of logistics zone, home building materials, vehicles). This could also affect strategy formulation (both business and IS). In particular, the manager of project management department stressed that:

“Our company is not a traditional business company. Unlike manufacturing companies, we focus on commercial real estate. We focus on specialized market. For example, we have logistics zone, home building materials mall, vehicles commercial centre. So when we are formulating strategy, we have to consider that. Our industry and the specialized market are more likely to be less relying on IS and IT than the normal business company like manufacturing companies or IT companies.”

The home building materials and furniture industry and the vehicles industry were the main markets that the company concerned. According to the company’s strategic planning report 2014, the specialized markets they focused on were growing between 2007 and 2012. The gross amount of value of home building materials and the furniture industry had a 166% increase from 210.6 billion RMB in 2007 to 560 billion RMB in 2012 in China. But in the most recent two years, the growth slowed obviously. On the other hand, the gross of vehicles industry had more rapid growth in this period (about 218% increase from 2081.2 billion RMB in 2007 to 6610.7 billion RMB in 2012).

Besides, consumer resource is also an analysing target for the strategy, as exemplified by deputy general manager of the company:

“Another factor is the recipient of your service, the consumers. That is to say, if you want to implement your strategy successfully, you will need to understand your target, which means your clients. You will need enough consumer resource to entry a new market. In other words, you need to research the potential consumer resources. This is extremely vital to the implementation of the strategy.”

In addition, the relevant industries, including suppliers and buyers, need to be considered. For instance, the manager of a sub-company stated that:

“We rent this vehicle commercial centre to the car dealers. If the market of car is depressed for some reasons like vehicle license plate restriction, the car dealers may no longer gain profits. This can lead to the some of the car dealers terminating the contract with us. As a result, we lose the rent. Therefore, it is also essential to consider our buyer’s market when planning strategy.”

B. Competitors

Although the company has inherent competitive advantages, they still need to consider who their competitors are when making a strategic plan. The president of the company believed that:

“In any industry, the competitor is one of the most important issues that need to be concerned in the strategy. The best situation is that you do not have any competitor, but this is impossible nowadays. Therefore, you need to find out your own advantage. This is extremely vital for implementing the strategy.”

The weakness of the competitors was another issue that the company needed to think about. The president of the company stated that:

“When you choose your industry and markets where you want to entry, you need to look at the potential competitors’ weakness. When you planned to entry the market, the weakness and less amount of the potential competitors can help you to success more easily.”

4.2.1.3 Technology

When a new technology emerges in an industry, it can be seen as a possibility for revolution, since all the new technologies can potentially change the industry dramatically. More specifically, IT has significantly changed the management and the way people doing their business. In this company, some interviewees did mention the new technology affecting their business and work. For instance, the manager of cost management department claimed that:

“I don’t know if you have heart about the constructive model. It is normally made of iron or wood. However, when the technology of using aluminium to build the model has been introduced, we all applied the new model, because it is much more

beautiful than the traditional one. Even it has its own disadvantage: it is harder to modify the aluminium model.”

The manager of the planning department, who was mainly in charge of layout design, claimed that the emergence of the smart phone and tablet changed his way of working. He used to have to work with computers. With the new technology, he could work with his smart phone anywhere and anytime. The appearance of powerful layout design software could also change the way they work significantly as well.

However, some interviewees claimed that the company did not rely on the new technology, as the industry determined the way they did their own business, and in the real estate industry, technology and IT is not that important compared to the other industries.

4.2.2 External environmental factors for IS

The previous section discussed the external environment factors affecting business. As we focus on strategy alignment, this section presents the external environment factors affecting IS in the company.

Most of the interviewees agreed that the IS of the company was not good and the company was trying to develop IS. Many interviewees only used the office automatic system for their works. Most asserted that the office assistance system was not affected much by the external environment in terms of use. However, the users of the financial system and the business operation system from the parent group claimed that such systems were affected by environmental changes. A financial accountant of the company stated that:

“When the government changes the policy, or the banks change their loan rate, the formula to calculate in the financial systems needs to be changed as well. If they change too frequently, it is difficult and annoying for us to change the systems.”

These changes did directly affect the IS use, but only slightly. Changes as such, however, do not have impact on IS strategy.

The price of IT equipment impacted on the quality and value of IS. The IT staff of the company suggested that:

“One of my responsibilities is to purchase IT equipment of the company such as computers, hardware, printers and so on. The cost of the IT equipment is considered for sure. If it is too expensive, we may give up the idea of buying it. This could affect the quality of the IS as well.”

The IT staff explained that the current situation was that the IS was expensive and IS development probably needed new IT equipment (e.g. new server). Since the company seemed to regard IS not as its priority, they preferred to spend the money on business expansion. However, if the price of IT equipment decreased, the company may consider upgrading the IS.

Also, if the competitors had huge business advantages because of use of IS, the company would consider following their competitors. The manager of the operations management department stated that:

“Sometimes, the competitors might adopt some kind of systems that lead to huge advantages, and then you have to follow them to adopt the same systems or similar one in order to survive in the sector.”

This was a common tactic. However, although many competitors had better systems, they did not gain huge competitive advantages over the case company because of such improved systems. This might result in the top management perceiving that the IS was not that important for the company.

Some employees of the company not only used internal information systems but also external systems, such as government systems. In most cases, different systems have different ways to present and record information. As a result, the external systems, which the company must use, but has no control over can affect the users’

needs for the new systems. The manager of the planning and engineering department claimed that:

“The construction department of the government has a system that needs us to provide information and data for the government to run statistical analysis. We also need to provide such information and data to our parent group. However, the government and the parent group have different requests and forms for that. This gives rise to the duplication of work. I was wondering if they could integrate the systems (the company’s system and the government’s system) together.”

The company needed to change its own IS to fit such external systems (government’s systems and parent group’s systems). For example, if the parent group changes its system into another brand system, then the company may need to change its systems to the same brand as well, in order to avoid incompatibility problems.

Younger interviewees of the case tend to agree that IS needs to be significantly developed. They believed in the importance of information in today’s business. A financial department staff stated that:

“Today is ‘information era’ that we should swim with the tide of information era.”

There is no doubt that the information era brings about a better way for companies to do their business. It might also affect the perception of IS/IT. The question is, which one is the best for the company, and how to develop it to fit the company’s needs.

4.3 Dynamic strategic alignment

Besides the internal environments and external environments, there are other factors affecting dynamic strategic alignment. In this section, the organizational agility and IT flexibility, as dynamic strategic alignment factors, are presented. According to the framework we developed in Chapter 3, there are 3 levels of dynamic strategic alignment process, and analysis of these levels of alignment in the

case company is presented. Finally, the dynamic strategic alignment process of the case company is explored.

4.3.1 Organizational agility

Organizational agility can be an essential factor affecting dynamic strategic alignment, according to the literature review (i.e. Tallon & Pinsonneault, 2011). According to the interviewees, the organizational agility was not bad, due to the frequent market research carried out, regular meetings, accessing relevant information from the government in advance, and the capability of the leaders. The president claimed that the company was able to detect environmental changes and potential business opportunities, and they had done quite well in the previous few years. The main reason for this is that they spend plenty of energy and time on market research, which helped them to predict the market trends and discover the potential new markets. The deputy general manager of the company reinforced the idea that the company held a large number of meetings to discuss environmental changes and the corresponding countermeasures. This shows that the company paid a lot of attention to changing environments and attempted to respond to such changes effectively in time.

The secretary of the president claimed that whether the decision makers are sensitive to the market and market changes makes a difference to organisational agility. He stated that “even when you have enough information, you still need analysis skills and techniques to analyse and judge the information. Our president has very strong sense of “smell” of the market.” All these help to enhance the organisational agility of the company.

However, the manager of the sub-company considered that organizational agility was affected by the number of decision makers. He pointed out that:

“Compared with normal private-owned enterprises which only has one or two decision makers, our company has a number of leaders (the operation team) who have decision-making power. Normally, they have to discuss every decision in

meetings. Only after the meetings of discussion, approvals of the decisions can be made. And such meetings tend to take several times to make the final decisions. That might slow down the company's reaction to the environmental changes."

4.3.2 IT flexibility

IT flexibility is a company's capability to respond to various IT demands from a dynamic competitive environment (Tian et al., 2010). It can be constituted by the adaptability and scalability of IT hardware, software, networks, the human component, and other elements of the existing IT infrastructure. IT flexibility tends to help companies survive in rapidly changing environments. According to the interview data, the case company had poor IT flexibility, particularly in the human components of IT infrastructure. Most interviewees agreed that the most urgent problem of IT flexibility was a lack of IS professionals. The manager of the HR department claimed that:

"As far as I am concerned, IT flexibility is very essential. The most important thing for our company right now is to recruit an IS manager, as we do not have any IS professionals."

Some interviewees mentioned that the systems should be able to be upgraded and integrated within the parent group's systems. IT staff pointed out that:

"When we choose systems, we have to consider whether it can be upgraded and expanded. What's more, we have to select the Jindie (brand) systems as the parent company requires us to use the same brand as of their systems, so that they can be integrated easily in the future."

Furthermore, as pointed out in Section 4.3.1, both political and economic environments are unpredictable, so that the company needs a more flexible system that can be adapted easily, according to environmental changes. But the company was weak in IT flexibility. Some asserted that there could be more flexibility for the company to adopt new systems or replace the existing ones with a more well-

developed system. The manager of a sub-company who had worked in the IS group before the transfer stated that:

“It is not a bad thing to have an undeveloped IS, because at least we can easily abandon the old system that is worth little and adopt a new one. It would be a hard decision to be made if you had an expensive system that is not fit for its job, because you cannot just abandon it.”

4.3.3 Three levels of strategic alignment

According to the framework we developed in Chapter 3, there are three levels of strategic alignment, which are the strategic level, the organisational/operational level, and the individual level. The following parts present the situation of strategic alignment in the case company at these three levels.

4.3.3.1 Strategic level of alignment

In this research, we explore the strategic alignment in a holistic way (multilevel co-evolutionary perspective) (Benbya and McKelvey, 2006). Strategic level, organisational/operational level, and individual levels of strategic alignment are presented and explored respectively. This part examines and analyses the strategic level of alignment.

Since the new president arrived, the case company had been trying to expand and develop its own business. It is clear that they changed their conservative business strategy into an ambitious one. These changes tended to affect the IS dramatically. The case company had been developing and expanding at an incredible speed in the previous 3 years. These changes also affected the needs of IS and strategic alignment at the strategic level. The manager of the operations department stated that:

“As our company is developing very fast recently, the OA system is not enough for our works, especially when we have more and more sub-companies. We definitely

need a new business system for managing the sub-companies. When the Shenyang projects begin in the next year, we will not be able to do our works without a new business system.”

According to the annual company report of 2013 and the strategic plan for 2014, there was a significant increase (42%) of revenue in 2013. There were also 5 projects in process in different cities, including Chengdu and Shenyang. It is clear that the company was developing and expanding in an incredible speed. The IT staff of the company reinforced this:

“We are doing our sale manually, I mean using excel, when most competitors have their own sale systems. It is OK for that, as the amount is not that big. However the growing number of projects which are being developed means that more and more sale work needs to be done. We urgently need a sale system for the future, as we need time build up and adapt such system.”

The quotes and reports show the company’s expansion and how the business changes affected IS needs. However, the systems were not changed or upgraded much to align with the business development. This suggests that that the alignment situation changed from aligned to misaligned at the individual level, where the system would soon no longer be able to support individual work.

Before the president arrived, the case company had a conservative business strategy. The previous leaders did not make any ambitious moves, just renting out their property without planning for the future or seeking potential opportunities. The current president claimed that the first thing he did when he took over was to formulate a strategy. He established a strategy planning group to formulate and implement the strategy. As mentioned by the general office director of the company:

“We have a special group named strategic planning group. The group leader is the president of the company, and the assistant leader is the general manager of the company. The group members are the leaders and managers of each department. This group also has a specific staff for specific works. For example, the group has a

strategy managing commissioner who is responsible for connecting between the groups and departments and sub-companies...”

In most companies, strategy is formulated by top management. This case company also had a high-level group which was responsible for strategy formulation. According to the quote, the strategic planning group also had decent communication with departments and sub-companies. This is to say the company had considered the link between strategic and operational levels. However, they did not consider the link to the individual level sufficiently. Hence, the needs and opinions of staff were not accounted for much in the strategy formulation. That could be one of the reasons for misalignment at the individual level and the barriers to strategy implementation which emerged.

The president pointed out that how they formulated the intended strategy:

“First of all, we analyse our company’s capability by using analysis approaches like five forces model and SWOT analysis approach. After we fully analyse our own advantages and disadvantages, we will analyse the environmental issues such as resources, policy and so on. And then, we decide the direction of our development. When we finish the draft of strategy, it will be discussed in meetings. The middle level managers will report it to us after the meetings, and the leaders group will discuss and confirm it. At last, the strategy will be approved by the meeting of board.”

This quote also determines that the strategy formulation lacked the opinions of bottom level employees. Moreover, there were many kinds of meetings for strategy formulation, which shows the bureaucracy of the strategy formulation processes. This could, to some extent, have affected the speed of strategy formulation. When the situation changes quickly, this can become a problem. In spite of this, according to the director of general office, the strategy formulation was quite decent, as it had been considered comprehensively.

The fact is that the strategy, in term of this business, succeeded. The annual reports illustrate that the business strategy was fulfilled very well. Also, the strategy was also amended in the preceding three years. For instance, the target markets expanded

from the local market to other places (Chengdu and Shenyang). However, IS strategy was not that successful in this company.

In their strategy, the IS was treated as a tool to support the business. For example, the general office director claimed that:

“As far as I concerned, the request of IS in our company is not that urgent, as it is just an assistant tool for internal control. In another words, it is not necessary for us to develop IS immediately. Instead we need to focus on the business strategy and amend it first...”

Indeed, the strategic plan for 2014 only had a limited length for the IS strategy. Only seeing IS playing a supporting role for business led to ignorance regarding the importance of IS strategy in business. More specifically, the manager of operations department suggested that IS could be the tool to operate the business. He stated that:

“If we adopt a new business operation system, it will be very helpful for us to do our daily works such as renting, sales, stores, customer services and so on. The bad news is that we don’t have it yet, and I wish we can have it as soon as possible.”

The IS needs of the operations department were not reflected in the company’s 2014 strategic plan. This is to say, the IS strategy of the company did not consider the business needs for IS needs. Although the strategic planning group might not have considered information systems and the strategy to be critical to their business operation, most middle level and more junior employees found using information systems enhanced their productivity and indeed some could not work without the systems. The manager of the cost management department reinforced this:

“Systems can enhance the efficiency of our works. They can also reduce the mistakes we might make, if it has checking functions...”

A financial staff member stated that:

“The financial system is very vital to my job. I can’t even work without it. It is so effective and efficient.”

All three financial staff members who were interviewed agreed that the financial system they were using was very good and helped their work significantly. Nevertheless, one can argue that most financial systems and software packages are very standard and well developed so that it is not surprising that the staff in the finance department found the system met their needs.

Besides, it is clear from the interviews that IS was also intended to provide accurate information to support decision making. For example, the secretary of president claimed that information from the knowledge sharing system of the parent company could help the president to make more appropriate decisions.

The president of the company also asserted that the IS could be designed as the tool to operate business strategy:

“IS can be seen as a method to implement business strategy”: this is to say that the strategy is very wide and rich in content. If we do not have IS as a tool to help implementing strategy including strategy amendment, the information will be inaccurate and delayed which could lead to failed decision making. Therefore, if we have a better IS, it can provide timely and accurate information to the decision makers. This is extremely significant for strategic planning and amendment. That’s why IS should be indispensable tool for organizational management.”

However, the fact is that the existing IS did not reach the criteria of most intended plans and still only had a very basic function that could not fully support the implementation of business strategy. The strategy mainly was implemented without helps and support from IS. There could be many reasons for this, as discussed in the following chapter.

IS strategy aligning with business strategy

According to Chan & Reich, 2007, strategic alignment refers to the degree to which IS strategy connects with business strategy. The president of the company suggested

that IS strategy was a part of business strategy, so that he drafted the IS strategy within the business strategy, as a chapter:

“The IS strategy is a part of business strategy. Business strategy is the core part of the management of the whole company. To manage and implement the business strategy, we need a standardized way in which should be the MIS. Through the IS strategy and IS, we can implement our strategy efficiently and effectively.”

The director of the general office also supported this point of view:

“The systems should be planned to support the (business) strategy and the management. IS should be a supporting management tool. What we focus on is the specific assignments and the implementation and achievement of our strategy.”

In their 2014 strategic plan IS development was planned in the internal management section within the strategy. They also concentrated on the development of many management level systems and some operational level systems without a strategic level system. For example, they planned to adopt a customer information system, a project management system, a sales and marketing management system and a cost control system.

IS strategy aligning with business structure (processes)

In Henderson and Venkatraman’s (1993) strategic alignment model, the IS strategy aligns with the organisational infrastructure and processes. In this case, some interviewees claimed that the business value chain of the company was stable relatively, so that the IS should not have been affected by the environmental changes much. This was highlighted by the manager of the project management department:

“In this industry, the business value chain is static, which means the business processes do not frequently change. Therefore, when we had a good system, it should be stable without too many changes and influences from the environments.”

The problem is that it is difficult for the company to develop a perfect system for the business process. The president mentioned that one of barriers to developing IS was that it was very hard to design an IS to completely fit the business structure of the company. The business structure here could refer to the business processes. The president also claimed that they attempted to standardise the business processes and their management processes via the IS and IT. Also, the 2013-16 strategic plan shows that the IS aims to improve the standardised level of project development, planning, cost control, operation management, sales management processes and mechanism. This is to say that the IS strategy aimed to align with the business structure. However, the fact is that the IS strategy failed in implementation.

4.3.3.2 Organisational level of alignment

The organisational level aligns the IT and business departments by communication and information sharing (Benbya & McKelvey, 2006). In the case company, most interviewees were happy with the communication between the IS/IT department and the business departments. The IT staff of the company stated that:

“The employees from each department will report their needs regarding IS and IT to us. They will also ask for help when they have technical problems.”

However, a small number of interviewees held different opinions, as stated by the manager of the cost management department:

“I think we have some problems with the communication between departments. This could be caused by the knowledge difference. For example, the IS staff may not understand what we truly need, as he has no specialized knowledge of cost management.”

Overall, most interviewees were happy with the communication between the IS and business departments. It is difficult for IS/IT staff to acquire all knowledge, even if there was a perfect knowledge sharing system. To express the user’s needs clearly seems to be more important.

Information sharing is another essential issue that should be highlighted. More information sharing can not only help the management of the business, but also improve internal control and decision making as well. This was pointed out by the manager of the investment and development department:

“The information sharing is not enough I think. When I need the information about the market, I need to ask many people to provide me with what I need. If we can easily get information from different departments I definitely can do my job much better.”

The 2013 annual report also showed that the company failed to establish a database in the OA system that enabled information about financial, official files, human resource, investment, project management, cost control, sales and marketing, risk management, and customer management to be shared within the company. On the other hand, the secretary of president mentioned that there was a knowledge sharing system from the parent group’s system, but only the operations team of the company could access it, meaning that departments could not share their information and knowledge through it. Instead, they gained information via paperwork, which takes more time, and tends to be more inconvenient.

Many interviewees asserted that information sharing would have been better if the company had a better IS. It appears that better strategic alignment and information sharing leads to better IS.

In addition, some interviewees, such as the manager of the cost management department, strongly wished to have an integrated system in the company, which could enhance both communication and information sharing. The president also suggested that the company needed an “all-in-one” system which should contain management, decision support and operations. Such systems contain different functional areas and focus on management level and operational level systems. For example, the sales department strongly needed an order processing system to deal with the upcoming sale for the new estate. Other departments, such as cost management, operations and finance, might need information from sales. If the company had an integrated system for departments to share information, the

organisational level alignment would be easier to achieve. Moreover, an integrated system can also help the company to develop a comprehensive strategic level system for the leaders to consolidate data.

The needs of each department for IS were different. The sales department wanted a customer information system and an order processing system. These systems not only would help their sales work, but would also be likely to improve customer service and price fixing. The operations management department strongly needed a management information system that could consolidate data and information from different departments. The manager of investment and development department suggested that the existing OA system should be upgraded in order to encourage people to work via IS. The risk management department did not have pressing needs on IS. The manager just suggested adding some functions regarding business processes to the existing OA system. The planning and designing department wanted a system that could approve and audit online, as the decision makers tended to be on business trips frequently. The human resource department were using the parent group's new HR system. The manager had some complaints about the system, as most functions needed permission to use, but they did not have the permission. All they could use were the personnel and payroll records. The cost management department needed functional systems that could enhance their daily work efficiency. The project management department wanted the existing system to provide more information, such as government policy changes. Finally, the finance department was generally happy with the existing systems. It is clear that departments focused more on operational level systems, and the company did not satisfy the need of departments for IS.

The importance of IS in the company can be shown in the size of the IS department and the IT/IS staff's participation in business meetings. In terms of size, there were only 3 people in the IS department (group), and the IT staff never participated in business meetings, though they did know of some aspects of the business in the company. Besides, it seems that the IS department did not do much in the company. For example, the cost control department developed and bought their own systems and software without help from the IS department. The fact is that the company

invested very limited resources in IS department in terms of the organisational size, perhaps due to the IS strategy role in the company. If the role of IS strategy changes, the role of the IS department is likely to change as well.

4.3.3.3 Individual level of alignment

As discussed before, the individual level focuses on the link between users' needs and the systems. This part presents an analysis of collected data about the individual level of alignment. In the interviews, many interviewees proposed their requests and needs for the IS, which were the functionality of IS, databases, teleworking, data and information storing, and specialized information. It is clear that most of the company's systems did not satisfy the employees' needs. The manager of the operations department claimed that:

“The systems we using are very poor. We need a more functional system to help our works. To be honest, the OA system we used is pretty worthless. It only has e-mail function and some simple approval process function, like asking for leave and claiming fee.”

This quote shows that the user was not satisfied and the IS did not meet the needs. Many interviewees also complained that the system was old and they wanted it to be upgraded. This resulted from the fact that the company did not align IS strategy with business strategy, and the operational level alignment was not that good. It is important for the company to pay attention to the significance of IS strategy.

However, some the interviewees were satisfied with the systems they were using. Most were junior staff and employees in the financial department. The financial system was highly appreciated by the users. For example, the manager of the financial department state that:

“The system is extremely helpful. Without it, I cannot work at all. The best thing is that I can use it when I am not in the office. That means I can bring my works home

to finish them, or you can still work when you are in a business trip. That is really nice for me.”

The financial system did meet the users’ needs. As regards the junior staff, they might not have known what they really needed, and the Chinese culture (power distance) might also result in them only doing what the managers asked of them without thinking what they might need for their work. For example, junior staff member in the financial department, who had only been with the company for half year, stated that he knew very little about the company, and just did what the manager told him to do.

Another thing highlighted in the interviews is the operability of IS. Almost all interviewees agreed that the systems must be easy to use. The president of the company pointed out that:

“The IS must be designed to be easy to use. If the IS has too much complex functionality, people will just reject to use it, especially the elder employees. Specialized systems involving specialized knowledge are used by the specific staff who might need to be trained a bit.”

The company had a number of elder employees who resisted using new technology. If the system had been made more user-friendly, such employees may have been willing to use it.

The role of IS from the interviewees’ perspectives was also important for alignment. Most interviewees treated IS as a tool to enhance their working efficiency. Only the president of the company treated it as a strategic level. The employees did not pay much attention to the development of IS and strategic alignment.

According to the manager of the project management department, besides the users’ needs, the users’ quality was also the key point of individual level of alignment. He stated that:

“The most important thing is not the IS. It is the quality and capability of the users. If all the employees of this company were very bad, no matter how good the IS is or

how the IS matches the business, the systems would be worthless, as the users could not use it properly. What we need is a number of persons of outstanding ability to lead the rest people to make use of the systems. Unfortunately we don't have IS professionals.”

The quality of IS users' can be enhanced by training. It was believed in this case that it was most important for the company to develop IS to meet users' needs.

4.3.3.4 Relationship between the three levels

From the interviews, the strategic level was clearly understood to be well-connected with the organizational level, as many managers of different departments suggested that they frequently contacted the leaders, and provided suggestions regarding IS to them. On the other hand, the junior staff tended to keep silent, even when they had opportunities and rights to provide their own thoughts, probably due to the national culture of China (power distance). As a result, the leaders might not have known the opinions and needs from the junior employees. Thus, the connection between organisational/operational and individual levels was affected, causing misalignment at the individual level.

4.3.4 Strategic alignment process

4.3.4.1 Intended strategic alignment

In the strategic planning report of 2013-2016, IS development was one of the important objectives. The company planned to establish an integrated system that included all areas of the company, such as finance, file management, human resources, investment, planning, project management, cost control and analysis, sales and marketing, and risk management. It was planned to start in 2013 and be built before 2014. The system would have involved daily and routine work, and periodic management, such as decision support. The director of the general office stated that:

“We are using a tandem type information system. This type of design could potentially lead to the information flows pausing due to one employee’s mistake. We have planned to build a system which is designed to connect more pieces together, according to the management structure of the company.”

It is clear that the company attempted to align their IS with their business. They were aware of the importance of IS and planned to build a suitable system for the business. They assumed the system was necessary and fit the company. However, when the researcher visited the company, no such intended integrated system was developed or established. The following section presents the challenges, unexpected changes and new opportunities within the process of implementation of intended strategic alignment.

4.3.4.2 Challenges, imposed changes and new opportunities

Challenges

When the company attempted to implement their IS strategy, they found that there were some unexpected challenges preventing the implementation, which gave rise to the misalignment between IS and business.

One of the challenges was technology and the design of IS, which needed to match the requirements of the business. However, it is not easy to purchase a suitable off-the-shelf system for a company. The president of the company stated that:

“The technology and design of the systems should be appropriate for our own needs. As a unique company, the systems must be customized. We cannot find an existing off-shelf package which fits our company well. Therefore, we definitely need a fully customized design system. However, to achieve this, we need technical supports, which we don’t have right now.”

This would have been a challenge, even if the company had a perfect alignment at strategic level. There was no suitable off-shelf package for the company on the market and it would cost too much for them to develop their own. The president

also mentioned that they did not have enough knowledge of IS and information management, as the existing IS personnel of the company were not professional enough. He had no one to consult for the design or development of IS. Therefore, it was very difficult for them to design and build a customized system. This is presented in detail below.

The second challenge was the lack of IS professionals. The president of the company highlighted that:

“One of the most important reasons for our poor IS is that the company cannot recruit IS managing professionals for the strategic alignment and strategic planning of IS, especially who has the knowledge of the real estate aspect. If we want to achieve strategic alignment and develop our IS, IS professionals are requested.”

A reason for the lack of IS professionals in the company could be the general attitudes towards IS there. For example the company did not treat IS and IS strategy as a success factor for business and therefore was less willing to invest in IS. Another challenge relevant to IS professionals is the security concerns among staff. The lack of IS knowledge from IS professionals led to the perception that “the Internet is dangerous” to the company. The manager of the sub-company asserted that the Internet was full of dangers. He believed if some hacker stole the president’s account name and passwords, the consequences would be serious. This security concern prevented the management from adopting the systems.

Although the company might have been aware of its lack of IS professionals, it was not easy for the company to recruit new staff, especially IS professionals. According to a HR staff:

“There are some rules and regulations for state owned enterprise to recruit employees. These rules and regulations restrict the recruitment of the company. What’s more, there are very limited IS professionals who has experience and has real estate knowledge. That’s why it is difficult to recruit IS professionals. In addition, our company has not a well-known reputation. I think we should develop our website to advertising ourselves for recruitment.”

From the quote we can see that there are three main points. The first one is that the company had restrictions on recruitment. The second is the specific IS professionals resource they needed (real estate knowledge or experience) was limited. Indeed, there are few IS management professionals in China. Most IS professionals join larger enterprises or IT companies. An article from www.cnii.com.cn (China information industry) published in 2011 claimed that, with the rapid development of IS and IT in China, the lack of IS personnel had emerged in most industries. The article recommended that organisations should establish a mechanism for training IS professionals.

The third issue raised above is that the company lacked attraction for recruitment. Indeed, all these are similar with the IS professionals challenge. The manager of human resource department claimed that if the company paid more attention and invested more, then the recruitment problem could be easily solved. The key was still the role of IS and IS strategy in the company, which were significantly affected by the perception of IS. It is clear from the interviews that most people in the company asserted that the IS was not that important, and most held an old school perspective on IS and IS strategy. It is apparent that people in the company perceived IS as no more than just a tool to support their work, instead of being considered at a more strategic level. For example, the general office director claimed that:

“It can be risky to invest too much in IS, as it is only an assistant method for management. Since it is only a tool to support our work, we should not invest too much resources and energy in it.”

The manager of project management reinforced this:

“In my opinion, the experience is more important than IS.”

23 of the 27 interviewees were not concerned about IS, as they focused more on their own duties and work. They did not see IS as a key factor to success in strategic level. They believed that there was not much value in spending too much on IS or IT. What is more, they considered that there were many things which might be more

essential than IS, such as 'experience' and 'business structure'. That means that they only considered IS as no more than a tool for their works.

Only the president of the company, among all the interviewees, considered IS at a strategic level, but he still appeared to pay insufficient attention to it. Some interviewees, such as the manager of the sales department, supposed that the leaders did not treat IS as an important issue, since they had asked for the systems they needed, but the leaders had declined the requests. Most interviewees tended to accept what the boss wanted them to do, instead of thinking about what they could do. Therefore, when the employees used a weak system, they might think IS was not that important. In the case company, IS seemed to be just a weak tool adopted by the leaders for the regular staff. The bad experience of using IS may have caused most employees to believe that IS was not particularly important.

Some interviewees, such as the manager of the risk management department, suggested that they did not need IS as much as other companies from different industries, such as the manufacturing industry, as the industry (real estate) of the company relied less on IT and had more static business processes.

The perception of IS led to not only not appreciating IS, but also user resistance. If the company does not treat IS as an important issue, the users probably will not use IS for some purposes. For instance, some elder leaders refused to use IS, because of the resistance to using new technology. This led to the fact that the staff needed to report something twice via the system as well as the paper documents. This also gives rise to resistance to using IS from staff members. Furthermore, the staff and IS users may not match the IS in terms of their skills and capability. This is to say, the systems were too difficult for some employees to use, which also produced resistance. For example, the staff of a sub-company claimed that a system used was bad at design, since there were too many buttons in the interface that he did not recognize. Also, the manager of the project management department asserted that the company had just begun to develop their own IS. This could be a factor of resistance to using IS, involving a lack experience of IS management, and the users may not adapt to the changes. Additionally, many interviewees complained about

the company IS or the systems of the parent company, since such systems did not match their needs or even just made their work complicated, particularly when they were required to input data. Therefore, a good design of the IS is essential. To satisfy the users' needs constantly can keep the strategic alignment at the individual level.

The next challenge could be resource management risk. IS development needs investment, which leads to resource management risks. It seems that IS could be a cost centre in the company. The general office director pointed out that:

“The company refuse to invest too much money, energy and time in IS, as it can be a risk. We try to invest and upgrade the systems every 3 years to reduce the risk.”

This means the company wanted to develop IS gradually, and not to invest too much resource in an unpredictable project which made no direct contribution to profit and may fail in the future. When a company invests, it wants the maximum value from the investment. The business of the case company developed rapidly. A growing number of sub-companies were owned by the company. This resulted in the potential change needs to be made in the management structure. The company was afraid of the waste of investment in IS, when it did not have a mature and formed management structure for the rapid business expansion. Moreover, there was no obvious intensive competition for the company. As a result, they did not need IS much as a competition advantage.

Also, the company's priority is not IS development, so they would not spend too much on it. The president of the company suggested that the budget for IS development was limited. The restriction was determined by the parent company and the state-owned Assets Supervision and Administration Commission. Therefore, they could not buy expensive systems. This was one of the main reasons why the company did not develop the IS. But they claimed that the budget would increase very soon, due to emergent needs. IS investment is always treated as a cost centre.

Furthermore, the slow return of investment of IS could be another reason that they thought IS investment could be a risk. Some interviewees, such as the general office director and the manager of the HR department, asserted that after the investment

of IS, it might need a long period for the new IS to show its effects. It is possible that when its effects appear, the system has already been out of date or misaligned with business, due to the rapidly changing environment. The leaders probably wanted more direct and rapid effects on investment, so that they did not spend much effort on IS and strategic alignment.

The next challenge identified in the analysis of the interviews is organizational change risk. People tended to be afraid of such changes. They thought change could risk the previous success of the company. This is similar to path dependency, which is identified in the literature review. As mentioned before, path dependency means that the set of decisions one faces for any given circumstance is limited by the decisions one has made in the past, even though past circumstances may no longer be relevant (Baker et al., 2011). For instance, the general office director stated that one of the challenges to strategic alignment was that the developments and changes of IS can change the old management mode which they were familiar with. Such changes might affect the management and performance of the company. It is clear that he was afraid of changing the organization, which might have affected past success, without considering that the environment had completely changed.

In summary, most challenges were probably caused by the poor role of IS and IS strategy in the company. If the company had realized the significance of IS and let IS strategy play a more important role, many challenges could have been overcome.

Unexpected changes

Unexpected changes also affected the intended strategic alignment. As we mentioned before, the company was experiencing dramatic changes within the company. The first one is changes of personnel. Besides the president, the director of the general office, who was in charge of IS, was new to the company as well. The IT staff stated that:

“The director of general office just took his post for a short time. Compared with his predecessor, he arranged fewer discussion meetings for IS department.”

This might affect the strategic alignment processes significantly. It seems that the new director was less concerned about IS and IS development. Moreover, the IT staff also claimed that a member of IS personnel transferred to the sub-company recently, although he was not very professional in IS issues. This gives rise to more serious problems regarding the lack of IS personnel. Such changes of personnel could, to some extent, negatively impact the strategic alignment process.

The president also claimed that the resources could be a significant factor affecting strategic alignment. As the core competitive advantage of the company identified by the president was resources, changes in resources could be essential. He also pointed out that the management mode was one of their most important resources, which had developed well in the recent years.

Besides the internal changes, some external changes also affected the strategic alignment process. For example, the parent group had begun to expand its own IS to the company since 2013. That means the company had to use the parent group's system, and the intended system that they wanted to build had to be able to integrate with the parent group's system. The IT staff stated that:

“The system we used is provided by a small company. The compatibility of the system is not that good. The parent group now provides its own system to us, and our own system must be able to share information with the parent group's one. Therefore, we have to change the IS provider to the one the parent group used in the future which is much more expensive.”

The parent group's decision significantly impacted on the intended strategic alignment. The functions of the parent group's system were very limited for the company due to the authority, they mainly just input information. Furthermore, it enhanced the cost for the company to build their own IS, and restricted the design as well.

Also, the new government policy affected the strategic alignment process of the company. According to their strategic report for 2014, it can be seen that they had been aware that one of the government's new policy was information construction,

which meant the government would support the IS development of the company. This made the company pay more attention on and make more efforts in IS development. In addition, the president suggested that the government's latest 5 years plan supported the industry (commercial real estate), so the company had expanded at an incredible speed. The rapid development of business with barely developed IS led to misalignment.

The rapid development of the economy in China also helped the company in its business, but very little in IS development. The cost of IS was still very high. The company spent more resources on business rather than on IS development. Besides, the company had no threatening competitors, so they did not think they strongly needed a better IS to gain competitive advantages.

New opportunities

The business opportunities also affected the intended strategic alignment. The president claimed that, in the previous two years, they had done some research and found that there were opportunities to enter some new markets which had very limited competitors, or the competitors were weak. Therefore, they decided to expand their business by purchasing companies within such markets. By May of 2014, there were a total five sub-companies under the case company, and there would be more in the future. What's more, in order to manage the sub-companies, a growing number of employees were recruited. This gave rise to strong needs for management systems, such as a new HR system. However, the intended IS strategy did not predict this rapid expansion, so that there was no plan to build up data connection with the sub-companies and deal with the increasing number of employees. The manager of one sub-company claimed that:

"They (the case company) just asked us for information and data, and we send them by email or other software like QQ. We have our own system and I would like our system connect with the OA system, so that they can check the information and data on the system."

This also produced organisational level issues of strategic alignment. The manager of human resource department complained that their work was harder when the number of sub-companies increased, as they had an increasingly large number of new employees to deal with, and the data were not systemic, and not easy to retrieve. The intended IS strategy did not consider these opportunities and changes. Most sub-companies were bought out by the company, and they had their own systems. There was no collection between the systems. The company had to consider whether to integrate all the systems of sub-companies with its own one, or just build unitive system which can support the business of all sub-companies, when the company has more and more sub-companies. Otherwise the company could have massive management issues.

All these influenced the intended strategic alignment and the implementation of IS strategy. As a result, the integrated system they planned to build was abandoned. That means the IS strategy failed, which produced some negative impacts (misalignment) on the company, as described below.

4.3.4.3 Unrealised strategic alignment

The intended strategic alignment failed due to the challenges, unexpected changes and new opportunities presented above. As a result, the company was still using their old system that could not match the current environment, business operation and management. Therefore, a number of misalignments in the case company emerged. One of the biggest issues was misalignment at the operational level. The expansion of company brought about increasing assignments, giving rise to growing operational needs of IS. For example, many interviewees claimed that the existing systems lacked functions. Most suggested that the IS should have an independent plate for their own departments. These plates should have specialized aspects for their work. Also, they wanted a new system to be adopted as soon as possible, as they needed it to deal with the increasing amount of work. Some departments desperately needed a functional system for their work. For instance, the sale department wanted an order processing system to deal with the upcoming sale of

the completed real estate projects. However, since the company failed to build the intended integrated system they planned, such departments did not gain what they needed.

The operational level of alignment was not achieved, and the users' needs were not satisfied, to a degree. For example, three interviewees (the manager of risk department, a staff of finance department and the manager of cost control department) wanted the OA system to have more memory space for storing the documents and files.

Also, 7 interviewees complained about the parent company's systems. The parent company demanded the case company use the new systems in the last year, which was unexpected when formulating IS strategy. The users in the case company needed to input the data to such systems, but they could not gain any information, due to the authority (only for the managers of the parent company). Furthermore, the systems seemed to be useless, as people from the parent company did not use it. As a result, they had to report the same information that had been input in the system to the parent company in another ways (e.g. excel printed paper or email).

In addition, the manager of the risk management department asserted that some systems might have too much information, which was useless, leading to information excess. This could give rise to burdens for IS users. It was better to only input the critical data and information into the systems, which could also reduce the workload of the users. It is clear that the parent company's systems did not align with the management policy. This shows the lack of integration between the case company's system and the parent company's systems. Maybe if they has successfully built the intended integrated system, there might have been fewer problems. Since it would be easy for the parent company to gain information from the intended integrated system, and even connect the two systems. Therefore, there was management level misalignment, which should have been given more attention from decision makers.

4.3.4.4 Amendment

When environments change, the intended strategic alignment might not be able to be implemented or realized as planned. Therefore, the strategy needs to be amended constantly to maintain the strategic alignment. Johnson and Scholes (2002) call this amendment “emergent strategy”. As stated by the assistant general manager of the company:

“When the environments changes, we will review the strategy to see if it is appropriate for the new circumstance. Every month, we have a general meeting to discuss the strategy amendment. Every year, around October, we have a specific meeting for strategy amendment and summation.”

It is clear from the interviews that most strategy amendment contained very limited IS strategy amendment, probably due to the role of IS strategy in the company. Nevertheless, they did make some amendments to the IS strategy. The director of general office stated that:

“Some managers have suggested the company to adopt some functional IS in the meetings. These systems have been examined and investigated to see if it is necessary by leaders... Such systems were also planned to establish in our strategy. However, there are some problems with the implementation such as budget and lack of IS professionals... Personally, I think our company does not mightily need IS for management level... In the last strategy amendment meeting, we have decided to build some emergent functional systems before 2014 for the business such as sales system and business operation system.”

The company failed to establish an integrated system, so that they attempted to adopt some operational level systems to deal with the emergent needs of the business. They temporarily gave up the management level systems.

Also, the company started to solve some problems that they did not expect in their intended strategic alignment. For example, the case company was aware that the IS

infrastructure could be an important development process of IS development. The company started recruit information system engineers and other IS professionals on their official website. However, according to the IT staff's statements, the company did not spend much on the IS facility:

"The computers and printers will be replaced only when they don't work anymore... The software and systems used in the company are upgraded constantly, but when the upgrade charges, the process become difficult as I need to reports to many people and waiting for their approvals. Therefore, I hardly upgrade any software which charges for a lot. The good thing is the main system – OA system we used can be upgraded for free."

The president had realised the importance of IS infrastructure. He claimed that the company would spend more on IS, in terms of hardware, software and human resources in the future.

The strategic alignment is not only about IS, but also about the business. The company considered that the environments were one of the most important factors affecting their business. In order to obtain environmental information, the company conducts marketing research frequently. The manager of the sales and marketing department stated that:

"We often do some marketing research to keep our information of the business environments up to date. This is one part of our strategy."

It is clear that environmental changes sometimes are not that obvious. Therefore, marketing research can, to a large extent, help the company to detect and predict these changes, which can lead to business opportunities or business changes which affect the business strategy. Therefore, the emergent strategic alignment also needs such environmental information to support it, as the assistant general manager stated:

"We want our systems to be fit with our business. So it is important for us to clarify how our business goes."

4.3.4.5 Summary of the process

The intended strategic alignment the company considered was based on the situation in 2012 and knowledge of the leaders and managers of the company. They planned to build an integrated system to support their management, business strategy and business operation. However, when they attempted to implement the intended strategic alignment, they found plenty of challenges, unexpected changes and new opportunities, which affected the implementation. Therefore, they gave up building the intended integrated system, and kept using the legacy system. The old system was adopted at 2007, which could not deal with the environment in 2014, and could not meet the needs, especially the operational needs, of the company. Therefore, strategic alignment was unrealised.

When the company faced unrealised strategic alignment, it attempted to amend the intended strategic alignment into a new intended strategic alignment. For example, they realised the low quality of the IS infrastructure, and began to enhance it by recruiting IS professionals. They also planned to adopt some functional operational level systems first, instead of building an integrated system directly. This does seem to be more suitable for their situation and environment. Such new strategic plans could be the new intended strategic alignment, and they were attempting to implement this new intended strategic alignment. So they started a new cycle of the dynamic strategic alignment process. They might have realised and successfully implemented the new intended strategic alignment at this point, but this was definitely not their final version of strategic alignment, as this new intended strategic alignment tended to be an emergent strategic alignment which could solve the emergent problems they faced. Therefore, another intended strategic alignment would be formulated and a new dynamic strategic alignment process cycle would be started. Even when the company had a perfect strategic alignment already, they need a new intended strategic alignment when the environments change. Therefore, the dynamic strategic alignment process will kept circling, as a dynamic process.

Generally, the company noticed that the intended strategic alignment and intended IS strategic failed, due to some challenges, unexpected changes and new opportunities. The results are the failure to adopt the intended integrated system, and misalignment. The company faced a number of issues because of this misalignment. In order to overcome such issues, the company amended their IS strategy (e.g. building some operational level systems first, instead of building the integrated system). Furthermore, the company began to solve some of the unexpected barriers, such as enhancing the IS infrastructure. The company also focused on the potential business changes that might affect the strategic alignment. This could be the emergent strategic alignment of the company when the intended strategic alignment went to unrealised strategic alignment.

Chapter 5 – Discussion

This chapter discusses the results and findings of the case study. In other words, it relates the analysis to the existing literature. The sustainability of strategic alignment in rapidly changing environments is reviewed here. Also, some factors and phenomena regarding dynamic strategic alignment in the case study are discussed. Through the discussion, we attempt to answer the research question of the thesis: ‘How can organisations adapt their strategic planning of IS and sustain strategic alignment in order to respond to the dynamic and competitive environment?’ There are three sub-questions which can help us to answer the main research question:

- 1 What are the (both internal and external) environmental factors that can influence strategic alignment process and how do they affect the strategic alignment process?
- 2 What constitute a process of sustainable strategic alignment and why is it important to the performance of an organisation in a dynamic environment?
- 3 How can organisations achieve sustainable strategic alignment?

First, a framework revision is provided. The following discussions are organised according to this revised framework. In order to discuss the findings systemically, they are concluded and synthesised according to the research questions in tables and figures in each subsequent discussion. Next, we relate the findings to the existing literature by comparing the similarities and differences, as well as indicating their relation to the filling in of the ‘gap’ identified in Chapter 1. Therefore, this chapter is structured as follows: Framework revisions; environmental factors; sustained strategic alignment; and the factors affecting sustainable strategic alignment. Each section contains the conclusion and synthesis of the findings through tables and figures which also explores some important relationship between findings. Each section also consists of a discussion of the relationship of the findings to the existing literature. Finally, a summary is given to summarise the findings and its link to the existing literature, from an overall view.

5.1 Framework revisions

In the light of the analysis in the previous chapter the theoretical framework developed in Chapter 3 was reviewed and revised. This section presents and discusses the revised framework.

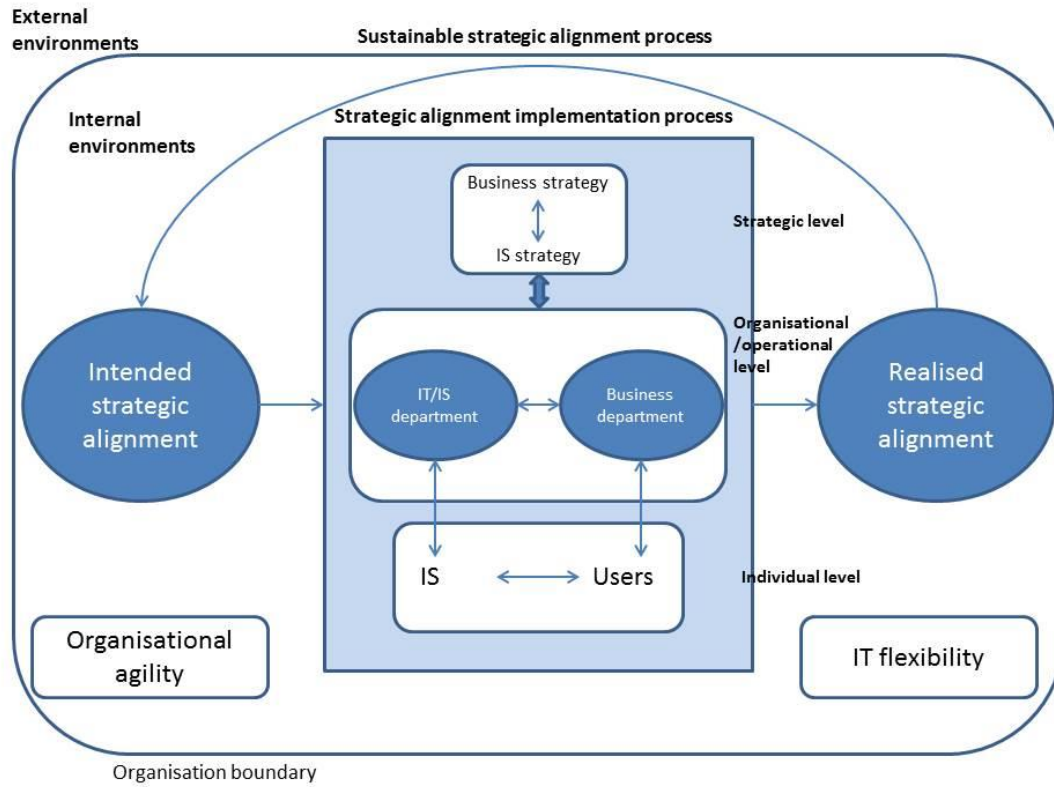


Figure 5.1 Initial framework of process-based strategic alignment model

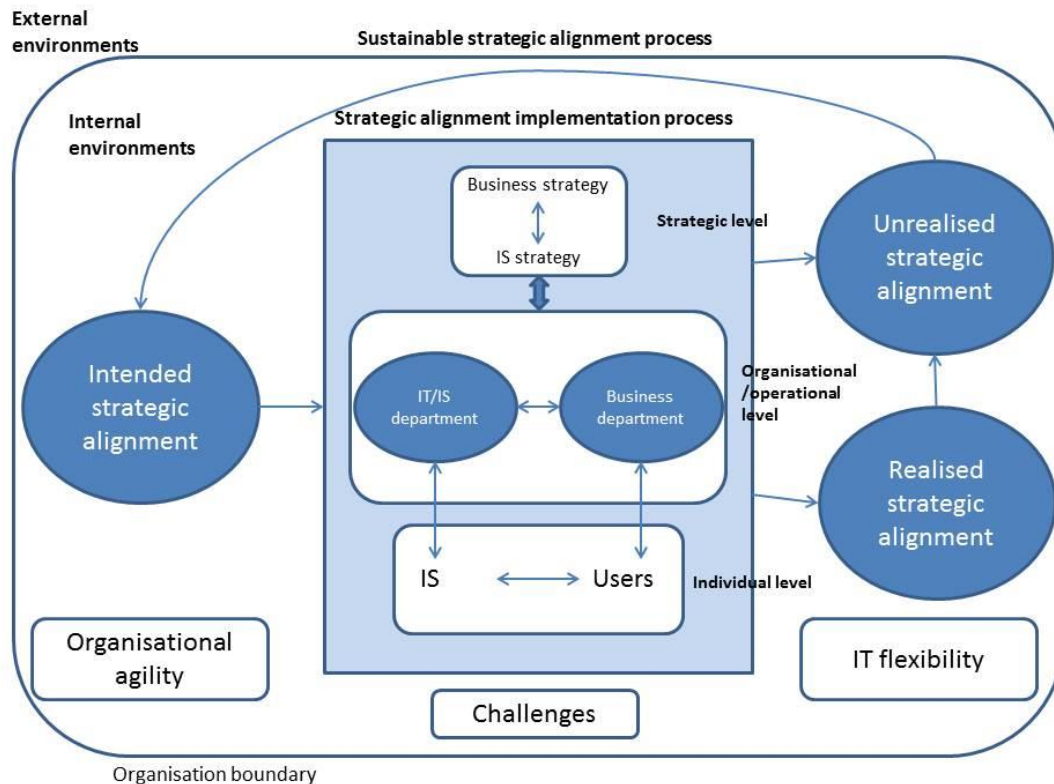


Figure 5.2 Revised framework of process-based strategic alignment model

From Figure 5.1 and Figure 5.2, we can see some differences between the original framework developed in Chapter 3 and the revised version. First, **Unrealised strategic alignment** is incorporated into the revised framework (Figure 5.2). This component takes into account the situation where intended strategic alignment cannot be carried out and hence realised for various reasons. In this case study, we have seen that the company had made an attempt to sustain alignment between business and IS strategy but for various organisational reasons (e.g. management needs) and business considerations (e.g. business expansion) the alignment strategy was not implemented and subsequently abandoned. Nevertheless, the case company later amended the IS strategy and continued making attempts to align business and IS the strategies. This process of alignment is indicated by the arrow that links *unrealised strategic alignment* to *intended strategic alignment*. From the findings as well as the literature we have learned that sustaining strategic alignment requires on-going and substantial efforts from organisations especially in rapidly changing environment where alignment can become misalignment quickly (Baker et al., 2010). In this sense, the *realised strategic alignment* can become unrealised at

some point when alignment conditions change. This is indicated by the arrow from realised strategic alignment to unrealised strategic alignment. Section 5.2.1 will discuss this sustainable strategic alignment process in details.

The **Challenges** is a new component in the revised framework. The challenges identified in the existing literature are mostly applied to strategic alignment from a static perspective (e.g. Henderson & Venkatraman, 1993; Chan et al., 1997; Luftman, 1996) and they are not always applicable from a process or dynamic view. The data analysis suggests that the presence of the challenges can seriously influence the alignment process and the implementation of the strategy. Therefore in order to understand the outcomes of the alignment (unrealised or realised) one needs to recognise these challenges and how they impact the process. Section 5.3.1 will discuss this component and its relation to sustainable strategic alignment process in more details.

5.2 Environmental factors

5.2.1 Internal environment

There are three sub-themes (organisational structure, organisational culture and organisational resource) to the internal environment theme, which were identified in the analysis process. Table 5.1 summaries the three categories of internal environmental factors. The findings of the study reflect that the internal environments seem to have significant impacts on strategic alignment and strategic planning of IS. The existing literature focuses on the influence of organisational structure and organisational culture on strategic alignment, while the results of the case study also highlight the impacts of organisational resources, besides organisational structure and organisational culture.

Table 5.1 Summary of internal environment factors

Internal environment		Definition/Circumstance of the case company	Influenced by	Influences on strategic alignment process
Organisational	Hierarchical	“an organisational form based on the	Chinese culture, SOE status,	Direct influences: lead to less communication

structure	structure	concepts of division of labour, specialisation, and unity of command” (Miles, 1978, p. 131)	organisational size	(organisational/operational level), being less flexible and dynamic in changing environments (organisational/operational level); Indirect influences: enhanced bureaucracy, centralised IS governance, puts emphasis on leaders, leads to hierarchical culture
	Bureaucracy	The nature of power and authority, exhibited as rules and procedures (Weber, 1964)	Hierarchical structure, China’s context, SOE status, parent group, heavy government regulations, leader’s management style	Direct influences: leads to strong resistance and slow reaction to changes (organisational/operational level and individual level); Indirect influences: enhances the power of leader, leads to centralised IS governance, leads to hierarchical culture
	IS governance centralised	Centralised organizational reporting arrangements for IS management (Brown & Renwick, 1996)	Hierarchical structure, bureaucracy, parent group, leader’s management style	Direct influences: being inflexible to adjusting to environmental change (organisational/operational level), overlooking user’s needs (individual level)
	Leader’s Management style	How leader manages the company and his capacity	Hierarchical structure, bureaucracy, parent group	Direct influences: treating IS as tool to support business and strategy (strategic level) Indirect influences: centralises IS governance, enhances bureaucracy, encourages friendly culture, social resource (guanxi)
	Organizational size	Increasing in size, mainly focusing on the number of employees	Market expansion, leader’s management style	Direct influences: increase the needs for IS (organisational/operational level) Indirect influences: hierarchical structure
Organisational culture	Friendly culture (laid back culture)	Relationship between employees in the case company appeared to be	Chinese culture, SOE status (less competition), leader’s	Direct influences: better communication with colleagues and low turnover rate

		harmonic	management style	(organisational/operational level), lead to less motivation to work, lead to users feeling unnecessary to use IS (individual level)
	Hierarchy culture	According to Twati and Gammack's study (2006), organisational culture of the case company should belong to a hierarchical culture	Hierarchical structure, bureaucracy	Direct influences: IS as a tool for stability and control (strategic level)
	Organisational culture	General organisational culture	Organisational structure	Direct influences: less reliance on IS/IT for information (strategic level)
Organisational resource	Information resource	Better or early government information accessibility	SOE status	Direct influences: less rely on IS/IT for information (strategic level)
	Capital resource	Land resources and loan credits	SOE status	Direct influences: leads to huge competitive advantages and less needs for IS in competition (strategic level); Indirect influences: leads to less IS resources, leads to friendly culture, as less competition
	Social resource	Guanxi, one of the key resources for doing business in China (Ambler et al., 2008)	Chinese culture, leader's network	Direct influences: business growth depends on social resources rather than use of IS (strategic level)
	IS resources	IS infrastructure (IS personnel, hardware, software, network, etc.)	Leader's management style, Capital resources	Direct influences: lack of IS resource leads to misalignment in strategic level organisational/operational level, easy to change (organisational/operational level)

Table 5.1 shows the internal environment factors (organisational structure, organisational culture and organisational resource) and the elements of each factor,

as well as presenting what influenced them and their influences on strategic alignment process in the case company. The remainder of this section will discuss these factors in turn.

5.2.1.1 Organisational structure

Organisational structure, according to the findings obtained in the previous analysis, appears to be the most important factor to the strategic alignment process in the internal environment. Five aspects of organisational structure played a role in the case company, thus: hierarchical arrangements, bureaucracy, decision making process, leadership and organisational size. Direct and indirect influences of such elements on the strategic alignment process are discussed and explored.

The hierarchical structure of the company appeared to affect the strategic alignment process of the case company significantly. According to the literature (Pearlson & Saunders, 2009; Mullins, 2002; Hicks, 1993; Lee, 2011), hierarchical structure is argued to rely less on IS in terms of communication than other types of organisational structure do (e.g. flat organisational structure, Matrix organisational structure and Networked organisational structure). In this case study, internal communication was focused on the vertical (e.g. top-down) rather than horizontal direction. For example, communications between the management and the subordinates were emphasised, while there was very little connection between managers of departments. As a result, the communication and knowledge sharing between IS department and business departments was limited. This is to say that the organisational/operational level alignment with IS was affected by the hierarchical arrangement, due to the unsatisfied coordination and communication between business managers and IS planners (Benbya & McKelvey, 2006). However, due to the hierarchical structure, communication at the case company seemed to be simplistic, so that they tended to rely less on the IS for communication in their business processes. This could be one of the reasons why the company could achieve current success without strong IS support.

Also, the individual level of strategic alignment was impacted on by the hierarchical structure. The hierarchical arrangement tended to lead to the staff accepting the arrangements (Miles, 1978). Indeed, the IS users in the case company were likely to accept what IS they were given, instead of actively requesting what they needed. As a result, the IS in the case company did not meet the needs of most users.

Hierarchical structure tends to work for standardised processes, which seem to be slow to react to new opportunities and changes, as they need to change the processes according to the environmental changes first (Kotter, 2011). Mullins (2002) asserts that a hierarchical structure can be inflexible and less dynamic for changing environments, so that it can potentially inhibit transformations. This study shows similar results to the literature. For example, the director of general office and the president claimed that the priority was to establish new business and management processes for the current business of the company, rather than the IS. It seemed that standardised progress was very important to the business of the case company due to the hierarchical structure, but the processes transformed slowly when the situation changed. This significantly affected the strategic alignment process in the organisational/operational level, since the IS development can be significantly affected by the inhibited transformations of business processes caused by the inflexibility of hierarchical structure, leading to operational misalignment.

Hierarchical structure also influenced strategic alignment indirectly by affecting other factors in this case. Firstly, hierarchical structure design determines plenty of internal regulations and procedures which lead to bureaucracy (Tirole, 1986). Secondly, a hierarchical structure was also a reason for centralised IS governance in the case company, as the decision-making power is highly centralised in a hierarchical structure (Miles, 1978). Thirdly, a hierarchical structure design puts more emphasis on leaders. This means that a leader's personal management style can affect the company more significantly with a hierarchical structure design than another design (Vecchio et al., 2010). Finally, a hierarchical structure, according to Twati and Gammack (2006), usually leads to a hierarchical organisational culture. These factors can all impact on the strategic alignment process.

Bureaucracy is another structural factor affecting strategic alignment process. The results of this research suggest that bureaucracy influences dynamic strategic alignment process. The employees of the case company needed to do plenty of reporting work. It was observed that the hierarchical structure imposed many unnecessary procedures in the company, which could lead to bureaucracy. Bureaucracy tends to be common in organisations with hierarchical structures in China, because of the culture and politics (Lin & Germain, 2003). What's more, the case company was partially owned by the government, which means that there were more bureaucratic regulations and procedures in the case company than in private companies. For example, there was a government committee which was responsible for supervising the company. That means there were a huge number of bureaucratic procedures and reporting requirements. Besides, this company was also part of a group, and so faced more layers and restrictions imposed by the parent company. Furthermore, the sector of the case company was heavily regulated by the government, so that it also faced more regulations and external government systems, as mentioned in the previous chapter. All of these gave rise to significant bureaucracy within the company. There are still other factors leading to bureaucracy in the company, such as the leader's management style, which will be discussed later.

In the literature, bureaucracy is variously evaluated and discussed. Mintzberg (1979) asserts bureaucracy can potentially produce negative impacts on planning and implementation, while John and Martin (1984) suggest that it may have positive influences on performance. Byrt (1973) also summarise both positive and negative impacts of bureaucracy. Professionalism of management is one of the positive impacts which have been shown in the case study. According to the experience of this company, bureaucracy seems to benefit the business of the company. According to the president, bureaucracy (business and management regulations and procedures) tended to be one of the competitive advantages, as it helped to convey priorities and values. In China, business organisations prefer centralised decision making and bureaucratic procedures, which appears to be better for doing business in China (Lin & Germain, 2003). Ambler et al. (2008) also support this argument by pointing out how important the regulations and procedures are there. The literature

also tends to agree that bureaucracy is suitable for managing larger companies with complex administrative requirements (Byrt, 1973; Mintzberg, 1979; Ritzer, 2000; Stazyk & Goerde, 2011), which is the case with this company. The president also claimed that procedures and regulations could, to some extent, avoid personal mistakes. This statement is similar to Linstead et al.'s (2009), who thought that bureaucracy can, to some extent, reduce personal influence.

On the other hand, a strong resistance to change could be the most important dysfunctionality of bureaucracy, which affects the dynamic strategic alignment process (Byrt, 1973). In dynamic strategic alignment processes, such regulations and procedures can produce inadequate interactions and undesired conformity (Linstead et al., 2009). For example, in this study, when the sale department wanted to buy a sale system for a new project, they needed to submit their request to different authorities for approval (e.g. the operation team, the cost management department and the risk management department), and gain approval from them layer by layer. Only until they had gained approval from all could they go ahead and purchase the system. This not only took a long period, but also generated unnecessary work for the employees. Often, the request could be rejected by the operation team without giving a clear and detailed reason. As a result, people tended to resist asking for these changes (e.g. asking for a new IS). Even when the request was accepted, the fussy regulations and procedures had already led to slow reaction to the dynamic contexts, which is a problem in rapidly changing environments.

Moreover, the findings have also shown that the company was afraid of organisational changes. They claimed that the regulations and procedures were the key to the management, and they might be negatively affected by the potential new IS which could significantly affect the procedures. This confirms that bureaucracy could potentially produce resistance to change. These findings are consistent with the existing literature (Byrt, 1973; Zusman & Turner, 2005). Therefore, the strategic alignment process was significantly affected, particularly at the organisational/operational and individual level, as the business changed dramatically while the organisation and the people resisted changing. This could be one reason for the failure of IS development in the past few years.

Bureaucracy in the case company also had indirect influences on the strategic alignment process, by affecting other factors which impacted on the strategic alignment process. First of all, Clegg (2008) suggests that bureaucracy can potentially enhance the power and importance of the leaders. And then the IS governance was also affected by the bureaucracy, as this often slowed down the decision making in the case company regarding IS, due to slow information flow, as well as the long review and approval procedures; it also led to centralised IS governance. Last but not least, bureaucracy tends to lead to a hierarchical culture, since this usually focuses on control and stability (Twati & Gammack, 2006), which bureaucracy could bring about (Linstead, et al., 2009).

Centralised IS governance is another structural factor which affects the strategic alignment process. As mentioned before, the hierarchical structure gave rise to the centralisation of decision-making power in the case company. As a result, IS governance is also highly centralised. In the case company, the business departments had little power and responsibilities regarding IS. For example, some departments, such as the operations department, had attempted to request systems development, but they did not have any right to the management of IS and IT, so their requests had to be approved by the operation team. The literature tends to agree that it is better that the management of the use of IS and IT functions is decentralised to some business units, as this could, to some extent, enhance the competitive advantages in unstable industry environments (Allen & Boynton, 1991; Brown & Magill, 1994; Brown, 1997). This means the strategic alignment process of the case company might potentially be affected by centralised IS governance. The business units' need for IS to respond to environmental changes can be ignored by centralised decision makers.

Moreover, centralised IS governance can also lead to overlooking users' needs. In this case study, the parent group forced the case company to use its IS without seek feedback from the users. A large number of junior staff who had used this system complained about it, and claimed that there was no official way to tell the parent group about their needs. This significantly influenced the company's IS and its development. Therefore, centralised IS governance can also potentially result in

ignorance in respect of junior staff's needs, leading to misalignment between IS and the business at the individual level. Van Grembergen (2007) supports this argument by pointing out that centralised IS governance have less ability to cater for users' needs.

The leader's management style was significant to the strategic alignment process of the case company as well. McGregor (1960) considered that most people tend to have an inherent dislike of work, so that they need to be coerced to perform in order to achieve organisational goals. Leaders can control and direct them. In China, leaders are likely to be essential to an organisation because of the culture (Chan & Lee, 2008). Also, a hierarchical structure relies more on the leader, as they have more decision-making power. In this case, there was an obvious improvement in terms of business after the company got a new president who was much more ambitious than his predecessor. The president had absolute power in the company, so that his management style was likely to be even more important.

Thus, if a leader does not pay attention to IS or thinks that it is not important, the company will probably not develop its IS (Luftman et al., 2004). Indeed, the president of the company, who had absolute decision making power on IS and IT, treated IS as tool to support business and strategy. As we mentioned in literature review chapter, IS has already been considered as more than a tool (Ward & Peppard, 2002), therefore the IS strategy they formulated might be not able to make use of the IS in the company. That means it is important that the leaders can access the relevant IS knowledge at the strategic level. Armstrong and Sambamurthy (1999) assert that the leaders who have decision-making power over IT need both business and IT knowledge in order to develop IT and make use of it within a company. Faraj and Smbamurthy (2006) also suggest that leaders have vital impacts on IS development projects, in terms of IS expertise. In the case company, no one had a good command of IS knowledge, including the president, who had the final decision-making power on IS, and the director of general office, who was responsible for IS. As a result, the strategic alignment process was affected at the strategic level, which means the IS strategy they formulated might not align with the business strategy very well. For example, due to the lack of IS knowledge, the company strategically planned to build

a very complex integrated systems in a short period of time with only a limited foundation.

The leader's management style also impacted on other factors in the case company, indirectly influencing the strategic alignment process. Firstly, this, to some extent, led to centralised IS governance, as the operation team rejected decentralising IS governance to business units, when they had the power to enforce IS governance on business units. Secondly, the leader's management style enhanced the bureaucracy within the company. The president asserted the rules and procedures of the management in the company, including the auditing and approving procedures, was one of the competitive advantages which enhanced the internal bureaucracy. Thirdly, Linstead et al. (2009) suggest that leaders can exert huge impacts on organisational culture. For example, in the case company, the president claimed he attempted to avoid personal decision-making mistakes by frequently meeting with managers and welcoming staff to provide their opinions and ideas, which could be one of the reasons for the friendly culture of the company. In addition, the secretary of the president claimed that one of the reasons for the recent success of the company was the social resource (guanxi) of the president. This is discussed further later part.

Organisation size is another factor affecting the strategic alignment process in this case company. Ein-Dor and Segev (1978) suggest that larger organisations tend to need IS and are likely to succeed in management IS than smaller organisations. Indeed, the case company had over 100 employees, and the president claimed that it was a midsize commercial real estate company. In the previous few years, the company had purchased two sub-companies and employed some new staff because of market expansion, leading to a significant increase in the number of employees. That increased the needs for IS, particularly in human resources (Levy & Powell, 2000). For instance, the HR department complained about work overload because of the increasing number of employees, and wanted a new system to help their work. The sales department and operational management department also wanted functional sales and operational management systems to help them with their growing workload. Laudon and Laudon (2009) suggest that such operational level systems can effectively assist the routine work and transactions of organisations,

particularly in larger size organisations. Therefore, the organisational/operational level of the strategic alignment process was affected by organisational size.

In fact, some scholars, such as Mintzberg (1979), consider that organisational size can influence organisational structures. For example, small start-up companies tend to have simple structures, while larger companies are likely to have more bureaucratic ones. The case company was a midsize company. Although it had developed and expanded rapidly over recent years and had increased numbers of sub-companies, the company was still far from a large company, compared to other large real estate companies, which may lead to the need to change the organisational structure.

5.2.1.2 Organisational culture

The company claimed that they had a friendly organisational culture, which meant every employee was allowed to participate in the management. The president and the deputy general manager also claimed that they were willing and pleased to hear opinions and suggestions from any staff member. An employee who used to work in a foreign company confirmed the friendly organisational culture of the company. He suggested this brought about better communication compared with the company he used to work for. Besides, the relationships between employees were better. That, to some extent, led to a low turnover rate, while many other companies in China had frequent changes of personnel. Better communication brought from the organisational culture seems help the dynamic strategic alignment process at the organisational/operational level, while a low turnover rate provides a more stable internal environment.

However, the friendly culture also led to the staff thinking that it was unnecessary to use IS for communication or that it was better to communicate with others face to face, even though there were more efficient ways, such as IS. This could possibly affect the individual level of strategic alignment process. Also, a friendly culture, to some extent, affected the competition between employees within the company.

That meant the staff may have had less motivation and lower productivity. Kostera and Wicha (1996) conducted a study about how organisational culture affected SOEs in Poland. Their study suggests that the organisational culture of Polish SOEs was strongly affected by communism, leading to friendly and harmonic relationships, due to a lack of 'self' consideration. However, that led to a bad competitive position during the transition to a market economy. Although there were many contextual differences between this study and Kostera and Wicha's (1996), both suggest that this kind of relaxed culture leads to difficulties in implementation. Therefore, a friendly culture can also affect the dynamic strategic alignment process, in terms of implementation, when the changes occur.

Moreover, this case company had a hierarchy organisational culture as well. As mentioned in Chapter 2, we have adopted Cooper's (1994) four quadrants of organisational culture (Clan, Adhocracy, Hierarchy and Market) to explore the relationship between organisational culture and IS. In this case study, organisational culture of the case company, to some extent, was affected by the organisational structure. The hierarchical structure leads to serious power distance between the employees and managers. Such power distance could subsequently influence employees' participation in decision making in the company (Hofstede, 1980). This was observed in the case company, where junior staff had not participated much in management and strategic planning of IS. A consequence is that the junior staff paid little attention to other things but their work, and a range of internal monitoring and controlling methods existed in the case company. Thus, it is clear that the organisational culture of the case company had a hierarchical culture which focused on stability and control, with little participation of junior staff in management (Cooper, 1994). Twati and Gammack's (2006) research suggests that the hierarchy culture would probably affect the adoption of IS because its key values can be significantly achieved by IS application. The president considered IS to be a key tool to manage and implement the business strategy for stability and control, which implies that hierarchical cultures need, to some extent, to influence the IS strategy formulation. This means the findings support the literature. Therefore, the

hierarchical culture of the case company had some impact on the strategic alignment process in strategic level.

In addition, the organisational culture could potentially be a barrier to the strategic alignment process at the organisational/operational level. Laudon and Laudon (2009) suggest that an organisational culture can be a restraint on change, particularly technological change. IS development can significantly threaten the current organisational culture by standardising fundamental assumptions about communication and the way they work. This is to say that the organisational culture of this case company needed to be changed or adjusted while the company implemented a new system (Leidner & Kayworth, 2006). Culture tends to change slowly (Hofstede, 1980), so that there was probably delay when implementing a new system in the case company.

5.2.1.3 Organisational resources

Amit and Schoemaker (1993) define resource as “stocks of available factors that are owned or controlled by the firm.” In the IS field, the critical resources for strategic alignment are the knowledge and skills residing in employees (Peppard & Ward, 2002). The resource does not create value itself. The organisation’s ability is the key to utilising and mobilising such resource (Bowman & Ambrosini, 2000). The results of this study show that organisational resources can also influence the strategic alignment process. It seems that when a company have more other resources that help it to gain competitive advantage, the less strategic use of IS is considered. The case company attempted to make use of every resource they had to gain competitive advantages, and the company did succeed with little IS support. In the IS field, there is limited literature considering how organisational resources can negatively affect the strategic alignment process. The following section presents and discusses how organisational resources affect the strategic alignment process in the case company, and compares this with some relevant studies from the existing literature.

The case company had some core resources which helped them to gain competitive advantages. The main resources the company had were Information resources and capital resources. Barney (1991) suggests that information resources are one of the key firm resources to sustain competitive advantage. Compared to private companies, the case company, which was partially owned by the government (51% shares), was able to access important information from the government, such as policy changes, even data like macro-economic analysis, more easily and quickly. Also, the president appeared to be able to gain valuable information from his social networks. This means that the case company relied less on IS/IT to gain information for business. Indeed, they never planned IS to gain environmental information, as they believed that they already had enough information from other means. Therefore, the information resources could affect the strategic alignment process at the strategic level.

Also, the company had inherent capital resources that other companies did not have. According to Barney (1991), the organisational capital resource is the basis which strategically enables organisations to implement strategy, obtaining competitive advantages. In China, land ownership belongs to the government according to its land policy. The company, as a state-owned company, had its own land. This could be a huge advantage, as its main competitors needed to rent the land, even the land of the case company, to do their business. Besides, the company can gain bigger loans, because this guarantees the capacity to repay the loan through the support of the government. This was the main reason for the company dominating the market with very little IS support. However, these capital resources appeared to be not increasable (the government would not give the case company more land or loan guarantees). Therefore, when the company expanded to a larger market, such inherent capital resources would not, by themselves, be able to keep the company in a dominant competitive position in the larger market.

Capital resources appeared to lead to less IS resources in the case company. The company considered capital resources were their core competitive advantage, while IS resources were considered as a non-essential supporting tool. It is common that they focused more on the capital resources which helped them more in business,

and overlooked IS resources which could not bring direct profits. The capital resources also produced some impacts on the friendly organisational culture. The resources led to competitive advantages. Such advantages prevented the case company from struggling for survival. This could be one of the reasons for the friendly culture of the company, as companies with less competition are likely to have more time to consider humanistic concerns.

Another resource that the interviewees often mentioned was the social resource (“guanxi”). In China, it is widely believed that it is essential that you have personalised networks to help your business. The president of the company appeared to have a large amount of friends in the business field. Such friends provide not only business opportunities, but also information and advice. Park and Lou (2001) pointed out the significant impact of “guanxi” on enterprise performance in China. Gu et al. (2008) also consider “guanxi” as a source of competitive advantage for doing business there. This social resource led to business growth in the past few years, while IS only contributed in a limited way. That also reduced the significance of IS to the company, affecting the strategic level of the strategic alignment process.

Due to these advantages, brought by organisational resources, the company did not face real competition. Thus, it was not necessary for them to spend too much in developing IS to gain competitive advantages. That significantly affected the strategic planning of IS and the strategic level of strategic alignment process. This issue is barely discussed in the existing literature.

The literature suggests that there is a positive relationship between IS resources and IS capabilities (Ravichandran et al., 2005). In this study, the case company had very limited IS resources in the context of strategic alignment process, which significantly affected the IS capabilities of the company and the strategic alignment process. For example, the IS infrastructure of the company, in terms of hardware, software and IS personnel, was frequently said to be incapable of supporting the business. They also lacked specialised IS knowledge and skills. Ravichandran et al. (2005) assert that IS human capital (skills and specificity) can help developing IS functional capabilities at the strategic level. A lack of IS resources leads to misalignment at the strategic and

organisational/operational levels. Indeed, the findings of this study show that the quality of all these IS resources can affect the quality and implementation of IS strategy. Nevertheless, it is found in this research that low quality of IS resources can be more easily replaced or changed, compared to high quality ones. Sabherwal et al. (2001) suggest that, when the environment changes, the previous successful IS could potentially prevent the organisation from evolving their IS and IS strategy, leading to misalignment. On the contrary, if the previous IS was not successful and had little value, the organisation can easily replace it or change it without hesitation.

Kearns and Lederer (2000) conducted a study regarding the effect of strategic alignment on the use of IS resources for competitive advantage. They conducted a survey which used 107 matched pairs of IS executives and business executives. The results suggest that IS resources could significantly contribute to competitive advantages when the organisation achieves strategic alignment, and that IS resources are the key to success. In this study, the case company had achieved current success without much IS resource. The main reason for the difference between the results of this study and Kearns and Lederer's (2000) is that the Chinese contexts are very different from the Western contexts. In Western countries, it is difficult for organisations to gain huge capital resources for competitive advantages. Even if some organisations may have these, they are restricted by antimonopoly laws. Therefore, IS resources are essential for competitive advantages in the Western countries. In contrast, the case company was in a unique context which allowed it to gain huge capital resources, leading to inherent competitive advantage. Therefore, they relied less on IS resources to gain competitive advantages.

5.2.2 External environment

External environment is another important factor significantly affecting the strategic alignment process, according to the findings of this study. External environment tends to change faster than organisations (internal environment) (Laudon & Laudon, 2009). There is much literature about environmental issues affecting strategic planning of IS and strategic alignment in a static sense, but little focus on change and

dynamic strategic alignment process. Linstead et al. (2009) trace the modern environmental movement from 1962 to 2006 in the West, but they do not connect such movement to the strategic alignment process. Ward and Peppard (2002) assert that environmental changes have significant impacts on strategic planning of IS. The case company existed in a complex and rapidly changing environment. Indeed, the case company had realised the importance of the environmental factors affecting business. They attempted to analyse some external environmental factors in their strategic planning report. The president also claimed that they had done some PEST analyses and paid much attention to external environmental changes which affected the business. When the business was affected, changes were made. When the business changed, the IS and strategic alignment could be significantly influenced. However, they seemed to pay less attention to the external environmental influence on strategic alignment and IS. Also, the company focused on politics and the economy, as they believed these two environmental factors affected their business most. Indeed, technology and national culture can also be issues that affect strategic alignment process of the case company. Table 5.2 displays the influence of these factors on strategic alignment process, and what influenced these factors in general.

Table 5.2 External environmental factors

External environment		Circumstance of the case company	Influenced by	Influences on strategic alignment process
Politics		The government heavily controls the industry of the case company, and changes policies frequently.	China's circumstances, Economy	Direct influences: regulations and policies influence business (strategic level), political issues influence business (strategic level), regulations and policies influence IS (organisational/operational level) Indirect influences: affect economy
Economy	Market	There are some new business opportunities for the	Politics	Direct influences: business opportunities lead to business

		case company in other markets.		expansion (strategic level) Indirect influences: market overheating affects government policy
	Competitor	There is no strong competitor in their market. However, when the company continues expanding into a bigger market, there will be some real competitors.	SOE advantage	Direct influences: weaker competitors lead to less need for IS (strategic level, organisational/operational level), strong potential competitors may lead to need for IS (strategic level, organisational/operational level)
Technology		The case company did not consider technology as an important thing in strategic level.	Knowledge, attitude	Direct influences: technology gives convenience for work (organisational/operational level, individual level) Indirect influences: IS/IT that the company did not have could benefit its competitors
National Culture		China's national culture has great power distance acceptability.	China's circumstances	Indirect influences: Chinese culture leads to hierarchy (hierarchical structure), enhances bureaucracy, affects organizational culture, enhances the significance of social resources (Guanxi)

5.2.2.1 Politics

Merali (2012) asserts that, the political context has become increasingly vital for strategic planning of IS due to rapid globalisation. In China, the government appears to play a more controlling role in the markets than Western countries. As a result, the political factors are more likely to be essential to commercial and business organisations in China (Brødsgaard, 2012). For the case company, the political factors appeared to be even more important, since its industry (real estate industry) was

heavily interfered with by the government. For example, in the previous few years, the government appeared to attempt to control the over-heating of the industry, which significantly affected the business strategy they had made. What is more, the case company was partially owned by the government (51% shares), so that it might be affected more by the direct impact of government policy. Furthermore, as a state-owned company, the case company needed to deal with and satisfy the requests of many different government agencies all the time, such as State-owned Assets Supervision and Administration Commission, which are governmental commission agencies responsible for managing and supervising state-owned enterprises. In addition, the case company could be impacted on by some political issues. For instance, the tension between China and Japan in recent years had directly affected their Japanese business partners' investing confidence. All of these regulations, policies and political issues dramatically influenced the business of the case company. These findings are consistent with the literature, which suggests business is affected by politics environments (Baron & Hall, 2003; Greening & Gray, 1994), and the case company was affected even more significantly due to the Chinese context. Therefore, the company had to seriously consider it in their business strategy, which meant the strategic level of the strategic alignment process was affected by politics.

Such political factors did significantly affect the business of the case company. Indeed, regulations and policies from the government also affected the IS directly. For example, the financial system and parent group's business system were significantly affected by government policy changes. The price of IT facilities and competitors' IS/IT advantages were also issues that they considered much in the strategic planning of IS. Also, the government tried to encourage Chinese companies to develop their IS by giving some supporting preferential policies. The company had been aware of this policy and put it into their strategic report. However, the results show that the company paid little attention to this policy. Such influences mainly affected the organisational/operational level of the strategic alignment process. Singh (2002) also mentions that global politics produced huge positive impacts on IT, which is consistent with this finding.

Politics also impacts on the economy which is also one of the external environmental factors in this case. According to Peng and Nunes (2007), economic changes are significantly associated with politics in China. For example, in 1978 Deng Xiaoping attempted to complete the transition of the Chinese economic system from a centrally planned economy to a market economy, leading to a dramatic explosion in the Chinese economy. More recently, there has been a trend of the Chinese government to try to slow down economic growth (from over 10% increase per year to about 7.5% per year), in order to focus more on other issues, such as environmental protection.

5.2.2.2 Economy

The economy also significantly influenced the business of the case company. In the previous few years, the economic circumstance of the world has tended to be unstable and unpredictable. In China, the situation seemed to be slightly optimistic in comparison, but still an obvious slowdown occurred in economic growth, as shown above. This affected the ambitious business strategy they developed earlier. The economy of China generally seemed to increase steadily over a long period of time. From the data given by the World Bank (2013), we can see that the growth of GDP of China was rapid but stable, even during the worldwide economic crisis. However, that is not to say that the economic environment in China was competitively predictable. For example, the stock market was extremely hot in 2007 and suddenly dropped to the bottom without obvious signs. The director of the general office of the case company also confirmed that they could not predict the economic environment for the long-term, particularly in their industry. That, to some extent, led to the fact that they needed to amend their strategy frequently, which affected the strategic alignment process at the strategic level.

In detail, the markets and competitors were two key factors affecting the business of the company in the economic environment. The commercial property market faced mixed circumstances. Generally, the company was optimistic about the future market and attempted to continue their ambitious strategy with a slight amendment.

The main change of the previous few years involved the company attempting to enter new markets in different cities. The president believed that these new markets could be huge opportunities for business. The fact is that the case company had bought two sub-companies in the new market. Porter (1985) asserts that if a company can enter a new market with competitive advantage, the company will succeed.

The market also affected the government's policy in China. The case company was located in Shenzhen, which is a special economic zone in China. The real estate market in Shenzhen had become saturated, and even overheated. As a result, the government introduced some policies to control this in Shenzhen, which could be a reason for the case company seeking new markets.

Also, the company paid much attention to competitors and potential competitors. However, the fact is that, according to the interview data, there was not much competition that the case company needed to face, due to the fact that the company made use of their competitive advantages (organisational resources) to gain a dominate market position. This gave rise to the fact that they did not need a good IS to gain competitive advantages. Therefore, the strategic alignment process was less concerned at the strategic and organisational/operational levels. However, as we mentioned before, the case company expanded its business to new markets, in which they did not have such competitive advantages from organisational resources. This means they faced new competition which might need IS in order to gain competitive advantages. This could be the reason why there was a strong need for IS in the findings.

Indeed, the economic factors had complex relationships to the political factors. For instance, as mentioned above, the tension between China and Japan had negative impacts on the economy of both countries. Government policy towards the markets also significantly affected the economic situation. Similarly, the economic crisis forced the government to formulate some emergent policies, while overheating and inflation of particular markets led to governmental intervention and suppression.

This complicated relationship between external environment factors to some extent led to uncertainty regarding the external environment.

5.2.2.3 Technology

In addition, some interviewees mentioned the technological influence on the company, but the impact was quite small. Most employees did not consider technology as an important environmental factor which could affect their business much. However, the fact is that the technological improvement of IT and IS has dramatically changed the way people do business. Fortune (1988) suggests that sometimes companies may even shape their business strategy and structure to fit new technology, particularly information technology. The main reason why the company considered technology little, they asserted, was that their industry tended to rely less on technology than other industries. Moreover, they had little knowledge of IT/IS and how technology could contribute to their business. They only thought technology made work convenient. For example, the manager of the planning department claimed that the technology helped him to achieve distance working. The literature showed that technology, particularly information technology, and its strategic use, is the key to achieving business success (e.g. Ward & Peppard, 2002; Melville et al., 2004; Brynjolfsson & Hitt, 2000). As discussed before, the case company had inherent competitive advantages, leading to little need for technology to gain more competitive advantages.

However, the technology, particularly information technology, benefited potential competitors of the case company. One of the staff who used to work in a private company stated that the IS and IT used in the private company were much better than in the case company, and they significantly enhanced working efficiency. Although such companies with better technology were not then direct competitors for the case company, when the company continued to expand, they had to face such potential competitors with huge advantages in technology, particularly information technology.

5.2.2.4 National culture

Last but not least, the national culture a key element that affected this case significantly. According to Hofstede's (2001) theory of culture, the acceptability of power distance could dramatically impact on the management of an enterprise in terms of style of management and organisational structure. In China, the acceptability of power distance seems to be quite high (Hofstede, 2001). It is very common that the power distribution is unequal within organisations in China. Hierarchy widely exists, even in the case company, who claimed they had a friendly organisational culture. The junior staff in the case company tended to only do what the manager asked them to do without asking or presenting their opinions and ideas, even though the leaders and managers of the company were willing to listen to them. This could potentially affect individual levels of strategic alignment, as the needs of main IS users (junior staff) were easily ignored.

Also, the Chinese culture enhanced the bureaucracy within the case company. Wong (2001) suggests that Chinese culture appreciates bureaucracy in organisations, especially large organisations, as the Chinese tend to accept power distance and not accept uncertainty. Bureaucracy can, to some extent, reduce uncertainty. Indeed, there were a small number of employees in the case company who complained about the bureaucracy. Most people just accepted it, and some believed that bureaucracy was good for the company.

In addition, the organisational culture of the company was significantly affected by Chinese culture. Hofstede (2001) considers that organisational culture is strongly related to national culture. Smith et al. (1996) conducted an analysis regarding national cultures' influence on organisations across 43 nations. It determined that the national culture influences the values of organisational employees, which are applied to everyday organisational problems. In the Chinese contexts, the hierarchy culture is strongly supported by the Chinese culture. What is more, in China, social resources appear to be more important to business than in Western countries, because of the national culture difference (Tsang, 1998). Gold and Guthrie (2002)

also support this argument by pointing out that “Guanxi lies at the heart of China's social order”.

In general, literature suggests that strategic alignment can be easily affected by cultural issues, due to globalisation (Cumps et al., 2009; Jarvenpaa & Ives, 1994). Thus, it is necessary to consider cultural contexts further.

5.2.3 Summary

Three elements in internal environment have been identified which affected the strategic alignment process in the case company: organisational structure, organisational culture and organisational resources. The first two are widely discussed in the current literature, and the findings confirm the literature. The organisational resource is barely mentioned as an internal environment factor affecting strategic alignment, but this factor could be one of the main reasons why the case company could achieve current success without strategic alignment and proper IS support, in its special context. Nevertheless, the company started to face many problems and issues that affected its business, due to misalignment and poor IS when it was expanding.

The external environment also affected the company in terms of both business and IS. Politics, economy, technology and culture were four main factors identified in the case company. PEST analysis is widely employed in both literature and practices, but the case focused more on political and economic factors, due to its own circumstances. There is little dynamic strategic alignment literature which discusses national culture, but the findings show that national culture could, to some extent, affect the strategic alignment process.

The literature shows that the external environment seems to change faster than the internal environment (e.g. Laudon & Laudon, 2009). However, this is not to say the internal environment should be less important than the external environment to the strategic alignment process in the changing context. From the case, we can see that internal changes, such as a change of president, produced huge impacts on both the business and the IS. On the other hand, the external environments also influenced

strategic alignment process at all three levels, but the external environment seemed to change more frequently. Therefore, it is very important for companies to be concerned with the impacts of both internal and external environmental changes on the strategic alignment process. Internal changes produce dramatic impacts on strategic alignment process, while external environments change more frequently.

5.3 Sustainable strategic alignment

In order to answer the second research sub-question, “What constitute a process of sustainable strategic alignment and why is it important to the performance of an organisation in a dynamic environment?”, this section discusses the process of sustainable strategic alignment and the effects of sustained strategic alignment on the case company’s performance.

5.3.1 Process of sustainable strategic alignment

The framework in Chapter 3 was developed based on the existing sustainable strategic alignment literature. The case in this research shows some failures of attempting to sustain strategic alignment, which the current literature has barely mentioned. The reality is that most companies are likely to face the failures of realising their intended strategic alignment. As a result, the original framework is revised by adding an unrealised strategic alignment stage in the process of sustainable strategic alignment. This section presents the revised version of the framework focusing on the process of sustainable strategic alignment.

A large number of frameworks have been developed in order to identify and describe strategic alignment (e.g. Henderson & Venkatraman, 1993; Luftman et al., 1996; Maes, 1999; Goedvolk et al., 1999). Most such frameworks share a view that strategic alignment is static. However, the fact is that the elements of strategic alignment, such as business strategy, always keep changing with the environments. As a result, misalignment can occur, leading to loss of competitive advantage for organisations (Chan & Reich, 2007). To overcome this limitation, the literature

suggests that strategic alignment should be treated as a process rather than a static status (Benbya & McKelvey, 2006; Baker et al., 2009; Baker et al., 2011; Vessey & Ward, 2013). By doing this, strategic alignment is able to process with the changing environments, so that sustainable strategic alignment can occur (Vessey & Ward, 2013). Some scholars have developed some frameworks to identify and examine what constitutes a sustainable strategic alignment process (e.g. Baker et al., 2009; Chen et al., 2008). This study also develops a framework for dynamic strategic alignment processes (see Chapter 3.2). Based on the findings of this study, the framework can be revised in terms of the process stages. Figure 5.3 shows the revised version of strategic alignment process focusing on stages of strategic alignment. The following part explains and discusses this strategic alignment process in detail.

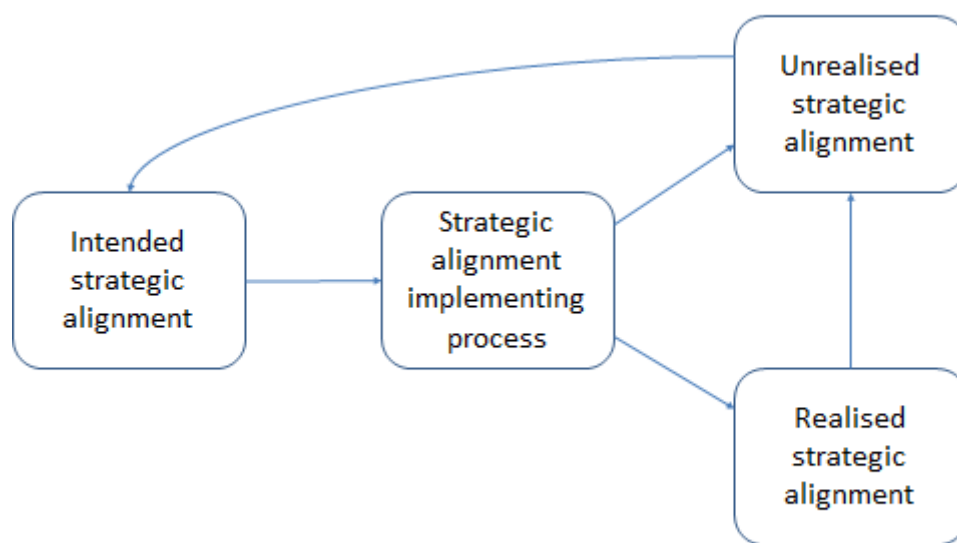


Figure 5.3 Stages of dynamic strategic alignment process

The intended strategic alignment is the stage where strategic alignment is planned and discussed. It is suggested that intended strategic alignment always occurs when organisations lack it (Hirschheim & Sabherwal, 2001; Chen et al., 2008). Hirschheim and Sabherwal (2001) assert that intended strategic alignment sometimes fails due

to the lack of a thorough analysis of the implemented strategic alignment and organisational changes. Based on the findings of this study, the intended strategic alignment can be difficult to realise in practice due to environmental changes and unexpected challenges (discussed in following sections) within organisations. Also, the intended strategic alignment can be unrealisable, due to a lack of strategic level strategic alignment. For instance, as mentioned before, the case company planned to build an integrated system that was unrealisable, due to misalignment at the strategic level.

After the intended strategic alignment stage, the strategic alignment process occurs by implementing IS strategy. This study finds that the strategic alignment process is significantly affected by environmental factors. For example, when the case company started to implement the intended integrated system, they found that it could not adapt to the change of external information systems (e.g. the parent group's systems and the government systems). As a result, the implementation of the planned integrated system was affected. Also, the results of this study show that the strategic alignment process (implementation) is affected by unexpected challenges. For instance, the lack of IS professionals in the case company resulted in a lack of IS knowledge, IS management and IS capability. Therefore, the implementation of the planned integrated system was significantly affected, leading to the abandonment of the planned integrated system. Because of such impacts on strategic alignment process, intended strategic alignment may not be realised, leading to unrealised strategic alignment.

When organisations overcome such challenges and adapt to environmental changes, intended strategic alignment tends to be realised as realised strategic alignment. However, this may only last for a short period (Jarvenpaa & Ives, 1993). Chen et al. (2008) suggest that strategic alignment is a "moving target" so that realised strategic alignment can turn to unrealised strategic alignment (misalignment) due to ongoing environmental changes. This study shows similar results to the literature. For example, the OA system of the case company was satisfied at the beginning when it was adopted. However, when the business kept expanding, the OA system was widely complained about, and it was believed that the OA system did not support

the business. Thus, strategic alignment can easily become unrealised due to environmental changes.

When organisations have unrealised strategic alignment, business performance is significantly affected (Chan et al., 1997). In this study, even though the case company had inherent competitive advantages, which meant that they relied less on strategic alignment to support the business, the case company suffered from the effects of misalignment, as discussed in the following section. When organisations are at low implemented strategic alignment, another new intended strategic alignment stage begins (Chen et al., 2008). The case company also attempted to amend the strategy to start a new intended strategic alignment. Some operational level systems were planned to be adopted, first to deal with the urgent needs of the business, instead of building up an integrated system with a heavy management level function.

In general, the case company formulated an intended IS strategy which planned to develop an integrated system to support its business. This is the intended strategic alignment stage. Then, it moved to the strategic alignment process stage. The IS strategy began to implement, and the intended integrated system was initiated. However, the changing environments issue and unexpected challenges mentioned before prevented the intended strategic alignment from being realised. Therefore, the intended integrated system was abandoned, and the business moved to an unrealised strategic alignment stage. The case company attempted to amend the IS strategy to achieve strategic alignment again by planning some operational level systems for urgent need, instead of developing an integrated system focusing on management level systems. As a result, the process returned to the intended strategic alignment stage, where a new IS strategy was established.

Therefore, the cycle of dynamic strategic alignment process keeps running repeatedly, as strategic alignment is a “moving target” (Chen et al., 2008). Organisations need to pursue or maintain strategic alignment continuously (Diaz, 2011). It is agreed that strategic alignment needs to keep moving with the changing environment, in order to achieve sustained strategic alignment.

5.3.2 Effects of sustained strategic alignment

In the framework, the effects of sustainable strategic alignment shown are presented on three levels (business level, organisational/operational level, individual level). This section discusses the findings from the case company about the effects of sustainable strategic alignment, linking with existing literature on such three levels.

As we mentioned in Chapter 2, it is widely believed that strategic alignment benefits organisational performance, when the alignment is sustainable (e.g. Chan & Reich, 2007; Luftman et al., 2005; Vessey & Ward, 2013). Misalignments occur when the organisations fail to adjust their alignment patterns to adapt to both external and internal environmental changes (Chan & Reich, 2007). In this case, the case company had achieved strategic alignment once, when it had stable business (i.e. mainly renting its property). After the new ambitious president and the new operations team took office, the business of the company expanded rapidly. However, the IS of the company was barely developed. That is to say that the strategic alignment did not continue. This produced some negative effects on the case company in terms of business performance and IT capacity building. Table 5.3 displays the effects of sustained strategic alignment of this case company at the strategic, organisational/operational and individual levels. Both effects of alignment and effects of misalignment are discussed, with references to the literature, in the following part.

Table 5.3 Effects of sustained strategic alignment

Strategic alignment process	Effects of alignment	Effects of misalignment
Strategic level	IS planned as a tool to support business and business strategy	Misalignment between IS strategy and business leads to failure of IS strategy implementation
Organisational/operational level	Communication → current systems working well	Lack of operational functionalities (IS support to business), lack of information sharing between departments, useless parent group systems for the

		company (increasing works but not supporting the business)
Individual level	Financial system satisfying users' needs	Ignorance of users' needs leading to user's resistance and IS implementation failure, ease of IS affecting IS implementation, user quality affecting value of IS

5.3.2.1 Effects of sustained strategic alignment at the strategic level

Strategies tend to continually change (Mintzberg, 1994; Johnson & Scholes, 2002). When business strategy changes, IS strategy needs to change in parallel (Benbya & Mckelvey, 2006). Segars and Grover (1999) and Chakravarthy (1987) found that, when the IS strategy is aligned with business, the organisations tend to have high levels of rationality and adaptability. In this case, the company did formulate an IS strategy in 2012 that planned an integrated system to adapt to business changes (expansion), and the system was also planned to support the business strategy. However, they only treated IS as a tool to support daily operations and management, without considering other benefits brought by an IS strategy. The literature does agree that IS strategy supports business strategy (e.g. Duhan et al., 2001; Hatten and Hatten, 1997; Brady et al., 1992; Hidding, 2001), but this is not to say IS cannot be more than that. Beside supporting business strategy, many scholars suggest that IS strategy can also enhance the IS function (e.g. Tai et al., 2000; Henderson & Venkatraman, 1999; Bajjaly, 1998; Bacon, 1991), share views of the IS role (Tai et al., 2000; Bajjaly, 1998; Ward, 1987; Ragu-Nathan et al., 2004), make use of information resources (Abdul-Gader, 1997; Brown, 2004; Phillip, 2007; Peppard & Ward, 1999, 2004), and increase performance (Ward & Peppard, 2002; Pearlson & Saunders, 2009; Broadbent & Weill, 1997; Chan et al., 1997). The case company seemed to overlook the significance of IS and IS strategy, which led to misalignment.

It is found that in this study that misalignment at the strategic level tends to lead to implementation failure. Although the company had formulated an IS strategy in 2012 which aimed to support the business operation and business strategy, it failed to

implement. According to the findings, the company planned to build a complex integrated system in less than one year without external help (IS outsourcing). It appeared that they lacked experience and knowledge, leading to over optimistic expectations. Besides, the integrated system they planned was unrealisable for the organisation situation. For example, the case company urgently needed some operational level systems, such as a sale order processing system, but the IS strategy focused on management level systems (e.g. the cost control and analysis system, the project management system and the risk management system). As a result, the planned integrated system failed to be implemented. Heeks (2002) introduces “design-actuality gaps” (mismatch between IS design and local user actuality) to explain some IS planning failures in developing countries. He asserts that if the IS design does not match the organisation context, the IS will fail to implement. Braa and Hedberg (2002) support this by investigating health information systems in South Africa, where they found out that these high cost systems partially failed to implement on a widespread basis, because the design did not match the countries context. Hence, the findings of Braa and Hedberg (2002) are also consistent with the results of this study. In addition, Yusuf et al. (2004) conducted a case study of successful ERP implementation in Rolls-Royce. They found that Rolls-Royce tried to avoid some possible failures and risks that ERP might bring within the organisation (design-actuality gap) when planning ERP, which helped them implement the ERP. This means the success of IS implementation needs strategic alignment at a strategic level.

5.3.2.2 Effects of sustained strategic alignment at the organisational/operational level

As discussed in Chapter 2 and Chapter 3, the organisational/operational level focuses on aligning the IS and business departments. According to Benya and McKelvey (2006), this level of strategic alignment significantly affects whether IS strategy and underlying IS architecture helps to achieve business objectives. Hence, the business can be negatively affected if there is misalignment at this level. IS planners and

business managers need to coordinate and communicate with each other in order to achieve sustained strategic alignment (Tan & Gallupe, 2006). In this case study, the communication between IS department and business departments appeared to be satisfactory, based on the findings. This helped the staff in the business domain to effectively use IS for their work. Therefore, the current IS they were using appeared to work well in the company.

However, the organisational/operational level of strategic alignment is not only about the communication between IS department and business departments. Benya and McKelvey (2006) also stated that shared understanding and knowledge sharing are also essential to sustained strategic alignment. If IS planners and business executives do not constantly communicate with each other to share their knowledge and understandings, misalignment may occur (Benya & McKelvey, 2006). This can be observed in this case study. The IS department played a limited role in the case company, and IT staff never joined in business meetings. Business executives lacked IS knowledge and did not participate in IS strategy formulation. This led to ignorance of the potential contributions of IS to business. As a result, the case company tend to overlook the IS and IS development. When the interviews took place, the IS they were using (OA system, financial system and the parent company's system) had only very basic functionalities. They could not satisfy the business and management needs of the case company. The hardware and network resources also lagged behind the competitors. The IS personnel of the company was one of the weakest parts of the IS infrastructure, as only 3 people were working in the IS department and all of them lacked professional knowledge of IT or MIS, while the company had over 100 employees and 5 sub-companies. The IS and IS infrastructure of the company had barely been developed in the previous few years, while the business was expanding rapidly. All these effects can be caused by misalignment at the organisational/operational level. When the environment and the business changed, IS did not develop to align with the new business strategy, as the business domain had a lack of IS knowledge, overlooking the significance of IS (Kearns & Sabherwal, 2007).

The misalignment at the organisational/operational level can cause negative effects and even barriers to business development (Bergeron et al., 2004). For example, in this study, the IS of the company lacked operational functionalities (e.g. sale ordering processing function, employee recordkeeping function, business daily operation function). Before the new president came, the company had very limited business (mainly renting its properties). The systems of the company were only designed to help communication and some simple procedures without operational functionalities. But when the companies expanded rapidly in terms of business, the systems still had no operational functionalities. Some business departments, such as the sales department and operation department, had realised that the old way they worked did not afford the increasing amount of jobs. Consequently, their business started to be affected. Moreover, the IS lacked information sharing between business departments. Some middle level managers, such as the manager of the cost management department, stated that they needed more information sharing between business departments within the IS. As mentioned before, the communication and information sharing between business departments was not very good, due to the hierarchical structure (focusing on top-down and down-top communication). The business changes led to the increasing information needs of business departments, but due to the misalignment at the organisational/operational level, the IS was overlooked and not developed at all (Jenkin & Chan, 2006; Chan & Reich, 2007; Benya & McKelvey, 2006). Furthermore, misalignment also gave rise to unnecessary work in the company. Some employees were forced to use the parent group's systems, which only increased their workload without any contribution to the business of the company. For example, the manager of the human resources department claimed that the new HR system from the parent group was useless and only increased their workload. They did not even have a way to complain about this to the IS planners and executives from the parent group. This shows a great misalignment; the IS planners and executives lacked enough relevant knowledge about business strategy, producing unnecessary work without contribution to business. Galliers (1987, 1988) conducted empirical studies to prove that the inclusion of the CIO as part of the business management team can

ensure the business is well supported by the IS management function. This result is consistent with the findings of this study.

The analysis of this case study shows that all of these effects of misalignment at the organisational/operational level appear to affect the business directly, particularly the operation of business. Benya and McKelvey (2006) also allege that this level is important as it links the strategic level to the individual level.

5.3.2.3 Effects of sustained strategic alignment in individual level

It is widely believed that the effect of IS infrastructure is significantly affected by whether individual users' needs and requirements are satisfied (Lamb & Kling, 2003; Benya & McKelvey, 2006). However, users' needs often change continually, as they often find new ways of doing things and come up with new things to do with the IS (Jiang et al., 2006). Benya and McKelvey (2006) believe that if IS cannot adapt to the changes of users' needs or coevolve with users' needs, the frustration, dissatisfaction and even resistance of users to IS can significantly affect the expected benefit from IS. In this case, the financial system successfully satisfied individual users' needs. The staff of the financial department claimed that the financial system was very helpful to their work, and their needs rarely changed, since what they did every day in the financial department barely changed. As a result, the financial system was always effective.

However, when misalignment at the individual level occurs, the other systems, such as the OA system and the parent group's systems in the company did not meet the needs of the users. For example, some employees required more functionality, such as procedures approval, but the IS failed to coevolve with users' needs. Consequently, the users' perception of IS were affected, leading to resistance to IS. User resistance to IS tends to prevent the implementation of IS. This result is consistent with the findings from Kim and Kankanhalli's (2009) research on user resistance to information systems implementation, which suggests that if the IS satisfies user's needs and the user feels confident in using the IS, user resistance can

reduce significantly. The literature suggests that user resistance is a key reason for IS implementation failure (Agarwal, 2000; Beaudry & Pinsonneault, 2005; Hirschheim & Newman, 1988; Joshi, 2005). Also, this study finds that ease of use could be a key to IS implementation. For example, some older employees preferred to work with paper instead of using IS, due to the operability of the latter. Dennis et al. (1992) determined that ease of use is an essential determinant of user acceptance of IT. In addition, the results of this study also find that user capability and quality can influence the value of IS, affecting strategic alignment at the individual level. Similarly, Huang and Hu (2007) suggest that it is necessary and important for key personnel in organisations to be trained and learn key skills and to have knowledge about the IS, in order to achieve sustained strategic alignment.

Summary

In general, the literature suggests that strategic alignment can achieve competitive advantage and enhance business performance (Chan et al., 1997; Kearns & Lederer, 2003; Chan et al., 2006; Luftam et al., 2005). However, when organisations fail to achieve strategic alignment, IS can possibly produce negative effects on a business (Kearns & Lederer, 2000; Baker et al., 2011). In this case study, the company started to face a number of problems when the business expanded rapidly without IS development. Such problems the business were mainly caused by misalignment between IS and the business. As a result, business development was impeded. For example, the new projects they were conducting at the time of writing had increased the amount of work significantly. Without IS support, some new projects were possibly affected.

5.4 Factors affecting sustainable dynamic strategic alignment

In order to answer the third research sub-question, “How can organisations achieve sustainable strategic alignment?”, two subsidiary questions were introduced in

Chapter 1, thus: “What can be the challenges for sustaining strategic alignment in rapidly changing environments, and why?”; “What are the critical success factors affecting sustainable strategic alignment”. To answer such questions, this section presents the challenges for effective planning and implementing of IS, and critical success factors affecting sustainable strategic alignment in rapidly changing environments.

5.4.1 The challenges for dynamic strategic alignment

According to dynamic capabilities perspective, companies should have dynamic capabilities in order to sustain strategic alignment and deal with the changing environments. One of such dynamic capabilities can be the ability to overcome challenges when companies attempt to sustain their strategic alignment in dynamic context. The existing literature discusses little about this, while this research identifies four possible challenges for sustainable strategic alignment. This section discusses and explores these four challenges including: Attitude to IT/IS, Risk management, Lack of IS professionals and Lack of IS outsourcing options.

The previous chapter has presented the challenges, imposed changes and new opportunities affecting strategic alignment and IS development. This section synthesises them into four categories as follows: attitude to IT/IS, risk management, out sourcing, and IS professionals. Table 5.4 summarises such challenges for dynamic strategic alignment.

Table 5.4 Summary of challenges for dynamic strategic alignment from findings

Challenges	Examples	How to challenge dynamic strategic alignment process
Attitude to IT/IS	As tool, not priority and important, role of IS	Direct influences: Leading to User resistance, lack of management support (management endorsement) Indirect influences: IS professionals issues, risk management

Risk management	Cost control, change resistance	Direct influences: Risk of investment (resource management risk), slow effects of IS (performance risk), risk of organisational changes (path dependency) Indirect influences: lack of IS professionals, attitude to IT/IS
Lack of IS professionals	IS personnel, recruitment difficulty, safety of IS	Direct influences: lack of IS knowledge, lack of IS management, lack of IS infrastructure capability Indirect influences: risk management, lack of IS outsourcing
Lack of IS outsourcing options	No suitable off-the-shelf system	Direct influences: IS development failure Indirect influences: risk management

5.4.1.1 Attitude to IT/IS (IS perception)

In the existing IS literature, attitudes to IT/IS are always associated with user resistance and IT adoption/acceptance (e.g. Hirschheim & Newman, 1988; Cheung et al., 2002; Venkatesh, et al., 2003; Riemenschneider et al., 2003; Schepers & Wetzels, 2007). In this study, most people in the company seemed to treat IS as only a tool which helped their daily work, while IS has already been seen to be one of the most important factors to success in business and management in the academic field (Pearlson & Saunders, 2009; Chan et al., 1997; Ward & Peppard, 2002). Most users believed that IS were not that important to their work, or even that it made their work harder. Some pointed out that they did not need IS as much as companies in other industries, as the industry of the company tended to rely less on IT and IS. This led to user resistance. Similarly, Schepers and Wetzels (2007) found that the user's attitude and behavioural towards IT had a significant influence on user resistance

and IT acceptance. Besides, Lau et al. (2000) suggest that attitudes to IT play the most significant role in user resistance and IT acceptance.

Some scholars, such as Spender (1989) and Kampas (2003), also consider that attitude and perception to IS of key personnel can significantly impact on managerial judgement and management endorsement of IS. In this case, the president was the only one among the interviewees who considered IS at a strategic level. However, he did not consider IS development as their priority, although he recognised that they had strong needs for it. He asserted that the IS should support the business at the strategic level, and the IS strategy should be a part of business strategy. This means the IS, to some extent, continued to be a tool that supports the business strategy in the case company. As a result, the IS did not gain managerial support, leading to IS development failure. Kampas (2003) asserts that cultural bias and the mind-set regarding IS at the management level could block value creation. This can lead to IS implementation failure. Also, a lack of managerial support and management endorsement for IS in the case company also resulted in a negative effect on individual attitudes towards using it. Many interviewees supposed the president did not pay much attention to IS, due to his policy. This gave rise to the managers and employees considering IS to be a less vital issue. Leonard-Barton and Deschamps (1988) generated similar findings, namely that perceived management support can produce a significantly positive effect on attitudes towards using new technology.

The existing literature on attitudes to IT/IS emphasises IT acceptance (e.g. Hirschheim & Newman, 1988; Cheung et al., 2002; Venkatesh, et al., 2003). Some literature also finds that attitudes to IT/IS can affect IS implementation (e.g. Kim & Kankanhalli, 2009; Joshi, 1991). In this study, besides IT acceptance and IS implementation, some other challenges to the dynamic strategic alignment process were influenced by attitudes to IT/IS. Similar to the results of DeLone and McLean (1992), the findings of this study suggest that the direct influence of negative attitudes to IT/IS on dynamic strategic alignment are the weak role played by IS, leading to a lack of IS professionals. Also, the attitude to IT/IS led to low investment in IS, as they thought there were risks that the IS might not have the outcomes they

wanted. Similarly, Boehm (1991) also found that managers may identify software as high-risk elements because of negative perception regarding technology.

5.4.1.2 Risk management

Risk management is a term widely used in the business and management field. Risk, according to Chapman and Ward (1996), refers to the possibility of losing value with uncertainty. Companies tend to attempt to minimise such a probability and control the impact of possible unfortunate events. Normally, they would avoid spending too much on the things that they are not good at or familiar with, to avoid the probable negative outcomes (Arrow, 1970; Sherer, 1992). In this study, the management of the case company intended to reduce risk by not investing in IS. This led to the fact that there were not sufficient funds invested in IS. According to Dey et al. (2007), this can result in IS failure. As a result, the planned integrated systems failed to be developed in the case company. There is plenty of IS literature suggesting that misalignment occurs when organisations do not invest enough in IS (Finne, 2000; Maguire, 2002; Kwak & Stoddard, 2004).

There is a common perception in practice that IT is a cost centre needing a huge sum of investment (Mukhopadhyay et al., 1995). It is clear that IS is not likely to bring about direct profit. It tends to provide capital management, the foundations for doing business, productivity, as well as strategic opportunities and advantages in the long-term (Laudon & Laudon, 2009). This leads to the fact that, sometimes, it is hard for the IS to match expectations (Kim et al., 2005; Sherer & Alter, 2004). Sherer and Alter (2004) suggest that the outcomes of IS can be totally different from what the users want. According to Abdel-Hamid et al. (1999), a lack of budget, time, and proper test can give rise to unsatisfied performance of IT projects. All of these can lead to the perception that IT and IS can be a cost centre without expected business value. In this case, the case company held a similar perception that IS cost too much without satisfying business value. Hence, they did not spend sufficient funds and time in IS development. Furthermore, the company appeared to concentrate more on the direct effects and profits than the indirect long-term outcomes. As a result,

the case company preferred abandoning the previous IS project, as they considered that the IS was not worth investing that much in. All of these aspects led to barriers to achieving and sustaining strategic alignment.

Besides, risks also can emerge due to organisational changes (Hollnagel, 2012). Cartwright and Cooper (1992) assert that people appear to feel anxious when work routines and work spaces change. Kohlrieser (2006) also suggest that people resist the pain of the changes. Therefore, the change of organisation can produce a negative impact on the individuals. Besides, organisational changes might also have negative effects on organisations, such as the risk of loss of business performance (Hollnagel, 2012). And the development and adoption of IS can bring huge changes to organisations (Keen, 1981; Avgerou, 2001; Ward & Peppard, 2002). This means organisations might resist adopting new IS or developing IS. In this study, the company, to some extent, was also afraid of the organisational changes brought about by IS. Due to the previous business success of the case company, the company appeared to reject any significant changes of its business and management mode. They asserted that new IS would change their management and business, which they were familiar with, which could possibly affect the performance of the company. Therefore, they asserted there was a high risk that organisational changes caused by IS might affect their successful mode of business and management. Indeed, the environment keeps changing, and the past successful path (without IS support) could lead them to failure. Sabherwal et al. (2001) and Baker et al. (2011) find that the previous successful path may prevent the organisation from evolving their IS and IS strategy, leading to misalignment. This is consistent with the results of this study.

Risk management in general can be a reason for IS project abandonment in the case company, because IS was treated as a risk. Also, risk management can be a reason for other challenges for the dynamic strategic alignment process. Similar to the results of Wallace et al. (2004), this study finds that, due to the resource management risk, the company spent limited resources on IS development, including IS professionals. Performance risk and organisational change risk, to a large extent, negatively affected the key personnel's (e.g. the president and the director of general office) attitude and perception to IS. Kwak and Stoddard (2004) suggest that

misunderstanding of risk management (over perceived risk management perceptions) can lead to negative perceptions and attitudes to information technology.

5.4.1.3 Lack of IS professionals

Brancheau and Wetherbe (1987) suggest that IS professionals can be one of the most important issues in IS management. The literature also suggests that IS employees have become more and more essential to implementation and strategic use of IS (Keen, 1991; Watson, 1990; Igbaria et al., 1994; Guzman et al., 2004). As mentioned above, the case company had recognised that they strongly needed IS professionals for their IS infrastructure. Lack of IS professionals did produce many negative impacts on the dynamic strategic alignment process and strategic planning of IS. The literature finds that the quality of IS professionals can be the key for strategic alignment (Reich & Benbasat, 2000; Burn & Szeto, 2000; Teo & Ang, 1999).

A lack of qualified IS professionals tends to lead to a lack of IS knowledge in organisations (Kearns & Sabherwal, 2007). Also, a lack of IS knowledge at the top management level, according to Kearns and Sabherwal (2007), can negatively affect business managers' participation in strategic IS planning, leading to misalignment between IS and business. In this study, the president complained that there were no qualified IS professionals in the case company who had the relevant knowledge to help him with the IS outsourcing. Also, due to a lack of IS knowledge, there were some security concerns about IS among the users. The lack of IS and IT knowledge and IS professionals resulted in a lack of confidence in IS security, which produced not only user resistance, but also high risk assumptions.

Moreover, the findings of this study also show that a lack of IS professionals can lead to a lack of IS management. The president claimed that they did not have qualified IS professionals, particularly those who could manage information systems. Sumner (1999) suggested that it is very vital for organisations to train and re-skill their IS professionals in IS management when they do not have external consultants. Pearlson and Saunders (2004) also agree that IS professionals play a key role in

managing an IS project. When the IS management is affected, strategic alignment tends to be affected as well (Henderson & Venkatraman, 1992).

The literature also suggests that the IS professionals could be the key to IS infrastructure capability (Peppard & Ward, 2004; Bharadwaj, 2000; Cepeda-Carrion, 2012). Bharadwaj (2000) considers IS professionals as a “human IT resource” which is the foundation of IS capability. IS professionals need both technological IT skills and managerial IT skills to make use of IT infrastructure (Bharadwaj, 2000). In this study, the case company had very limited IS infrastructure. They claimed that the most serious problem of IS development for them was a lack of IS professionals. The president was worried that there were not enough qualified IS personnel to manage and make use of the planned integrated system, which was one of the main reasons for the abandonment of the system project. Thus, the strategic alignment process was significantly affected. Even though they realised the importance of IS professionals, they could not solve the issue about the lack of IS professionals.

There were some reasons for the lack of IS professionals in the case company. As mentioned above, attitudes to IT/IS and risk management are two of them. Another important reason is recruitment difficulties. In China, state-owned companies are restricted by the government in terms of recruitment, such as limitations on salaries. As a company partially owned by the government, the case company was also restricted by such regulations and supervisions. Moreover, there are not many IS professionals in China, particularly IS professionals who have experience and are familiar with their industry. It is widely claimed in the literature that there is a significant lack of IS/IT professionals in Chinese companies (Sun et al., 2009; Chang, et al., 2008; Westrup & Liu, 2008). For example, He (2007) asserts that the lack of well-trained IS employees could be one of the challenges when Chinese companies implement ERP systems. Davison, et al. (2008) also mentioned that there is a lack of IT professionals in most Chinese companies, which affects IS/IT applications and business performance. Furthermore, the company seemed to lack attraction for recruitment.

The lack of IS professionals also indirectly strangled the strategic alignment process by leading to other specific barriers which affected the strategic alignment process in the case company. As mentioned before, a lack of IS professionals can lead to excessive risk assumptions, giving rise to improper risk management on IS. Besides, a lack of IS professionals also results in a lack of IS knowledge, which is one of the reasons why they could not find a suitable off-the-shelf system and abandon IS outsourcing.

5.4.1.4 Lack of Outsourcing options

Outsourcing refers to services or products provided by third party providers (Applegate & Montealegre, 1991). According to Dibbern et al. (2004), IS outsourcing has been a very popular method for organisations to meet their IT needs, since it can benefit organisations by reducing costs, enabling business focus, catching up with competitors on IS, enabling leveraging of IS expertise, and increasing flexibility for dynamic environments (Martinsons, 1993). However, there are also many problems which emerge when organisations attempt to employ IS outsourcing (Martinsons, 1993; Kremic et al., 2006; Aubert & Patry, 1998). One of the most major problems is that the outsourcing system cannot support business needs (Grover et al., 1996). In this case study, the case company had attempted to employ IS outsourcing, but they did not find a suitable off-the-shelf system to fit the business of the case company. The president claimed that they needed a fully customised design system, but they could not find a third party provider to offer an appropriate system for their own business and management needs. Unsuitable outsourcing and insufficient planning of outsourcing has proved to be disastrous (Barthélemy & Quélin, 2006). For example, Martinsons (1993) conducted a study where an American bank employed an external vendor to turn over its entire IS operation and management. He finds that the cost did reduce, and the efficiency of information processing did enhance, but the service level also went down (Martinsons, 1993). The case company attempted to avoid this problem, so that they gave up IS outsourcing.

Although the case company had a good reason to abandon IS outsourcing, the negative influence of a lack of IS outsourcing emerged. Without IS outsourcing, it was hard for the case company to catch up with competitors in IS development. Grover et al. (1994) suggest that IS outsourcing can be a response to IS resource gaps. Loh and Venkatraman (1992) also assert that IS outsourcing can reduce IS development costs and increase IS performance efficiently and effectively. Van Lier and Dohmen (2007) find that successful IS outsourcing can support strategic alignment by conducting a multiple case study. Without IS outsourcing, organisations may need more effort and investment to achieve strategic alignment. It seemed that the case company was not willing to spend much resource on IS development, which failed as a result.

The lack of IS outsourcing also produced some indirect influences on dynamic strategic alignment process by leading to resource management risks. According to Barthélemy & Quélin (2006), outsourcing can significantly reduce costs if organisations want to meet a short-term demand. In this study, the case company abandoned IS outsourcing, which means that they needed to develop IS on their own with large financial and time costs. The resource needs increased due to the lack of outsourcing without extra financial support from management. As a result, resource management risk increased (Sherer & Alter, 2004; Dey et al., 2007).

5.4.2 Dynamic capability affecting sustainable strategic alignment

According to dynamic capabilities perspectives, IT flexibility and organisational agility can also be seen as the capabilities to help sustaining strategic alignment in dynamic contexts. This section discusses how these two capabilities benefit and affect sustainable strategic alignment in the case company with some relevant literature.

The literature identifies two factors that have a significant impact on sustainable strategic alignment: organisational agility and IT flexibility (Tallon & Pinsonneault, 2011; Preston & Karahanna, 2009; Croteau & Bergeron, 2009; Tian et al., 2009). Organisational agility refers to “the ability to detect and respond to opportunities

and threats with ease, speed, and dexterity, has emerged, next to alignment, as a key business imperative, facing rapid and unpredictable changes” (Tallon & Pinsonneault, 2011, p. 464), while IT flexibility refers to “the ability to easily and readily diffuse or support a wide variety of hardware, software, communications technologies, data, core applications, skills and competencies, commitments, and values within the technical physical base and the human component of the existing IT infrastructure” (Byrd & Turner, 2000, p. 172). The findings of the study confirm the findings from the literature that organisational agility and IT flexibility are associated with dynamic strategic alignment. The following paragraphs explore and elaborate these two factors in details.

It is widely believed in the existing literature that organisational agility has a positive relationship with strategic alignment (Kearns & Lederer, 2003; Preston & Karahanna, 2009; Reich & Benbasat, 1996; Barki & Pinsonneault, 2005; Lee, 2004; Tallon, 2008), although some studies considering strategic alignment produce negative impacts on organisational agility (He & Wong, 2004; Kraatz & Zajac, 2001; Lavie & Rosenkopf, 2006) because strategic alignment is treated as static and too tight. In this thesis, strategic alignment is seen as a process which is dynamic. Therefore, it is suggested that organisational agility can benefit sustainable strategic alignment. In this study, the findings show that the organisational agility could help organisations to identify the changes that affect strategic alignment. This is similar to the results of Tallon’s (2008) research. However, Tallon (2008) also finds that strategic alignment can benefit organisational agility, and the results of this study do not provide evidence to support this. This is probably due to the fact that the case company had not developed strategic alignment sufficiently to produce positive influences on organisational agility.

IT flexibility is very important when you need to change frequently in terms of dynamic strategic alignment (Luftman & Brier, 1999; Croteau & Bergeron, 2009). Duncan (1995) suggested that IT infrastructure should be flexible enough to enable strategic innovation of IS and sustainable alignment with changing business process. Chung et al. (2003) consider that IT flexibility has positive impacts on strategic alignment, particularly dynamic strategic alignment in changing environments

(Croteau & Bergeron, 2009; Croteau et al., 2001). In this study, the results suggest that a low level of IT flexibility could affect IS development and innovation. For example, the IT staff claimed that the systems should be flexible enough to be able to integrate with other systems (e.g. the parent group's system), but the OA system they used did not have such flexibility, which affected IS development and strategic alignment. In addition, Gebauer and Schober (2006) assert that IT flexibility is cost efficiently deployed to support a business process. This means the cost of change is a key to IT flexibility. Similarly, the findings of this study also show that the low level of IS infrastructure, to some extent, means that the organisation can easily abandon the existing system, as it is worth little. That is to say that it is more flexible and costs less to change or replace lower level IS infrastructure than an expensive one.

5.5 Summary

In order to answer the research question, this chapter has examined and discussed the environmental factors affecting the strategic alignment process, the importance of sustainable strategic alignment, and sustainable dynamic strategic alignment respectively. Most results of this study confirm the current literature on sustainable dynamic strategic alignment. This chapter firstly discussed both internal and external environmental factors affecting strategic alignment process and how external and internal environments impact on the strategic alignment process differently. Next, this chapter explains how sustainable strategic alignment process occurs, by discussing the process of sustaining strategic alignment. Besides this, the effects of sustainable strategic alignment were examined. In addition, four challenges for sustainable strategic alignment and two critical success factors (i.e. IT flexibility and organisational agility) affecting sustainable strategic alignment have been examined and discussed as well.

Chapter 6 – Conclusion

After discussing the findings of this study in relation to the current literature, this chapter firstly summarises the key ideas of this study and answers the research questions. Next, a research contribution section, including contributions to knowledge, is presented. A section discussing the implications of this study for both practice and research provides recommendations in these areas. Finally, this chapter reviews the limitations of this study and gives suggestions for future research.

6.1 Summary

It is widely believed in the literature that strategic planning of IS and strategic alignment has significant impacts on organisations' performances (Chan et al., 2006; Reich & Benbasat, 1996; Sabherwal & Chan, 2001; Pearlson & Saunders, 2009; Chan et al., 1997). A chronological review of the literature on this topic presented in Chapter 1 shows that most early strategic alignment and strategic planning of IS literature was proposed in a relatively static context (e.g. Earl, 1989; Henderson & Venkatraman, 1993). Researchers started to realise the significance of dynamic contexts after 2000. Therefore, a growing amount of literature has begun to focus on sustainable dynamic strategic alignment (e.g. Baker et al., 2011; Benbya & McKelvey, 2006; Vessey & Ward, 2013). This trend highlights the importance of rapidly changing environments. Hence, it is vital to investigate the influence of changing environments on strategic planning of IS and strategic alignment, and how strategic alignment can be sustained in dynamic contexts, which is the aim of this study. Research objectives and research question were constructed according to the research aim. Research objectives were set as presented in Chapter 1: to identify factors which can influence strategic alignment process in complex and dynamic enterprise environments; to examine the significance of sustainable strategic alignment in changing environments; to investigate the process of sustainable strategic alignment in changing and competitive environments. The core research

question is: “How can organisations adapt their strategic planning of IS and sustain strategic alignment in order to respond to the dynamic and competitive environment?” A number of sub-questions are developed to better answer this core research question. The following parts summarise the answers to such research questions.

1. What are the (both internal and external) environmental factors that can influence strategic alignment process and how do they affect the strategic alignment process?

a) What are the elements in the environments that have significant effects on the strategic alignment process?

This study had identified a number of environmental elements that can significantly influence strategic alignment process. It is widely suggested in the literature that organisational contexts and business environments are key elements affecting strategic planning of IS and strategic alignment (e.g. Chen et al., 2010; Ward & Peppard, 2002). Organisational contexts can be considered as the internal environment, while business environments can be considered as the external environment in this study.

In the IS literature, organisational structure and organisational culture are frequently mentioned as internal environments or organisational contexts which affect strategic planning of IS and strategic alignment (e.g. Laudon & Laudon, 2009; McGrath, 2005). In this case study, organisational structure (e.g. Hierarchical structure, bureaucracy, centralised IS governance, leader’s management style and organisational size), organisational culture (e.g. friendly culture and hierarchy culture) and organisational resource (e.g. information resource, capital resource, social resource, and IS resource) are identified as internal environmental factors affecting strategic alignment process. The findings of this study support the literature, and also show that organisational resource can be another factor affecting strategic alignment processes in internal environment.

The IS literature also identifies PEST (politics, economy, social, technology) and national culture as external environment factors affecting strategic planning of IS

and strategic alignment (Ward & Peppard, 2002; Merali, 2006; El Sawy et al. 2010; Ward, 2012). In the case study, politics, economy, technology and national culture are identified as external environmental factors. The results of this case study confirm and support the literature, although social factors were not highlighted in the case.

b) How do they affect the strategic alignment processes?

This research discovered that environmental factors have significant impacts on strategic alignment in strategic level, organisational/operational level, and individual level. The literature has already shown some effects of environmental factors on strategic planning of IS and strategic alignment (e.g. Veiga et al., 2001; Merali, 2006). Tables 5.1 and 5.2 have shown the influences of such environmental factors on strategic alignment processes in this study (see column “influences on strategic alignment process”). For example, organisational structure can affect communication, flexibility, reaction to changes, and perception of IS and needs for IS, and influence strategic alignment processes at all three levels. Organisational culture can also affect the perception of IS, and resistance to change, influencing all three levels of strategic alignment processes. Organisational resource can potentially reduce the needs for IS and strategic alignment within the organisations, affecting strategic alignment processes in strategic level and organisational/operational level. Politics and economics can significantly influence the business strategy, affecting strategic alignment processes in strategic level. Technology, particularly information technology, can produce impacts on strategic alignment processes at the organisational/operational and individual levels by making work processes more convenient. National culture can also produce indirect influences on strategic alignment processes. Such environmental factors can influence each other as well. Furthermore, they do not influence strategic alignment processes independently. Most factors affect or enhance other factors. For example, the organisational structure can determine organisational culture. External environments can also significantly affect internal environments. For instance, the national culture can

significantly affect organisational structure and organisational culture (Hofstede, 1980). This is why environmental factors are so important to the strategic alignment process.

2. What constitute a process of sustainable strategic alignment and why is it important to the performance of an organisation in a dynamic environment?

a) What is sustainable strategic alignment and what are the processes of sustainable strategic alignment?

Chapter 2.4 introduced sustainable strategic alignment which should be a continuous process, and the results of the case study also support this argument. Figure 5.1 illustrated that strategic alignment can be treated as a dynamic process. By doing this, sustainable strategic alignment can occur. Intended strategic alignment is established usually when organisations are at a low strategic alignment stage (unrealised strategic alignment). Next, the intended strategic alignment was implemented in the strategic alignment process. However, due to environmental changes and unexpected challenge, the intended strategic alignment failed to implement the strategic alignment process, so that unrealised strategic alignment occurred. Only when organisations adapt to environmental changes and overcome challenges can intended strategic alignment be realised as strategic alignment. But realised strategic alignment can turn to unrealised strategic alignment due to continuous environment changes. When unrealised strategic alignment occurs, organisations attempt to amend their IS strategy, so that a new, intended strategic alignment is established. This cycle continues because environments keep changing. Based on this process, strategic alignment can be sustained.

b) How is sustainable strategic alignment different from the conventional understanding of strategic alignment?

Chapter 2 introduced the conventional understanding of strategic alignment by presenting some classical strategic alignment frameworks, such as the Strategic Alignment Model (Henderson & Venkatraman, 1993). Such frameworks are widely applied and examined (e.g. Goedvolk et al., 1999; Avison et al., 2004; Bleistein, et al., 2006). However, recently, a growing amount of literature has criticised such conventional strategic alignment frameworks, as they do not apply to today's rapidly changing contexts (e.g. Smaczny, 2001; Chan & Reich, 2007; Baker et al., 2011; Merali et al., 2012; Vessey & Ward, 2013). Hence, sustainable strategic alignment has emerged in order to demonstrate the value of strategic alignment in a changing environment. It has been found in this study that there are three main differences between sustainable strategic alignment and a conventional understanding of strategic alignment. The first is that conventional strategic alignment tends to treat strategic alignment as a static end-state, while sustainable strategic alignment considers strategic alignment as a dynamic process. This allows strategic alignment can be sustained in a dynamic context. The second difference is that conventional strategic alignment is too tight, and so can cause path dependence (resistance to change), while sustainable strategic alignment is more flexible for changing environments. The third difference is that conventional strategic alignment lacks comprehensive theoretical support, while sustainable strategic alignment is built based on well-established theories (i.e. co-evolution and dynamic capabilities perspective).

c) What effects does sustainable strategic alignment have on an organisation's performance?

It is suggested in the current literature that sustainable strategic alignment produces positive effects on an organisation's performance (Vessey and Ward, 2013; Baker et al., 2011). This study also found that, when strategic alignment turns to misalignment, due to dynamic environments, the business performance of the organisation will be affected. Table 5.3 summarises the effects of strategic alignment and misalignment at the strategic, organisational/operational and individual levels in

the case company. If organisations achieve and sustain strategic alignment at the strategic level, the business strategy of the organisations can be supported by IS strategy. The failure to sustain strategic alignment at the strategic level can lead to a failure to implement both IS and business strategies. Strategic alignment at organisational/operational level can support organisations' communication and daily works, as well as aiding the implementation of IS strategy. Misalignment at this level can lead to failure of IS implementation and negative effects on daily business operations. Individual levels of strategic alignment can also support IS implementation, while misalignment at this level can significantly affect IS implementation and IS capability, leading to low individual performance. Thus, this research argues that all three levels of strategic alignment or misalignment can produce significant effects on organisations' business performance. This is to say, it is essential for organisations to sustain strategic alignment in dynamic contexts.

3. How can organisations achieve sustainable strategic alignment?

a) What can be the challenges for sustaining strategic alignment in rapidly changing environments, and why?

A number of researchers have identified some critical success/failure factors affecting strategic alignment (e.g. Teo & Ang, 1998; Henderson & Venkatraman, 1993). Strategic use of IS, IS management knowledge and top management support are frequently mentioned as critical factors affecting strategic alignment in the literature. However, very few consider this issue in a dynamic context. There are four main challenges to sustaining strategic alignment (effective planning and implementing of IS) identified in this case study. These are attitudes to IT/IS, risk management, lack of IS professionals, and lack of IS outsourcing options.

Attitudes to IT/IS in the case company led to user resistance and a lack of management support for IS. Also, it enhanced other challenges (i.e. for risk management and a lack of IS professionals) for strategic alignment. The management of the case company intended to reduce the risk by not investing in IS,

because of their negative attitude towards IT/IS and lack of understanding of the field. This restricted the IS development of the organisation. Besides, the case company did not want to change their successful mode of business because of IS development. Due to the negative attitude to IT/IS and risk management (lack of investment in IS), the case company lacked IS professionals, which led to a lack of IS knowledge, a lack of IS management, and a lack IS infrastructure capability in the case company, which significantly affected the dynamic strategic alignment. Due to this, the case company failed to employ IS outsourcing. Without sufficient IS knowledge, the case company could not find an off-the-shelf system to fit the business of the organisation. Thus, they needed to develop their own systems themselves, which cost much more than IS outsourcing. Due to the previous challenges, the case company was not willing to invest too much in IS. As a result, strategic alignment failed to be sustained in the case company. The challenges for sustained strategic alignment identified in this case study are quite similar to the critical factors affecting strategic alignment identified in the existing literature, although the challenges have more technological and practical concerns.

b) What are the critical success factors affecting sustainable strategic alignment?

Besides the environmental factors and unexpected challenges mentioned before, this study has discovered two more important factors that affect the sustainable strategic alignment. One is organisational agility, which is significant for sustainable strategic alignment. It has been suggested in the literature that organisational agility is the key to sustained strategic alignment in dynamic contexts, as organisational agility is about how organisations detect and respond to the changing environment (e.g. Tallon & Pinsonneault, 2011; Gibson & Birkinshaw, 2004), which is confirmed by the findings of this case study. Tallon and Pinsonneault (2011) also find that sustained strategic alignment can enhance the organisational agility of organisations. The other is IT flexibility which significantly influences the organisation's ability to sustain strategic alignment in rapidly changing environments. The findings of this study reveal that the IT flexibility is significantly essential to the dynamic sustainable

strategic alignment. If IT infrastructure is inflexible, it can be extremely expensive when organisations attempt to sustain strategic alignment in changing environments (Croteau & Bergeron, 2009; Croteau et al., 2001; Chung et al., 2003). It is also found in this study that it is easier for organisations to replace IT infrastructure at a lower level. If organisations are used to having high level of strategic alignment with expansive IT infrastructure, it is difficult for the management to decide to replace such IT infrastructure when environments change. Therefore, IT flexibility is also important to sustained strategic alignment in dynamic contexts.

6.2 Limitations

The case study is a single case conducted in only one Chinese company, meaning that the findings of this research are only validated in a unique organisational context. The findings may need to be confirmed in other contexts in order to check if the results can explain and be employed in a different context. Future research can further explore sustainable strategic alignment in changing environments beyond this boundary (e.g. choosing similar types of organisations or different types of organisations in different sectors as cases to research), which may find more factors affecting sustainable strategic alignment, environmental influences on strategic alignment process, and challenges to sustainable strategic alignment.

Also, this research cannot be generalised to a universal level or develop theory from the results, due to the exploratory nature of this study which aims to explore and explain the specific phenomenon in a specific context. However, the findings of this study are considered to be valid for use in further research aimed at identifying the construct. Also, it is criticised that single cases offer a poor basis for generalising in quantitative research methods (e.g. survey), but it is different in qualitative case study research. This research relies on analytic generalisation rather than statistical generalisation, which means that the researcher is attempting to generalise a set of particular results to a border situation in a specific context (Chinese small and medium size SOEs in this study). In this context, the case company is selected as

typical, representative and not unique. This can enhance the generalizability of the research. To re-enforce the generalisation, further research can test the findings of this research by replicating them in different cases in similar contexts.

Alongside interviews and documentation, which are used as data collecting methods, participant observation could be used to gain deeper hidden data. DeMunck and Sobo (1998) assert that participant observation can provide more in-depth insights and opportunities for viewing unscheduled events. If researchers can attend the board level meetings to observe how they formulate and amend business strategy and IS strategy, deeper data may be obtained. However, it was hard for the researcher to participant in the board level meetings, due to the regulations of the case company and confidentiality concerns. It is considered that the interviews and documentation have provided deep and sufficient data. Nevertheless, future research can attempt to employ participant observation as a data collection method to gain a more richly detailed description of sustainable strategic alignment in changing environments.

In addition, one of the criteria for choosing the case company in this research was rapidly changing environments. The case company did exist in such an environment. However, it was unexpected that the external environment had less impact on the case company's decision making, for various reasons. There may be bias within the findings because of the SOE status of the case company. Future research should test the framework and the findings of this study in private companies to see how well the framework of this research can be applied in other contexts which are affected significantly by environmental issues.

6.3 Research contributions

6.3.1 Contributions to knowledge

This research has a number of contributions to the existing knowledge. Firstly, a chronological review of literature on strategic planning of IS from 1970s to 2000s was made in Chapter 1. This review not only presents a general view of academic

background regarding the topic, but also identifies the research tendency of this topic. It is clear that strategic alignment became the main concern in the field after 1990s (e.g. Morton, 1991; Earl, 1993; Henderson & Venkatraman, 1993). Most assumed a static context, but the reality is that circumstances keep changing constantly, so there has been a trend, as the literature states, to concentrate on dynamic issues in strategic alignment (e.g. Hirschheim & Sabherwal, 2001; Baker et al., 2011; Vessey & Ward, 2013). By doing this, an existing gap in the literature has been identified. Sustainable strategic alignment in dynamic contexts is discussed in Chapter 2 to show the significance and existing understanding of sustainable strategic alignment. The literature review also enhances the understanding about sustainable strategic alignment by identifying the difference between sustainable strategic alignment and conventional understanding of strategic alignment in a comprehensive way. Three differences are identified: process-view, flexibility and theoretical base. The differences also reflect the improvements and the tendencies in strategic alignment literature. This provides the significance and characters of the sustainable strategic alignment for researchers to consider in their studies. In addition, it also provides a practical idea and guide for establishing methods to achieve and sustain strategic alignment.

Secondly, this study develops a process-based dynamic strategic alignment framework which identifies the processes and factors involved in achieving sustainable strategic alignment in changing environments (see figure 3.1). This framework is built based on Benbya and McKelvey's (2006) co-evolutionary IS alignment framework, which shows the multilevel aspects of strategic alignment in a co-evolutionary perspective. By adding external environments, internal environments, two factors affecting sustainable strategic alignment (IT flexibility and organisational agility), and the stages process cycle, the framework provides a theoretical lens to understand how sustainable strategic alignment processes occur and what influences the sustainable strategic alignment process. Our framework also explores the strategic alignment process at three levels (strategic level, organisational/operational level and individual level), which can better reflect the strategic alignment process holistically. Furthermore, the framework explores the

interaction between each level and process, which is barely discussed in the existing literature. In Chapter 5, the stages process cycle is modified (see Figure 5.1). Unrealised strategic alignment, which is known in the literature as misalignment, is added as a stage. This not only enhances the framework but also makes it more flexible in different situations. Thus, it is considered that this framework can be employed by other researchers in sustainable strategic alignment studies.

Thirdly, this research identifies organisational resources as an internal environmental factor affecting strategic alignment process. Most literature considers organisational structure and organisational culture as internal environmental factors that influence strategic alignment (e.g. Ward & Peppard, 2002; McGrath, 2005; Twati & Gammack's, 2006). Very few consider organisational resources as an internal environmental factor. Some have mentioned IS/IT resources, information resources (e.g. Kearns & Lederer, 2000) or even IT human resource (Kearns & Sabherwal, 2007), but little concern has been shown in relation to other organisational resources, such as capital. This research suggests that organisation resources which can provide huge competitive advantages can significantly affect strategic IS planning because organisations with such organisational resources may rely less on IS and strategic alignment to help gaining competitive advantages. Therefore, organisational resources can potentially prevent IS innovation and IS adoption. In addition, this case company was in a different context. Normal private companies in relatively open markets may not have such organisational resources, and so have to rely on IS more to gain competitive advantages.

Fourthly, it is considered in this study that both internal and external environments play a vital role in strategic alignment processes in dynamic contexts. This study highlights that the internal environmental factors have more significant impacts on strategic alignment than external environmental factors do. Literature suggests that external environments tend to change more rapidly than internal environments (e.g. Laudon & Laudon, 2006; Cao et al., 2012). As a result, most studies tend to focus on external environments in the dynamic strategic alignment literature (e.g. Chetty, 2003; Sapounas, 2009). However, this study discovers that, although internal environments do not change as frequently as external environments, the influences

of internal environmental changes can be more serious and significant than external environmental changes. For instance, the turnover of the president in the case company brought about huge changes in management style, leading to huge impacts on strategic alignment, directly and indirectly. The external environmental changes, on the other hand, appear to have had fewer impacts on strategic alignment, though they happened more frequently. Therefore, internal changes produce dramatic impacts on strategic alignment process, while external environments change more frequently.

Fifthly, this study has discovered how sustainable strategic alignment influences organisations' performance, particularly the business performance, in an exploratory case study. A large amount of the literature agrees that strategic alignment benefits an organisations' performance, but most are in a static context and focus on only one or two levels (e.g. Henderson & Sifonis, 1988; Luftam et al., 2005). This study begins to empirically investigate the effects of sustainable strategic alignment on organisational performance in a holistic and dynamic process view. It suggests that the strategic level alignment can make IS to support business strategy, while strategic level misalignment can lead to IS implementation failure, affecting the organisation's management and business. This study also finds that the organisational/operational level alignment can help in the implementation of IS, while misalignment at this level can lead to a lack of operational functionalities, a lack of information and knowledge sharing between departments, and work inefficiency. Besides, it is found in this research that individual level misalignment can lead to ignorance of users' needs; to user resistance; and to IS implementation failure. Moreover, this study finds that the users' ability, including knowledge and skills, can also affect the individual level of strategic alignment. Through this, the significance of sustainable strategic alignment is embodied. Thus, the holistic clarification of the effects of sustainable strategic alignment in this research reinforces the sustainable strategic alignment and provides a solid basis for future research to explore and discuss sustainable strategic alignment.

Sixthly, four challenges (attitude to IT/IS, risk management, lack of IS professionals and lack of IS outsourcing options) for sustainable strategic alignment are identified

in this research. In most of the literature, attitudes to IT/IS are usually considered as a factor that influences IT acceptance. In this study, attitudes to IT/IS are treated as a challenge for sustainable strategic alignment. According to the results of this study, attitudes to IT/IS play a significant role in sustainable strategic alignment. Negative attitudes towards IT/IS can lead to user resistance and lack of management support. It also can lead to perceived risk associated with IS. The existing literature suggests that organisations always see IS as a cost centre that has slow effects (King & Schrems, 1978).

This study also finds that organisations are likely to avoid investing too much in IS in order to reduce the risk. The lack of investment in IS leads to difficulty to sustain strategic alignment. It is found that organisations also tend to resist change, as they see this as a potential risk (path dependency). Adoption of new IS and IS development tends to result in changes within the organisation, so that they are treated as a risk as well. Due to the limited investment in IS caused by improper risk management and negative attitudes to IT/IS, organisations are likely to lack IS professionals. This research suggests that a lack of IS professionals can lead to a lack of IS knowledge, a lack of IS management, and a low IS capability level. Such influences not only affect the dynamic strategic alignment process directly but also enhance other challenges, such as negative attitudes to IT/IS and improper IS risk management. Normally, organisations can employ third party companies for IS development and management (IS outsourcing), when they lack IS professionals. However, this study suggests that organisations may fail to employ IS outsourcing due to a lack of IS knowledge caused by a lack of IS professionals. According to Martinsons (1993), it is better for organisations to employ IS outsourcing when they have a limited basis. Lack of IS outsourcing options forces the organisation to develop IS on its own, which costs much more in terms of funds, times and manpower. It is clear that such challenges can significantly affect dynamic strategic alignment process, and they tend to influence and enhance each other. These findings contribute to the existing knowledge by adding the four possible challenges for sustainable strategic alignment, thus enriching the current literature.

Last but not least, most literature does not consider sustainable strategic alignment, or even conventional strategic alignment, in different contexts (e.g. Vessey & Ward, 2013; Baker et al., 2011). They focus on private companies and are barely concerned about other situations, such as SOEs. It is suggested that SOEs are very different from private companies, and should be considered separately in IS research (Tan & Tan, 2005; Yu & Egri, 2005). This exploratory case study was conducted in an SOE context. It is believed that SOEs are different from private companies in many senses. For example, the case company had inherent competitive advantages (land resource) compared to private companies in China. Such differences can lead to specific circumstances that need to be considered and investigated specially. This case study contributes this scope regarding sustainable strategic alignment. In addition, future research should also validate the results of this study in different contexts, such as in private companies, to see if they can transfer and replicate to other contexts.

6.4 Research Implications

6.4.1 Implications for practice

The findings of this study have significant implications for the practices of business organisations. Currently, many organisations appear to believe that strategic alignment can bring better organisation's performance, but from a static perspective. It is suggested in this research that strategic alignment should be treated as a dynamic process, so that organisations should continuously evolve their IS with business changes. This is to say that IS needs to be continuously developed to match the business. Therefore, it is essential for business organisations and IS planners to have a sustainable dynamic strategic alignment - and keep evaluating and revising IS strategy to adapt to business and environmental changes, in order to effectively gain competitive advantage from IS.

Also, it is important for top management and IS planners to consider and plan strategic alignment in a more flexible way. It is believed that inflexible strategic alignment can lead to resistance to change, due to previous success (Baker et al., 2011; Tallon & Pinsonneault, 2011). It is suggested in this study that flexibility can

help organisations to sustain strategic alignment. Flexibility here means that organisations should formulate their IS strategy flexibly, so that top management and IS planners consider future upgrades and change more, rather than blindly going for tight alignment when formulating IS strategy. Moreover, this study finds that the IT flexibility and organisational agility can significantly help organisations to sustain strategic alignment as well. IT flexibility can provide flexible infrastructure for organisations to amend their IS and IS strategy to align with changing business and environments, while organisational agility can enhance the ability to adapting environmental changes, helping sustain strategic alignment in dynamic contexts. As a result, the top management and IS planners may need to consider more about flexibility (including the flexibility of strategic IS planning, IT flexibility and organisational agility) in today's dynamic environments, as conventional static perspectives of strategic alignment can lead to a failure to sustain strategic alignment.

Besides, this research discovered four challenges (attitudes to IT/IS, perceived risk associated with IS, lack of IS professionals, and lack of IS outsourcing options) for sustainable strategic alignment. For example, it is essential to stress that attitudes to IT/IS are very important, as it can not only leads to user resistance and lack of managerial support, but it can also significantly enhance other challenges for sustainable strategic alignment. Hence, it is vital for the top management to be aware of these challenges and to provide direct support for sustainable strategic alignment and IS development. Failure to realise these challenges, especially attitudes to IT/IS which management is less likely to be aware of, can prevent organisations from achieving and sustaining strategic alignment, leading to misalignment and unexpected organisation performance. It is recommended that top management should make efforts to develop positive attitudes to IT/IS supporting strategic alignment and IS innovation, and let the IS department play a more important role in the company. It is also very important to recruit qualified IS professionals who have sufficient IS knowledge and skills. Two other challenges (perceived risk associated with IS and lack of IS outsourcing options) are significantly affected by the previous two challenges. For example, if organisations develop

positive attitudes to IT/IS and knowledge regarding the value of IT/IS, staff will not perceive IS to be a risk. As a result, they may be willing to invest more in IS innovation. In addition, sufficient IS professionals can not only reduce needs for IS outsourcing, but also help find more IS outsourcing options with their IS knowledge.

At the same time, it is essential for organisations to emphasise all three levels (strategic level, organisational/operational level, individual level) of strategic alignment in order to sustain strategic alignment. This study suggests that all these levels of strategic alignment have significant impacts on an organisation's performance. Strategic level alignment tends to be realised in both literature and practices already. It is recommended that top management and IS planners should consider how IS can help businesses strategically during the formulation of IS strategy. Also, this study suggests that it is very important for organisations to consider organisational/operational level alignment. IS departments need to be aligned with business departments in organisations. IS planners and business executives should communicate with each other well and share knowledge and information, in order to build successful links between business objectives and IS strategy (Benbya & McKelvey, 2006). Finally, organisations may easily ignore or overlook the individual level of strategic alignment, which is also very important. Users' needs and users' quality might be neglected by top management and IS planner when they are trying to achieve and sustain strategic alignment. This can lead to user resistance and IS implementation problems. The expected value of IS can be affected as well. It is recommended that organisations should conduct periodical surveys to understand users' need, and to train users in developed IS skills.

It is found in this research that some organisations can gain huge competitive advantages from their organisational resources, so that they may claim that they do not strongly need IS to gain competitive advantages. However, it is considered that such competitive advantages, particularly when gained through capital resources, cannot last forever. For example, when the case company expanded to other cities, they did not have land resources in those cities any more to help gain complete advantages. Therefore, dynamic environments can change the organisational resources from having huge competitive advantages to having nothing, and even

becoming a drag. On the other hand, sustainable strategic alignment can provide long-term value that continuously benefits the business and management of organisations constantly. Therefore, even for organisations which rely less on IS for their business, sustainable strategic alignment is still very important and helpful. It is recommended that top management should take a broad and long-term view and realise the long-term significance of IS, rather than overlooking its value.

6.4.2 Implications for future research

A large number of studies adopt a conventional understanding of strategic alignment to describe and explore strategic alignment (e.g. Henderson & Venkatraman, 1992, 1993; Goedvolk et al., 1999; Avison et al., 2004; Bleistein, et al., 2006). These studies focus on a holistic and prescriptive view of strategic alignment in a static context. For instance, Henderson and Venkatraman (1992, 1993) developed a strategic alignment model that illustrates the alignment and relationship between business strategy, information technology strategy, organisational infrastructure and processes, and information systems, infrastructure and processes in a static end-state. However, it has been argued in this research that these conventional understandings of strategic alignment can lead to failure and misalignment in a dynamic context, because environments which significantly affect strategic alignment are changing continuously and rapidly nowadays (Benbya & McKelvey, 2006; Baker et al., 2011; Vessey & Ward, 2013). This study reinforces the sustainable strategic alignment perspective, which treats strategic alignment as a dynamic process. By discussing and empirically exploring this, a comprehensive and holistic understanding of sustainable strategic alignment can be built and examined. As a result, the failure and misalignment caused by conventional strategic alignment in dynamic contexts can be prevented. Future researchers may apply this process view of strategic alignment to further investigate or describe the phenomenon of strategic alignment in dynamic contexts and validate the results of this research in different contexts. Researchers can also build new sustainable strategic alignment models based on this perspective, for their own purposes.

Also, this study attempts to investigate sustainable strategic alignment phenomenon in the light of co-evolution and dynamic capabilities perspective. These theories have been adopted in IS research recently (e.g. Benbya & McKelvey, 2006; Chen et al., 2008; Baker et al., 2011; Vessey & Ward, 2013), and very limited empirical studies support these theories. This study makes a further step to explore and investigate the phenomenon of sustainable strategic alignment, theoretically establishing the co-evolution and dynamic capabilities perspective. With the empirical support from this study, future research might develop these theories into a more normative theory in order to offer a solid basis for developing approaches to achieving and sustaining strategic alignment in dynamic contexts.

This research also built a process-based dynamic strategic alignment framework, which can be employed by future researchers. This framework is created based on the existing literature, and the elements of this framework can be flexible in different circumstances. For example, external environments can focus on politics rather than all PEST factors in some special contexts. Hence, it is suggested that the framework can be employed by future researchers in different contexts. Moreover, this framework describes sustainable strategic alignment process systematically and holistically at three levels (strategic, organisational/operational and individual). This framework provides an overall picture of the sustainable strategic alignment process and critical factors. Future researchers, who want to explore sustainable strategic alignment in a more comprehensive way, may consider adopting this framework, as they may obtain holistic insights into the understanding of sustainable strategic alignment by employing the framework.

REFERENCE

- Abdel-Hamid, T. K., Sengupta, K., & Swett, C. (1999). The impact of goals on software project management: An experimental investigation. *MIS quarterly*, 531-555.
- Abdul-Gader, A. H. (1997). Information systems strategies for multinational companies in Arab Gulf countries. *International Journal of Information Management*, 17(1), 3-12.
- Adler, P., & Adler, P. A. (1985). From idealism to pragmatic detachment: The academic performance of college athletes. *Sociology of Education*, 241-250.
- Al-Gahtani, S. S. (2004). Computer technology acceptance success factors in Saudi Arabia: an exploratory study. *Journal of Global Information Technology Management*, 7(1), 5-29.
- Allen, B. R., & Boynton, A. C. (1991). Information architecture: in search of efficient flexibility. *MIS quarterly*, 435-445.
- Altholz, V. (2010). The advantages and limitations of developing an external perspective for analyzing corporate strategic alignment. *Economic and Environmental Studies*, 10(1), 35-48.
- Apte, U., Sankar, C. S., Thakur, M., & Turner, J. E. (1990). Reusability-based strategy for development of information systems: implementation experience of a bank. *MIS Quarterly*, 421-433.
- Agarwal, R. (2000). Individual acceptance of information technologies. *Framing the domains of IT management: Projecting the future through the past*, 85-104.
- Agarwal, R., & Sambamurthy, V. (2002). Principles and models for organizing the IT function. *MIS Quarterly Executive*, 1(1), 1-16.
- Ambler, T., Witzel, M., & Xi, C. (2008). *Doing business in China*. Routledge.
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic management journal*, 14(1), 33-46.
- Andreu, R., & Ciborra, C. (1996). Organisational learning and core capabilities development: the role of IT. *The Journal of Strategic Information Systems*, 5(2), 111-127.
- Anthony, R. N. (1965). Planning and control systems: a framework for analysis.

- Ansoff, H. I. (1980). Strategic issue management. *Strategic Management Journal*, 1(2), 131-148.
- Applegate, L., & Montealegre, R. (1991). Eastman Kodak Company: Managing information systems through strategic alliances. *Harvard Business School Case*, 9, 192-030.
- Argenti, J. (1968). *Corporate planning: a practical guide* (No. 2). Routledge.
- Armstrong, C. P., & Sambamurthy, V. (1999). Information technology assimilation in firms: The influence of senior leadership and IT infrastructures. *Information systems research*, 10(4), 304-327.
- Armstrong, J. S. (1986). The value of formal planning for strategic decisions: Reply. *Strategic Management Journal*, 7(2), 183-185.
- Arrow, K. (1970). Political and economic evaluation of social effects and externalities. In *The analysis of public output* (pp. 1-30). UMI.
- Atkins, M. H. (1994). Information Technology and Information Systems Perspectives on Business Strategies, *Journal of Strategic Information Systems*, 3(2), 123-135.
- Atuahene-Gima, K., & Li, H. (2002). When does trust matter? Antecedents and contingent effects of supervisee trust on performance in selling new products in China and the United States. *The Journal of Marketing*, 61-81.
- Aubert, B. A., Patry, M., & Rivard, S. (1998, January). Assessing the risk of IT outsourcing. In System Sciences, 1998., *Proceedings of the Thirty-First Hawaii International Conference on* (Vol. 6, pp. 685-692). IEEE.
- Aversano, L., Grasso, C., & Tortorella, M. (2012). A Literature Review of Business/IT Alignment Strategies. *Procedia Technology*, 5, 462-474.
- Avison, D., Jones, J., Powell, P., & Wilson, D. (2004). Using and validating the strategic alignment model. *The Journal of Strategic Information Systems*, 13(3), 223-246.
- Avison, D., & Fitzgerald, G. (2003). *Information systems development: methodologies, techniques and tools*. McGraw Hill.
- Avgerou, C. (2001). The significance of context in information systems and organizational change. *Information systems journal*, 11(1), 43-63.

- Avgerou, C., & McGrath, K. (2007). Power, rationality, and the art of living through socio-technical change. *MIS quarterly*, 295-315.
- Bacon, N. (1991). Information Systems Strategies in Government: Recent Survey Evidence, *Journal of Information Technology* 6(2), 94-107.
- Baets, W. (1992). Aligning information systems with business strategy. *The Journal of Strategic Information Systems*, 1(4), 205-213.
- Baker, J., Cao, Q., Jones, D., & Song, J. (2009). Dynamic Strategic Alignment Competency: A Theoretical Framework and an Operationalization.
- Baker, J., Jones, D., Cao, Q., & Song, J. (2011). Conceptualizing the dynamic strategic alignment competency. *Journal of the Association for Information Systems*, 12(4), 299-322.
- Bakos, J. Y. (1991). Information links and electronic marketplaces: The role of interorganizational information systems in vertical markets. *Journal of Management Information Systems*, 8(2), 31-52.
- Bajjal, S. T. (1998). Strategic Information Systems Planning in the Public Sector, *American Review of Public Administration*, 28(1), 75-85.
- Barki, H., & Pinsonneault, A. (2005). A model of organizational integration, implementation effort, and performance. *Organization Science*, 16(2), 165-179.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Baron, D. P. & Hall, P. (2003). *Business and its Environment*. Upper Saddle River, NJ: Prentice Hall.
- Barthélemy, J., & Quélin, B. V. (2006). Complexity of Outsourcing Contracts and Ex Post Transaction Costs: An Empirical Investigation. *Journal of Management Studies*, 43(8), 1775-1797.
- Baskerville, R. L. (1999). Investigating information systems with action research. *Communications of the AIS*, 2(3es), 4.
- Beaudry, A., & Pinsonneault, A. (2005). Understanding user responses to information technology: A coping model of user adaptation. *MIS Quarterly*, 493-524.

- Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The case research strategy in studies of information systems. *MIS quarterly*, 369-386.
- Benbya, H., & McKelvey, B. (2006). Using coevolutionary and complexity theories to improve IS alignment: a multi-level approach. *Journal of Information Technology*, 21(4), 284-298.
- Bensaou, M., & Earl, M. (1998). The right mind-set for managing information technology. *Harvard Business Review*, 76, 118-129.
- Berger, P. L., & Luckman, T. (1967). *The social structure of reality*. Alien lane, London.
- Bergeron, F., Raymond, L., & Rivard, S. (2001). Fit in strategic information technology management research: an empirical comparison of perspectives. *Omega*, 29(2), 125-142.
- Bergeron, F., Raymond, L., & Rivard, S. (2004). Ideal patterns of strategic alignment and business performance. *Information & management*, 41(8), 1003-1020.
- Bhatt, G. D., & Grover, V. (2005). Types of information technology capabilities and their role in competitive advantage: an empirical study. *Journal of Management Information Systems*, 22(2), 253-277.
- Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: an empirical investigation. *MIS quarterly*, 169-196.
- Bharadwaj, A. S., Sambamurthy, V., & Zmud, R. W. (1999, January). IT capabilities: theoretical perspectives and empirical operationalization. In *Proceedings of the 20th international conference on Information Systems*, pp. 378-385. Association for Information Systems.
- Birks, M., & Mills, J. (2011). *Grounded theory: A practical guide*. Sage publications.
- Bititci, U. S., Mendibil, K., Nudurupati, S., Garengo, P., & Turner, T. (2006). Dynamics of performance measurement and organisational culture. *International Journal of Operations & Production Management*, 26(12), 1325-1350.
- Black, R. (2003). *Organisational culture: creating the influence needed for strategic success*. Universal-Publishers. com.
- Bleistein, S. J., Cox, K., Verner, J., & Phalp, K. T. (2006). B-SCP: A requirements analysis framework for validating strategic alignment of organizational IT based on strategy, context, and process. *Information and Software Technology*, 48(9), 846-868.

- Bloomberg, L. D., & Volpe, M. (2008). *Completing qualitative research: A roadmap from beginning to end*. Thousand Oaks: Sage
- Boehm, B. W. (1991). Software risk management: principles and practices. *Software, IEEE*, 8(1), 32-41.
- Boudreau, J. W., & Ramstad, P. M. (2005). Talentship, talent segmentation, and sustainability: A new HR decision science paradigm for a new strategy definition. *Human Resource Management*, 44(2), 129-136.
- Bowman, C., & Ambrosini, V. (2000). Value creation versus value capture: Towards a coherent definition of value in strategy. *British Journal of Management*, 11(1), 1-15.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage.
- Boynton, A. C., Jacobs, G. C., & Zmud, R. W. (1992). Whose responsibility is IT (information technology) management?. *Sloan Management Review*, 33(4), 32-38.
- Brødsgaard, K. E. (2012). Politics and business group formation in China: the party in control?. *The China Quarterly*, 211, 624-648.
- Braa, J., & Hedberg, C. (2002). The struggle for district-based health information systems in South Africa. *The information society*, 18(2), 113-127.
- Brady, T., & Targett, D. (1995). Strategic Information Systems in the Banking Sector: Holy Grail or Poison Chalice, *Technology Analysis & Strategic Management*, 7(4), 387-406.
- Brady, T., Cameron, R., Targett, D., & Beaumont, C. (1992). Strategic IT issues: the views of some major IT investors. *The Journal of Strategic Information Systems*, 1(4), 183-189.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Brancheau, J. C., & Wetherbe, J. C. (1987). Key issues in information systems management. *MIS quarterly*, 23-45.
- Brancheau, J. C., Janz, B. D., & Wetherbe, J. C. (1996). Key issues in information systems management: 1994-95 SIM Delphi results. *Mis Quarterly*, 225-242.

- Broadbent, M., & Weill, P. (1993). Improving business and information strategy alignment: Learning from the banking industry. *IBM systems Journal*, 32(1), 162-179.
- Broadbent, M., & Weill, P. (1997). Management by maxim: how business and IT managers can create IT infrastructures. *Sloan management review*, 38, 77-92.
- Brown, C. V. (1997). Examining the emergence of hybrid IS governance solutions: Evidence from a single case site. *Information systems research*, 8(1), 69-94.
- Brown, C. V., & Magill, S. L. (1994). Alignment of the IS functions with the enterprise: toward a model of antecedents. *Mis Quarterly*, 371-403.
- Brown, C. V., & Renwick, J. S. (1996). Alignment of the IS organization: the special case of corporate acquisitions. *ACM SIGMIS Database*, 27(4), 25-33.
- Brown, I. T. (2004). Testing and extending theory in strategic information systems planning through literature analysis. *Information Resources Management Journal (IRMJ)*, 17(4), 20-48.
- Bryman, A. (2004). *Research methods and organization studies* (Vol. 20). Routledge.
- Bryman, A. (2008). Of methods and methodology. *Qualitative Research in Organizations and Management: An International Journal*, 3(2), 159-168.
- Bryman, A. (2012). *Social research methods*. Oxford university press.
- Bryman, A., & Burgess, R. G. (1994). Developments in qualitative data analysis: an introduction. *Analyzing qualitative data*, 1-17.
- Brynjolfsson, E., & Hitt, L. M. (2000). Beyond computation: Information technology, organizational transformation and business performance. *The Journal of Economic Perspectives*, 23-48.
- Burn, J. M. (1993). Effective alignment of information systems and business strategies. In *ECIS*, 118-130.
- Burn, J. M., & Szeto, C. (2000). A comparison of the views of business and IT management on success factors for strategic alignment. *Information & Management*, 37(4), 197-216.
- Burrell, G., & Morgan, G. (2005). *Sociological paradigms and organisational analysis*. London: Heinemann.

Byrd, T.A. & Turner, E.D. (2000). An exploratory analysis of the information technology infrastructure flexibility construct . *Journal of Management Information Systems*, 17(1), 167-208.

Byrd, T.A. & Turner, E.D. (2001). An exploratory analysis of the value of the skills of IT personnel: Their relationship to IS infrastructure and competitive advantage. *Decision Sciences*, 32(1), 21-54.

Byrt, W. J. (1973). *Theories of organisation*. McGraw Hill.

Caldwell, B. (2003). *Beyond positivism*. Routledge.

Cameron, K. S., & Quinn, R. E. (1999). An introduction to changing organizational culture. *Diagnosing and Changing Organizational Culture: based on the Competing Values Framework*.

Campbell, A., & Alexander, M. (1997). What's wrong with strategy?. *Harvard Business Review*, 75(6), 42.

Campbell, B. (2005). Alignment: Resolving Ambiguity within Bounded Choices. In *PACIS*.

Cao, Q., Baker, J., & Hoffman, J. J. (2012). The role of the competitive environment in studies of strategic alignment: a meta-analysis. *International Journal of Production Research*, 50(2), 567-580.

Cash Jr, J. I., Eccles, R. G., Nohria, N., & Nolan, R. L. (1994). IT between organizations: interorganizational systems. *Building the information-age organization: Structure, Control, and information technologies*, 338-396.

Cartwright, S., & Cooper, C. (1992). *Managing mergers and strategic alliances: Integrating people and cultures*. Oxford: Elsevier.

Cavaye, A. L. (1996). Case study research: a multi-faceted research approach for IS. *Information systems journal*, 6(3), 227-242.

Cepeda - Carrion, G., Cegarra - Navarro, J. G., & Jimenez - Jimenez, D. (2012). The effect of absorptive capacity on innovativeness: Context and information systems capability as catalysts. *British Journal of Management*, 23(1), 110-129.

Chaffey, D., & Wood, S. (2005). Knowledge management strategy. *Business information management: improving performance using information systems*, Financial Times Prentice Hall, Harlow, England, 221-272.

Chakravarthy, B. S. (1987). On tailoring a strategic planning system to its context: some empirical evidence. *Strategic Management Journal*, 8(6), 517-534.

Chan, G., & Lee, P. K. (2008). China's Environmental Governance: the domestic–international nexus. *Third World Quarterly*, 29(2), 291-314.

Chan, H., Kim, H. W., & Tan, W. C. (2006). Information systems citation patterns from international conference on information systems articles. *Journal of the American Society for Information Science and Technology*, 57(9), 1263-1274.

Chan, Y. E. (1992). Business strategy, information systems strategy, and strategic fit: Measurement and performance impacts.

Chan, Y. E., & Huff, S. L. (1992). Strategy: an information systems research perspective. *The Journal of Strategic Information Systems*, 1(4), 191-204.

Chan, Y. E., Huff, S. L., Barclay, D. W., & Copeland, D. G. (1997). Business strategic orientation, information systems strategic orientation, and strategic alignment. *Information systems research*, 8(2), 125-150.

Chan, Y. E., & Reich, B. H. (2007). IT alignment: what have we learned?. *Journal of Information technology*, 22(4), 297-315.

Chang, H. L., Wang, K., & Chiu, I. (2008). Business – IT fit in e - procurement systems: evidence from high - technology firms in China. *Information Systems Journal*, 18(4), 381-404.

Chapman, C., & Ward, S. (1996). *Project risk management: processes, techniques and insights*. John Wiley.

Charmaz, K. (1983). Loss of self: a fundamental form of suffering in the chronically ill. *Sociology of health & illness*, 5(2), 168-195.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative research*. London: Sage.

Chase, S. E. (2005). Narrative Inquiry: Multiple Lenses, Approaches, Voices. In: Denzen, N., & Lincoln, Y. *The SAGE Handbook of Qualitative Research*, CA: Sage, 651-679.

Chaudhuri, S., Dayal, U., & Narasayya, V. (2011). An overview of business intelligence technology. *Communications of the ACM*, 54(8), 88-98.

Chen, D. Q., Mocker, M., Preston, D. S., & Teubner, A. (2010). Information systems strategy: reconceptualization, measurement, and implications. *MIS quarterly*, 34(2), 233-259.

Chen, R. S., Sun, C. M., Helms, M. M., & Jih, W. J. (2008). Aligning information technology and business strategy with a dynamic capabilities perspective: A longitudinal study of a Taiwanese Semiconductor Company. *International Journal of Information Management*, 28(5), 366-378.

Chen, Y., Wang, Y., Nevo, S., Jin, J., Wang, L., & Chow, W. S. (2014). IT capability and organizational performance: the roles of business process agility and environmental factors. *European Journal of Information Systems*, 23(3), 326-342.

Chetty, D. (2003). *A Study to Evaluate the Suitability of Strategic Alignment in a Changing External Environment: A Case Study of Moreland Developments (Pty) Limited/cby Dayalan Chetty* (Doctoral dissertation, University of Natal).

Cheung, C., Lee, M. K., & Chen, Z. (2002, January). Using the Internet as a learning medium: an exploration of gender difference in the adoption of FaBWeb. *Proceedings of the 35th Annual Hawaii International Conference on* (pp. 475-483). IEEE.

Chin, W. W., & Dibbern, J. (2010). An introduction to a permutation based procedure for multi-group PLS analysis: Results of tests of differences on simulated data and a cross cultural analysis of the sourcing of information system services between Germany and the USA. In: Esposito, V. V., Chin, W. W., Henseler, J., & Wang, H. *Handbook of partial least squares*, Berlin Heidelberg: Springer, 171-193.

Christensen, C. (1997). *The innovator's dilemma: when new technologies cause great firms to fail*. Harvard Business Press.

Chung, S. H., Rainer, R. K., & Lewis, B. R. (2003). The impact of information technology infrastructure flexibility on strategic alignment and applications implementation. *Communications of the Association for Information Systems*, 11(11), 191-206.

- Ciborra, C. U. (1997). De profundis? Deconstructing the concept of strategic alignment. *Scandinavian journal of information systems*, 9, 67-82.
- Clarke, A., & Dawson, R. (1999). *Evaluation research: An introduction to principles, methods and practice*. Sage.
- Clarke, A. (1999). *Evaluation research: An introduction to principles, methods and practice*. Sage.
- Clark, C. E., Cavanaugh, N. C., Brown, C. V., & Sambamurthy, V. (1997). Building change-readiness capabilities in the IS organization: insights from the Bell Atlantic experience. *MIS quarterly*, 425-455.
- Claver, E., Llopis, J., Reyes González, M., & Gascó, J. L. (2001). The performance of information systems through organizational culture. *Information Technology & People*, 14(3), 247-260.
- Clegg, C. (2008). The National Programme for IT (NPfIT)—Lessons from elsewhere. *Information Technology*, 6, 9.
- Clegg, S. (1990). *Modern organizations: Organization studies in the postmodern world*. Sage.
- Codington, S., & Wilson, T. D. (1994). Information system strategies in the UK insurance industry. *International journal of information management*, 14(3), 188-203.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative science quarterly*, 128-152.
- Cooper, R. B. (1994). The inertial impact of culture on IT implementation. *Information & Management*, 27(1), 17-31.
- Corbin, S., & Strauss, A. (2007). *Business Research Method*. New York: McGraw Hill.
- Courtney, H., Kirkland, J., & Viguerie, P. (1997). Strategy under uncertainty. *Harvard business review*, 75(6), 67-79.
- Creswell, J. W. (1994). *Research design*. Thousand Oaks, CA: Sage publications.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: choosing among five approaches*. Sage

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Crossan, F. (2003). Research philosophy: towards an understanding. *Nurse researcher*, 11(1), 46.

Croteau, A. M., & Bergeron, F. (2009, January). Interorganizational governance of information technology. In *System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on* (pp. 1-8). IEEE.

Croteau, A. M., Solomon, S., Raymond, L., & Bergeron, F. (2001, January). Organizational and technological infrastructures alignment. In *System Sciences, 2001. Proceedings of the 34th Annual Hawaii International Conference on*. IEEE.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Sage.

Crucini, M. J., Kose, M. A., & Otrok, C. (2011). What are the driving forces of international business cycles?. *Review of Economic Dynamics*, 14(1), 156-175.

Cumps, B., Martens, D., De Backer, M., Haesen, R., Viaene, S., Dedene, G. & Snoeck, M. (2009). Inferring comprehensible business/ICT alignment rules. *Information & Management*, 46(2), 116-124.

Czarniawska, B. (2004). *Narratives in social science research*. Sage.

D'Aveni, R. (1994). *Hypercompetition: Managing the dynamics of strategic management*. New York.

Daiute, C. & Lightfoot, C. (2004). *Narrative analysis: Studying the development of individuals in society*. Sage.

Davenport, T. H. (1998). Putting the enterprise into the enterprise system. *Harvard business review*, 76(4).

Davenport, T. and Linder, J. (1994). Information management infrastructure: The new competitive weapon. *Proceedings of the Twenty-Seventh Hawaii International Conference on System Sciences*. IV, 885-896.

Davison, R., Li, Y., & Kam, C. S. (2008). Web-based data collection in China. *Journal of Global Information Management*, 14(3), 70-89.

de Leede, J., Looise, J. K., & Verkerk, M. (2002). The mini-company: A specification of sociotechnical business systems. *Personnel Review*, 31(3), 338-355.

Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of management Journal*, 39(4), 802-835.

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information systems research*, 3(1), 60-95.

DeMunck, V. C., & Sobo, E. J. (Eds.). (1998). *Using methods in the field: a practical introduction and casebook*. Rowman Altamira.

Denscombe, M. (2007). *The Good Research Guide*. Berkshire.

Dey, P. K., Kinch, J., & Ogunlana, S. O. (2007). Managing risk in software development projects: a case study. *Industrial Management & Data Systems*, 107(2), 284-303.

Diaz, R. A. (2011). Planning for sustainable development: Strategic alignment in Peruvian regions and cities. *Futures*, 43(8), 908-918.

Dibbern, J., Goles, T., Hirschheim, R., & Jayatilaka, B. (2004). Information systems outsourcing: a survey and analysis of the literature. *ACM SIGMIS Database*, 35(4), 6-102.

Dickson, G. W., Leitheiser, R. L., Wetherbe, J. C., & Nechis, M. (1984). Key information systems issues for the 1980's. *MIS quarterly*, 135-159.

DiMaggio, P. J., & Powell, W. W. (1983). And collective rationality in organization fields. *American Sociological Review*, 48(2), 147-160.

Doll, W. J., & Vonderembse, M. A. (1987). Forging a partnership to achieve competitive advantage: the CIM challenge. *MIS Quarterly*, 205-220.

Donmoyer, R. (2000). Generalizability and the single-case study. *Case study method: Key issues, key texts*, 45-68.

Dooley, K. (2001). Social research methods. In 4th ed. *Upper Saddle River, NJ*.

Duhan, S., Levy, M., & Powell, P. (2001) Information systems strategies in knowledge-based SMEs: the role of core competencies, *European Journal of Information Systems*, 10(1), 25-40.

- Duncan, N.B. (1995). Capturing flexibility of information technology infrastructure: A study of resource characteristics and their measure. *Journal of Management Information Systems*, 12(2), 37-57.
- Daft, R. (2012). *Organization theory and design*. Cengage learning.
- Davenport, T. H. (2013). *Process innovation: reengineering work through information technology*. Harvard Business Press.
- Drucker, P. F. (1974). The dimensions of management. *PF Drucker, Management: Tasks, responsibilities, practices*. New York: Harper & Row.
- Drucker, P. F. (1994). The theory of the business. *Harvard business review*, 72(5), 95-104.
- Dul, J., & Hak, T. (2008). *Case study methodology in business research*. Routledge.
- Earl, M. J. (1989). *Management strategies for information technology*. Prentice-Hall, Inc..
- Earl, M. J. (1993). Experiences in strategic information systems planning. *Mis Quarterly*, 17(1), 1-24.
- Earle-Chaffee, E. (1985). Three models of strategy. *Academy of management review*, 10(1), 89-98.
- El Sawy, O. A., & Pavlou, P. A. (2008). IT-enabled business capabilities for turbulent environments. *MIS Quarterly Executive*, 7(3), 139-150.
- El Sawy, O. A., Malhotra, A., Park, Y., & Pavlou, P. A. (2010). Research Commentary—Seeking the Configurations of Digital Ecodynamics: It Takes Three to Tango. *Information Systems Research*, 21(4), 835-848.
- Ehrlich, P. R., & Raven, P. H. (1964). Butterflies and plants: a study in coevolution. *Evolution*, 586-608.
- Ein-Dor, P., & Segev, E. (1978). Organizational context and the success of management information systems. *Management Science*, 24(10), 1064-1077.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they?. *Strategic management journal*, 21(10-11), 1105-1121.

- Eisenhardt, K. M., & Schoonhoven, C. B. (1990). Organizational growth: Linking founding team, strategy, environment, and growth among US semiconductor ventures, 1978-1988. *Administrative science quarterly*, 504-529.
- Emery, J. C. (1990). The Management Difference: a Tale of Two IS Projects. *MIS Quarterly*, 14(3), 11-12.
- Esposito, N. (2001). From meaning to meaning: The influence of translation techniques on non-English focus group research. *Qualitative health research*, 11(4), 568-579.
- Ewusi-Mensah, K. (1981). The external organizational environment and its impact on management information systems. *Accounting, Organizations and Society*, 6(4), 301-316.
- Fawcett, S. E., Wallin, C., Allred, C., Fawcett, A. M., & Magnan, G. M. (2011). Information technology as an enabler of supply chain collaboration: a dynamic - capabilities perspective. *Journal of Supply Chain Management*, 47(1), 38-59.
- Faraj, S., & Sambamurthy, V. (2006). Leadership of information systems development projects. *Engineering Management, IEEE Transactions on*, 53(2), 238-249.
- Feagin, J. R., & Orum, A. M. (Eds.). (1991). *A case for the case study*. UNC Press.
- Ferris, W. P. (2008). A new issue continuing our themes of corporate social responsibility, globalization, and cutting edge management education. *Organization Management Journal*, 5(3), 115-116.
- Fetterman, D. M. (2010). *Ethnography: Step-by-step*. Sage.
- Finne, T. (2000). Information systems risk management: key concepts and business processes. *Computers & Security*, 19(3), 234-242.
- Flyvbjerg, B. (2004). Five misunderstandings about case-study research. *Sociologisk tidsskrift*, 2, 117-143.
- Forester, J. (1992). *Critical ethnography: on fieldwork in a Habermasian way*. London: Sage Publications.
- Fortune, P. J. (1988). Software Development. In: Juran, J. M. *Juran's quality control handbook* *Juran's Quality Control Handbook*, McGraw-Hill, 79.

- Gable, G. G. (1994). Integrating case study and survey research methods: an example in information systems. *European Journal of Information Systems*, 3(2), 112-126.
- Galliers, B. (1999). Towards the integration of e-business, knowledge management and policy considerations within an information systems strategy framework. *The Journal of Strategic Information Systems*, 8(3), 229-234.
- Galliers, R. (1987). *Information systems planning in the United Kingdom and Australia: a comparison of current practice*. Oxford University Press.
- Galliers, R. D. (1988). Information technology strategies today: the UK experience. In: Earl, M. J. *Information management: the strategic dimension*, Oxford: Oxford University Press.
- Galliers, R. D. (1991). Strategic information systems planning: myths, reality and guidelines for successful implementation. *European Journal of Information Systems*, 1(1), 55-64.
- Galliers, R. D. (1993). IT strategies: beyond competitive advantage. *The Journal of Strategic Information Systems*, 2(4), 283-291.
- Galliers, R. D. (2004). Trans-disciplinary research in information systems. *International Journal of Information Management*, 24(1), 99-106.
- Galliers, R. D. (2006). On confronting some of the common myths of information systems strategy discourse. In: Mansell, R., Quah, D., Avgerou, C., Silverstone, R. (Eds.), *The (Oxford) Handbook of Information and Communication Technology*. Oxford University Press, Oxford.
- Galliers, R. D. (2007). Strategizing for Agility: Confronting Information. *Agile Information Systems*, 1.
- Galliers, R. D., & Newell, S. (2003). Back to the future: from knowledge management to the management of information and data. *Information Systems and e-Business Management*, 1(1), 5-13.
- Galliers, R. D., & Sutherland, A. R. (1991). Information systems management and strategy formulation: the 'stages of growth' model revisited. *Information Systems Journal*, 1(2), 89-114.
- Galliers, R. D., Pattison, E. M., & Reponen, T. (1994). Strategic information systems planning workshops: lessons from three cases. *International Journal of Information Management*, 14(1), 51-66.

- Garrett, R. S., Thurber, J. A., Fritschler, A. L., & Rosenbloom, D. H. (2006). Assessing the impact of bureaucracy bashing by electoral campaigns. *Public Administration Review*, 66(2), 228-240.
- Gebauer, J., & Schober, F. (2006). Information system flexibility and the cost efficiency of business processes. *Journal of the Association for Information Systems*, 7(3), 8.
- Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega*, 28(6), 725-737.
- Gibson, C., & Birkinshaw, J. (2004). Contextual determinants of organisational ambidexterity. *Academy of Management Journal*, 47(2), 209-226.
- Giddens, A. (1976). Classical social theory and the origins of modern sociology. *American Journal of Sociology*, 703-729.
- Gillham, B. (2000). *Case study research methods*. Continuum International Publishing Group.
- Goedvolk, J. G., de Bruin, H., & Rijsenbrij, D. B. B. (1999). Integrated architectural design of business and information systems. In *The Second Nordic Workshop on Software Architecture (NOSA'99)*.
- Gogan, J. L., Baxter, R. J., Sakaranaryanan, B., & Johnson, M. E. (2010). Aiming at a Moving Target: IT Alignment in Toy Companies. *In ECIS*. 202
- Gold, T., Guthrie, D., & Wank, D. (2002). *Social connections in China: Institutions, culture, and the changing nature of guanxi*. Cambridge University Press.
- Goldman, S. L., Nagel, R. N., Preiss, K., & Dent, H. S. (1995). *Agile competitors and virtual organizations*. New York: Van Nostrand Reinhold.
- Gordon, G. G., & DiTomaso, N. (1992). Predicting corporate performance from organizational culture. *Journal of management studies*, 29(6), 783-798.
- Gorman, G. E., Clayton, P. R., Shep, S. J., & Clayton, A. (2005). *Qualitative research for the information professional: a practical handbook*.
- Greening, D. W., & Gray, B. (1994). Testing a model of organizational response to social and political issues. *Academy of Management Journal*, 37(3), 467-498.

Greenwood, R., & Hinings, C. R. (1996). Understanding radical organizational change: Bringing together the old and the new institutionalism. *Academy of management review*, 21(4), 1022-1054.

Grewal, R., & Tansuhaj, P. (2001). Building organizational capabilities for managing economic crisis: the role of market orientation and strategic flexibility. *The Journal of Marketing*, 67-80.

Grover, V., & Segars, A. H. (2005). An empirical evaluation of stages of strategic information systems planning: patterns of process design and effectiveness. *Information & Management*, 42(5), 761-779.

Grover, V., Cheon, M. J., & Teng, J. T. (1996). The effect of service quality and partnership on the outsourcing of information systems functions. *Journal of Management Information Systems*, 89-116.

Grover, V., Teng, J., Segars, A. H., & Fiedler, K. (1998). The influence of information technology diffusion and business process change on perceived productivity: The IS executive's perspective. *Information & Management*, 34(3), 141-159.

Gruber, T. R. (1993). A translation approach to portable ontology specifications. *Knowledge acquisition*, 5(2), 199-220.

Gu, F. F., Hung, K., & Tse, D. K. (2008). When does guanxi matter? Issues of capitalization and its dark sides. *Journal of Marketing*, 72(4), 12-28.

Guan, Y. (2010, June). A study on the Internal Control of accounting information system. In *Computer and Communication Technologies in Agriculture Engineering (CCTAE), 2010 International Conference On* (Vol. 2, pp. 203-206). IEEE.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2, 163-194.

Gupta, Y. P., Karimi, J., & Somers, T. M. (1997). Alignment of a firm's competitive strategy and information technology management sophistication: the missing link. *Engineering Management, IEEE Transactions on*, 44(4), 399-413.

Guzman, I. R., Stanton, J. M., Stam, K. R., Vijayasri, V., Yamodo, I., Zakaria, N., & Caldera, C. (2004, April). A qualitative study of the occupational subculture of information systems employees in organizations. In *Proceedings of the 2004 SIGMIS conference on Computer*

personnel research: Careers, culture, and ethics in a networked environment (pp. 74-80). ACM.

Hamel, G. (1996). *Strategy as revolution*. Harvard Business Review.

Hammer, M. (1990). Reengineering work: don't automate, obliterate. *Harvard business review*, 68(4), 104-112.

Hammer, M., & Champy, J. (1994). *Reengenharia*. Rio de janeiro: Campus.

Hammersley, M. (1993). *Social research: philosophy, politics and practice*. Sage.

Hampden-Turner, C. (1990). *Corporate culture: From vicious to virtuous circles*. Vintage.

Harris, M. (1968). Emics, etics, and the new ethnography. *The rise of anthropological theory*, 568-604.

Hartley, J. (2004). Case study research. *Essential guide to qualitative methods in organizational research*, 323-333.

Hatten, M. L., & Hatten, K. J. 1997. "Information Systems Strategy: Long Overdue and Still Not Here," *Long Range Planning*, 30(2), 254-266.

He, Y. (2007). A comparative study of critical success Factors for ERP system implementation in China and Finland. *Swedish School of Economics and Business Administration*.

He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization science*, 15(4), 481-494.

Heeks, R. (2002). Information systems and developing countries: Failure, success, and local improvisations. *The information society*, 18(2), 101-112.

Henderson, J. C., & Sifonis, J. G. (1988). The value of strategic IS planning: understanding consistency, validity, and IS markets. *MIS quarterly*, 187-200.

Henderson, J. C., & Venkatraman, N. (1992). *Strategic alignment: a model for organizational transformation through information technology*. Oxford University Press, New York.

Henderson, J. C., & Venkatraman, N. (1993). Strategic alignment: Leveraging information technology for transforming organizations. *IBM systems journal*, 32(1), 4-16.

Henderson, J. C., & Venkatraman, N. (1999). Strategic Alignment: Leveraging information technology for transformation organizations. *IBM Systems Journal*, 38(2,3).

Hevner, A., & Chatterjee, S. (2010). *Design research in information systems: theory and practice*. Springer Science & Business Media.

Hicks, S. (1993). Advanced cruise missile guidance system description. *In Aerospace and Electronics Conference*, 355-361. IEEE.

Hidding, G. J. (2001). Sustaining Strategic IT Advantage in the Information Age: How Strategy Paradigms Differ by Speed, *Journal of Strategic Information Systems*, 10(3), 201-222.

Hiekkänen, K., Helenius, M., Korhonen, J. J., & Patricio, E. (2012) Business and IT: Beyond Alignment. *8th European Conference on Management Leadership and Governance*, 217-224.

Higgo, H. A. (2003). Implementing an information system in a large LDC bureaucracy: the case of the Sudanese ministry of finance. *The Electronic Journal of Information Systems in Developing Countries*, 14.

Highsmith, J. (1981). Structured systems planning. *MIS Quarterly*, 35-54.

Hirschheim, R., & Newman, M. (1988). Information systems and user resistance: theory and practice. *The Computer Journal*, 31(5), 398-408.

Hirschheim, R., & Sabherwal, R. (2001). Detours in the path toward strategic information systems alignment. *California Management Review*, 44(1), 87-108.

Hitt, L., Ball, L. D., & Eloy, G. (1987). Interconnect technology as a management challenge. *MIS Quarterly*, 433-435.

Hitt, M. A., Keats, B. W., & DeMarie, S. M. (1998). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *The Academy of Management Executive*, 12(4), 22-42.

Ho, C. F. (1996). Information technology implementation strategies for manufacturing organizations: A strategic alignment approach. *International Journal of Operations & Production Management*, 16(7), 77-100.

Hodder, I. (1994). Theoretical archaeology: a reactionary view. *Interpreting Objects and Collections*, 48.

- Hofstede, G. (1980). Culture and organizations. *International Studies of Management & Organization*, 15-41.
- Hofstede, G. (1986). Editorial: The usefulness of the 'organizational culture' concept. *Journal of Management Studies*, 23(3), 253-257.
- Hofstede, G. (2003). Cultural constraints in management theories. *Readings and Cases in International Management: A Cross-Cultural Perspective*, 1, 17.
- Hofstede, G. J. (2001). Adoption of communication technologies and national culture. *Systèmes d'information et management*, 6(3), 55-74.
- Holland, C., & Lockett, G. (1992). IT strategy in retailing: organizational change and future direction. *The Journal of Strategic Information Systems*, 1(3), 134-142.
- Hollnagel, E. (2012). *An Application of the Functional Resonance Analysis Method (FRAM) to Risk Assessment of Organisational Change*. Stockholm: Swedish Radiation Safety Authority.
- Huang, C. D., & Hu, Q. (2007). Achieving IT-business strategic alignment via enterprise-wide implementation of balanced scorecards. *Information Systems Management*, 24(2), 173-184.
- Huang, R., Zmud, R. W., & Price, R. L. (2010). Influencing the effectiveness of IT governance practices through steering committees and communication policies. *European Journal of Information Systems*, 19(3), 288-302.
- Hughes, J. A., & Sharrock, W. W. (1997). *The philosophy of social research*. The Open university: London
- Igbaria, M., Meredith, G., & Smith, D. C. (1994). Predictors of intention of IS professionals to stay with the organization in South Africa. *Information & Management*, 26(5), 245-256.
- Iivari, J., Hirschheim, R., & Klein, H. K. (1998). A paradigmatic analysis contrasting information systems development approaches and methodologies. *Information Systems Research*, 9(2), 164-193.
- Irani, Z. (2002). Information systems evaluation: navigating through the problem domain. *Information & Management*, 40(1), 11-24.
- Ives, B., & Learmonth, G. P. (1984). The information system as a competitive weapon. *Communications of the ACM*, 27(12), 1193-1201.

Jahnke, A. (2003). Sound Off. Taking Sides on Critical IT Issues: What is Standing Between You and Alignment?. *CIO Magazine*.

Jarvenpaa, S. L., & Ives, B. (1993). Organizing for global competition. *Decision Sciences*, 24(3), 547-580.

Jarvenpaa, S. L., & Ives, B. (1994). The global network organization of the future: Information management opportunities and challenges. *Journal of management information systems*, 10(4), 25-57.

Jenkin, T. A., & Chan, Y. E. (2006). Exploring the IS project alignment construct. *Queen's School of Business working paper*.

Jiang, J. J., Klein, G., & Chen, H. G. (2006). The effects of user partnering and user non-support on project performance. *Journal of the Association for Information Systems*, 7(1), 6.

John, G., & Martin, J. (1984). Effects of organizational structure of marketing planning on credibility and utilization of plan output. *Journal of Marketing Research*, 170-183.

Johnson, D. (2008). Environmental indicators: their utility in meeting the OSPAR Convention's regulatory needs. *ICES Journal of Marine Science: Journal du Conseil*, 65(8), 1387-1391.

Johnson, J. P., Lenartowicz, T., & Apud, S. (2006). Cross-cultural competence in international business: Toward a definition and a model. *Journal of International Business Studies*, 37(4), 525-543.

Johnson, P., & Duberley, J. (2000). *Understanding management research: An introduction to epistemology*. Sage.

Johnson, G., & Scholes, K. (2002). Introducing strategy. *Exploring Corporate Strategy: Texts and Cases*, 6.

Johnson, P., Buehring, A., Cassell, C., & Symon, G. (2006). Evaluating qualitative management research: towards a contingent criteriology. *International Journal of Management Reviews*, 8(3), 131-156.

Jonassen, D. H. (1991). Objectivism versus constructivism: Do we need a new philosophical paradigm?. *Educational technology research and development*, 39(3), 5-14.

Joshi, K. (2005). Understanding user resistance and acceptance during the implementation of an order management system: A case study using the equity implementation model. *Journal of Information Technology Case and Application Research*, 7(1), 6-20.

Judge, A. (1965). International Cooperation, Communication and Sources of Information.

Kampas, P. J. (2003). Shifting cultural gears in technology-driven industries. *MIT Sloan management review*, 44(2), 41-48.

Kanungo, S., Sadavarti, S., & Srinivas, Y. (2001). Relating IT strategy and organizational culture: An empirical study of public sector units in India. *The Journal of Strategic Information Systems*, 10(1), 29-57.

Karimi, J., Somers, T. M., & Bhattacharjee, A. (2007). The role of information systems resources in ERP capability building and business process outcomes. *Journal of Management Information Systems*, 24(2), 221-260.

Kauffman, S. (1993). *The Origins of Order: Self-Organization and Selection in Evolution*. New York: Oxford University.

Kayworth, T. R., & Sambamurthy, V. (2000). Facilitating localized exploitation and enterprise-wide integration in the use of IT infrastructures: the role of PC/LAN infrastructure standards. *ACM SIGMIS Database*, 31(4), 54-80.

Kearns, G. S., & Lederer, A. L. (2000). The effect of strategic alignment on the use of IS-based resources for competitive advantage. *The Journal of Strategic Information Systems*, 9(4), 265-293.

Kearns, G. S., & Lederer, A. L. (2003). A Resource-Based View of Strategic IT Alignment: How Knowledge Sharing Creates Competitive Advantage. *Decision Sciences*, 34(1), 1-29.

Kearns, G. S., & Sabherwal, R. (2007). Strategic alignment between business and information technology: a knowledge-based view of behaviors, outcome, and consequences. *Journal of Management Information Systems*, 23(3), 129-162.

Keen, P. G. (1981). Information systems and organizational change. *Communications of the ACM*, 24(1), 24-33.

Keen, P. G. (1991). Redesigning the organization through information technology. *Planning Review*, 19(3), 4-9.

Kennedy, G. (1976). Marketing social science in hard times. *Studies in Higher Education*, 1(2), 119-125.

Kim, G., Shin, B., Kim, K. K., & Lee, H. G. (2011). IT capabilities, process-oriented dynamic capabilities, and firm financial performance. *Journal of the Association for Information Systems*, 12(7), 487-517.

Kim, H. G., Iijima, J. & Ho, S. (2005). A Framework for Analysis of Systems Failure in Information Systems Integration. *IEMS*, 4(2), 207-217.

Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: a status quo bias perspective. *MIS Quarterly*, 567-582.

King, J. L., & Kraemer, K. L. (1984). Evolution and organizational information systems: an assessment of Nolan's stage model. *Communications of the ACM*, 27(5), 466-475.

King, J. L., & Schrems, E. L. (1978). Cost-benefit analysis in information systems development and operation. *ACM Computing Surveys (CSUR)*, 10(1), 19-34.

King, W. R. (1978). Strategic planning for management information systems. *MIS quarterly*, 27-37.

King, W. R. (1983). Evaluating strategic planning systems. *Strategic Management Journal*, 4(3), 263-277.

King, W. R. (1985). The strategic evaluation of projects and programs. *Project management: methods and studies*, pag, 3-16.

King, W. R. (1988). How effective is your information systems planning? *Long Range Planning*, 21 (5), 103–112.

Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS quarterly*, 67-93.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *The Journal of Marketing*, 1-18.

Kohlrieser, G. (2006). Resolving Conflict in Family Businesses: Don't Be Family Harmony. *Unconventional Wisdom: Counterintuitive Insights for Family Business Success*, 117.

Kostera, M., & Wicha, M. (1996). The 'divided self' of Polish state-owned enterprises: the culture of organizing. *Organization Studies*, 17(1), 83-105.

Kotter, J. (2011). Hierarchy and Network: Two Structures, One Organization. [online] http://www.forevueinternational.com/Content/sites/forevue/pages/1494/16_3_Hierarchy_and_Network_Two_Structures_One_Network.PDF [Accessed on July, 2012].

Kraatz, M. S., & Zajac, E. J. (2001). How organizational resources affect strategic change and performance in turbulent environments: Theory and evidence. *Organization Science*, 12(5), 632-657.

Kremic, T., Icmeli Tukel, O., & Rom, W. O. (2006). Outsourcing decision support: a survey of benefits, risks, and decision factors. *Supply Chain Management: an international journal*, 11(6), 467-482.

Kuechler, B., & Vaishnavi, V. (2011). Promoting relevance in IS research: an informing system for design science research. *Informing Science: the International Journal of an Emerging Transdiscipline*, 14(1), 125-138.

Kvale, S. (2006). Dominance through interviews and dialogues. *Qualitative inquiry*, 12(3), 480-500.

Kwak, Y. H., & Stoddard, J. (2004). Project risk management: lessons learned from software development environment. *Technovation*, 24(11), 915-920.

Lacity, M., Willcocks, L., & Feeny, D. F. (1994). *Information Systems Outsourcing: A Decisionmaking Framework*. OXIIM working paper, Templeton College, Oxford University, Oxford.

Lamb, R., & Kling, R. (2003). Reconceptualizing users as social actors in information systems research. *MIS quarterly*, 197-236.

Lanc, D., & MacKinnon, L. M. (2003). Application of a Holistic Information Systems Strategy for Organisational Management (Hissom), to an E-Commerce Card Payment Processor. *ICWI*, 11-20.

Lau, A. S., Yen, J., & Chau, P. Y. (2001). Adoption of On-line Trading in the Hong Kong Financial Market. *J. Electron. Commerce Res.*, 2(2), 58-65.

- Laudon, K. C., & Laudon, J. (2009). Management information systems: managing the digital firm. *New Jersey*,
- Lavie, D., & Rosenkopf, L. (2006). Balancing exploration and exploitation in alliance formation. *Academy of Management Journal*, 49(4), 797-818.
- Lederer, A. L., & Hannu, S. (1996). Toward a theory of strategic information systems planning. *The Journal of Strategic Information Systems*, 5(3), 237-253.
- Lederer, A. L., & Mendelow, A. L. (1986). Issues in information systems planning. *Information & Management*, 10(5), 245-254.
- Lederer, A. L., & Sethi, V. (1988). The implementation of strategic information systems planning methodologies. *Mis Quarterly*, 445-461.
- Lederer, A. L., & Sethi, V. (1996). Key prescriptions for strategic information systems planning. *Journal of Management Information Systems*, 13(1), 35-62.
- Lee, A. S. (1991). Integrating positivist and interpretive approaches to organizational research. *Organization science*, 2(4), 342-365.
- Lee, A. S. (1994). Electronic mail as a medium for rich communication: An empirical investigation using hermeneutic interpretation. *MIS quarterly*, 143-157.
- Lee, C. L., & Yang, H. J. (2011). Organization structure, competition and performance measurement systems and their joint effects on performance. *Management accounting research*, 22(2), 84-104.
- Lee, H. L. (2004). The triple-A supply chain. *Harvard business review*, 82(10), 102-113.
- Leidner, D. E., & Kayworth, T. (2006). Review: a review of culture in information systems research: toward a theory of information technology culture conflict. *MIS quarterly*, 30(2), 357-399.
- Leifer, R. (1988). Matching computer-based information systems with organizational structures. *MIS Quarterly*, 63-73.
- Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic management journal*, 13(S1), 111-125.

Leonard-Barton, D., & Deschamps, I. (1988). Managerial influence in the implementation of new technology. *Management science*, 34(10), 1252-1265.

Levine, H. G., & Rossmore, D. (1993). Diagnosing the human threats to information technology implementation: A missing factor in systems analysis illustrated in a case study. *Journal of Management Information Systems*, 55-73.

Levy, M., & Powell, P. (2000). Information systems strategy for small and medium sized enterprises: an organisational perspective. *The Journal of Strategic Information Systems*, 9(1), 63-84.

Lewis, D., & Madon, S. (2004). Information systems and nongovernmental development organizations: Advocacy, organizational learning, and accountability. *The information society*, 20(2), 117-126.

Li, H., & Atuahene-Gima, K. (2002). The adoption of agency business activity, product innovation, and performance in Chinese technology ventures. *Strategic Management Journal*, 23(6), 469-490.

Lieblich, A., Tuval-Mashiach, R. & Zilber, T. (1998). *Narrative research: Reading, analysis, and interpretation*. Sage.

Lin, X., & Germain, R. (2003). Organizational structure, context, customer orientation, and performance: lessons from Chinese state - owned enterprises. *Strategic management journal*, 24(11), 1131-1151.

Lincoln, Y. S., & Guba, E. G. (2005). Techniques for Collecting and Analyzing Data. *Transforming the Character of Public Organizations: Techniques for Change Agents*, 27.

Linstead, S., Fulop, L., Lilley, S., & Banerjee, B. (2009). *Management and organization: A critical text*. Basingstoke: Palgrave Macmillan.

Loh, L., & Venkatraman, N. (1992). Determinants of information technology outsourcing: a cross-sectional analysis. *Journal of management information systems*, 7-24.

Luftman, J. (2004). Assessing business-IT alignment maturity. *Strategies for information technology governance*, 4, 99.

Luftman, J. N. (Ed.). (1996). *Competing in the information age: strategic alignment in practice*. Oxford University Press.

- Luftman, J., & Ben-Zvi, T. (2011). Key Issues for IT Executives 2011: Cautious optimism in uncertain economic times. *MIS Quarterly Executive*, 10(4), 203-212.
- Luftman, J., & Brier, T. (1999). Achieving and sustaining business-IT alignment. *California management review*, 42(1), 109-122.
- Luftman, J., & Kempaiah, R. (2007). An update on business-IT alignment: "A line" has been drawn. *MIS Quarterly Executive*, 6(3), 165-177.
- Luftman, J., Kempaiah, R., & Nash, E. (2005). Key issues for IT executives 2004. *MIS Quarterly Executive*, 4(2), 269-285.
- Luftman, J., Papp, R., & Brier, T. (1996). Business and IT in harmony: enablers and inhibitors to alignment. In *Proceeding of American Conference on Information Systems*, Phoenix, Arizona, American.
- Luftman, J., Papp, R., & Brier, T. (1999). Enablers and inhibitors of business-IT alignment. *Communications of the AIS*, 1(3es), 1.
- Luftman, J. N., Lewis, P. R., & Oldach, S. H. (1993). Transforming the enterprise: The alignment of business and information technology strategies. *IBM Systems Journal*, 32(1), 198-221. Jahnke
- Lyytinen, K., & Hirschheim, R. (1987). *Oxford Surveys in Information Technology*. Oxford University Press, NY.
- Macdonald, K. H. (1991). Business strategy development, alignment, and redesign. *Corporation of the 1990s*. 159-186.
- Maes, R. (1999). *A generic framework for information management*. Universiteit van Amsterdam, Department of Accountancy & Information Management.
- Maes, R. E., Rijsenbrij, D., Truijens, O., & Goedvolk, H. (2000). Redefining business-IT alignment through a unified framework.
- Maguire, S. (2002). Identifying risks during information system development: managing the process. *Information Management & Computer Security*, 10(3), 126-134.
- March, J. G. (1991). Exploration and Exploitation in Organisational Learning, *Organisation Science*, 2(1), Feb.: 71-87.

- Markus, M. L., Majchrzak, A., & Gasser, L. (2002). A design theory for systems that support emergent knowledge processes. *Mis Quarterly*, 179-212.
- Marshall, M. N. (1996). Sampling for qualitative research. *Family practice*, 13(6), 522-526.
- Martin, E.W., DeHayes, D.W., Hoffer, J.A. & Perkins, W.C. (1994). *Managing Information Technology: What Managers Need to Know*, 2nd edition, New York: Macmillan.
- Martinsons, M. G. (1993). Outsourcing information systems: a strategic partnership with risks. *Long Range Planning*, 26(3), 18-25.
- Mason, R. M. (1991). The role of metaphors in strategic information systems planning. *Journal of Management Information Systems*, 8(2), 11-30.
- Matthews, B., & Ross, L. (2010). *Research methods*. Pearson Longman.
- McFarlan, F. (1981). PORTFOLIO APPROACH TO INFORMATION-SYSTEMS. *HARVARD BUSINESS REVIEW*, 59(5), 142-150.
- Maxwell, J. A. (1997). *Qualitative research design: An interpretative approach*. Thousand Oaks, CA: Sage.
- McFarlan, F. W. (Ed.). (1984). *The information systems research challenge: Proceedings*. Harvard Business School Press.
- McGaughey, R. E. (1999). Internet technology: contributing to agility in the twenty-first century. *International Journal of Agile Management Systems*, 1(1), 7-13.
- McGee, M., Flamholtz, E., & Schreiner, K. (2005). The Transformation to Professional Management at Pardee Homes. *International Journal of Entrepreneurship*, 3(2), 185-204.
- McGrath, K. (2005). Doing critical research in information systems: a case of theory and practice not informing each other. *Information systems journal*, 15(2), 85-101.
- McGregor, S. E. (1960). Siblings in our society. *Bulletin of the Entomological Society of America*, 6(3), 109-109.
- McKeen, J. D., & Smith, H. (2003). *Making IT happen: critical issues in IT management* (p. 366). Chichester: Wiley.
- McKelvey, B. (1999). Avoiding complexity catastrophe in coevolutionary pockets: Strategies for rugged landscapes. *Organization Science*, 10(3), 294-321.

- McKelvey, B. (2002). Managing coevolutionary dynamics. *In 18th EGOS Conference*, Barcelona, Spain.
- McKelvey, B. (2004). Simple rules || for improving corporate IQ: Basic lessons from complexity science. *Complexity theory and the management of networks*, 39-52.
- McLaren, T. S., Head, M. M., & Yuan, Y. (2004, December). Strategic Fit of Supply Chain Management Information Systems: A Measurement Model. *In/CIS* (pp. 597-606).
- McLean, E. R., & Soden, J. V. (1977). *Strategic planning for MIS*. John Wiley & Sons Inc.
- Mentzas, G. (1997). Implementing an IS strategy—a team approach. *Long Range Planning*, 30(1), 84-95.
- Melville, N. P. (2010). Information systems innovation for environmental sustainability. *MIS quarterly*, 34(1), 1-21.
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS quarterly*, 28(2), 283-322.
- Merali, Y. (2006). Complexity and Information Systems: the emergent domain. *Journal of Information Technology*, 21(4), 216-228.
- Merali, Y., Papadopoulos, T., & Nadkarni, T. (2012). Information systems strategy: Past, present, future?. *The Journal of Strategic Information Systems*, 21(2), 125-153.
- Miles, M. B. & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.
- Miles, M. B., & Snow, C. C. (1978). *Organisation Strategy: Structure and Process*, McGrawHil, New York, NY.
- Miller, D. (1992). Environmental fit versus internal fit. *Organization science*, 3(2), 159-178.
- Mintzberg, H. (1978). Patterns in strategy formation. *Management science*, 24(9), 934-948.
- Mintzberg, H. (1979). The professional bureaucracy. *Organization and Governance in Higher Education*, 50-70.

Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard business review*, 72(1), 107-114.

Mitchell, J. C. (1983). Case and situation analysis. *The sociological review*, 31(2), 187-211.

Monteiro, E., & Hanseth, O. (1996). Social shaping of information infrastructure: on being specific about the technology. In: Orlikowski, W. J., Walsham, G., & Jones, M. *Information technology and changes in organizational work*, London: Chapman & Hall, 325-343.

Moran, R. T., Harris, P. R., & Moran, S. V. (2011). *Managing cultural differences: global leadership strategies for cross-cultural business success*. Routledge.

Morton, M. S. (1991). *The corporation of the 1990s: Information technology and organizational transformation*. Oxford University Press.

Moustakas, C. (1994). *Phenomenology and the social sciences*. IL: Northwestern

Mukhopadhyay, T., Kekre, S., & Kalathur, S. (1995). Business value of information technology: a study of electronic data interchange. *MIS quarterly*, 137-156.

Mullins, C. (2002). *Database administration: the complete guide to practices and procedures*. Addison-Wesley Professional.

Myers, M. D. (1997). Qualitative research in information systems. *Management Information Systems Quarterly*, 21, 241-242.

Nag, R., Hambrick, D. C., & Chen, M. J. (2007). What is strategic management, really? Inductive derivation of a consensus definition of the field. *Strategic management journal*, 28(9), 935-955.

Nandakumar, M. K., Ghobadian, A., & O'Regan, N. (2010). Business-level strategy and performance: The moderating effects of environment and structure. *Management Decision*, 48(6), 907-939.

Nardulli, P. F. (1978). *The Courtroom Elite: An Organizational Perspective on Criminal Justice*. Cambridge: Ballinger Press.

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing*, 20-35.

- Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change*. Harvard Business School Press, Cambridge.
- Neuman, L. W. (2007) *Basics of Social Research: Qualitative and Quantitative Approaches*. Pearson Education, Boston.
- Neuman, W. L., & Wiegand, B. (2000). *Criminal justice research methods*. Allyn and bacon.
- Newkirk, H. E., & Lederer, A. L. (2006). The effectiveness of strategic information systems planning under environmental uncertainty. *Information & Management*, 43(4), 481-501.
- Niederman, F., Brancheau, J. C., & Wetherbe, J. C. (1991). Information systems management issues for the 1990s. *MIS quarterly*, 15(4), 475-500.
- Niskanen, W. A. (1974). *Bureaucracy and representative government*. Transaction Publishers.
- Nolan, R. L. (1979). Managing the Crisis in Information Systems. *Harvard Business Review*, 115-126.
- Nolan, R., & McFarlan, F. W. (2005). Information technology and the board of directors. *Harvard business review*, 83(10), 96.
- Oh, W., & Pinsonneault, A. (2007). On the assessment of the strategic value of information technologies: conceptual and analytical approaches. *MIS quarterly*, 239-265.
- Orlikowski, W. J. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization science*, 3(3), 398-427.
- Orlikowski, W. J. (1996). Improvising organizational transformation over time: A situated change perspective. *Information systems research*, 7(1), 63-92.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information systems research*, 2(1), 1-28.
- Orna, E. (2004). *Information strategy in practice: How to Develop an Organizational Information Strategy*. Gower Pub Co.
- Overby, E., Bharadwaj, A., & Sambamurthy, V. (2006). Enterprise agility and the enabling role of information technology. *European Journal of Information Systems*, 15(2), 120-131.
- Oxford English. (1989). *Dictionary*, Oxford: Oxford University Press.

- Park, S. H., & Luo, Y. (2001). Guanxi and organizational dynamics: Organizational networking in Chinese firms. *Strategic management journal*, 22(5), 455-477.
- Parsons, G. L. (1983). Information technology: a new competitive weapon. *Sloan Management Review*, 25(1), 3-14.
- Patten, M. L. (2007). *Understanding research methods: an overview of the essentials*. Pyrczak Publishing
- Patton, M. Q. (2005). *Qualitative research*. John Wiley & Sons, Ltd.
- Pavlou, P. A., & El Sawy, O. A. (2006). From IT leveraging competence to competitive advantage in turbulent environments: The case of new product development. *Information Systems Research*, 17(3), 198-227.
- Pearlson, K., & Saunders, C. S. (2004). *Managing and using information systems: A strategic approach*. New York, NY: Wiley.
- Pearlson, K., & Saunders, C. S. (2009). Strategic management of information systems.
- Peng, G. C. A., & Nunes, M. B. (2007, July). Using PEST analysis as a tool for refining and focusing contexts for information systems research. *In 6th European conference on research methodology for business and management studies, Lisbon, Portugal* (pp. 229-236).
- Peppard, J. (1993). Information, technology and strategy. *IT Strategy for Business*, 1-25.
- Peppard, J., & Ward, J. (1999). 'Mind the Gap': diagnosing the relationship between the IT organisation and the rest of the business. *The Journal of Strategic Information Systems*, 8(1), 29-60.
- Peppard, J., & Ward, J. (2004). Beyond strategic information systems: towards an IS capability. *The Journal of Strategic Information Systems*, 13(2), 167-194.
- Pierson, P. (2004). *Politics in time: History, institutions, and social analysis*. Princeton University Press.
- Philip, G. (2007). IS strategic planning for operational efficiency. *Information Systems Management*, 24(3), 247-264.
- Porter, M. E. (1980). Competitive strategy: Techniques for analyzing industry and competitors. *Competitive strategy: techniques for analyzing industry and competitors*.

- Porter, M. E. (1985). *Competitive advantages*. New York.
- Porter, M. E. (1998). *Competitive strategy: Techniques for analyzing industries and competitors*. Free pres.
- Porter, M. E. (2001). OT COPY. *Harvard business review*, Sage.
- Prasad, P. (1997). Systems of meaning: ethnography as a methodology for the study of information technologies. In *Information systems and qualitative research* (pp. 101-118). Springer US.
- Preston, D. S., & Karahanna, E. (2009). Antecedents of IS strategic alignment: a nomological network. *Information Systems Research*, 20(2), 159-179.
- Proctor, S. (1998). Linking philosophy and method in the research process: the case for realism. *Nurse Researcher*, 5(4), 73-90.
- Qing, D., Hoa, V. Do, B. M., & Kentaro, T. (2011) Apparatus, system, and method for the selection of perpendicular media segregant materials. *U.S. Patent 7, 879-470*.
- Ragu-Nathan, B. S., Apigian, C. H., Ragu-Nathan, T. S., & Tu, Q. (2004). A path analytic study of the effect of top management support for information systems performance. *Omega*, 32(6), 459-471.
- Ragu-Nathan, B., Ragu-Nathan, T. S., Tu, Q., & Shi, Z. (2001). Information management (IM) strategy: the construct and its measurement. *The Journal of Strategic Information Systems*, 10(4), 265-289.
- Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *Mis Quarterly*, 30(2), 225-246.
- Rapley, T. (2004). Analysing conversation. *Researching Society and Culture*, 2, 383-396.
- Ravichandran, T. (2000). Swiftiness and intensity of administrative innovation adoption: an empirical study of TQM in information systems. *Decision Sciences*, 31(3), 691-724.
- Ravichandran, T., & Lertwongsatien, C. (2002). Impact of information systems resources and capabilities on firm performance: A resource-based perspective. *ICIS 2002 Proceedings*, 53.

- Ravichandran, T., Lertwongsatien, C., & Lertwongsatien, C. (2005). Effect of information systems resources and capabilities on firm performance: A resource-based perspective. *Journal of management information systems*, 21(4), 237-276.
- Reich, B. H., & Benbasat, I. (1996). Measuring the linkage between business and information technology objectives. *MIS quarterly*, 55-81.
- Reich, B. H., & Benbasat, I. (2000). Factors that influence the social dimension of alignment between business and information technology objectives. *MIS quarterly*, 81-113.
- Rice, P. L., & Ezzy, D. (1999). *Qualitative research methods: A health focus*(p. 291). Melbourne: Oxford University Press.
- Riemenschneider, C. K., Harrison, D. A., & Mykytyn, P. P. (2003). Understanding IT adoption decisions in small business: integrating current theories. *Information & Management*, 40(4), 269-285.
- Ritzer, G. (2000). Obscene from any angle: Fast food, credit cards, casinos and consumers. *Third Text*, 14(51), 17-28.
- Roberts, N., & Grover, V. (2012). Leveraging information technology infrastructure to facilitate a firm's customer agility and competitive activity: An empirical investigation. *Journal of Management Information Systems*, 28(4), 231-270.
- Robson, W. (1997). *Strategic management and information systems*. London: Pitman.
- Rosemann, M., & vom Brocke, J. (2015). The six core elements of business process management. In: Vom Brocke, J., & Rosemann, M. *Handbook on Business Process Management*, Berlin: Springer, 105-122.
- Rosen, M. (1991). COMING TO TERMS WITH THE FIELD: UNDERSTANDING AND DOING ORGANIZATIONAL ETHNOGRAPHY*. *Journal of Management Studies*, 28(1), 1-24.
- Rossmann, G. B., & Rallis, S. F. (1998). *Learning in the field: An introduction to qualitative research*. Sage.
- Sabherwal, R., & Chan, Y. E. (2001). Alignment between business and IS strategies: a study of prospectors, analyzers, and defenders. *Information Systems Research*, 12(1), p 11-33.

Sabherwal, R., & Kirs, P. (1994). The alignment between organizational critical success factors and information technology capability in academic institutions*. *Decision Sciences*, 25(2), 301-330.

Sabherwal, R., Hirschheim, R., & Gales, T. (2001). The dynamics of alignment: Insights from a punctuated equilibrium model. *Organization Science*, 12(2), 179-197.

Saldaña, J. (2009) *The coding manual for qualitative researchers*. Sage

Salmela, H., Lederer, A., & Reponen, T. (1996). Prescriptions for Information Systems Planning in a Turbulent Environment.

Salmela, H., & Spil, T. A. (2002). Dynamic and emergent information systems strategy formulation and implementation. *International Journal of Information Management*, 22(6), 441-460.

Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. *MIS quarterly*, 237-263.

Sampler, J. (1998) Redefining industry structure for the information age. *Strategic Management Journal*, 19, 139-149.

Sapounas, I. (2009). *Factors increasing the productivity of information and communication technologies investments of the Greek firms: The effect of external environment, strategy and strategic alignment, soft ICT investment and new forms of workplace organization*, Doctoral dissertation, University of the Aegean.

Sarker, S., Sarker, S., & Sidorova, A. (2006). Understanding business process change failure: An actor-network perspective. *Journal of Management Information Systems*, 23(1), 51-86.

Sauer, C., & Burn, J. (1997). The pathology of strategic alignment. *Steps to the Future: The Management of IT-based Organizational Transformation*, Jossey-Bass, San Francisco, USA.

Sauer, C., Yetton, P. W., & Alexander, L. (1997). *Steps to the future: fresh thinking on the management of IT-based organizational transformation*. Jossey-Bass Inc., Publishers.

Saunders, M. N., Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for business students*. Pearson Education India.

Schepers, J., & Wetzels, M. (2007). A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects. *Information & Management*, 44(1), 90-103.

Schwartzman, H. B. (1993). *Ethnography in organizations*. Sage.

Schwarz, A., & Hirschheim, R. (2003). An extended platform logic perspective of IT governance: managing perceptions and activities of IT. *The journal of strategic information systems*, 12(2), 129-166.

Scott, T., Mannion, R., Marshall, M., & Davies, H. (2003). Does organisational culture influence health care performance? A review of the evidence. *Journal of Health Services Research & Policy*, 8(2), 105-117.

Seale, C. (1999). Quality in qualitative research. *Qualitative inquiry*, 5(4), 465-478.

Segars, A. H., & Grover, V. (1999). Profiles of strategic information systems planning. *Information Systems Research*, 10(3), 199-232.

Shavelson, R. J., & Towne, L. (Eds.). (2002). *Scientific research in education*. National Academies Press.

Sherer, S. A. (1992). *Software Failure Risk*. Springer US.

Sherer, S. A., & Alter, S. (2004). Information systems risks and risk factors: Are they mostly about information systems?. *Communications of the Association for Information Systems*, 14(1), 2.

Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text and interaction*. Sage.

Singh, J. P. (2002). Introduction: Information technologies and the changing scope of global power and governance. In: Rosenau, J. N., & Singh, J. P. *Information technologies and global politics: The changing scope of power and governance*, SUNY Press, 1-38.

Smaczny, T. (2001). Is an alignment between business and information technology the appropriate paradigm to manage IT in today's organizations? *Management Decision*, 39(10), 797-802.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative science quarterly*, 339-358.

Smith, J. K. (1983). Quantitative versus qualitative research: An attempt to clarify the issue. *Educational researcher*, 12(3), 6-13.

Smith, K. A., Vasudevan, S. P., & Tanniru, M. R. (1996). Organizational learning and resource-based theory: an integrative model. *Journal of Organizational Change Management*, 9(6), 41-53.

Smith, N. C. (1990). The case study: a useful research method for information management. *Journal of Information Technology*, 5(3), 123-133.

Smits, M. T., & Van der Poel, K. G. (1996). The practice of information strategy in six information intensive organizations in the Netherlands. *The Journal of Strategic Information Systems*, 5(2), 93-110.

Smits, M. T., Van der Poel, K. G., & Ribbers, P. M. A. (1997). Assessment of information strategies in insurance companies in the Netherlands. *The Journal of Strategic Information Systems*, 6(2), 129-148.

Snape, D., & Spencer, L. (2003). The foundations of qualitative research. *Qualitative research practice: A guide for social science students and researchers*, 11.

Soh, C., & Markus, M. L. (1995). How IT creates business value: a process theory synthesis. In *ICIS*, pp. 29-41.

Spender, J. C. (1989). *Industry recipes*. Oxford: Basil Blackwell.

Stake, R. E. (1995). *The art of case study research*. Sage

Stazyk, E. C., & Goerdel, H. T. (2011). The benefits of bureaucracy: Public managers' perceptions of political support, goal ambiguity, and organizational effectiveness. *Journal of Public Administration Research and Theory*, 21(4), 645-672.

Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications, Inc.

Strauss, A. L., & Corbin, J. (1998). *Basics of qualitative research: Techniques and Procedures for Developing Grounded Theory*. Sage

Stern, P. N. (1980). Grounded theory methodology: Its uses and processes. *Journal of Nursing Scholarship*, 12(1), 20-23.

- Sullivan, C. H. (1985) Systems planning in the information age. *Sloan Management Review*, 3-11.
- Sumner, M. (1999, April). Critical success factors in enterprise wide information management systems projects. In *Proceedings of the 1999 ACM SIGCPR conference on Computer personnel research* (pp. 297-303). ACM.
- Sun, C. M., & Chen, R. S. (2006). A study on the strategic alignment process with information technology for new ventures: from a dynamic capability perspective. In *ECIS*, pp. 299-309.
- Sun, Y., Bhattacharjee, A., & Ma, Q. (2009). Extending technology usage to work settings: The role of perceived work compatibility in ERP implementation. *Information & Management*, 46(6), 351-356.
- Tai, L. A., & Phelps, R. (2000). CEO and CIO perceptions of information systems strategy: evidence from Hong Kong. *European Journal of Information Systems*, 9(3), 163-172.
- Tallon, P. P. (2008). Inside the adaptive enterprise: an information technology capabilities perspective on business process agility. *Information Technology and Management*, 9(1), 21-36.
- Tallon, P. P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: Insights from a mediation model. *Mis Quarterly*, 35(2), 463-484.
- Tan, F. B., & Gallupe, R. B. (2006). Aligning business and information systems thinking: a cognitive approach. *Engineering Management, IEEE Transactions on*, 53(2), 223-237.
- Tan, J., & Tan, D. (2005). Environment strategy co-evolution and co-alignment: a staged model of Chinese SOEs under transition. *Strategic Management Journal*, 26(2), 141-157.
- Tanriverdi, H., Rai, A., & Venkatraman, N. (2010). Research commentary—reframing the dominant quests of information systems strategy research for complex adaptive business systems. *Information Systems Research*, 21(4), 822-834.
- Teddle, C., & Yu, F. (2006). Mixed methods sampling procedures: Some prototypes with examples. In *annual meeting of the American Educational Research Association, San Francisco, CA*.

- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.
- Teo, T. S., & Ang, J. S. (2000). How useful are strategic plans for information systems?. *Behaviour & Information Technology*, 19(4), 275-282.
- Tian, J., Wang, K., Chen, Y., & Johansson, B. (2010). From IT deployment capabilities to competitive advantage: An exploratory study in China. *Information Systems Frontiers*, 12(3), 239-255.
- Tirole, J. (1986). Hierarchies and bureaucracies: On the role of collusion in organizations. *Journal of Law, Economics, & Organization*, 181-214.
- Thomson, L. (1993). Reporting changes in the electricity supply industry and privatisation. *Financial Accountability & Management*, 9(2), 131-157.
- Thornley, R. K. (2012). Sustainable strategic alignment of actual project portfolio execution: Application and exploratory case study. In *Technology Management Conference (ITMC), 2012 IEEE International* , 374-381.
- Tsang, E. W. (1998). Can guanxi be a source of sustained competitive advantage for doing business in China?. *The Academy of Management Executive*, 12(2), 64-73.
- Trauth, E. M. (1997). Achieving the research goal with qualitative methods: lessons learned along the way. In: Lee, A. S., & Liebenau, J. *Information systems and qualitative research*, US: Springer, 225-245.
- Tushman, M., & O'Reilly, C. (1996). Evolution and revolution: Mastering the dynamics of innovation and change. *California Management Review*, 38(4), 8-30.
- Twati, J. M., & Gammack, J. G. (2006). The impact of organisational culture innovation on the adoption of IS/IT: the case of Libya. *Journal of enterprise information management*, 19(2), 175-191.
- Vaishnavi, V., & Kuechler, B. (2011). Design Sciences Research in Information Systems. *Association for Information System*.
- van Grembergen, W. (Ed.). (2007). *Implementing Information Technology Governance: Models, Practices and Cases: Models, Practices and Cases*. IGI Global.

van Lier, J., & Dohmen, T. (2007, January). Benefits management and strategic alignment in an IT outsourcing context. In *System Sciences, 2007. HICSS 2007. 40th Annual Hawaii International Conference on* (pp. 206b-206b). IEEE.

Vitale, M. R. (1986). The growing risks of information systems success. *MIS Quarterly*, 327-334.

Vitale, M. R., Ives, B., & Beath, C. M. (1986). Linking information technology and corporate strategy: an organizational view. In *Proceedings of the Seventh International Conference on Information Systems*. San Diego, CA.

Vecchio, R. P., Justin, J. E., & Pearce, C. L. (2010). Empowering leadership: An examination of mediating mechanisms within a hierarchical structure. *The Leadership Quarterly*, 21(3), 530-542.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Venkatraman, N. (1989). The concept of fit in strategy research: toward verbal and statistical correspondence. *Academy of management review*, 14(3), 423-444.

Venkatraman, N., Henderson, J. C., & Oldach, S. (1993). Continuous strategic alignment: Exploiting information technology capabilities for competitive success. *European Management Journal*, 11(2), 139-149.

Vessey, I., & Ward, K. (2013). The Dynamics of Sustainable IS Alignment: The Case for IS Adaptivity. *Journal of the Association for Information Systems*, 14(6).

Vrasidas, C. (2000). Constructivism versus objectivism: Implications for interaction, course design, and evaluation in distance education. *International Journal of Educational Telecommunications*, 6(4), 339-362.

Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research: Review, extension, and suggestions for future research. *MIS quarterly*, 28(1), 107-142.

Wallace, L., Keil, M., & Rai, A. (2004). How software project risk affects project performance: An investigation of the dimensions of risk and an exploratory model. *Decision Sciences*, 35(2), 289-321.

- Walliman, N. (2006). *Social research methods*. Sage.
- Walsham, G. (1993). IS strategy and implementation: a case study of a building society. *ACM SIGOIS Bulletin*, 14(2), 13-16.
- Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of information systems*, 4(2), 74-81.
- Watson, R. T. (1990). Influences on the IS manager's perceptions of key issues: information scanning and the relationship with the CEO. *MIS Quarterly*, 217-231.
- Watson, R. T., Kelly, G. G., Galliers, R. D., & Brancheau, J. C. (1997). Key issues in information systems management: an international perspective. *J. of Management Information Systems*, 13(4), 91-116.
- Ward, J. M. (1987). Integrating information systems into business strategies. *Long range planning*, 20(3), 19-29.
- Ward, J. M. (2012). Information systems strategy: Quo vadis?. *The Journal of Strategic Information Systems*, 21(2), 165-171.
- Ward, J., & Peppard, J. (2002). *Strategic Planning for Information Systems*. John Wiley. New York.
- Ward, J., Griffiths, P., & Whitmore, P. (1990). *Strategic Planning for Information Systems* John. Chichester
- Weber, R. J. (1964). *The Miau manuscript of Benito Pérez Galdós: a critical study*. Univ of California Press.
- Weick, K. E. (1993). Organizational redesign as improvisation. In: Huber, G. P. & Glick, W. H. *Organizational change and redesign: Ideas and insights for improving performance*. Oxford: Oxford University Press. 346-379.
- Weill, P. (1993). The role and value of information technology infrastructure: Some empirical observations. In R. Banker, Kaufman, R., Mahood, M. A. (eds), *Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage*, Idea Group Publishing, Middleton, PA, 547-572.
- Weill, P. (2004). Don't just lead, govern: How top-performing firms govern IT. *MIS Quarterly Executive*, 3(1), 1-17.

Weill, P., Subramani, M., & Broadbent, M. (2002). Building IT infrastructure for strategic agility. *MIT Sloan Management Review*, *v44 i1*, 57.

Wells, F. O. (1994). Management of research misconduct—in practice. *Journal of internal medicine*, *235*(2), 115-121.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, *5*(2), 171-180.

Wernerfelt, B. (1995). The resource-based view of the firm: Ten years after. *Strategic management journal*, *16*(3), 171-174.

Westrup, C., & Liu, W. (2008). Both global and local: ICTs and joint ventures in China. *Information Systems Journal*, *18*(4), 427-443.

Wheeler, B. C. (2002). NEBIC: a dynamic capabilities theory for assessing net-enablement. *Information Systems Research*, *13*(2), 125-146.

Wilson, T. D. (1989). The Implementation of Information System Strategies in UK Companies: Aims and Barriers to Success, *International Journal of Information Management* (9), 245-258.

Wong, K. C. (2001). Chinese culture and leadership. *International Journal of Leadership in Education*, *4*(4), 309-319.

Woolridge, B., & Floyd, S. W. (1990, September). Bridging the gap between strategy and operations: the implications of middle management involvement in strategy. In *10th Annual International Conference of the Strategic Management Society, Stockholm* (pp. 24-27).

World Bank (2013). World GDP report 2013. [Online] <http://databank.worldbank.org/data/download/GDP.pdf> [Accessed on July 2014]

Yayla, A. A., & Hu, Q. (2011). The impact of IT-business strategic alignment on firm performance in a developing country setting: exploring moderating roles of environmental uncertainty and strategic orientation. *European Journal of Information Systems*, *21*(4), 373-387.

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.

Yu, B. B., & Egri, C. P. (2005). Human resource management practices and affective organizational commitment: A comparison of Chinese employees in a state-owned enterprise and a joint venture. *Asia Pacific Journal of Human Resources*, *43*(3), 332-360.

- Yusuf, Y., Gunasekaran, A., & Abthorpe, M. S. (2004). Enterprise information systems project implementation: A case study of ERP in Rolls-Royce. *International Journal of Production Economics*, 87(3), 251-266.
- Yusuf, Y. Y., Sarhadi, M., & Gunasekaran, A. (1999). Agile manufacturing:: The drivers, concepts and attributes. *International Journal of production economics*, 62(1), 33-43.
- Zachman, J. A. (1977). Control and Planning of Information Systems. *Journal of Systems Management*, 28(7).
- Zachman, J. A. (1982). Business systems planning and business information control study: a comparison. *IBM Systems Journal*, 21(1), 31-53.
- Zaheer, S., & Zaheer, A. (1997). Country effects on information seeking in global electronic networks. *Journal of International Business Studies*, 77-100.
- Zahra, S. A., & George, G. (2002). The net-enabled business innovation cycle and the evolution of dynamic capabilities. *Information Systems Research*, 13(2), 147-150.
- Zevon, M. A., & Tellegen, A. (1982). The structure of mood change: An idiographic/nomothetic analysis. *Journal of Personality and Social Psychology*, 43(1), 111.
- Zhao, J., Wang, S., & Huang, W. V. (2008). A study of B2B e-market in China: E-commerce process perspective. *Information & Management*, 45(4), 242-248.
- Zhao, X. (2005). *Research on the Theories and Methods and Strategic Planning of Enterprises Information Resources Configuration* (Doctoral dissertation, PhD Thesis, Jilin University).
- Zikmund, Z. (2000). Vision of clathrate perovskites, or can they exist?. *Ferroelectrics*, 241(1), 317-324.
- Zmud, R. W., Boynton, A. C., & Jacobs, G. C. (1987, December). An examination of managerial strategies for increasing information technology penetration in organizations. In *Proceedings of the eighth international conference on information systems* (pp. 24-44). available from ACM, New York, NY.
- Zusman, E., & Turner, J. L. (2005). Beyond the bureaucracy: Changing China's policymaking environment. *China's Environment and the Challenge of Sustainable Development*. New York, ME Sharpe, 121-149.

Appendix A: Research ethics approval

Information School Research Ethics Panel

Letter of Approval

Date: 13th December 2012

TO: Zefeng Wang

The Information School Research Ethics Panel has examined the following application:

Title: How to sustain dynamic strategic alignment in rapidly changing environment: An exploratory case study

Submitted by: Zefeng Wang

And found the proposed research involving human participants to be in accordance with the University of Sheffield's policies and procedures, which include the University's '*Financial Regulations*', '*Good Research Practice Standards*' and the '*Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue*' (Ethics Policy).

This letter is the official record of ethics approval by the School, and should accompany any formal requests for evidence of research ethics approval.

Effective Date 13th December 2012

Dr Ana Cristina Vasconcelos
Acting Research Ethics Coordinator

Appendix B: Information Sheet for interview

一，研究项目题目：

企业如何在变化万端的激烈竞争环境中如何实现有效的信息与商业战略应对

二，邀请函

在此荣幸地邀请您参加此次研究项目。这是一次自费的学术性的研究项目，并无任何商业利益或者任何其他目的存在。在您决定是否参与此问卷调查前，希望您了解此次研究的目的与大致内容。请您花费一点时间去读接下来的信息。您可以通过电子邮件来询问您的所有疑问与索要进一步的信息。希望这些信息能够给您带来帮助，也感谢您的阅读。

三，项目的宗旨

这次研究项目的宗旨在于调查中国企业对于信息系统的战略性使用，尤其是在变换莫测的现代商业竞争环境中。其目的在于通过对中国企业如何计划，采用与使用信息系统与技术提高商业竞争力的调查研究来定位战略性应用信息系统与战略应对对企业的帮助与影响。

四，调查对象

此次调查对象均为在中国境内的企业的员工与管理层。

五，参加意愿

此次研究调查完全属于自愿性质。您还可以在任何时候决定并退出此次调查，而且您不需要任何理由。

六，调查内容

如果您参加了此次调查，您将会被要求参加一次电话访谈，需时大约 25 分钟。

七，您的义务

您只需要将您真实的意见与观点以访谈方式给出便可以。

八，调查对您的影响

此次调查并不会对您带来任何不适，其中也不会关于姓名年龄性别等敏感问题，公司企业也为匿名参加。此外，此次调查得到的数据会严格保密与储存。研究人员会确保调查对象不受到任何负面影响。

九，调查福利

此次调查并无给予参与者直接的利益，但是您的参与对中国信息化管理的发展研究有着重要的意义与影响。

十，调查中止

如果调查因为任何原因中止，您将会得到通知和合理的解释。

十一，调查中的状况与问题反馈

此次调查为匿名调查，任何参与者都拥有相同的权力和得到应有尊重。但是如果您在此次调查中遇到任何状况与问题需要反馈，您可以联系此项目的指导。联系方式如下：

Dr Angela Lin (Email: A.lin@sheffield.ac.uk 地址: Information School, Regent Court, The University of Sheffield, 211 Portobello Street, Sheffield S1 4DP, The United Kingdom)

如果您的反馈没有得到您预期的回复，您还可以联系谢菲尔德大学的 **Registrar and Secretary**。

十二，信息保密

没有信息可以表明您与贵公司的身份，一切的调查信息都会严格保密。您不会在任何学术报告中被识别出来。

十三，调查所需信息

在问卷中，参与者会被询问一些关于公司的基本信息，他们应用 **B2B** 电子商务平台的经验，信息系统的战略性使用还有其与商业战略联系。

十四，调查项目的结论

如有需要，参与者可以要求通过 **Email** 得到一份简约的项目报告。

十五，项目源

此次研究是谢菲尔德大学信息学院的自费博士研究项目的一部分。

十六，项目的道德监管

此项目由英国谢菲尔德大学信息学院监管。同时，此项目是由谢菲尔德大学研究道德委员会监督与批准的。

十七，联系方式

项目负责人: 王泽锋

Email: Zwang8@sheffield.ac.uk

地址: Room 224 Information School

Regent Court

The University of Sheffield

211 Portobello Street,

Sheffield S1 4DP

The United Kingdom

项目监导: Dr. Angela Lin

E-mail: A.lin@sheffield.ac.uk

地址: Room 221 Information School

Regent Court

The University of Sheffield

211 Portobello Street,

Sheffield S1 4DP

The United Kingdom

感谢您的参与, 您提供的信息将会帮助我们与信息管理学的发展!

Information Sheet

1. Research Project Title:

How to sustain dynamic strategic alignment in rapidly changing environment: An exploratory case study

2. Invitation paragraph

You are invited to take part in a research project investigating dynamic strategic alignment in rapidly changing environment. Before you decide to take part in this survey it is important for you to understand why this research is being conducted and what it will involve. Please take a few minutes to read the following information carefully. Ask us via E-mail if there is anything that is not clear or if you would like more information. Please take time to decide whether or not you wish to participate. Thank you for reading this.

3. What is the project's purpose?

This research project aims to investigate the influence of changing environments on strategic planning of IS and strategic alignment. It intends to address the gap in the current literature on dynamic strategic alignment in rapidly changing environment by examining the use of IS strategy and IS adoption among companies and whether and how the adoptions help companies achieve strategic advantage in rapidly changing environments.

4. Why have I been chosen?

You are chosen because you are identified to be the normal employee, manager or decision maker of a representative company in rapidly changing environments.

5. Do I have to take part?

Your participation in this research is entirely voluntary. If you decide to take part in this research, you will receive this information sheet to keep and you will later be asked to sign a University ethical consent form. You can still withdraw and quit at any stage of this research project, and you do not need to give a reason.

6. What will happen to me if I take part?

You are being asked to participate in a case study. You will give us your permission to conduct interviews with yourself. The interviews aim to collect information about dynamic strategic alignment in rapidly changing environment and strategic planning of IS in your company. Each interview will last for approximately one hour and it will take place in your company. After the initial interview you may be contacted again for follow-up questions and clarifications.

7. What do I have to do?

You will provide us with your comments, ideas, and personal feelings according to your experience.

8. What are the possible disadvantages and risks of taking part?

There are no anticipated discomforts or disadvantages brought to participants in the research.

9. What are the possible benefits of taking part?

While there is no immediate benefit for those who participating in the project, it is hoped that the research will contribute to the understanding of sustainable dynamic strategic alignment in rapidly changing environment.

10. What happens if the research study stops earlier than expected?

If this is the case the reason(s) will be explained to the participant immediately.

11. What if something goes wrong?

Participants in this research will be treated with respect and anonymity, and their rights will be well protected. However, you are encouraged to contact the project supervisor named below, should you wish to raise a complaint regarding any improper treatment by the researcher or something serious occurring during or following their participation in the project. In addition, if the complaint has not been handled to their satisfaction, participants can contact the University's Registrar and Secretary.

Supervisor: Dr. Angela Lin
E-mail: A.lin@sheffield.ac.uk
Address: Information School
Regent Court
The University of Sheffield
211 Portobello Street,
Sheffield S1 4DP
The United Kingdom

12. Will my taking part in this project be kept confidential?

No information that can identify participants will be collected. All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications. Only the researchers on the project will be able to access the data.

13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

Information collected from the interviews is of great importance to provide a deeper insight into strategic planning of IS and dynamic strategic alignment in rapidly changing environment.

Documentation collected will be used to provide the background of your company and for the data triangulating purpose. Documents here could be annual reports, internal confidential reports, presentations, official website or instructions for IS/IT.

14. What will happen to the results of the research project?

Results of the research will be presented in my PhD thesis and will be published. You will not be identified in any report or publication. If you wish to be given a copy of any reports resulting from the research please just ask us.

15. Who is organising and funding the research?

This research is part of a self funded PhD research project.

16. Who has ethically reviewed the project?

This research has been ethically approved via Information School's ethics review procedure. The University's Research Ethics Committee monitors the application and delivery of the University's Ethics Review Procedure across the University.

17. Will I be recorded, and how will the recorded media be used?

With your permission we would like to record the interview using digital audio recorder. The digital audio recording will be saved in password protected file in password access only personal computer. The recording will only be used for data analysis no other use will be made of them without your written permission, and no one outside the project will be allowed access to the original recordings.

18. Contact for further information

Contact detail:

Researcher: Zefeng Wang

E-mail: Zwang8@sheffield.ac.uk

Address: Room 224 Information School

Regent Court

The University of Sheffield

211 Portobello Street,

Sheffield S1 4DP

The United Kingdom

Supervisor: Dr. Angela Lin

E-mail: A.lin@sheffield.ac.uk

Address: Room 221 Information School

Regent Court

The University of Sheffield

211 Portobello Street,

Sheffield S1 4DP

The United Kingdom

Thank you very much for your kind assistance for this research project. The information you provide will help us to improve the development of strategic

planning of IS and dynamic strategic alignment. Additionally, a copy of this information sheet will be given to you along with a signed consent form.

Appendix C: Consent form

同意书

项目标题：企业如何在变化万端的激烈竞争环境中如何实现有效的信息与商业战略应对

研究员：Zefeng Wang 王泽锋

参与者编号：

请打钩

我确认我已经读过并且明白信息指南上的信息，我明白我有权力与机会提问相关信息。

我清楚我的参与是自愿的，我有随时退出该项目的权力而不需要任何理由。并且，我有权拒绝回答任何问题。

我清楚我的信息和访谈会得到保密。

我授权研究人员可以使用我的音频录音永远研究工作，并且我清楚我的个人信息绝对不会泄露或者在未来的论文和报告中被认出。

我同意我给出的数据可以用在未来的研究中。

我同意参与这次研究项目

参与者签名：

日期：

访问人签名：

日期：

一式两份，一份给参与者，一份由研究者妥善管理收于项目资料

Consent Form

Project Title: How to sustain dynamic strategic alignment in rapidly changing environment: An exploratory case study
Researcher: Zefeng Wang
Participant Identification Number:

*Please
Initial box:*

I confirm that I have read and understood the information sheet dated [] and have had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.

I understand that my responses will be kept strictly confidential. I understand that my name will not be linked with the research materials, and will not be identified or identifiable in the report or reports that result from the research.

I agree for this interview to be tape-recorded. I understand that the audio recording made of this interview will be used only for analysis and that extracts from the interview, from which I would not be personally identified, may be used in any conference presentation, report or journal article developed as a result of the research. I understand that no other use will be made of the recording without my written permission, and that no one outside the research team will be allowed access to the original recording.

I agree that my anonymised data will be kept for future research purposes such as publications related to this study after the completion of the study.

I agree to take part in this interview.

Name of participant

Date

Signature

Principal Investigator

Date

Signature

To be counter-signed and dated electronically for telephone interviews or in the presence of the participant for face to face interviews

Copies: *Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, and the information sheet. A copy of the signed and dated consent form should be placed in the main project file which must be kept in a secure location.*

Appendix D: Interview script and timetable

3 telephone interviews were conducted and some issues regarding the interview questions were identified. One issue identified was that two out of three interviewees were unable or not prepared to answer some of the questions. Subsequently questions were revised so that interviewees were able to understand the questions better and a decision was taken to conduct face to face rather than telephone interviews. This is because Chinese are usually hesitant to talk to strangers especially when they are asked to express their views and opinions about company's policy and strategy. In order to collect rich data conducting face to face interviews is more appropriate.

Interviewees were chosen according to the research design and the purpose of this research. Appointments with interviewees were made prior to the researcher visit the case study company. Total number of 29 interviews have been conducted, and 27 of them considered to be valuable. On average each interview last 30-45 minutes. The following table summarises the interviewees' job titles and time the interview schedules.

Summary of Interviewees and interview timetable

	morning	afternoon
Telephone interviews	January	
13/01/2014	President's secretary	
14/01/2014		Accountant staff
15/01/2014	Accountant staff	
Face to face interviews	March to April	
17/03/2014	IT/IS staff	IT/IS staff
18/03/2014	IT/IS manager	
19/03/2014	2 staff members in the general office	Manager of the Cost Management Dept
20/03/2014	Manager of Risk Management Dept and his secretary	Manager of investment and Development Dept
21/03/2014	Manager of Planning Dept manager	A staff member in Planning Dept
25/03/2014	Manager of Project Management Dept	Assistant manager of Project Management

26/03/2014	Director of the General office director and HR staff	HR manager and her secretary
27/03/2014	Manager of Operations Management Dept and staff	
28/03/2014	Assistant Manager of Subsidiary company	An assistant manager secretary at Subsidiary company
31/03/2014	Vice president	
01/04/2014	President	
02/04/2014	Vice-general manager	General manager

Interview questions

Opening of the interview:

Can I record the interview?

Can you read and sign the form?

Opening statements and background information

Can you tell me your main responsibilities and work in the company?

External environment factors:

Any external environment factors potentially affect the strategy formulation of your company? (normal staff -- Any external environment factors affect your works?)

Can the IS strategy adapt the changes of business in your company?

What is the changing environmental impact on the implementation of IS? (normal staff – what kind of environmental changes could significantly affect your works? Example.)

External or internal environment factors are more important?

Does IS strategy adapt the environmental changes?

Intended strategic alignment:

Does your company have long-term business strategy?

When formulating business strategy, do you include IS strategy or consider IS strategy? Do you consider IS and information resource to support the business strategy? (normal staff -- Have you discussed any issues regarding IS in the meeting? If yes, what was that?)

Strategic alignment process:

Can you distinguish strategy from planning? What is the difference? (only for managers)

If the environmental changes significantly affect the strategy, what would you do to react the changes?

Has the company developed or changed IS strategy when the business strategy has been changed? (normal staff – How long will the company update the IS or adopt a new IS? Did these updates and adoptions help your works?)

Organisational structure and culture (Internal environment):

Who has the power to formulate business strategy and IS strategy? (normal staff -- who has the decision power in your department?)

Any internal environment factors potentially affect the strategy formulation of your company? (normal staff -- Any internal environment factors affect your works?)

External or internal environment factors are more important?

Do you report any changes or request of your work to IS/IT department? Are you happy with the communication between business department and IS/IT department? Why?

Do you participate in the discussion of IS and IS strategy or did you ever give any suggestions regarding IS and IS strategy? Does IS/IT department participate in business strategy formulating or provide suggestions? Do you think the communication between IS department and business department is important? Why?

What role does IS/IT department play in your company? Does IS/IT department managers participate in the decision-making meeting of the company? Who has the power to decide the IS adoptions?

Strategic level:

Does your company have long-term business strategy?

When formulating business strategy, do you include IS strategy or consider IS strategy? Do you consider IS and information resource to support the business strategy?

Organisational level:

Do you report any changes or request of your work to IS/IT department? Are you happy with the communication between business department and IS/IT department? Why?

Do you participate in the discussion of IS and IS strategy or did you ever give any suggestions regarding IS and IS strategy? Does IS/IT department participate in business strategy formulating or provide suggestions? Do you think the communication between IS department and business department is important? Why?

What role does IS/IT department play in your company? Does IS/IT department managers participate in the decision-making meeting of the company? Who has the power to decide the IS adoptions?

Individual level:

What IS do the company have? (normal -- what IS do you use for work?)

What role do these IS play in business strategy? What functions do these IS have in the management and daily work? (normal staff – what role do these IS play in your daily works)

Do these IS satisfy your needs? Does IS strategy adapt the environmental changes?

Are these IS help your works? Are these IS easy to operate? Do you have any suggestion or complain?

Are these IS important? Are you happy with the IS strategy of the company and its implementation?

Relationship between the three levels:

What role do these IS play in business strategy? What functions do these IS have in the management and daily work? (normal staff – what role do these IS play in your daily works)

Has the company developed or changed IS strategy when the business strategy has been changed? (normal staff – How long will the company update the IS or adopt a new IS? Did these updates and adoptions help your works?)

Do you report any changes or request of your work to IS/IT department? Are you happy with the communication between business department and IS/IT department? Why?

Do you participate in the discussion of IS and IS strategy or did you ever give any suggestions regarding IS and IS strategy? Does IS/IT department participate in business strategy formulating or provide suggestions? Do you think the communication between IS department and business department is important? Why?

Realised strategic alignment:

What are the competitive advantages of the company?

Will these competitive advantages of the company can be enhance by IS or information generated from IS?

In nowadays rapidly changing business environments, is the development of IS and sustained strategic alignment important to the performance and IT capacity building of an organisation? Why?

What are the challenges for effective planning and implementing IS in rapidly changing environments, and why?

Do you think information resources generated from IS can help to enhance organisational agility?

What are the challenges or barriers that the company is facing when manage and implement IS? Are these challenges or barriers related to the business changes?

Organisational agility:

How would you estimate the organisational agility of you company? Do you think the company can detect environmental changes faster and react better than the competitors?

Do you think information resources generated from IS can help to enhance organisational agility?

It flexibility:

Do you think IT flexibility is important? What role does IT flexibility play in rapidly changing competitive environments? (normal staff – Can the information resources you've got including IT/IS professionals, hardware, software and so on work in different situations? Do you think it is important? Why?)

Sustained Dynamic strategic alignment:

What are the challenges or barriers that the company is facing when manage and implement IS? Are these challenges or barriers related to the business changes?

What do you think how the company can adapt the rapidly changing environments, and how IS can align with business? (normal staff – what suggestions would you give regarding the IS and IS strategy of the company?)

How can IS and IS strategy align with business and business strategy more sustainably in changing environment? What factors affect sustainable strategic alignment?

Do you think sustained strategic alignment is important? Why?

Ending:

Is there anything else you want to say about this topic?

(Some questions are repeated as the questions can involve in several themes. The researcher will ask them in different themes according to different interviewee.)

Appendix E: Coding scheme and Categorisation

Table 0.1: Coding Scheme

Code	Definition	Description/examples
Strategy planning group	A group that has the right and responsibility to formulate strategy and implement it.	The president and the general manager are the group leaders. The directors of each department are the group members.
Strategy formulating process	A process that shows how strategy is formulated	According to External environments, organisational resources and HR, the departments of the company communicate and draft an initial strategy, then discuss and amendment with the leaders of company, and finally approved by the leaders.
Market trend	A tendency of a financial market to move in particular directions over time.	The market trend of the industry significantly affects the strategic planning.
Government policy	A principle or protocol to guide decisions and achieve rational outcomes made by government.	The industry is strongly connecting to the government policy, which can produce huge impacts on the strategy
Anxiety of the expectation	The worry about the difference between expectation and the reality	The uncertainty of the market trend and government policy leads to the anxiety that might affect the strategy planning.
Less internal factors concern	There is little attention drawn by internal factors	In general, the internal factors have less impacts on strategy planning
IS alignment	The degree to which IS and business complement each other	IS just basically meet the need of the operation and information communication of the company (poor level)
Misalignment individual level	Design not match the user's needs	The information flow design of the IS is series that the information might be stuck in the middle when a user fail to continue the flow
Environmental issues impacts on use of IS	the surroundings of the IS that may interact with the system	There is not much influence of environmental change on the use of IS (depend on what systems)
IS as support (assistance)	IS can be used to support the	The company is not spending

management tool	management	too much in IS, which just treat it as a tool for supporting management.
Strategy amendment	When the strategy is affected by the uncertainty changing environment, the strategy needs to be revised for the new situation.	e.g. When the industry is affected by the market and government policy, the strategy will be amended to avoid lose or catch opportunities for the new markets.
perception of IS	a belief or opinion, often held by many people and based on how IS seem	Some staff think they don't need IS much compared with other business department; some think it is just the assistance management tool or just make their work more efficient.
Risk of IS investment	The risk of IS investment can be a barrier of strategy alignment	The company refuse to invest too much on IS, as it can be a risk. They try to invest and upgrade IS every 3 years to reduce the risk.
User's quality	The user's activeness, creativity, knowledge, thinking mode, behaviour, ability to using IS, and so on	The quality of normal staff in the company need to be initiative and creative for IS implementation.
Organisational culture	the distinctive constellation of beliefs, values, work styles, and relationships which distinguish one organisation from another, which focus on the personality	The organisational culture of the company is open that the communication between people, especially the top level, is good. However, there is still some problems with the communication between middle level and the bottom level. This may be caused by the knowledge difference
Decision making centralised	the important decision making power is centralised within the leaders or the centre of an organisation	The leaders of the company has the decision making power to decide whether adopt IS
Leader ship	a process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task	They think the leaders are good, and they could be the competitive advantages of the company.
Implementation of IS	The implementation capacity of IS users	The staff and the IS users might not match the IS in term of their skills and capability.

IS as decision making support	IS can be used to support the decision making	When the IS make the information standardised and intelligentised, the decision can be made more efficiently and accurately.
Path dependence	the set of decisions one faces for any given circumstance is limited by the decisions one has made in the past, even though past circumstances may no longer be relevant	One of the challenges to strategy alignment is that the developments and changes of IS can lash the old management mode, which may affect the management and performance of the company
Unpredictable environment	The environment is unpredictable.	They cannot predict the next 10 years, as the environment is uncertain and changing constantly.
Organisational agility	organisational capability for responding to turbulent business environments	The company has meetings for considering the environmental issues and the strategy implementation issues. The company also has a specific group to do the marketing research.
IS strategy as supports of business strategy	IS strategy supports business strategy	They think the management of the company has 3 important things: strategy, leaders, and organisational culture. The IS strategy is part of business strategy and supports it.
IT flexibility	a company's capability to respond to various IT and IS demands from dynamic competitive environments	They think in some department like HR and financial is not affected much by dynamic environments, therefore, the IT flexibility is not that important in such area.
IS training	Training for using IS	The company had trained the employees for operating IS.
Human resource	the set of individuals who make up the workforce of an organization, business sector, or economy	The structure of the people and the different quality of the people can affect the strategy alignment. Different people have different opinions on IS.
Organisation size	The size of organisations could affect the strategic alignment	When the organisation is not that large, its requirement of IS is not that strong.
Sustained strategic	The strategic alignment is	The company need the IS to

alignment	sustainable during period of time	keep aligning with its business. The planning process should be consider more, and the IS professionals should be improved.
Employees' attention to IS	How the employees think of IS	IS is undervalued in this company. People didn't pay much attention to the importance of IS.
Hierarchical structure	A organizational structure where every entity in the organization, except one, is subordinate to a single other entity	The decision making power is highly centralised.
IS department (group)	A group of people who are in charge of IT and IS	There were 3 people in this IS group, and the general office director is the leader.
bureaucracy	a system for controlling or managing a country, company, or organization that is operated by a large number of officials employed to follow rules carefully	There is a rigid hierarchy of power about IS adoption and management. IT staff have to report to the general office director, and then the general office director report to the leader.
Price of IT facility	the amount of money for which IT facility, such as computer and printer, is sold	The price of computer, printer and other IT equipment are concerned as one of the external environmental factors.
examination and approval process	The process of the feeling of having a positive opinion of someone or something	There are many approval processes and approval authorities in the company, and you have to gain all of the approvals to do your job. This might affect the reaction speed of a company.
IT infrastructure upgrade	The development and upgrade of hardware, software and the systems.	The company does not pay much attention on the development of IS/IT infrastructure. E.g. the hardware will not upgrade until it is not working anymore.
Integrated system	bringing together the component subsystems into one system and ensuring that the subsystems function together as a system	The company is planning to integrate all the systems they adopted into one system. However, the compatibility of such systems they are using could

		be a problem.
Communication between IS dept and business dept	the activity of conveying information through the exchange of thoughts, messages, or information, as by speech, visuals, signals, written, or behaviour between IS dept and business dept	The employees from business department will report their needs and requests to IS department regarding the IS. However, IS staffs do not participate in business aspects.
Development of the company	the process in which the company grows or changes and becomes more advanced	When the company keeps developing, the IS just stay and undeveloped. This lead to the fact that IS cannot satisfy the needs of company.
Investment (cost) of IS	The act of spending money and time on IS to get advantages	The systems are very expensive, so this could be a barrier to sustained strategic alignment, as you can't change the systems constantly. The company has to invest more on IS development.
parent company	a company that owns enough voting stock in another firm to control management and operations by influencing or electing its board of directors; the second company being deemed as a subsidiary of the parent company	The parent company has the right to reject the system the company want to adopt. In order to integrate the systems, the parent company might want you to adopt more expensive systems. This also can be a challenge for sustained strategic alignment.
Operability of IS	the ability to keep an IS in a safe and reliable functioning condition, according to pre-defined operational requirements.	The existing IS are easy to use and operate. Most employees can easily use them, expect few elder employees who cannot use computers.
IS professionals	person who has a high level of education and training of IS	The company needs more IS/IT professionals especially in real estate aspect for strategic alignment and strategic planning of IS.
Importance of sustained strategic alignment	the quality of being important	The IS can still handle the business of the company recently. However, a growing number of projects will be conducted in the future, so the IS have to develop or new systems need to be

		adopted.
Auditing and supervision	The activities of overseeing the company's operation, in order to control and supervise	There are many supervisions and auditing in the company. They call it risk management.
Procedure	a set of actions that is the official or accepted way of doing something	The procedure of supervisions and auditing is red tape (trivial) and complex.
Risk management	the activity of calculating and reducing risk, so that an organization does not fail or lose money	The company has a risk management department. Its responsibility is to audit and supervise the business departments. They also assess risk of business for the leaders.
perception of the company	a belief or opinion, often held by many people and based on how the company seem	Some staff think the company is different from other normal industries, so that it does not rely on IS and IT as much as other companies from other industries like manufacturing
The user's need (function of IS)	The natural purpose of IS	The OA system is not functional enough. It can only help some simple procedure flow. Employee wish to have more functions on IS.
Communication between IS dept and business dept		
Decision making centralized		Can be barrier to sustained strategic alignment
Cost of IS	The money spend to buy the systems	There are many systems that the company needs, but most of them are expensive. This can be barrier to strategic alignment.
sustainable development of IS	Resource and investment meet the needs without over developing IS	They think the company should develop IS according to their need, particularly in business operation.
Emphasis request	the particular importance or attention of IS that the company needs	The operation part should be the emphasizing developing aspect, as it needs IS more to support its performance than other aspects.
Information sharing	Information can be used at the same time as someone else	More information sharing can help the management of business, and also can help

Timeliness of information	Information is transferred in time	It is important that information is delivered in time, since this can be key of decision making.
Attention to IS strategy	How the company think of the importance of IS strategy	Not much discussion on IS and IS strategy, it is not the emphasis.
National economic situation	The trend and circumstance of the national economy	National economic situation is part of environmental analysis in the strategy
competitor	company that is competing against the company	Competitor is considered as one of the environmental factors in the strategy. Sometimes, the competitors might adopt some kind of systems that lead to huge advantages, then you have to follow them to adopt the systems as well to survive in the market.
Consumer resource	a person who buys goods or services for their own use	Consumer resource is also a analysing target for the strategy
change of personnel	Position change of the employee	change of personnel particularly the leaders' change affect the company a lot
Knowledge management system	the system of capturing, developing, sharing, and effectively using organisational knowledge	The parent company has a KM system that is useful, but it needs permission to access, and very few people have the permission.
Influence of environments on IS	How environmental factors can influence the IS	Some think the environmental issues does not affect the IS much, because the IS is not developed and does not align with the business tightly
Advantages of SOE	Competitive advantages of SOE that other competitors do not have.	The trust of consumers, land resources, relationship with government and SOE organisational culture. These advantages might be the barrier of IS development.
Social resources	The resources form social structure	The president of the company has a lot of social resources which can be one of the important reasons for the success of the company.
Emergent needs of IS	The most priority needs of IS	Project management,

		construction management, cost management, sales Management and customer management need IS urgently.
IS align with Business structure	IS need to align with business structure	The functions of IS need to be designed to match the business structure and procedure.
Business value chain	a chain of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market	The business value chain of the company is stable relatively. So the IS should not be affected by the environments much.
High request to employees	The company has a quite high requirement on its employees	The new employees might need to train for one or two years to adapt the job.
Government's systems	The IS developed by government and request relevant companies to use	The companies need to use the construction bureau's systems. (bid and tender systems and communication with government)
IS as internal control	a process for assuring achievement of an organization's objectives in operational effectiveness and efficiency, reliable financial reporting, and compliance with laws, regulations and policies	One of the functions of IS in the company is internal control.
IS misalign due to the rapid changing environment	When the environment changes too fast, IS might not be able to catch up with the changes	The construction bureau's systems often cannot catch up with the changes of relevant regulations or laws.
Complicacy of IS development	It is difficult for the company to deal with the IS development	There are many procedures for IS development. Every departments of the company has their own needs and there are so many auditing and approving processes.
Organisational culture*		This might help the implementation of IS
Human factors	The human component of the company	They think human factor is more important than IS
Background of the times (era)	The era will strong affect the perspective of individuals and organisations	They think today is 'information era' that they should swim with the tide of information era.
Lack of specialised aspect in IS	The IS of company lack specialised aspects, which means it only have some	The lack of specialised aspect or functions in IS lead to employees might think IS is

	basic function	not that important, as they can finish their works without IS.
Design of IS	Plan how IS is going to work	The designer of IS might lack specialised knowledge from the relevant disciplines (e.g. real estate), so there might be problems within the IS that not match the users' needs.
Connection with external systems	The link and information share with external systems	The government's systems cannot be integrated with the company's IS, which lead to some inconvenience.
industry	the companies and activities involved in the process of producing goods for sale, especially in a factory or special area	Some of the employee think the real estate industry is not influenced much by IS than other industry, such as manufacturing industry.
Technology	the practical, especially industrial, use of scientific discoveries	Emerging of new technology may also affect the strategic planning
IS enhance efficiency	IS can improve the working efficiency in some particular position in the company	Some departments such as financial department and cost control department rely on IS heavily in their everyday works.
Less concern about IS	Some of the employee might not realise the importance of IS	Some employees think IS is not their business. They just concern their jobs.
Lack of HR	Not enough people to work	This might be caused by the rapid development of the company and the poor IS.
Control of sub-company	The company has several sub-companies, and these companies are controlled and managed by the company	The system is too weak for controlling and managing the sub-companies. More functional IS is needed to manage the sub-companies.
Role of IS department	The role that IS department plays in the company	The role of IS department is not important. E.g. the cost control department develop and buy their own systems without helps from IS department.
Information database	a large amount of information stored in a computer system in such a way that it can be easily looked at or changed	The strategy process needs a database to implement. Database can also help information sharing and information retrieval. The company needs a basic database

Data report ways	To give a description of an event or situation to leaders	There are many data which needs to be report to leaders, but most of them are report in both paper form and via IS. Some of the leaders might not use the IS to receive the reports, so this lead to the increase of works for the reporters.
No experience on IS management	The company even the parent company has little experience of IS management and planning	The company just began to develop their IS. This could be a barrier of strategic alignment.
Specialised market	The company focus on specific market and concentrate on studying it.	The company focuses on logistics zone, home building materials, vehicles etc. markets. Some claim that this causes the company less rely on IS.
Fitness of IS	Whether the IS fits the company	One of the reasons that the company has poor IS is that they cannot find satisfied IS which fits the company well from the systems suppliers.
The slow effects of IS	After investment of IS, the effects of it usually emerge slowly	This can be another barrier of strategic alignment and IS development.
IT flexibility (software)	The computer programs nowadays are flexible and easy to upgrade.	They think the software is easy to upgrade and change, due to today's technology.
Accuracy of data	the fact of being exact or correct	The data from human can be more inaccurate, while the systems can check the data, and make sure it is accurate
Practice of IS (try adopt new systems)	action rather than thought or ideas	Some think the IS need to be practiced even when they are not sure if it fits with the company. Then, they can discover the problems and solve them.
Unsatisfied use of IS	The parent company's systems are unsatisfied	Most of employees who have used the parent company's systems think the systems are cumbersome, and even repeat their works, particularly when they are requested to entering data.
Potential customers	People who might buy the company's products or services.	IS can help them to find potential customers.
The individual employees'	The opinions form grass-	The leaders who have all the

opinions	roots work	decision making power might not know the opinions and circumstance of basic level of the company.
teleworking	the activity of working at home or when you are on a business trip	Many employees want to finish their work even when they are not in the office. Some of them (financial staff) have already achieved teleworking via the systems.
External software	The software that is not pursued by the company	Many employee use external software like QQ (communication software) to communicate while working, particularly external contact
Pressure of IS	The force that IS is produced to users	The IS could press employees to work well, as it can be seen on the systems that what has been done and by whom.
Company expansion	the increase of the company in size, business, particularly business out of Shenzhen	The company expansion to other city in China gives rise to the active demand of IS
Record of IS	Store the documents and what have been done in the IS	It is easier for the company to retrieval data and information.
Change of procedure	The working process changes due to the environmental change.	Some think the IS must align with the procedure of business or auditing, but it is difficult to change IS, if the procedures change frequently.
Developing Phase (instability) of IS	The developing period of a new system which is unstable	There are so many upgrades and changes during this period, which can annoy and confuse the users. Sometimes, the parent company's systems might disconnect randomly without auto saving, so that the user have to do the work again.
Communication problem with parent company	Lack of communication between parent company and its systems' user in the company	No ways to report the user's feeling of using the systems to the parent company
Willing to use IS	Whether the user is happy to use the IS	It needs time for employees to adapt the new things. If the systems changed, the users might not wish to use the new systems

		immediately
Recruitment difficulty	The company has some difficulties to get new staff	There are some rules and regulations from SOE which restrict the recruitment of the company. What's more the company's reputation is not that well known. This might prevent the company getting IS/IT professionals.
IS as support of strategy	The business strategy need IS to support its implementation	There is a chapter of the business strategy named informatisation support, which is used to ensure the strategy can be implemented
Changes and efficiency	The changes need to be adapted be employees for a period of time. During this period, the efficiency of employees might be affected.	If there are too many changes in the company, including changes of leaders, systems changes, and strategy changes, the employee will like a fish out of water which influence their working efficiency.
The good thing of poor IS	The undeveloped IS of company provides flexibility and space of the IS future development	Since the current IS is not developed well, there are not much thing needs to be changed, this could lead to less barrier of IS development.
Develop IS according the company's ability	The IS need to be develop, but it should be fit the company's ability	Too much investment of IS can lead the resources waste, too little investment of IS can give rise to competitive disadvantage.
Usage of IS	How the IS is used	The parent company's systems are not used by people. People tend to ask information they need from people, instead of using IS, even the systems have the information they need.
Experience more important than IS	In decision making, experience helps more than IS does.	Some think IS cannot provide a judgement to a project, which experience can.
Need a IS development group	The company needs a specialised IS group to handle the development of IS	Some think this could be the key to sustained strategy alignment
Information outsourcing	The company pays to have part of its work done by another company	Some think it is important to use outsourcing to help not only the IS development but also the information retrieval

		and analysis.
Reaction mechanism	an automatic system of behaving or thinking by which the company react the changes of the environment	IS can help the company to establish a reaction mechanism to deal with the environmental changes.
Rely on IS	The company is that much rely on IS	This might be cause by the poor strategic alignment or maybe just because of the organisation size?
friendly org culture	Org culture that less competition	Compared with foreign company, the company is more friendly. Relationship between employees is better. And the stability is better as well.
Quality of work	IS can potentially increase the quality of work	Compared with the company which has better IS, the company's work might have more human factor which affect the quality of the works.
Information excess	There are too much information due to the IS	This could lead to burden for employees.
Leaders group	There are a group of people who have the centralised power.	Decision need a number of people to approve that could potentially lead to the slow reaction.
Importance of individual level	The grass-roots employees' opinions and suggestions are important to the company	There are not much grass-roots employees tell they feeling and thought to the leaders, which lead to the misalignment, also, the leaders need to know what happen within the bottom of the company.
Relevant industry (supplier and buyer)	The industry which has business relationship with the company	The relevant industries are significantly affecting the company's business and IS strategy.
Safety of IS	Whether the IS is confidential	The user's account might be stolen by hackers, which could lead to huge problems.
Specialised information	Information which is useful for specific specialised people	Some wish to have specialised information on the IS
Leaders' perception	Leaders' point of view and knowledge	The president has more strategic vision than other interviewees
Implementation of strategy	How the strategy will implement	The implementation of strategy needs all employees' understanding

		and also the steps of implementing. This could be the internal environmental factor.
IS strategy as part of business strategy	IS strategy is a part of business strategy	The president think the IS strategy is a part of business strategy. it should supports the business strategy
Organisational structure	an organisational form based on the concepts of division of labour, specialisation, and unity of command	Organisational structure influences the strategy formulation
Internal environmental issues changes	Compared with external environmental factors, internal factor are more stable	Internal factors do not change constantly like external factors.
Application of data	How the IS can apply the data	It is essential that the data and information can be processed. E.g. the data from grass-roots employees can be analysis to give a result that help the decision making.

Table 0.2: Categorising codes

Theme	Sub-theme	code
External environment factors to business	Market	Market trend
		Anxiety of the expectation
		Consumer resource
		Relevant industry (supplier and buyer)
		Specific (specialized) industry
	Policy	Government policy
		External bureaucracy
		international situation
	Competitors	Competitive advantage
		Weakness of competitors
Economy	National economic situation	
technology	New technology	
Unpredictable environments		
External environment factors to IS	External environmental issues to use of IS	Financial systems, business systems affected more
		Office assistance systems or management systems affected less
		Price of IT facility
		Competitors' IS/IT advantage

		External systems (government's systems)
		Background of the times
Internal environment factors	Org structure	Hierarchical structure
		Internal bureaucracy (R1 examination and approval process; R2 auditing and supervision; R3 trivial procedure)
		Decision making centralized
		leadership
		Organizational size
	Org culture	Friendly culture
		Easy communication
		Lower motivation
	Org resource	Advantage of SOE
		Land resource
		Social resource
	Internal changes	Development of the company (company expansion)
Change speed		
Change of personnel		
Intended strategic alignment	IS support Business	IS as tools for (assistance) management (IS as internal control)
		IS as tools for operation
		IS enhance efficiency
		IS enhance data accuracy
		IS as decision-making support
	Strategy formulation	Strategic planning group
		Strategic formulation process
	perception	Perception of IS (R1 less concern about IS; R2 Experience more important than IS; R3 IS as only assistance)
		Perception of IS strategy (leader)
		Perception of the company
Strategy alignment Process	Strategy amendment	
	IS infrastructure upgrade	
	Reaction mechanism	
	Market research	
Strategic level of alignment	IS strategy align with Business strategy	IS strategy as part of business strategy

		IS strategy as supports of business strategy		
		IS as support of strategy		
	IS align with business structure	Business value chain		
Organisational level of alignment	Link between business dept and IS dept	Communication		
		Information share		
		Timeliness of information		
		Integrated systems		
		Role of IS dept		
		Control of sub-company		
Individual level of alignment	User align with IS	User's need (R1 function of IS; R2 emphasis request; R3 database need; R4 help them to find potential customers; R5 teleworking; R6 record of IS; R7 specialized information)		
		Operability of IS		
		Usage of IS (permission to access and use systems)		
		Role of IS		
		IS alignment		
		Pressure of IS (transparency)		
		Users' quality (high request to employee)		
		Employees' attention to IS		
		Relationship between the three levels	Strategic level and organizational level	Good communication
			Organizational level and individual level	Lack of communication
Strategic level and individual level	Leaders might not know the opinions form grass-roots			
Realized or unrealized strategic alignment	Misalignment	Misalignment due to the rapid changing environment		
		Bad design of IS (R1 Lack of specialized aspect in IS; R2 useless; R3 too complex; R4 functional need)		
		Information excess		
	Alignment	Poor level (just meet the need of operating the company)		
		Financial system is satisfied		
Organizational agility	Org agility support strategic alignment	number of decision-makers could affect the org reaction speed		
	Strategic alignment support org agility	Better IS can reduce the risk of environment changes		

IT flexibility	Human component of IT infrastructure	IS profession
	IT flexibility vs strategy alignment	IS need to be upgradable and can be integrated
Sustained Dynamic strategic alignment	challenges	IS professionals
		Technology or design
		Decision makers
		User resistance (R1 some leaders refuse to use IS which makes staff need to report something twice via IS and paper documents; R2 no experience on IS; R3 unsatisfied use of IS)
		Risk of IS investment
		Cost of IS
		Path dependency
		Fitness of IS
		Slow effects of IS
		Recruitment difficulty
		Safety of IS
		Complicacy of IS development
	How to achieve	IS training
		Sustainable development of IS
		Practice of IS
		Keep align with procedure
		Developing phase of IS
		willing to use IS
	importance	Developing IS according to the company's ability
Need a specialized IS development group		
	Information outsourcing	
	Quality of the work	

Table 0.3: An example of coded text

Code	Definition	Description	Examples
Strategy planning group	A group that has the right and responsibility to formulate strategy and implement it.	The president and the general manager are the group leaders. The directors of each department are the group members.	"We have a special group named strategic planning group. The group leader is the president of the company, and the assistant leader is the general manager of the company.

			The group members are the leaders and managers of each department. This group also has a specific staff for specific works. For example, the group has a strategy managing commissioner who is responsible for connecting between the groups and departments and sub-companies..." – director of general office
Strategy formulating process	A process that shows how strategy is formulated	According to External environments, organisational resources and HR, the departments of the company communicate and draft an initial strategy, then discuss and amendment with the leaders of company, and finally approved by the leaders.	"The strategy is developed and drafted by the strategy planning group who are appointed by the operation team (the main members were the managers of the departments and the operation team), and conformed and approved by the operation team... The adoption of IS also needs to be approved by the operation team." –director of general office "When we draft a strategy we would first discuss it in the company so that we can gather views from different parts of the company. The manager of each department would have a meeting to discuss the strategy first and then have another meeting organised by the operation team to express and discuss their views about the strategy. The strategy will then be proposed to and confirmed by the Board Meeting." – president
perception of IS	a belief or opinion, often held by many people and based on how IS seem	Some staff think they don't need IS much compared with other business department; some think it is just the assistance management tool or just make their work	"It can be risky to invest too much in IS, as it is only an assistant method for management. Since it is only a tool to support our work, we should not invest too much resources and energy in it." – director of general office

		more efficient.	“In my opinion, the experience is more important than IS.” – manager of project management
bureaucracy	a system for controlling or managing a country, company, or organization that is operated by a large number of officials employed to follow rules carefully	There is a rigid hierarchy of power about IS adoption and management. IT staff have to report to the general office director, and then the general office director report to the leader.	“There are many approval processes and approval authorities in the company, and you have to gain all of the approvals to do your jobs. These might potentially affect the reaction speed of the company.” – manager of risk management “There are many layers and stages of supervision and auditing in the company. The management call this risk management. However, most of the procedures of supervisions and auditing are very trivial yet complex. I think they just make our jobs harder.” – junior staff member of the cost management department