ANTECEDENTS OF IT-BUSINESS ALIGNMENT FACTORS IN INFLUENCING SUSTAINABLE COMPETITIVE ADVANTAGE

A Thesis submitted to the Colleges of Arts and Sciences in fulfillment of the requirements for the degree of Doctor of Philosophy
Universiti Utara Malaysia

BY
DMAITHAN A . AL-MAJALI

PERMISSION TO USE

In presenting this thesis in fulfillment of the requirements for a postgraduate degree from University Utara Malaysia, I agree that the University library may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or part, for scholarly purposes may be granted by my supervisor or, in their absence, by the Dean of Research and Graduate Studies. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall be allowed without my written permission. It is also understood that due recognition shall be given to me and to University Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part should be addressed to:

Dean of Research and Graduate Studies)
College of Arts and Sciences
University Utara Malaysia
06010 UUM Sintok
Kedah Darul   Aman

ABSTRAK

Semasa para penyelidik sedang menggalakkan lebih kajian ke atas rangkaian kasual di antara pelaburan Teknologi Maklumat (IT) dan prestasi sesebuah firma, kajian empirik tidak menunjukkan satu hasil kajian yang kukuh. Ia adalah akibat dari tindakan yang tidak mempraktikkan penjajaran strategik dalam bisnes-IT (dikenali sebagai penjajaran strategik). Secara spesifiknya, para sarjana telah meminta supaya kajian yang menekankan kepada anteseden yang membawa kepada penjajaran. Oleh itu, kajian ini telah berjaya mengemukakan satu model ketetapan yang menjelaskan perhubungan antara latar belakang anteseden penjajaran strategik, penjajaran strategik serta kelebihan kompetitif lestari. Secara spesifiknya, kajian ini telah mengkaji impak anteseden penjajaran strategik IT-bisnes dari segi kepimpinan antara pengurus bisnes dan IT, struktur dan proses antara pelan IT dan pelan bisnes dan mengkaji sumber pengurusan IT antara pengurus bisnes dan IT, kualiti perkhidmatan, nilai dan kebolehpercayaan serta kejayaan pelaksanaan IT ke atas penjajaran strategik bisnes IT dalam soal jurang penjajaran. Kesimpulannya, impak perniagaan IT penjajaran strategik juga diuji membawa kesan ke atas kelebihan kompetitif lestari. Dalam meneroka perhubungan penyelidikan di atas, kajian ini menggunakan paradigma positivism. Dengan penggunaan metod ini, data kuantitatif telah dikutip. Secara lebih spesifik lagi, kajian ini telah menguji model penyelidikan ini melalui 172 soal selidik (tinjauan) dengan firma-firma pemegang saham di Jordan. Dapatan keputusan diperolehi menggunakan teknik *Structural Equation Modeling* (SEM) dan beberapa temuduga susulan di Jordan bagi mendapatkan pandangan berguna terhadap soalan kajian. Dapatan dari tinjauan telah menunjukkan betapa kuatnya bukti mengenai impak beberapa angkubah: kepimpinan, kualiti perkhidmatan, nilai dan kepercayaan, sumber pengurusan IT dan kejayaan pelaksanaan IT, mengenai IT - pensejajaran strategik bisnes. Walaubagaimanapun, SEM telah gagal menyokong hubungan struktur dengan proses terhadap pensejajaran busines IT.Tambahan pula, dapatan menunjukkan bukti yang kukuh berkaitan impak beberapa perkara berikut: kepimpinan, IT, sumber pengurusan IT dan kejayaan pelaksanaan IT terhadap kelebihan kompetitif lestari. Walaubagaimanapun, SEM juga gagal menyokong hubungan antara kualiti perkhidmatan, nilai dan kepercayaan dan struktur serta proses terhadap kelebihan kompetitif lestari. Tambahan pula, dapatan dari tinjauan menunjukkan bukti kukuh terhadap impak ICT terhadap pensejajaran strategik bisnes ke atas kelebihan kompetitif lestari. Selain itu, dapatan dari tinjauan melalui SEM menunjukkan bukti kukuh dalam menjadi kesan perantara pensejajaran strategik berkaitan hubungan antara nilai dan kepercayaan, kualiti perkhidmatan dan kelebihan kompetitif lestari. Kajian ini telah mengemukakan *'roadmap'* yang dapat digunakan oleh para penyelidik dan pengamal memahami sumber-sumber yang diperlukan dan merealisasikan nilai yang bakal diperolehi melalui pelaburan IT mereka. Penyelidikan lanjutan dirasakan perlu bagi mendapatkan pandangan yang lebih jitu terhadap lumrah perhubungan ini.

ABSTRACT

More extensive studies on the causal chain between Information Technology (IT) investments and firm performance have been encouraged by scholars. However, the results of empirical studies have been inconclusive. This is partly due to the exclusion of IT - business strategic alignment (known as strategic alignment). In particular, scholars have continuously called for research to address the antecedent factors that lead to the alignment. As a result, this study has successfully developed a causal model illustrating the relationships between strategic alignment antecedents, strategic alignment and sustainable competitive advantage. Specifically, this study has looked into the impact of IT-business strategic alignment antecedents in terms of leadership between business and IT managers, structures and processes between IT plans and business plans and examined IT managerial resources between business and IT managers, service qualities, values and beliefs, and IT implementation success on IT business strategic alignment in terms of alignment gaps. Finally, the impact of IT-business strategic alignment is also tested for its impact on sustainable competitive advantage. In order to explore the above research relationships, this study has utilized the positivism paradigm. Under this method, quantitative data was collected. More specifically, this study has tested the research model by conducting 172 survey questionnaires with public shareholding firms in Jordan. The results obtained from the structural equation modeling (SEM) technique and interviews have offered very valuable insights into the research questions. The results of the main survey questionnaire show strong evidence for the impact of the following variables: leadership, service quality, value and belief, IT managerial resources and IT implementation success, on IT – business strategic alignment. Conversely, SEM has failed to support the link between structure and process on IT business alignment. In addition, the results show strong evidence for the impact of the following: leadership, IT managerial resource and IT implementation success on sustainable competitive advantage. However, SEM failed to support the link between service quality, value and belief, and structure and process on sustainable competitive advantage. Furthermore, the results from the main survey questionnaire show strong evidence for the impact of IT – business strategic alignment on sustainable competitive advantage. Moreover, the results of the main survey questionnaire through the SEM show strong evidence for the mediating effect of strategic alignment on the relationships between value and belief, service quality and sustainable competitive advantage. This study has provided a detailed roadmap that researchers and practitioners can use in order to understand the resources required, and to realize the potential values of their IT investments. Future research is clearly needed to reveal better insights into the nature of these relationships.

PUBLICATIONS FROM THIS RESEARCH

The following conferences papers and publications have been produced from the research reported in this thesis:

Al Majali, D., & Dahalin, Z. (2010). Diagnosing the gap in IT – business strategic alignment: A qualitative analysis among public shareholding firms in Jordan. *International Journal of Electronic Business Management, 8*(4), 255- 262.

Al Majali, D., & Dahalin, Z. (2010). Antecedents of IT-business strategic alignment in influencing sustainable competitive advantage in Jordan: A structural equation modelling approach, *In the Communications of the International Business Information Management Association (IBIMA) Journal (accepted).*

Al Majali, D., & Dahalin, Z. (2010). IT – business strategic alignment gap and sustainable competitive advantage in Jordan: Triangulation approach. *In the Communications of the International Business Information Management Association (IBIMA) Journal (accepted).*

Al Majali, D., & Dahalin, Z. (2010). Antecedents of IT-business strategic alignment in influencing sustainable competitive advantage in Jordan: A structural equation modelling approach. *Proceeding of the 15ᵗʰ IBIMA conference on Innovation and Knowledge Management in Business : A Business Competitive Edge Perspective, 380 – 393, Cairo.*

Al Majali, D., & Dahalin, Z. (2010). IT – business strategic alignment gap and sustainable competitive advantage in Jordan: Triangulation approach. *Proceeding of the 15ᵗʰ IBIMA conference on Innovation and Knowledge Management in Business: A Business Competitive Edge Perspective, 394 – 405, Cairo.*

Al Majali, D., & Dahalin, Z. (2010). IT–business strategic alignment and sustainable competitive advantage. *Proceedings of the Conference of Organizational Innovation*, 4-6 August 2010, Bangkok, Thailand.

Al Majali, D., & Dahalin, Z. (2010). Diagnosing the gap in IT – business staregic alignment: A qualitative analysis among public shareholding firms in Jordan. *Proceedings of the Conference on Innovation and Management*, 7-10 July, Penang, Malaysia.

Al Majali, D., & Dahalin, Z. (2010). IT- business strategic alignment in influencing sustainable competitive advantage in Jordan. *Proceedings of the Conference on Infocomm Technologies in Competitive Strategies*, 25-26 October, Singapore.

Al Majali, D., & Dahalin, Z. (2010). Determinant of IT – business strategic alignment factors in influencing sustainable competitive advantage in Jordan. *Proceedings of the 2nd International Quantitative Sciences And Its Application*, 2- 4 November, Penang, Malaysia.

Masa'deh, R., Shannak , R., Almajali,A., & Dahalin, Z. (2010). Investigating a causal model of IT-business partnership and competitive advantage. *Proceeding of the 14th IBIMA conference on Innovation and Knowledge Management in Business : An Academic Perspective ,1250 -1260 , Istanbul.*

ACKNOWLEDGMENTS

In the name of Allah, the Most Gracious, the Most Merciful. The more we realize how little we know, we come to understand that our accomplishments are not possible without the help of Allah. The following are just a few of the countless people who have helped me to complete my PhD Studies.

Firstly, I want to express my sincere thanks particularly to my supervisor Professor Zulkhairi Md Dahalin, for his guidance, patience, and faith in me. He fostered my academic growth by challenging and inspiring me to reach deeper, to learn more, and to think more critically. I also extend a special thanks to all members of UUM CAS Applied Science who helped me in so many different ways.

I would also like to offer my endless gratitude to my brother, Ayman for his endless love and support. I do appreciate the support that you have given me during all years of my studies. I offer special thanks to Dr Aied muala, Dr Raed masadeh, Dr Malek almajali for their advice and help during the early stage of my study.

Finally, many thanks go to everyone who has helped me in various ways in support of my PhD Journey.

DEDICATION

To My Mother, *Sabah*, *and my Father, Abdelkarim*, who constantly inspired me, had unending faith in me, and nourished the passion for learning; who indulged me for endless hours on numerous occasions with memorable conversations and lessons that have lasted a lifetime.

TABLE OF CONTENTS

Page

CHAPTER ONE: INTRODUCTION

CHAPTER TWO: LITERATURE REVIEW

CHAPTER THREE: METHODOLOGY

CHAPTER FOUR: QUANTITATIVE ANALYSIS

CHAPTER FIVE: CONCLUSION AND DISCUSSION

APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

AGFI   Adjusted Goodness – of – Fit Index
AVE   Average Variance Extracted
BU   Business Unit
BP   Business Planning
CA   Competitive Advantage
CFA   Confirmatory Factor Analysis
CFI   Comparative Fit Index
CEO   Chief Executive Officer
CIO   Chief Information Officer
EFA   Exploratory Factor Analysis
GFI   Goodness- of- Fit Index
ICT   Information and Communication Technology
IFI   Incremental Fit Index
ISP   Information System Planning
IT   Information Technology
IS   Information Technology implementation Success
LS   Leadership
MIT   Massachusetts Institute of Technology
MIS   Management Information System
MR   Information Technology Managerial Resource
NFI   Normed Fit Index
RMSEA   Root Means Square Error of Approximation
SA   Strategic Alignment
SAM   Strategic Alignment Model
SEM   Structural Equation Model
SP   Structure and Process
SQ   Service Quality
SUS   Sustainable Competitive Advantage
TLI   Tucker-Lewis Index
VB   Values and beliefs

CHAPTER ONE

INTRODUCTION

In this chapter, the researcher will describe the background of the research, statement of the problem, research questions, research objectives, motivation of the study, scope of the research, thesis structure, and finally expected contributions this study is expected to make.

1.1   Background

Due to globalization of businesses, most companies have to compete in a borderless environment. Challenges and opportunities are tremendous in this rapidly changing world. In such an environment, achieving competitive advantages requires the business organizations to be flexible and agile. The term "competitive advantage" has traditionally been described in terms of the attributes and resources of an organization that allow it to outperform others in the same industry or product market (Collis & Montgomery, 1995). Thus, the concept of competitive advantage is described as the organization's ability to provide more values than its competitors. In other words, it refers to the degree to which the organization, under free market conditions, meets the demands of the market with maintaining and growing its profit levels simultaneously.

However, competitive advantage is a static concept based on post rationalization. It does not explain the way it can be sustained in a dynamic business environment. Strategic advantage, on the other hand, encompasses a broader perspective because it can develop an organization's ability to develop a strategic direction that creates new opportunities and shapes the future of its competitive environment. In this context, MacMillan (1983) points out that organizations need to understand and anticipate response barriers, intelligence systems, preemption potentials, infrastructure requirements, calculated sacrifices, general management challenges, and punch and counterpunch planning.

It has been argued that business organizations can utilize their competitive advantage and strength in a better way through the use of Information Technology (IT) which now is an integral part of the most forms of business and industrial organizations (Peppard & Ward, 2004). Historically, the role of IT in organizations has evolved for a long time since it was treated as a cost center (Porter & Millar, 1985). Nowadays, information technology is considered as an enabler to achieve competitive advantage and as a strategic instrument facilitating the effective management of the business of an organization (Porter, 1996).

With the emergence of IT in business, businesses everywhere are undergoing rapid and significant changes. Across a wide range of business organizations, IT is obviously rising above its traditional 'back office' role towards a 'strategic' role. By playing such role, IT is not only supporting chosen business strategies, but also shaping new business strategies (Henderson & Venkatraman, 1993; Luftman et al., 1993).

Henderson and Venkatraman (1993) point out that the anticipated value of the investment in IT has not been achieved. Similarly, Luftman *et al.* (2004) highlights that for over 20 years, business-IT strategic alignment is ranked as a top management concern where business and IT executives are continually looking for the best management practices to help them align their business and IT strategies.

Strategic alignment seems to grow in importance as dynamic business strategies leading the business organizations attempting more to link business and IT and evolving technologies at a rapid pace (Luftman, 2005). For organizations to stay competitive in a dynamic business environment, they have to determine and understand how to manage IT strategically as a key success factor in a dynamic business environment supporting business strategies and processes (Henderson & Venkatraman, 1993). The importance of the strategic use of IT for effective organizational performance that makes a contribution to the creation of business value is well recognized (Henderson & Venkatraman, 1993; Luftman et al., 1993). The alignment between the business strategy and the strategic choices of IT deployment are therefore a prominent area of concern. It is also a high priority business as well as IT issue that business and IT management struggle with (Kefi & Kalika, 2005; Silvius, 2009; Ward & Peppard, 1996). The business strategic alignment with IT is considered to be a very important issue particularly when IT becomes an essential part of the business and is used to leverage special business competencies, to merge companies, to restructure industries, and to facilitate global competition (Chan et al., 1997; Earl, 1993; Peppard & Ward, 2004; Sabherwal & Chan, 2001; Silvius, 2009).

This research, therefore, is concerned about the gap between business strategy and IT strategy, and presents a general strategic alignment model. It practically focuses on how to manage the business-IT strategic alignment in business organizations to achieve success through sustainable competitive advantage.

1.2   Problem Statement

The reasons behind the misalignment between business and IT, according to Oana (2010), are the lack of common understanding of the concept of strategic alignment, dependence on classical assumptions for strategic planning process, and/or ad-hoc IT investments in organization. Oana further contends that this misalignment leads to missing competitive advantages and opportunities, increasing wasted time, increasing costs, and creating negative environment for IT investments. Arguably, sustainability of the competitive advantage is conditional on the current efficiency, cost, and the organizational environment. This is why, although only in the European and developed context, the relationship between IT-business strategic alignment and sustainability of competitive advantage has been studied by some scholars (e.g., Croteau & Bergeron, 2001; Chan et al., 2006; Chan & Reich, 2007; Dong et al., 2008). However, such study is very rare (if any) in the context of developing country like Jordan, which is different from that of European or other developed countries at least in terms of cultural environment.

Thus, in order to identify the main factors behind the misalignment between IT strategy and business strategy in Jordanian context, the researcher conducted a preliminary study, which is already published (Al majali & Dahalin, 2010). The

interview-based preliminary study of the Jordanian organizations suggests the perception that leadership, structure and process, service quality, values and belief, IT managerial resource and IT implementation success are the most important factors which are representative of the culture gap between IT strategy and business strategy. The lack of these factors may form a potential barrier to the gaining of benefits from organizations' investment in IT. As revealed in the preliminary study, lack of leadership of top management is a result of lack of communication. The communication that takes place is found to be only verbal and not adequate enough to identify requirements of the business department. Lack of communication between IS and other senior executives, according to Coakley et al. (1995) could lead to mismatches between IS investments and business objectives. The study of Luftman et al. (2004) concludes that IT is a crucial enabler of strategic alignment. Others mentioned that leadership is a critical requirement for the position of Chief Information Officer or CIO (Weiss et al., 2006). They recommended that CIO leaders should acquire technical and behavioral skills in order to enhance their strategic alignment ability.

From the preliminary study, the researcher found that there is a clear separation between IT plans and the business plans. This separation may lead to huge gap as the focus of IT function and business functions are different. IT always looks for things that give the employees the capacity to upload mechanisms to their work to increase their productivity, such as solutions, guarantee, quality, easy graphical user interface, and a system that contains all modern features. In contrast, business managers, for example, the purchasing manager, are always looking at cost cuts without looking at the quality of products. Often, business managers perceive the IT department as a cost centre. Wang & Tai, (2003) suggested that 'business planning – information system

5

planning', and 'information system planning-business planning' connections might not coexist in firms, in part due to the lack of management involvement in Strategic Information Systems Planning (SISP). Wang and Tai contented that the reason behind lack of management involvement is less knowledge and experience in software engineering and technical aspects of computer hardware and software systems for the individual who work in the business department, where structures and processes are the mechanisms through which organizational activity takes place. Inadequate or inappropriate structures and processes can severely impinge on the success of IT in an organization (DeLone & McLean, 1992). Indeed, Benbya and Mckelvey (2006) noted that many organizations have encountered problems in information systems planning, such as the lack of the linkage between information technology strategy and business strategy.

The preliminary study also indicated that of the inadequate quality of products or services was a result of inadequate training programs leading to lack of skills. Service quality is a good channel of interaction within the departments. It can also be the means of assessing user satisfaction with applications or system as well as the services provided by the IT unit. At this point, it is important to note that service quality is not assessing user satisfaction with application or systems, but the service provided by the IT organization. This raises the question of roles as our preliminary research has suggested significant disagreement and little convergence with regard to the actual role and function of the IT organization, particularly in service provision.

The researcher, in addition, found that IT managers in Jordanian organization claim that top managers do not have IT basics, and they do not believe about the role of IT managers in enhancing the performance if they deal with them. Values and beliefs

6

revolve around resistance to change. This is due to the fear of complexity in using technology, as well as lack of confidence to use technology for business improvement. For instance Ward and Peppard (1999) contend that if business managers do not believe that IT is strategic, this will reflect in how they manage and deal with IT issues.

Surprisingly, Jordanian organizations based on the preliminary study have the lowest level of knowledge sharing between IT management and top management that can hinder the linkage between IT plan and business plan. Chan et al. (2006) explained that competent IT managers are more likely to be trusted and consulted in decision making process as they have the practical knowledge and awareness of both existing and new business and opportunities.

Finally, the preliminary study also suggests the lack of confidence about the efficiency of the services offered by IT department. This perception of the top management may lead to the weak linkage between IT plan and business plan. Teo and Ang (1999) postulated that top management assurance in IT increases their commitment to the strategic use of IT, and making them more likely to allocate proper resource for planning and development of IT application. This idea is supported by Brown (2001) who stated that the training process in developing countries was slow and difficult, part of the problem was 'technophobia'. Thus the failure in IT implementation hampers alignment between IT strategy and business strategy.

Empirical investigation indicates that effective utilization of IT is a source of Competitive advantage in organization. According to Aldhmour (2009), IT can help

to provide CA for organization and most of the managers emphasized the fact that they use IT because they felt it provided better information. In addition, Raymond and Croteau (2009) argue that IT is a highly transferable resource, a necessary but not a sufficient condition for sustainable competitive advantage.

Given the significance of IT in the strategic management of the firm, it is important to know the degree of importance of the above mentioned antecedents for the purpose of practical implication in terms of improving the sustainable competitive advantage. However, insufficient research has been conducted on how such antecedents affect and sustained competitive advantage over time (Raymond & Croteau, 2009).

Some scholars (e.g., Chan & Reich, 2007; Raymond & Croteau, 2009; Jr et al., 2009) suggest that the firms could be competitive only if there is an alignment between the business and information technology plan of the firms. Thus, business executives are continuously concerned with achieving strategic alignment. There are many reasons why it is important that IT should be aligned with business objectives: firstly, to ensure that IS function supports organizational goals and activities at every level, secondly, to enable better exploitation of opportunities to use IT for strategic purpose, thirdly, to reduce cost, fourthly, to improve the ability to achieve organizations goal, and finally, to gain competitive advantage through the direct use of IT as a competitive weapon (Luftman, 2005).

However, previous research on strategic alignment is rudimentary, both theoretically and empirically. In particular, it is evident that strategic alignment is viewed differently by theorists. For instance, Venkatraman (1989) elaborated the concept of

fit from several measurement perspectives, such as, moderation, mediation, matching, gestalt, covariation, and profile deviation. Nevertheless, researchers (e.g., Bergeron & Raymond, 1995; Chan et al., 1997; Bergeron et al., 2001; Bergeron et al., 2004) found that there is no universally accepted way to measure strategic alignment, and often the above six perspectives end in contradictory results. Sabherwal and Chan (2001) indicated empirical research on the performance implication of this alignment has been spare and fragmented.

However, most MIS research identifies IT business alignment as a missing link between IT and organizational performance (Henderson &Venkatraman,1993; Burn &szeto,2000 ; Sabherwal & Chan,2001). In addition, Henderson and Venkatraman (1993) proposed that ''the inability to realize value from IT investment is, in part, due to the lack of alignment between business and IT strategies''. However, there is lack of study on the mediating role of strategic alignment and its way of enhancing organizational performance.

Although researchers (e.g., Raymond, 2005; Jr et al, 2009) have encouraged further exploration on the causal links between IT investments and competitive advantage, outcomes of empirical studies have been non-conclusive. This is, to a certain extent, owing to the omission of strategic alignment.

Chan and Reich (2007) have called for further improvement to the concept of alignment by applying new theoretical approaches which have not been explored in the field of information systems (IS). Noting that little research has been carried out on this topic, and in an effort to respond to several calls from well-known scholars on this issue, this study presents a causal model to test the impacts of some antecedents

that could lead to strategic alignment, and its impact on sustainable competitive advantage. So, strategic alignment will play meditating role between the six proposed antecedents and sustainable competitive advantage.

1.3   Research Questions

The research questions of this research are related to the way the IT and the business are aligned in terms of strategy in organizations. These questions will determine the challenges preventing (or facilitating) strategic alignment in organizations to gain sustainable competitive advantage. In short, this study tries to answer the following questions:

1-   What degree of influence does IT – business strategic alignment has on sustainable competitive advantage?

2-   What are the antecedent factors that affect strategic alignment / and or misalignment?

3-   What antecedent factors directly affect sustainable competitive advantage?

4-   Does strategic alignment mediate the relationship between antecedent factors and sustainable competitive advantage?

1.4   Research Objectives

Based on the following discussion above, the present study aims to achieve the following objectives:

1- To identify whether IT - business strategic alignment influence sustainable competitive advantage.

2- To determine if the proposed antecedents affect strategic alignment.

3- To determine if the proposed antecedents directly affect sustainable competitive advantage.

4- To identify if strategic alignment mediates the relationship between the proposed antecedents and sustainable competitive advantage.

1.5 Motivation of the Study

There are many reasons behind the motivation for this research. The first reason is to study the theoretical concept of strategic alignment and comparing it with practical practices in the organizations. Practically, it is essential to scan the rich theoretical and empirical literature of the alignment between information technology and business. By understanding the IT-business strategy alignment, some practical recommendations can be offered to business executives on how to develop sustainable competitive advantage for their companies through this alignment.

Thus, this research can be a big contribution in assessing the information technology-business alignment in organizations, and in demonstrating the success factors that can fill the gap between business strategy and IT strategy to achieve sustainable competitive advantage. Strategic alignment is therefore a desired goal, and several scholars have consequently called for more research to fill this gap. However, despite of the growing body of research (e.g., Brown & Magill, 1994; Reich & Benbasat,

1996), recent reviewers (Chan et al., 2006; Johnson & Lederer, 2010) have called for more research on the factors affecting IT-business alignment, and on the coupling process between alignment and enhanced business performance in the business units and IT units.

1.6   Scope of Research

The scope of this research includes the effort of exploring bodies of knowledge pertaining to strategic alignment and sustainable competitive advantage. These areas are critical to the enhancement of businesses in Jordanian organizations with regard to achieve sustainable competitive advantage. Since strategic alignment with the IT becomes increasingly essential to executing organization's operations, IT managers in organizations will be the target audience of this research.

This research was conducted in two phases. The first phase consisted of exploratory research that involved gathering of information relating to strategic alignment and sustainable competitive advantage. The second phase consists of an analysis of the study variables using statistical analysis. In order to achieve sustainable competitive advantage, the research attempted to bridge the gap between business and information technologies.

1.7   Contributions of the Study

This study tries to make an original contribution to the existing body of knowledge in the area of MIS by exploring the associations between IT-business strategic alignment

and sustainable competitive advantage in the Jordanian organization. Moreover, it will contribute to IT-business strategic alignment literature by investigating new theoretical approaches of strategic alignment which have not been explored in the field of IS, and also by exploring the influence of several antecedent variables (leadership, IT managerial resource, value and belief, structure and process, service quality, and IT implementation success) on IT-business strategic alignment to achieve sustainable competitive advantage in a single framework.

This study will be useful for both academia and practitioners. From the academic perspective, this study aspires to fill the gap of the incomplete causal chains between IT investments and sustainable competitive advantage. Furthermore, because most strategic alignment literature is theoretical and lacks empirical evidence, the current study will not only provide a succinct and holistic review of the existing literature on strategic alignment, but also, to the best of the author's knowledge, it will be the first research of its kind to test the causal chain of strategic alignment. In addition, this study utilizes Chan et al.'s (2006) and Chan and Reich's (2007) recommendations, by further developing and validating a comprehensive model to assess strategic alignment mechanisms within organization. This is by incorporating different aspects of alignment antecedents and sustainable competitive advantage into an assessment based model.

From the practitioner's point view, this study will be valuable to IT managers, executives and business managers. The result of this study will, consequently, provide useful and practical guidelines for them to implement while taking investment decisions and helping them understand the resources and conditions required to

realize the potential values of their IT investments in terms of sustainable competitive advantage.

1.8   Thesis Structure

This thesis comprises five chapters. Chapter one includes the introduction, whereby the background and motivation of this research is defined, research objectives and questions are developed, and the contributions of this study to theory and practice are explained.

Chapter Two provides a review of the relevant literature, and establishes the theoretical foundations of this study. It begins by discussing the strategic alignment models and their contribution to strategic alignment theory, and how they have been developed over time. It also reviews and discusses the ways in which researchers considered strategic alignment as a dynamic process rather than as an end state one. Subsequently, this chapter also explains how researchers assess IT-business alignment within firms. It also critically reviews how researchers measure and evaluate strategic alignment within firms.

The discussion of this chapter also extends to the literature related to the antecedents of IT-business strategic alignment. Despite attempts to investigate how firms can best realize strategic alignment (Henderson & Venkatraman, 1993), contingency and antecedent factors that guide IT-business alignment have been under-explored. Thus, this chapter begins by offering a detailed discussion of the ways in which researchers classify strategic alignment drivers and antecedents.   This chapter also concerns

reviewing the concept s of competitive advantage and sustainable competitive advantage as well as provides the conceptual framework used as the basis for deriving the research model and hypotheses tested in this study.

Chapter Three describes the research methodology used in this study. The chapter starts with a discussion with regard to major research paradigms, namely positivism. It implements a quantitative research approach as its major research method, and uses interviews. In this chapter, research design applied in this study is explained in greater detail.

Chapter Four presents the results of the quantitative data analysis of the research. Chapter Five discusses the results and findings obtained from both SEM analysis and interview analysis in detail.

1.9   Summary

This study attempts to answer the appropriate research questions based on theoretical and empirical literature. As mentioned above, the importance of this study comes from the essential role of IT-business alignment to achieve sustainable competitive advantage. A comprehensive theoretical and empirical scanning of the topics addressed has both practical and theoretical implications.

CHAPTER TWO

LITERATURE REVIEW

2.1   Introduction

For more than two decades, IT-business strategic alignment has been consistently a concern for both researchers and practitioners. Indeed, aligning IT or IS strategy with business strategy has been ranked as one of the most important issues faced by the business and IT executives (Silivius, 2009). Several researchers argue that strategic alignment can influence organizational performance. For instance, Chan et al. (2006, as cited in Chan & Reich, 2007, p. 298) said, "Simply put, those organizations that successfully align their business strategy with their IT strategy will outperform those that do not. Alignment leads to more focused and strategic use of IT which, in turn, leads to increased performance."

Researchers have defined strategic alignment in different ways using expressions that are synonymous with the term. For instance, Henderson and Venkatraman (1993) argued that alignment involves compatibility and integration among business strategy, IT strategy, business infrastructure and processes, and IT infrastructure and processes. Alignment has been defined as the extent to which the IT mission, objectives, and plans support and are supported by their business counterparts (Reich & Benbasat,

1996). King (1998) described alignment as the fit of IT strategies and plans with business strategies and goals, whereas Kanellis et al. (1999) stated that alignment is the fit between an organization and its strategy, structure, processes, technology and environment.

Much of the literature in the field of MIS and management often uses the Strategic Alignment Model (SAM) of Henderson and Venkatraman (1993) to explain the ways of achieving alignment by the firms. The SAM comprises building linkages among four strategic domains: business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes. These linkages result in several perspectives (e.g., strategy execution, technology transformation, competitive potentiality, and service level) and organizational roles carried out by business and IT managers and executives. Papp (1995) proposed eight more perspectives for examining the business and IT strategies and infrastructures to determine whether they work in harmony or in opposition.

Some MIS researchers (e.g. Kearns & Lederer, 2000, 2003; Miller, 1993; Sabherwal et al., 2001) assume a different type of alignment where business strategy determines IT strategy (unilateral fit). Others (e.g., Henderson & Venkatraman, 1993, 1999) theorize the way IT strategy could determine business strategy (unilateral fit). But SAM does not differentiate the conditions and the order of pursuing different types of alignments by the firms. A firm can pursue the alignment and its unilateral fit either sequentially or simultaneously. However, the SAM model does not take the antecedent variables that guide to greater strategic alignment into account.

This chapter will introduce a holistic view of the most popular theoretical and practical models on strategic alignment, and the ways of achieving, assessing, and measuring the term by the researchers. Although some researchers attempted to investigate how firms can best achieve alignment building on SAM model, contingency and antecedent factors which guide IT business alignment have been explored by a few researchers (e.g., Brown & Magill, 1994; Bassellier et al., 2003; Luftman & Brier, 1999; Reich & Benbasat, 1996; Reich & Benbasat, 2000; Sabherwal & Chan, 2001). Furthermore, recent researchers (e.g., Celuch et al., 2007; Chan & Reich, 2007; Chan et al., 2006; Kearns & Lederer, 2001) have continuously called for further research into the factors that influence IT-business alignment, and the coupling process between strategic alignment and enhanced business performance.

Therefore, this chapter will begin by providing a detailed discussion of how researchers classified strategic alignment drivers and antecedents. Although more attention is given to strategic and structural antecedents dimensions, few studies concern the social dimension. Therefore, this chapter will critically review the ways in which researchers have considered strategic, structural, and social dimensions of IT-business strategic alignment respectively. Also this chapter aims to present the conceptual framework proposed in this study together with the hypotheses formulated for the purpose of testing the proposed model as well as   this chapter is devoted for providing a detailed argument of premises beyond the new conceptualization of IT – Business strategic alignment into alignment gap.

2.2   Strategic Alignment Models

Since the late 1980's alignment has been an important concern to the business community (Watson et al., 1997). The reason is, it not only helps the firms realizing the potential benefits from investments in IT (Tallon et al., 2000), but also enhances business performance by aligning the organizational and technological infrastructures (Croteau et al., 2001).

Since the 1990s, research performed at MIT (Massachusetts Institute of Technology) has been widely recognized as the starting point for realizing the strategic effect of information technology on organizations. One of the dominant models that fulfilled the MIT90s program was given by Scott Morton (1991).

The MIT model argues that organizations can be rewarded significantly if an appropriate alignment is achieved between external forces (the technological and socioeconomic environment), and internal forces (business strategy, IT strategy, organizational structure and culture, human resource policies, and management processes). Remarkably, the MIT model is the framework of the Strategic Alignment Model (SAM) by Henderson and Venkatraman (1993), to which most MIS and management literature subscribes.
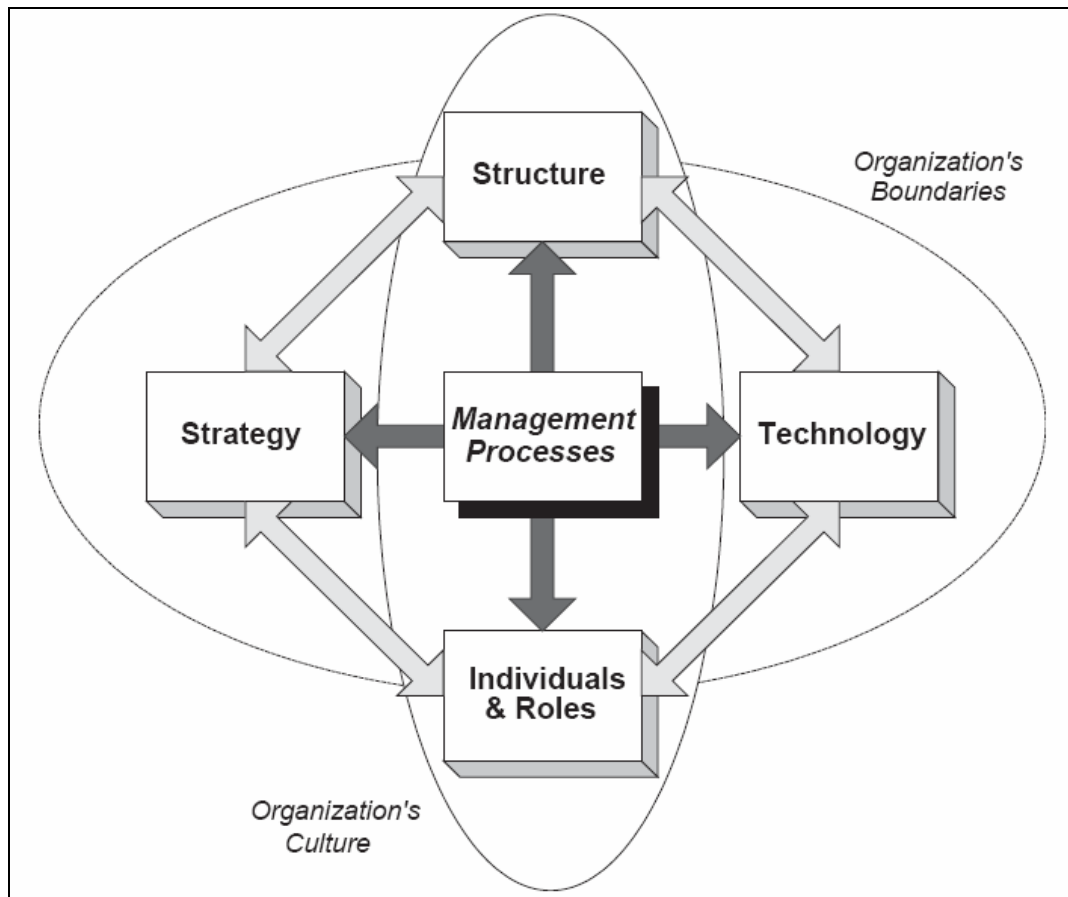
Figure 2.1 The MIT90s framework
(Source: Scott Morton, 1991)

The model underlines the significance of aligning business strategy with IT strategy to help firms continuously adapt to their business environments (see Figure 2.2). The model suggests that IT-business alignment can be achieved in organizations by building linkages among four strategic domains: business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes.
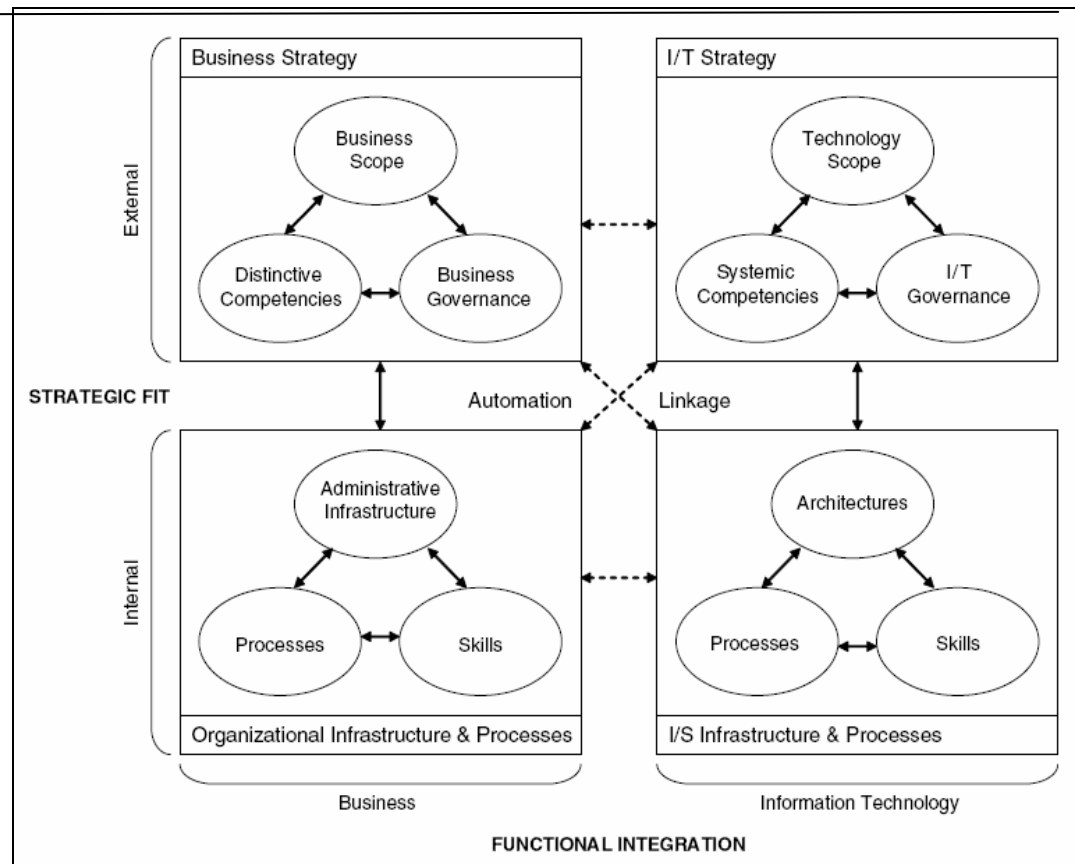
Figure 2.2: The Henderson and Venkatraman's (1993) strategic alignment model

The model has two fundamental features of strategic management, which form the overall strategy of an organization together. The first is 'strategic fit', which refers to the interrelationships between internal and external domains. The second is 'functional integration', which captures the integration between the business and technology domains. The external domain has three components, namely, business scope, systemic competencies, and governance, whereas the internal domain consists of infrastructure, skills, and processes. The components that construct business strategy are business scope, distinctive competencies, and business governance. The business infrastructure components are administrative structure, business processes, and business skills. IT strategy consists of the technology scope, systematic competences, and IT governance. The components of IT infrastructure are architecture, processes, and skills.

Besides, business strategy components are business scope, distinctive competencies, and business governance (Papp, 1995). Business scope, also known as market scope, refers to everything which may have an effect on the business environment such as products, services, customers, competitors, and suppliers. The distinctive competencies element relates to everything that makes the business successful in the market, and the firm's ability to differentiate its products and services from its competitors. This also includes the brand, manufacturing and product development, a customer satisfaction strategy, the focus of service, and pricing or quality. The third part of business strategy is the business governance, which refers to the establishment of business partnerships with other firms, and any governmental regulations and their consequence on a firm.

In addition, the components that make up business infrastructure are administrative structure, business processes, and business skills (Papp, 1995). Administrative structure refers to the ways a firm runs its business. This includes the number of levels of management, whether decision making is centralized, decentralized, or matrix. The second part of business infrastructure is the business process, which is related to all activities that drive the business, and how they run. This involves exploiting information technology in a firm, which may affect the improvements in its business process.

Business skills concentrate on the human resources of the firm. They focus on the training, education and motivation of employees, including salaries and rewards. The ways a firm creates the organizational culture, and deploys human resources to achieve the firm's business goals also influence the concentration of business skills.

Moreover, the components of IT strategy are: technological scope, systematic competences, and IT governance (Papp, 1995). Information technology scope refers to all information, applications, and technologies that the business has to use. The systematic competences element is related to all information regarding the firm's customers and clients, which serve the firm's business strategy. The final part of IT strategy is the IT governance, which addresses issues such as the possibility of technological partnerships, including outsourcing, and the selection and prioritizing IT applications and projects.

IT infrastructure consists of IT architecture, processes, and skills (Papp, 1995). IT architecture consists of software, hardware, networks, data, applications, and data management that a firm uses to sustain its IT and business strategies. The second part of IT infrastructure is the process, which is similar to the process element in the business infrastructure domain. These refer to the enhancement of specific IT practices and activities that employees may do to manage, develop and maintain IT applications and, in turn, improve IT infrastructure. The last component is IT skills, which is related to the human resource activities to enhance IT. This includes hiring and training practices, employee competencies and salaries, and the IT culture with the norms connected to it.

Henderson and Venkatraman (1993) argued that both strategic fit and functional integration have to be involved in order to gain strategic alignment. This is demonstrated by a combination of two arrows (the arrows implying causality), one horizontal and another vertical. Cross-domain alignment and full strategic alignment could also be achieved by combining three out of the four domains, and all four

domains, respectively. These interactions result in four types of perspectives on alignment, namely: strategy execution, technology transformation, competitive potential, and service level.

As argued in Henderson and Venkatraman (1993, 1999), while the first two perspectives of their model arise when business strategy serves as the driver, the final two arise when IT strategy is considered as the driving force. Applying such different perspectives will necessitate different roles being carried out by business and IT managers and executives. In the first perspective, the (business) strategy execution, business strategy is the driver of both organizational infrastructure and information technology infrastructure. While top management is responsible for the strategy formulation to articulate the sense and preferences pertaining to business strategy, the IT manager is in charge of implementing the business strategy and objectives.

The second perspective is technology transformation, which includes implementing the preferred business strategy using an appropriate IT strategy. Therefore, the role of top management is to offer a technology vision that might assist the chosen business strategy, while the IT manager should design and implement the wanted IT infrastructure, which is related to the IT vision. The third perspective of alignment is concerned with harnessing IT capabilities to create new products and services. Consequently, the role of the IT manager is to identify the trends in the IT environment to help the top management to understand the possible opportunities and threats from the IT point view. However, the role of executive management is to enhance the business vision by articulating the IT competencies and functionalities. Finally, the service level perspective focuses on the need for IS service in the firm. In

this perspective, the executive manager's task is to make best allocation and to prioritize a firm's scarce resources and IT projects. The IT manager in turn leads the project and makes the service to succeed based on the top management directions.

Papp (1995) extended Henderson and Venkatraman's model (SAM) and suggested that IT infrastructure and organization infrastructure could be drivers to support business strategy and IT strategy. He stated that the use of cross-domain alignment resulted eight different strategic alignment perspectives, namely strategy execution, technology transformation, competitive potential, service level, organizational IT infrastructure, IT infrastructure strategy, IT organizational infrastructure, and organizational infrastructure strategy. Table 2.1 illustrates these eight perspectives. Each strategic perspective has three components: the anchor, pivot, and impacted domains (Papp, 1995). The anchor, which drives any change that applies to the pivot domain, is the strongest area.

Table 2.1: Strategic Alignment Perspectives

	Strategy Execution	Technology potential	Competitive Potential	Service Level
Anchor Domain	Business Strategy	Business strategy	IT Strategy	IT Strategy
Pivot Domain	Business Infrastructure	IT Strategy	Business Strategy	IT Infrastructure
Impacted Domain	IT Infrastructure Organisation IT Infrastructure	IT Infrastructure IT Infrastructure Strategy	Business Infrastructure IT Organization Infrastructure	Business Infrastructure Organisation Infrastructure Strategy
Anchor Domain	Business Infrastructure	IT Infrastructure	IT Infrastructure	Business Infrastructure
Pivot Domain	IT Infrastructure	IT Strategy	Business Infrastructure	Business Strategy
Impacted Domain	IT Strategy	Business Strategy	Business Strategy	IT Strategy

(Source: Papp, 1995)

The pivot domain, the weakest one, is the area that receives the focus and where changes are addressed by anchor area through the re-alignment. The area that will be directly influenced by the pivot domain is the impacted area. Therefore, when the firm's alignment perspective is known, it can then recognize its future direction and thus achieve sustained alignment. Papp (1995) argued that such perspectives highlight the need to examine the business and IT strategies and infrastructures of a firm, to find out if they work in harmony or in opposition. In other words, inappropriate alignment may cause problems with the integration (i.e., bilateral fit) of business and IT strategies, and inhibit technology from reaching its maximum potential. The result, in turn, may be a less competitive and profitable firm.

For instance, in the strategy execution perspective, the anchor area is business strategy, where a firm has a strong strategy. In contrast, the business infrastructure is a weak domain which requires alteration. Moreover, the IT infrastructure is the impacted area, which results in fundamental changes to the IT architecture. From this perspective, the top management is the leader and IT manager is responsible for meeting the business strategy requirements. Firms follow this perspective to decrease the time expected to process orders, to reduce costs by using a re-engineering process, and to enhance their products and services.

As the example from another perspective, the anchor domain of the organization's IT infrastructure is organizational infrastructure, which provides the direction for IT. The pivot area is the IT infrastructure in which changes occur, and the impacted area is IT strategy. Therefore, while the executive manager leads the project, the role of the IT manager is to improve the business process re-engineering by changing IT

architecture. However, in the IT infrastructure strategy perspective, which concentrates on the improvements of IT strategy, the IT manager plays a vital role as project manager whereas the executive manager is seen as a supporter and visionary.

Another important outcome of the MIT90s program was MacDonald's (1991) Strategic Alignment Process model (SAP), which examined the interactions among business strategy, business infrastructure and processes, IT strategy, and IT infrastructure and processes. In order to achieve alignment, SAP model emphasized that appropriate processes must be run, including technology potential, service level, business value, and competitive potential. After that, these processes should be reviewed. In addition, as noted in Figure 2.3, Baets (1992) developed a model of alignment building on the MacDonald (1991) SAP model and the enterprise-wide information model of Parker, Benson, and Trainor (1988). Like the models of MacDonald (1991) and Henderson and Venkatraman (1993), Baets's model (1992) represented the inter-relationships among business strategy, IT strategy, business infrastructure and processes, and IT infrastructure and processes. Baets's (1992) model stated that alignment is achieved by integrating factors like competition and reconfiguration, organizational change process and human resource issues, global IT platform, and IS implementation processes, tools, and skills.

From the above discussions it is notable that the models of Baets (1992), Henderson and Venkatraman (1993), and MacDonald (1991) shared causal chains that relate IT and business. However, this is not surprising since all of their models are related to the MIT90s program, especially to the Morton's (1991) framework.

Among some of the models that received empirical support, in the SAM model (e.g., Avison et al., 2004), Henderson and Venkatraman (1993) defined the concept of fit among four domains. These are, business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes. Their model contributes to the recognition of the differences among bivariate fit (associations between any two domains), cross-domain alignment (associations among three domains), and the concept of strategic alignment (associations among all four domains).
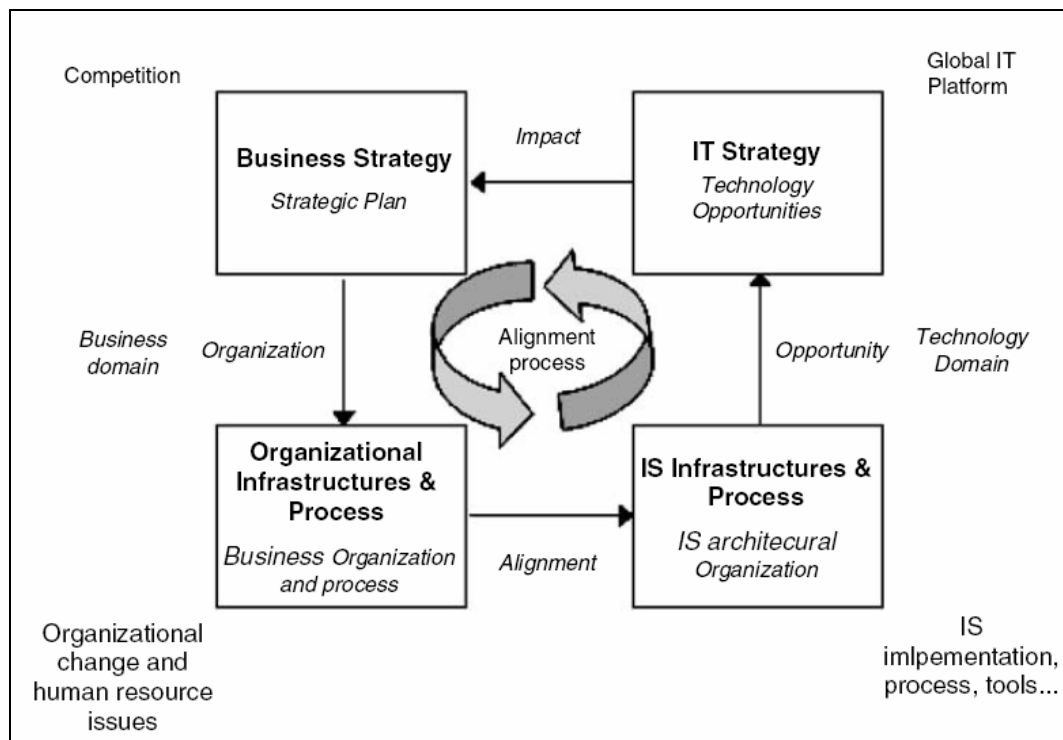
Figure 2.3 :The Baets's (1992) model

However, it has several limitations. For example, the model did not take the antecedent and contingency variables into account despite the fact that they guide the concept of strategic alignment and the appropriate process between strategic alignment and enhanced firm performance. Besides, the SAM model paid insufficient

28

attention to the ways in which firms could handle probable negative consequences of alignment. Also, alignment is not always achievable if firms are not conscious of the driving factors of their executives' decisions. For example, Burn and Szeto (2000) rejected their hypothesis that IT and business managers would perceive different drawbacks from the implementation of an alignment strategy. Thus, they argued that alignment would increase expenditure on IS and on their personnel, because of which the status quo of top management would be threatened in the shift of focus from monetary goals to technology goals. Also the adaptation problems would be created when business practices and organizational structure are changed to secure alignment. In addition, there would be extra pressure on functional departments to re-design their business processes for improved efficiency and effectiveness. Therefore, although the SAM model underlines a comprehensive theoretical understanding of the roles played by both business and IT managers, it failed to test what might happen if firms faced such dynamic organizational factors, and in turn, the model needs more tests to proof its validity.

To sum up, earlier research conducted at MIT proved to be the starting point to realize the strategic effect of information technology on a firm. One of the leading models that fulfilled the MIT90s program was related to Morton (1991). The model emphasized that significant rewards could be achieved in a firm if an appropriate alignment was achieved between external and internal forces. However, although Morton's (1991) model is comprehensive and offers theoretical propositions for the links among the technological and socioeconomic environment, business strategy, IT strategy, organizational structure and culture, human resource policies, and management processes, it is purely theoretical and lacks empirical justifications.

This program led to Henderson and Venkatraman's model (SAM), which suggests that strategic alignment can be accomplished in a firm by building linkages among four strategic domains: business strategy, IT strategy, organizational infrastructure and processes, and IT infrastructure and processes. The model has two essential features of strategic management which together form the overall strategy of a firm. The first is strategic fit, which refers to the interrelationships between internal and external domains, and functional integration, which captures the integration between the business and technological domains.

Moreover, Henderson and Venkatraman (1993) argued that both strategic fit and functional integration have to be involved in order to gain strategic alignment. This is demonstrated by a combination of two arrows, one horizontal and another vertical. Cross-domain alignment and full strategic alignment could also be achieved by combining three out of the four domains, and all four domains respectively. These interactions result in four types of perspectives on alignment, namely: strategy execution, technology transformation, competitive potential, and service level. What becomes clear in this section is, strategic alignment could be seen as a bi-directional linkage (between business and IT strategy). In other words, reciprocity transforms a unilateral relation into a bilateral relation where both parties, attached with business strategy and IT strategy, understand that strategic alignment will be continued if reciprocity is observed.

Papp's (1995) extension of Henderson and Venkatraman's model was based on the argument that the use of cross-domain alignment results in eight different strategic

alignment perspectives, namely strategy execution, technology transformation, competitive potential, service level, organizational IT infrastructure, IT infrastructure strategy, IT organizational infrastructure, and organizational infrastructure strategy. These eight perspectives emerged as a result of using IT infrastructure and organizational infrastructure as drivers besides the business strategy and the IT strategy.

Additionally, each strategic perspective has three components: the anchor, pivot, and impacted domains. Consequently, when the firm's alignment perspective is known, it is possible for the firm to identify its future direction to achieve sustained alignment. Nevertheless, although Morton's (1991) and Henderson and Venkatraman's (1993) models are comprehensive in defining the concept of fit and are considered as key works for understanding alignment theoretically, they remain merely conceptual, since they did not provide any empirical support. Also, they paid less attention to the process or the dynamic nature of achieving alignment. In fact, both models need further tests of their validity in explaining the antecedents and the impacts of achieving strategic fit. Despite the importance of Papp's (1995) theoretical work (which deals with the ability of the firm in achieving alignment by ib considering both IT infrastructure and organizational infrastructure as drivers of alignment besides both IT strategy and business strategy), it fails to specify the ways to achieve and maintain alignment in real business practices. Therefore, further emphasis is needed to capture the crucial conditions and aspects of strategic fit.

Another important outcome of the MIT90s program was MacDonald's (1991) Strategic Alignment Process model (SAP), which argues that in order to achieve alignment appropriate processes must be run, including technology potential, service level, business value, and competitive potential. In addition, based on MacDonald's model, Baets (1992) developed a theoretical model, which states that alignment is realized by integrating several factors such as competition and reconfiguration, organizational change process and human resource issues, global IT platform, and IS implementation processes, tools, and skills. However, like the models of Morton (1991) and Henderson and Venkatraman's (1993), MacDonald's (1991) and Baets's (1992) works are totally theoretical, and did not consider the conditions of achieving alignment. Therefore, a comprehensive, empirical approach to the study of how to achieve IT-business strategic alignment and its link with other organizational contexts would be appropriate.

While strategic alignment is typically defined as aligned IT strategy with business strategy, this can be conducted through the extent to which IT supports the business strategy and the extent of the ability of the business strategy to utilize existing IT resources to fulfill the objectives of the business strategy.
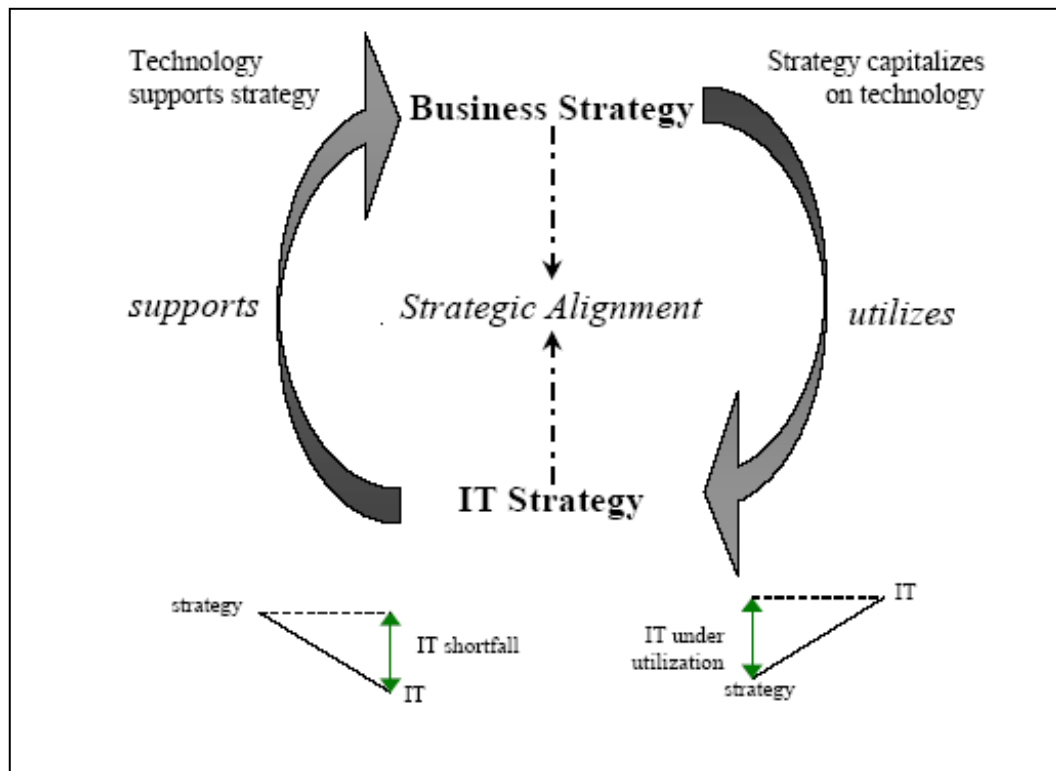
Figure 2.4 Dimensions of Strategic Alignment
(Source: Tallon & Kraemer, 2003)

The model above provides graphical representation of the relationship between business strategy and IT strategy. It also represents IT shortfall or IT under-utilization. The interaction between both strategies will feature significant strategic alignment. For example, perfect strategic alignment will exist when the IT strategy fully supports the business strategy and when the business strategy, in turn, has full capitalization on the capabilities offered by IT resources (Tallon & Kraemer, 2003). This suggests that misalignment can occur through lack of IT spending, or alternatively, by failure to capitalize on IT resources, possibly caused by excessive spending on IT or by failure on the part of executives to understand the business opportunities presented by IT. However, there are many reasons that cause misalignment and hence prevent the organization to achieve strategic alignment. These reasons may be attributed to the success factors that can affect the harmonization between IT strategy and business strategy.

33

2.3   Gaps in the Literatures

  previous research on strategic fit is rudimentary, both theoretically and empirically. In particular, it is evident that strategic fit is viewed differently by theorists. For instance, Venkatraman (1989) elaborated the concept of fit from several measurement perspectives, such as moderation, mediation, matching, gestalt, covariation, and profile deviation. Nevertheless, researchers found that there is no universally accepted way to measure strategic fit, and often the above six perspectives end in contradictory results (Bergeron & Raymond, 1995; Bergeron et al., 2001, 2004; Chan et al., 1997). Moreover, most studies consider strategic alignment as reciprocally interdependent. In other words, they view business strategy and IT strategy as mutually related, and then do not differentiate the order of the two types of fit (Bergeron & Raymond, 1995; Chan & Reich, 2007). Consequently, studying new ways to conceptualize strategic fit is potentially an important area that should be explored further (Chan & Reich, 2007). However, there is no unique way of measuring it (Chan & Reich, 2007; Powell, 1992). Indeed, researchers (e.g., Chan & Reich, 2007; Kearns & Lederer, 2000, 2003; Miller, 1993; Sabherwal et al., 2001) generally presume a type of fit or alignment where business strategy determines IT strategy, whereas others (e.g., Henderson & Venkatraman, 1993, 1999) speculate how IT strategy would verify business strategy .

Initially, Bergeron and Raymond (1995) emphasized that organizations use one of the two perspectives in managing the relation between business strategy and IT strategy. These are the alignment approach and the impact approach. While the former is considered by the implementation of IT technologies planned to support the organization's business strategy, the latter is considered when IT management drives

the organization in formulating a new vision and implementing IT goals. Therefore, in the second case, IT management plays a critical role in influencing the firm's business strategy, and leads to key changes in the means of doing business.

Later, Chan and Reich (2007) stated two approaches on the relationship between strategy and IT: the classical approach and the processual approach. While the first approach considers the relationship between strategy and IT as to deal with recognizing the contingencies of the technology and its application to business objectives, the second approach considers the role of IT as a resource and an instrument for gaining power. However, researchers commonly pay close attention to the ways of using IT to support organization's business strategy. They focus on the premise of considering IT as just an order-taker as technology yields benefits when it has been cautiously chosen to fit the organization's goals and objectives (Chan & Reich, 2007; Palmer & Markus, 2000).

Since of the strategic role of IT, and the increasing need for integration of existing and new IT systems, IT strategic management receives considerable attention from researchers and managers (Chan & Reich, 2007). D'Souza and Mukherjee (2004) ascertained that IT revolution is about improving the performance of a firm in a coordinated manner over the long haul. Further, IT business alignment that concentrates on instant results, and casts the task as a technology diffusion problem, would not be the best way to attain financial enhancements in the long run. Instead, alignment models should focus on fitting the chosen IT package to the firm since the organizational change is inherently confused, time-consuming, and since top management demands innovation activities. According to Peppard and Ward (2004),

Technology itself has no inherent value and that IT alone is unlikely to be a source of sustainable competitive advantage. The business value derived from IT investments only emerges through business changes and innovations, whether they are product/service innovation, new business models, or process change, organizations must be able to assimilate this change if value is to be ultimately realized. (p. 169)

In line with the above discussion, Strassmann (2003) confirmed that cutting of innovative investments is not able to restore security, reliability, and system integrity. For instance, instead of feeding the increasingly costly IT infrastructure and throwing money at rising maintenance costs, firms should initiate IT investment cycles to replace old systems. The cure for most of the so called "legacy system" is not patching, but radical innovation, such as shifting the accountability for systems performance to vendors who would have the responsibility of delivering reliable and robust applications.

In addition, some researchers have argued that innovative and superior quality of products and services offer a competitive advantage to the firm. This advantage can help a company to possess certain intangible resources that a competitor cannot copy or buy easily (Cho & Pucik, 2005). This can be seen from the resource base view (RBV), which states that a sustainable competitive advantage is caused by the inimitability, rarity, and non-tradability of intangible resources (Barney, 1991). Broadly speaking, while innovation is defined as exploring something new which has not existed before, quality is seen as a dynamic threshold which firms have to meet to satisfy customers (Cho & Pucik, 2005). However, balancing innovation and quality (i.e., pursuing strategic ambidexterity) is a big challenge that firms face. Therefore,

the relationship between IT- business strategic alignment with firm's sustainable competitive advantage is not clear yet.

2.4   Strategic IT-Business Alignment Antecedents

Early research considers the alignment between business and IT/IS as a link among strategy, structure, and social aspects (Papp, 2001). While strategy and structure are considered to be hard part, intellectual aspects, social aspects are seen as soft (Horovitz, 1984). Figure 2.5 illustrates that. While most studies focus on the strategic alignment model (SAM) of strategy and structure, few have concentrated on the social dimension of IT alignment. Horovitz (1984) has highlighted two antecedent dimensions to alignment construction: the intellectual dimension and the social dimension. While the former focuses on the content of plans and planning tactics, the latter concentrates on the people who are engaged in the alignment process.
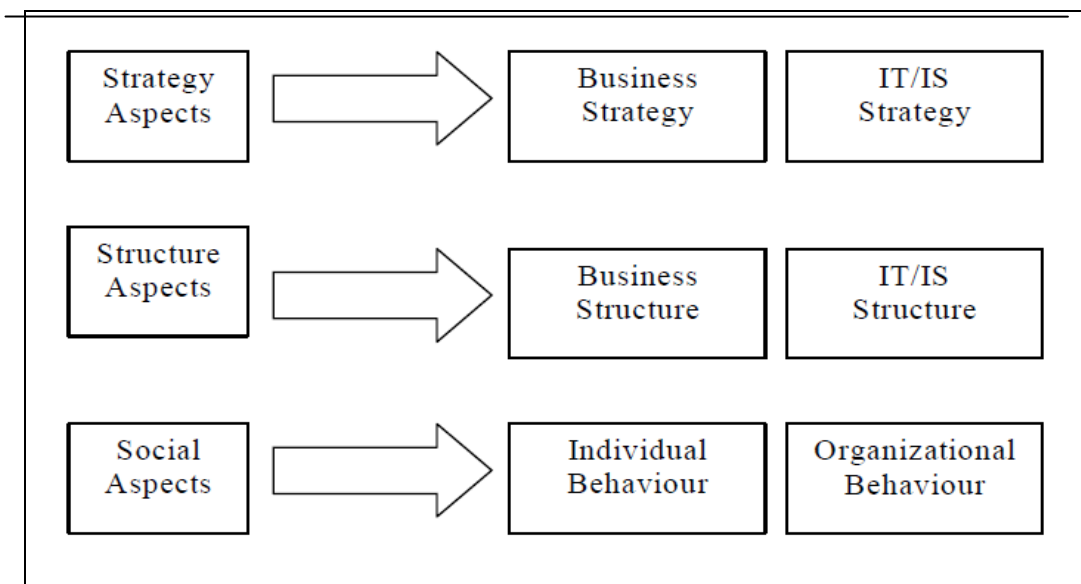
Figure 2.5: Traditional aspects of alignment
(Source : Horovitz, 1984)

Reich and Benbasat (1996) defined the intellectual dimension of alignment as "the state in which a high-quality set of interrelated IT and business plans exist" (p. 58), and the social dimension as "the state in which IT and business executives within an organizational unit understand and are committed to the business and IT mission, objectives, and plans" (p. 58). In their study, Reich and Benbasat found two types of strategic and intellectual alignment. The first is considered to be a short-term approach, where business and IT executives are committed to each other's short-term (one to two year) plans and objectives. The second is a long-term approach, where business and IT executives share a common vision. This sharing can result IT to contribute to the success of the business unit. Nevertheless, even Reich and Benbasat (2000) pointed that both dimensions are important, though they focused only on the understanding of the social dimension of alignment and the underlying drivers.

Based on the investigation of several different perceptions of business and IT management, Peppard and Ward (2004) proposed a framework to diagnose the gap between IT and business departments. This framework consists of four dimensions that are crucial to maximize the contribution of IT in a firm. These dimensions are: leadership, structures and processes, service quality, and values and beliefs. While the first two dimensions are related to the strategy and structure aspects of alignment, the final two fall in the field of the social aspects of alignment. However, the researchers argued that the above four dimensions are interdependent and cannot be analyzed in separation. Hence, they should be considered as complementary dimensions in order to understand the interaction among them.

Nevertheless, many scholars (e.g., Chan, 2002; Chan & Huff, 1992; Reich & Benbasat, 1996, 2000) have argued about the lack of research on the social dimension of alignment at the lower level of an organization compared to that at the executive levels, where middle managers implement strategy rather than develop it. However, Campbell et al. (2005) highlight the inter-relationship between the social and intellectual dimensions of IS-business alignment, indicating that these dimensions should not be studied in isolation, rather should be studied together and across all levels of an organization. In a recent study, Benbya and Mckelvey (2006) proposed a multilevel co-evolutionary model of business/IS alignment. They considered alignment as a series of adjustments at the individual, operational, and strategic levels. This is achievable by considering the view that IS should be aligned with end user needs between business and IS departments, and between business and IS strategies at the individual, operational, and strategic levels respectively. These three levels of IS alignment should occur to ensure better organizational effectiveness.

For the firms with misalignment at the operational level of the firms, but with the necessity of alignment between business and IS departments, Benbya and Mckelvey (2006) reported that business and IS managers are unable to express themselves in a common language. Necessarily, this expression is necessary to cope with the absence of rationality and analyzability. Therefore, successful links between business objectives, IS strategy, and underlying IS architecture are insufficiently built. Furthermore, they do not understand the complexities other party has to deal with. Hence, tightly aligned business and IS domains require continuous co-ordination and communication between the two entities of the duality: business and IS.

In order to achieve this co-ordination and communication, both business and IS must form effective collaborative partnerships at all levels by defining each other's domains followed by gradual development of an understanding regarding this domain. It is also necessary to set up agendas for their discussion and coordinated actions related to continuous and sustainable IS alignment. In fact, it is only the course of continuous adjustments between the two parties – business and IS – that can facilitate sustainable alignment.

Conversely, if business and IS strategies change without proper alignment between business and IS departments; a firm is far away from enhancing its performance. This is due to the fact that in such misaligned environment, business managers would be unaware of the potential contributions of IS, and the IS managers would lack knowledge about business strategy. At the individual level, IS infrastructure should be aligned with the requirements and needs of individual users. Moreover, users' involvement and partnering with IS staff in the system development process have been suggested to advance the collaboration and improvement of the IS project performance.

Conversely, some researchers (e.g., Karahanna & Straub, 1999) argued that users seldom have the chance to select the system they use, instead their choice is limited to a set of resources by which a firm is selected despite the fact that the users' needs often change with time. For instance, Benbya and Mckelvey (2006) stated:

> Indeed, as users become competent in using an IS, they often see new ways of doing things and dream up new things to do with the IS. These new ideas change the organization and its perception of what is required from its IS. If

these changes cannot be easily incorporated in the IS, the users become frustrated and dissatisfied with the system. (p. 289)

Therefore, to ensure better performance for a firm, it is essential to guarantee an alignment between the IS and its users.

In summary, Horovitz (1984) and Reich and Benbasat (1996) highlighted two dimensions as main antecedent to strategic alignment: the intellectual dimension (i.e., someone focusing on the content of plans and planning tactics) and the social dimension (i.e., someone focusing on the people who are engaged in the alignment process). Peppard and Ward (2004) proposed a framework consisting of four dimensions: leadership, structures and processes, service quality, and values and beliefs. While the first two dimensions are related to the strategy and structural aspects of alignment, the final two referred to social aspects. Nevertheless, Campbell et al. (2005) and Benbya and Mckelvey (2006) draw attention to the inter-relationship among these dimensions. They also point out that such dimensions should be studied together and at all levels of an organization.

2.5   Strategic Dimensions of Alignment

Strategic alignment has been described as the degree to which the business strategy and plans, and the IT strategy and plans harmonize with each other, both formally and informally (Chan & Reich, 2007). In a notable study, Pyburn (1983) found that the influence of an IT manager's status on the success of IS or IT planning depends on the style of that planning. This presupposes that the more informal the style between business and IT management, the more important that status becomes. Furthermore,

the success of the personal-informal style of IT planning depends on both an informal business management style, and high IT manager status. In addition, with the personal and written- formal planning styles, success relied on a more formal business management style.

In contrast, some researchers (e.g., Lederer & Mendelow, 1989; Vitale et al., 1986; Wang & Tai, 2003) emphasized that alignment could not occur in small firms if a business or a firm lacks formal-documented plans. Cragg et al. (2002) studied the alignment of business strategy and IT strategy among 256 small UK manufacturing firms, and the relationship between alignment and firm performance. They found that small firms with great alignment had better performance than those with low alignment. They indicated that a quarter of the returned sample (26%) formalized their IT strategy (i.e., 74% had informal IT strategy), whereas two-thirds of the sample (68%) had a written business plan. Therefore, this shows that IT planning does exist in small firms, but lots of it is agreed and achieved informally.

A pioneering study conducted by Synnott (1987) classified a firm's planning system as being one of the five types:

1. No planning: No formal business planning (BP) or information systems planning (ISP) takes place.
2. Stand-alone planning: In which a business plan or an IS plan exists, but not both.
3. Reactive planning: Where IS function reacts to business plans, and has no input in the BP process.

4. Linked planning: In which BP is interfaced with ISP; system resources are matched against business needs.

5. Integrated planning: BP and ISP occur simultaneously, interactively, and indistinguishable from each other.

Chan and Huff (1993) argued that full alignment in a firm is dependent on the levels of awareness, integration, and strategic alignment applied in that firm. While the awareness level could be achieved when a firm knows the important role of the connection between IS plans and business plans, reaching the integration stage is possible when the business plans engages with the IS plans. The strategic alignment level is achieved when IS and business strategies and plans are fully integrated.

In a recent study, Teo and Ang (1999) asked 136 firms to rate the degree of importance of 18 critical success factors for aligning IT plans with business plans. Based on a five point Likert scale ranging from 1 (not important) to 5 (very important), they listed twelve success factors that are critical for firms to align their IT plans with the business plans. Teo and Ang (1999) argued that once a firm evaluates each factor, its management will be able to design suitable and proper strategies to enhance IS planning alignment. Table 2.2 shows these factors.

Table 2.2: Critical Success Factors for Aligning IT Plans with Business Plans

1.	Top management is committed to the strategic use of IT
2.	Top management has confidence in the IT department
3.	Top management is knowledgeable about IT
4.	IS/IT management is knowledgeable about business
5.	Business goals and objectives that are known to IT management

6.   The corporate business plan being available to IT management

7.   The IT department comes up with creative ideas on how to use IT strategically

8.   The IT staff are able to keep up with advances in IT

9.   There is frequent communication between users and IT departments

10.   Business and IT management partnering to prioritise applications development

11.   The IT department provides efficient and reliable services to user departments

12.   The IT department is responsive to user needs

(Source: Teo & Ang, 1999)

Further study by Peak et al. (2005) developed a comprehensive model to assess IT alignment planning in an organization. They tested the model by distributing a survey questionnaire to 58 managers from five major business units (BU). They defined IT alignment planning as a process which enables IT clients to realize their objectives through transforming information quality (IQ) from IT products and services. Furthermore, they emphasized that the IT department should plan with clients and for clients (see Table 2.3).

Table 2.3: Major Results of the IT Alignment Planning Process

1.   Aligns the firm and client business goals with IT

2.   Creates a decision and capital budgeting tool for IT projects across the firm

3.   Dovetails with the firm strategic planning process

4.   Develops IT vision integrated with business goals and critical success factors

5.   Facilitates executive-level understanding and communication on IT across the firm

6.   Helps improve operational IT support of clients

7.   Brings IT and client closer together

(Source: Peak, Guynes, & Kroon, 2005)

In addition, as shown in Figure 2.6, Peak et al. (2005) reported the deliverable for every business unit in a custom IT alignment roadmap. This roadmap contains a list of ranked concerns (information gaps), a prioritized development plan with a schedule of

candidate IT solutions, and a management-level portfolio of IS. This IT alignment plan integrates the business unit roadmaps, provides consistent, corporate-wide IT vision and status, and functions as a capital budgeting tool for major IT resources, projects, and systems. Therefore, their model looked to the way in which IT products and solutions, information needs, and business processes interact with each other.
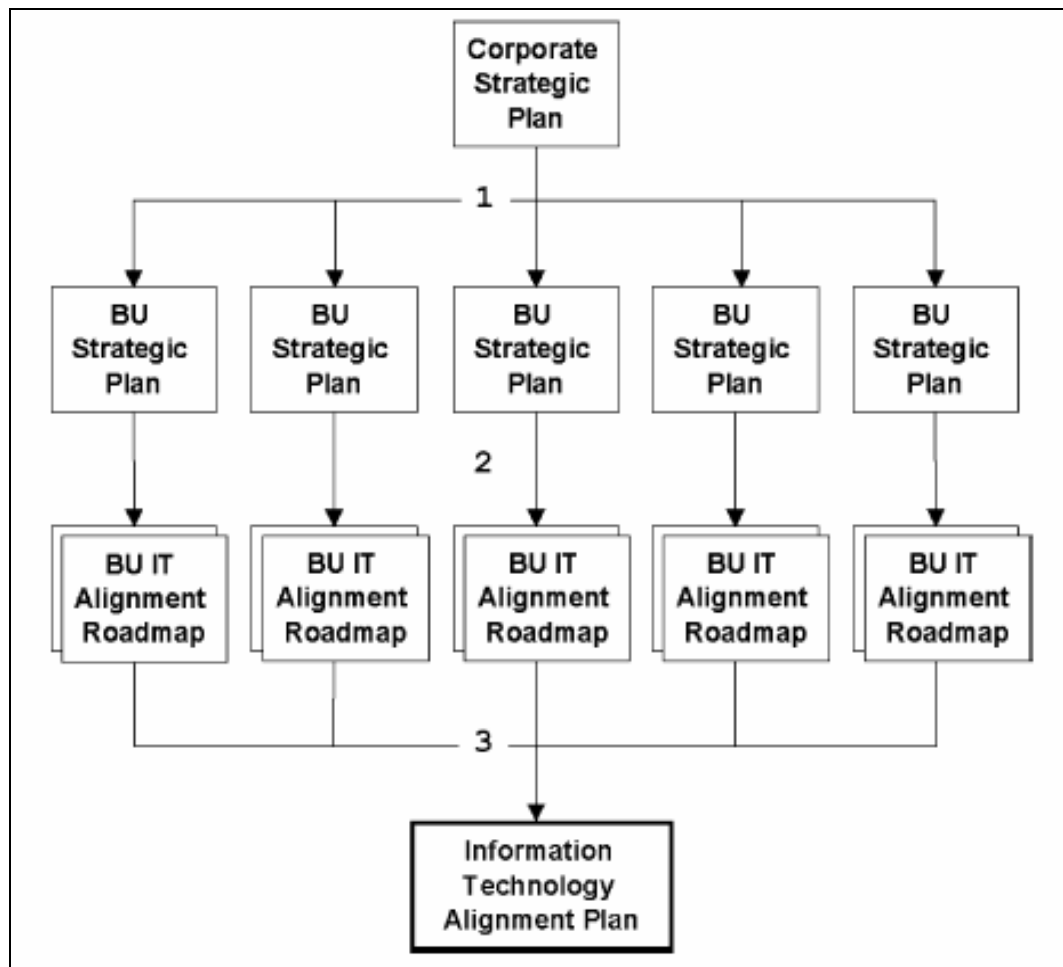
Figure 2.6: Business unit IT alignment roadmaps align BU information requirements with the BU strategic plans
(Source: Peak, Guynes, & Kroon, 2005)

Moreover, based on their model, the IT strategic plan is built in a firm by aligning its IT alignment plan with each business unit plan (see Figure 2.6). Peak et al. (2005) stated that each IT alignment roadmap becomes a high-level IT planning customized for each corporate business unit. Internal deliverables include: (1) a management-

level portfolio of important IT systems and products, (2) a prioritized list of information solutions (e.g., systems, enhancements, strategies, projects, training programs) containing estimates of size, resources, new technologies, dependencies, cost benefit, and installation date, and (3) a solution delivery schedule. Consequently, IT is expected to support critical success factors, processes, and drivers for all business units. It also becomes a building force across the firm.

Following section discusses about the most important potential outcome of the alignment, competitive advantage. If the proper alignment enhances the competitive advantages of the firm it can easily be translated into strategic superiority in the competitive market.

2.6   Competitive Advantage

Probably the most common business concept today is competitive advantage. Despite its wide use, few researchers have attempted to define the concept, and it is often confused with distinctive competence (Day & Wensley, 1988). Exceptions include the work by Ansoff (1987), who broadly defined competitive advantage as the properties of individual product or markets providing a strong competitive position to the firm. Porter's (1985) book titled *Competitive Advantage* propelled the concept of competitive advantage into popular business vernacular. Porter did not articulate a definition of the concept but explained that a competitive advantage refers to organizational factors that enable a firm to outperform its competitors. As such, Porter argued that sustaining competitive advantage should be the central purpose of an organization's competitive strategy and that creating value is the means to attain it.

Competitive advantage is basically arised when a firm is competent to generate more value for its buyer compared to cost of creating the advantage. Value is what buyers are willing to pay, and superior value stems from offering unique or lower price equivalent benefits that more than offset a higher price. Porter's arguments reflect the common strengths, weaknesses, opportunities, and threats (SWOT) framework for assessing competitive advantage. Competitive advantage stems from a firm's ability to leverage its internal strengths to respond to external environmental opportunities while avoiding external threats and internal weaknesses.

The resource-based view of a firm offers an alternative to this basic framework focusing on superior resources as a source of sustained competitive advantage (Barney, 1991; Wernerfelt, 1984). As Collis and Montgomery (1995) explained that regardless of the source, Competitive advantage ultimately can be attributed to the ownership of a valuable resource enabling the company to perform activities in a better or cheaper way than its competitors. To be sustainable, a competitive advantage should be difficult to imitate or substitute (Barney, 1991). King (2007) argued that firms sustain competitive advantage when their competencies possess strong causal ambiguity because competitors are less likely to identify or understand such competencies well enough to imitate them. For example, competitors have found it difficult to imitate Starbucks' unique store atmosphere and branding competencies and, as a result, Starbucks could sustained its competitive advantage (Michelli, 2006).

The term "competitive advantage" has usually been described in terms of the attributes and resources of an organization that let it move to better position than others in the similar industry or product market. The concept of competitive

advantage is often used to illustrate the organization's new ability to add more value than its competitors. It refers to the degree to which the organization, under free market conditions, meets the demand of a product market while concurrently maintaining and growing its profit levels. Competitive advantage is limiting as it is a static notion based on post rationalization. It does not clarify how it can be sustained in dynamic business environments. Strategic advantage, on the other hand, encompasses a broader viewpoint whereby it:

- Provides the organization with the unique ability to develop a strategic direction that creates new opportunities and shapes the future of its competitive environment.
- Represents the basis of resource leadership in one or more product markets.

Competitive advantage exists for a firm having a product or service that is perceived better by its target market customers than that of its competitors. Unfortunately, entrepreneurs are often confronted with two myths surrounding the creation of a competitive advantage. One is that most good business opportunity is already gone. The other is that small firms cannot compete well with big companies. Both of these ideas are erroneous! Nevertheless, existing companies, both large and small, do not typically welcome competitors. Before choosing such an entry wedge, the entrepreneur desires to understand the basic nature of the competition he or she faces in the marketplace. Only then can a competitive advantage be developed properly (Porter, 1985).

The success of businesses depends on possessing some advantages relative to their competitors. Therefore, the main objective of strategy is to achieve the competitive advantage (Day, 1994; Porter, 1996). For achieving this goal, specific strategies including innovation, improved processes, higher quality, lower cost and marketing are usually adopted from the corporations which already gained competitive advantage in their industries. However, even if businesses are capable to gain competitive advantage and attain higher level of profitability, they lose this competitive advantage over time. This is because their strategies are usually copied quickly or their initiatives are improved by rivals.

Achieving a competitive advantage enables a firm to raise successful barriers and achieve a sustainable competitive advantage (Porter, 1996). However, preventing imitation does not last forever. So, the firm will gain the maximum benefit from any competitive advantages if it is able to delay this eventuality. Besides, achieving abstained and profitable growth essentially needs to have at least one strong and differentiated core business. The access to some form of competitive advantage would be a prerequisite for building this strong and differentiated core (Christenen & Fahey ,1984).

According to Prahalad and Hamel (1990), "similar formidable" standards for product cost and quality converge to that of Western and Japanese companies .These standards are more important as qualifying criteria for continued competition, and less important as sources of CA. They further suggest that the real source of CA is related

to company's ability to consolidate technologies, and production skills in competencies that empower business to adapt quickly to changing opportunities. Kanter (1990) suggested that companies must focus continuously on their core competencies, invest in their development, and de-emphasize activities that do not add value. As a result, they will be successful. She further suggests that the success in changing the conditions is guaranteed by defining the core competencies and organizing it to support and augment them.

Porter (1996) considers that organization in the past decades had invested to become lean and flexible in order to respond rapidly to environment and market changes. They also benchmarked continuously to achieve the best practice and outsourced aggressively to achieve efficiencies. The Japanese are well-known for deriving competitive advantage by operational effectiveness. These investments have failed in securing sustainable advantage although they have succeeded in achieving operational improvements, efficiency and competitive advantage (Hill & Jones, 2001). Besides, Porter explained that the essential need for superior performances, which are the ultimate goal of any enterprise, is both strategy and operational effectiveness.

In reality, the more benchmarking companies do, the more they look similar, and the more rivals outsource activities are, the more generic those activities become. There is a tandancy of imitation among the rivals regarding their improvements in quality, cycle times or supplier partnerships. Therefore, their strategies converge and they become a series of races down identical paths that no one can win. Consequently, the competition is mutually destructive (Porter, 1996).

The firm in differentiation strategy selects one or more of the attributes that many buyers in an industry perceive their importance. It also positions itself uniquely to meet the customer needs. In addition, a firm is rewarded by being able to charge a premium price as a result of its uniqueness. This means that if the firm is to expect a premium price, it must truly be unique at something, or be perceived as unique, (Porter, 1985).

2.6.1 Strategic alignment and Sustainable Competitive Advantage

The role of IT in the organization has evolved with time. IT has been treated as a cost center for a long time (Porter & Millar, 1985). However, now it has been considered as an enabler to achieve competitive advantage. It is also viewed as a strategic instrument enabling an organization to manage its intelligence effectively.

The alignment between the business strategy and the strategic choices of IT deployment are therefore a prominent area of concern that stays on a high priority business IT issues that business and IT management struggle with (Johnson & Lederer, 2010). The business strategic alignment with IT is considered to be a very important issue particularly when IT becomes an essential part of the business and is used to leverage special business competencies, merge companies, restructure industries, and facilitate global competition (Chan et al, 1997; Peppard and Ward, 2004).

Businesses today are facing an ever increasing competition both at the domestic and global front. So, it becomes an essential necessity for organization, to understand the nature creating competitive advantage. Some scholars (e.g., Chan & Reich, 2007;

Raymond & Croteau, 2009; Jr et al., 2009) indicated the literature suggests that the firms could be competitive only if there is an alignment between the business and information technology of the firms.

Xia and King (2002) conclude that alignment has been reported as an organization-wide issue that directly influences the company's overall performance. Labovitz and Rosansky (1997) reached the conclusion that strategic alignment is considered as an aspect of competitive advantage of the firm. Thus, business executives are continuously concerned with achieving strategic alignment. Papp (2001) indicated that deploying IT to support business functions gives strategic benefit which is considered as the basis for continuous competitive advantage. Raymond (2005) mentioned that a firm could maximize its IT investments to achieve harmony with business strategies and plans by proper alignment, which usually equates to increased profitability and competitive advantage. Johnson and Lederer (2010) conclude the importance of strategic alignment enhances organization and this allows organizations to be more competitive in the industry. Others found that high successful use of IT can improve company's performance and competitive position (Bharadwaj, 2000; Fink & Neumann, 2009). However, to the best of the authors knowledge, concrete empirical evidence for the link between this alignment and competitive advantage is very rare, if any.

For organizations to stay competitive in a dynamic business environment, they have to determine and understand how to manage IT strategically as a key success factor for a successful business in a dynamic business environment that supports business strategies and processes (Henderson & Venkatraman, 1993). The importance of the

strategic use of technology based IT for effective organizational performance that makes a contribution to the creation of business value is well recognized (Henderson & Venkatraman, 1993; Luftman et al., 1993).

This research therefore practically focuses on how to manage the business-IT strategic alignment in particular for organizations to achieve competitive advantage and sustain this advantage for success in business.

2.7   Conceptualization of Strategic Alignment

As mentioned at the beginning of this study, the research of several authors in this field (Morton, 1991; MacDonald, 1991; Baets, 1992; Henderson & Venkatraman, 1993; Papp, 1995) are inclusive in defining the concept of fit, and are considered key works in understanding alignment theoretically. However, they do not differentiate the conditions of how firms pursue different types of alignment and in which order. Many researchers usually assume a type of alignment where business strategy determines IT strategy (Miller, 1993; Kearns & Lederer, 2000, 2003; Sabherwal et al., 2001; Chan & Reich, 2007). Others theorize the ways how IT strategy could determine business strategy (Henderson & Venkatraman, 1993; 1999). Apparently, despite the wide discussion of IT-business strategic alignment models in the literature, there is little agreement among MIS researchers regarding the best approach for measuring IT-business strategic alignment and its impact on sustainable competitive advantage. Consequently, it is essential to understand how strategic fit is conceptualized in the current study before the empirical work can be meaningfully carried out. Indeed, earlier IS models (Morton, 1991; MacDonald, 1991; Baets, 1992;

Henderson & Venkatraman, 1993; Papp, 1995) were not theoretical well-developed and were without empirical support. They also did not take the antecedent variables guiding to a specific type of strategic alignment into account.

The lack of proper IS model as demonstrated in the literature review necessitates further emphasis for capturing the critical conditions and aspects of strategic fit. Consequently, this research will capture some essential aspects of fit, and will build a model that explains the antecedents and their impacts on the achievement of strategic fit. In order to recognize the key factors that allow firms to attain IT-business strategic alignment, three main antecedent dimensions to strategic alignment have been identified from the extensive literature of MIS, and based on the arguments developed. These dimensions are: strategy, structure, and social aspects. While the strategic dimension of alignment refers to the degree to which the business and IT plans formally and informally complement each other, the structural dimension is related to the degree of structural fit between business and IT departments. The social dimension of alignment is considered to be the reciprocal understanding of the business and IT objectives by top management and IT managers in a firm.

According to Chan and Reich (2007), investigation of the exact conditions and antecedents of a specific type of strategic fit have not been undertaken. Accordingly, it is vital to investigate some underlying conditions, antecedents, and impacts of fit in order to achieve a specific type of alignment between IT and business strategies. Due to the lack of knowledge and inconclusiveness of results of the impact of these antecedents on strategic alignment, this study will further examine the relationship

between a set of antecedents of strategic alignment and the construct of strategic alignment between business and IT strategy.

As stated earlier in this study, this study will also bridge the gaps of knowledge by investigating these issues quantitatively and with interviews. Nevertheless, despite various types of alignments, the main focus of the current research is on the strategic alignment and its importance to firm's sustainable competitive advantage. Therefore, unlike most of the prior literature examining either the effect of antecedents on alignment or the alignment effects on performance, current research tests an integrated model that includes the effect of the antecedents on alignment and the effect of the alignment on sustainable competitive advantage. Furthermore, the conceptualization of alignment is expected to provide better insights into the conditions of alignment in terms of the antecedent variables, and the consequences of alignment in terms of mediating processes in leveraging the organizational capabilities, which further realizes the potential business values in IT. However, attention will now be turned to the new conceptualization of IT-business strategic alignment in terms of alignment gap.

Alignment Gap

Despite the criticality of business and IT relationship, few attempts have been taken for further investigation of this relationship. There is an extensive literature on the business-IT strategic alignment concerned with the issues of control of resources rather than managing relationships (Ward and Peppard, 1996). Although the alignment gap represents an important concept in business-IT strategic alignment, it

has not been presented or discussed explicitly in business-IT strategy context. Moreover, to the best of the researcher's knowledge, the literature does not have evidence as to who has referred to the concept of alignment gap between business strategy and IT strategy, except Al majali and Dahalin (2010). Therefore, the focus in this paper is to identify and explore this concept as well as to identify the reasons why the alignment gap exists between business strategy and IT strategy.

This study will benefit management of the business and industrial organizations for dealing with unmanageable issues regarding the alignment gap, and for employing different management practices in order to bridge the alignment gap between business strategy and IT strategy. Several scholars discussed the term 'gap' or 'culture gap' in different articles (e.g., Ward & Peppard, 1999; Grindly, 1992; Luftman, 2003). However, none of these scholars attempted to provide a critical review of the concept "alignment gap" between business strategy and IT strategy in a conceptual manner. Some scholars (e.g., Chan & Reich, 2007) called for further adjustments to the concept of alignment by applying new theoretical approaches which have not been explored in the field of IT. Therefore, this study aims to conceptualize IT-business strategic alignment into the alignment gap.

The concept of alignment gap between business strategy and IT strategy has emerged due to the fact that there are two separate organizational units in any organization, normally the IT department, which is responsible for IT activities and the business department. Due the separate existence in the organization, functions and activities of these departments encounter this gap.   IT functions are generally performed by the individuals who provide IT services to the organization. These individuals are usually

highly skilled IT professionals, who have certain amount of knowledge and experience in software engineering and technical aspects of computer hardware and software systems. They also carry out a variety of tasks to deal with the IT services requirements of the firm. A few of the functions of the IT professionals may include designing, implementation, and maintenance of the software programs, including data processing (Ward & Peppard, 2002; Sage, 2002).

The concept of gap used here, based on literature, refers to what is called 'culture gap'. This is a variable that can explain the challenges that can exist between the IT function and the business activities. The concept of culture gap consists of four dimensions: leadership, structure and process, service quality, and values and belief (Ward & Peppard, 1999; 2002). The culture gap has been identified as a key factor in limiting the successful utilization of IT in the organization (Grindly, 1992).

Leadership is elaborated upon by reflecting both the leadership of the CIO and the leadership of the Chief Executive Officer. Baker et al. (2004) argues that a successful alignment between business strategy and IT needs a well-built leadership structure. Structure and process are concerned with the way in which an organization manages its IT, such as the involvement of business management in IT strategy development, aligning IT strategy with business objectives, and delivering IT benefits. Service quality is considered to be vital in determining the customer supplier relationship. Such relationships could be strengthened by the IT department by focusing on the development of IT outsourcing and the level of service that clients expect from the vendor.

The last dimension, values and belief, shape how attitudes, behaviors and practices develop. Hence, the values and belief of the members of the firm have great effect on several dimensions of IT, including the way it is managed. Culture is an abstract concept which refers to the organizational culture in the organizational context. It is the shared set of values, behaviors and beliefs together with attitudes and experiences that represent unique characters, which take the form of rules of behavior in a work group or organization (Galliers et al., 1994).

2.7.1 Proposed Conceptual Research Model

According to Sekaran (2000a), a theoretical framework is a conceptual model of how one theorizes or makes logical sense of the relationship among the several factors that have been identified as important to the problem. The development of testable hypotheses is done from the theoretical framework. These hypotheses are used to examine whether the theory formulated is valid or not. The hypothesized relationship can thereafter be tested through appropriate statistical analysis to be sure about the firmness of the research. Since the theoretical framework offers the identification of the network of the relationship among the variables considered important to the study, it is essential to understand what variables are involved in the study of the conceptual model.

The aim of this study is to identify some factors which might lead to a better strategic alignment and might affect firm's sustainable competitive advantage. This study also explains the mediating effect of strategic alignment in the relationship between sustainable competitive advantage and the following factors: leadership, structure and

process, service quality, value and belief, IT managerial resource, IT implementation success.

Figure 2.7 below displays the theoretical framework of this research. This model extends Henderson and Venkatraman's (1993) model, by considering strategic alignment as the levels of fit related to the linkages between business and IT strategy.

This model also serves as a background to test several associations between a set of antecedents related to strategy, structure, and social alignment aspects. It is important to note that the theoretical framework for the current research is based on well-established existing theory. Thus, confirmatory research is essential, since it examines the underlying framework. Furthermore, the model acts as a guideline for firms to lever their sustainable competitive advantage through strategic alignment. This research not only subjects the present theoretical framework to empirical tests, but also extends it to examine the ordering of fit between business and IT strategies.

Present theoretical framework provides a detailed roadmap to guide the decision-making process for the practitioners. It focuses their attention on the significant antecedents on strategic alignment and strategic alignment as mediating variable that ultimately affect the sustainable competitive advantage.
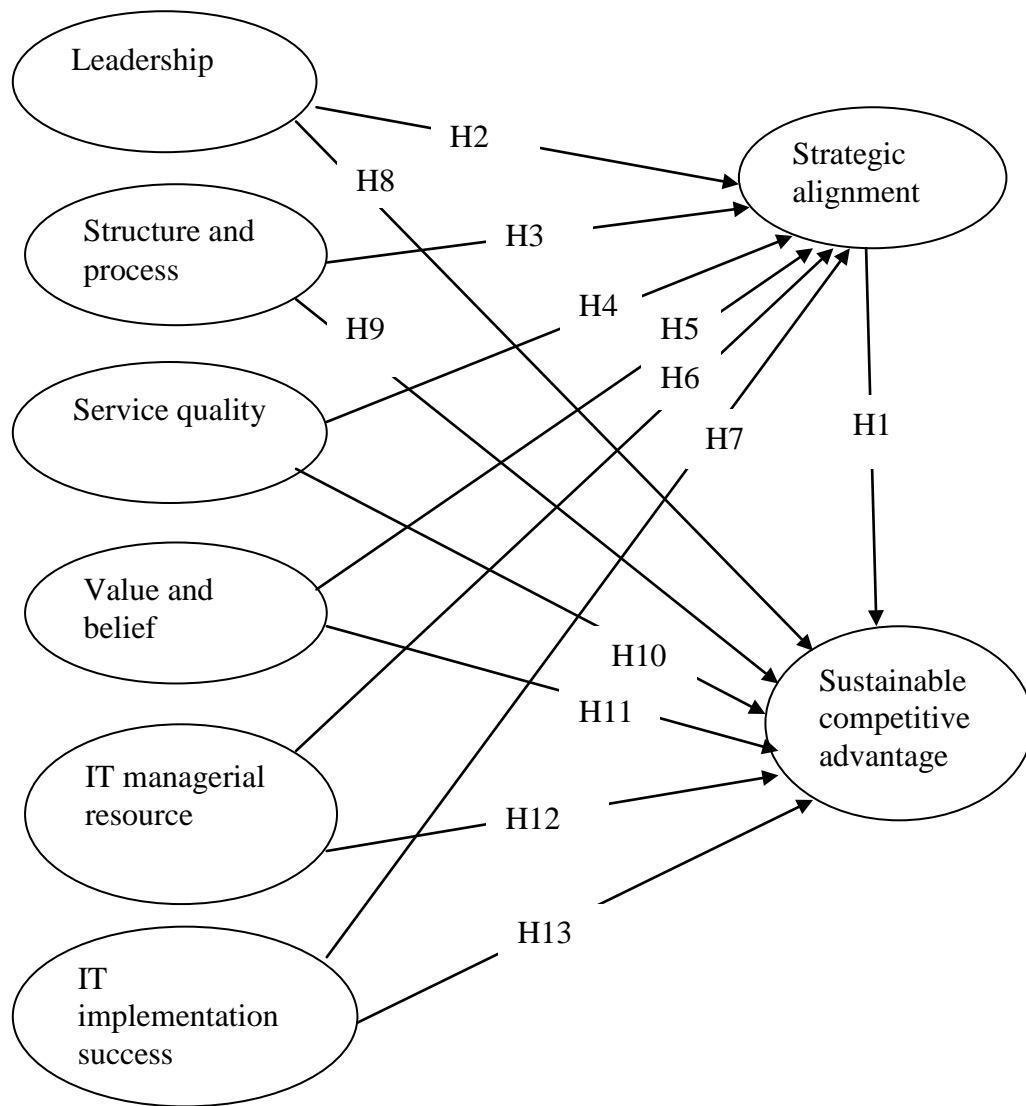
Figure 2.7 Research Conceptual Model

2.7.2 Model construct

Leadership

According to Peppard and Ward (2004), the concern of leadership is not just the leadership of the IT organization. The concern is also for the leadership which the chief executive officer (CEO) exhibits vis-à-vis IT, where CEO is supportive of IT initiatives. In the IS literature, there are two main streams of research regarding leadership. The first examines the characteristics and role of the IT director or Chief Information Officer (CIO). Earl and Feeny (1994) conclude that the IT director's ability to add value is the single major factor in determining whether the organization views IT as an asset or a liability. Successful IT directors are seen to contribute beyond their functional responsibility (Feeny et al., 1992), although there is often little agreement as to what actually their role and function is in an organization. IT directors too often see their role as custodians of the organization's technology. However, the prevalence of outsourcing is now more available due to the increasing range of IT supply options.

Venkatraman and Prescott (1990) contend that the role of the IT director has shifted from managing a technical portfolio to managing a relationship portfolio. Applegate et al. (1996) surmised that ideal candidate for the senior IS position in a company is apparently an individual who has a combination of business, technology and leadership skills. Their research suggested that newly appointed IS executives are just as likely to come from outside as from inside the organization and to have business

experience outside the IT function. However, the ability of the IT director to build relationships with both business managers and suppliers is seen as a crucial attribute.

A second area of research relates to the role of the CEO in relation to IT activity. Of particular interest is the relationship between the CEO and IT director, specifically whether or not the CEO is supportive of the IT director and IT initiatives (Feeny et al., 1992). Furthermore, IT and business strategic planning must be highly supported by open and consistent communication between high-level IT and business managers to ensure the success of strategic planning initiatives.

Structures and Processes

Structures and processes are concerned with how the organization organizes for IT, including IS/IT strategy development, delivery of IT benefits, structures for service delivery, and the mechanisms for bringing business and IT organization together (Peppard and Ward, 2004). Structures and processes are also considered as the mechanisms through which organizational activity takes place. Inadequate or inappropriate structures and processes can severely impinge the success of IT in an organization (DeLone & McLean, 1992). Traditionally structures in relation to IT have been devised around the concept of technology delivery with a reactive IT organization. The IT organization develops products (i.e. applications) in response to business requests or based on what it thinks the business requires. To facilitate IT/business integration, appropriate structures and processes are necessary. Brown and Magill (1994) have gone through some way in developing a model of antecedents in alignment of the IS function with the enterprise. Yet that model has had exclusive

focus on structural dimensions, which has ignored the importance for total organizational involvement in IS/IT.

Service Quality

According to Peppard and Ward (2004), service quality recognizes that the provision of some IT services will be based around a customer–supplier relationship. This might entail meeting predefined or expected criteria and service levels, some of which may be enshrined in formal service level agreements. Over the last decade, the marketing and quality literature have devoted reams to the issue of service quality and delivery. Within the quality movement there are the notions of the 'internal customer' and 'service level agreements' which are often devised to set parameters around the expected relationship. The development of IT outsourcing has also seen the development of legally enforceable agreements specifying the level of service, which the client can expect from the vendor. Previously there has been some interest in applying the concept of service management and quality to IT (Pitt et al., 1995; Van Dyke et al., 1997). The traditional role of the IT organization as the developer and maintainer of IT systems has been usurped by a variety of factors and its function now includes a significant service component. IS research has tended to focus on products rather than service and only recently has this service aspect been addressed.

Values and Beliefs

The values and beliefs of organizational members have a tremendous impact on many dimensions of IT in organizations. These include the way of managing IT in organizations. For example, if business managers do not believe that IT is strategic this may define the way they manage and deal with IT and associated issues (Peppard & Ward, 2004). This dimension is concerned with the values and beliefs of organizational incumbents. Values and beliefs can significantly shape how attitudes develop and hence behavior and practices. These beliefs are shaped throughout ones career based on the experiences which one has with IT. Major influences are likely to come from experiences with IT both from previous workplaces and from current industry or the organization. Values and beliefs should not to be confused with culture. While the concept of culture is now firmly in the management nomenclature, it in fact originates from anthropology, where there is no consensus as to its meaning (Smircich, 1983). Culture is a concept which encompasses values and beliefs, but is also shaped by stories, myths, symbols, control systems, structures, and politics. Individual values and beliefs are indeed a powerful force and should not be underestimated. For example, if business managers do not believe that IT is strategic this will reflect in how they manage and deal with IT and IT issues (Venkatraman & Tanriverdi, 2004).

IT Managerial Resource

This antecedent concerns the level of involvement from business and IT executives in vendor selection, contract negotiation and management, and the design and

implementation of the IT projects. Keen (1991) stated that IT success generally reflects an effective relationship between business managers and IS managers, and is the main contributor to successful vendor relations. Chan et al. (2006) explained that competent IT colleagues are more likely to be trusted and consulted in the decision-making process. They become more aware of both existing and new business opportunities, and have the practical knowledge not just in operating within existing markets, but also with a newly-emerging market. An earlier study by Boynton et al. (1994) assessed managerial IT knowledge of the business's operations and strategies, and the degree to which line management perceived IT as a competitive weapon. They found that higher levels of managerial IT knowledge positively predicted a higher usage of IT resources.

IT Implementation Success

Successful history of IT unit gives reliability to the IT unit and creates complimentary perceptions of IT in top management (Chan et al., 2006; Earl, 1993; Hu & Huang, 2005; Reich & Benbasat, 2000; Rockart et al., 1996). Also, it essentially contribute to the involvement of business managers in the planning process (Teo & Ang, 1999). For the alignment of IS plans with business plans, two important critical success factors found are the assurance of top management in the IT department, and efficient and reliable services (Teo & Ang 1999; Luftman et al., 1999). Teo and Ang (1999) postulated that assurance of top management in IT increases their commitment to the strategic use of IT, making them more likely to allocate proper resource for the planning and development of IT applications. On the other hand, lack of IS management credibility discourages top executives from communicating their

requirements and problems (Pearlman, 2004), and more importantly, from communicating their goals, objectives and plans.

2.7.3   The Relationships

Antecedents and Sustainable Competitive Advantage

In this study the researcher hypothesized the direct relationship between the antecedents in the framework, (leadership, structure and process, service quality, value and belief, IT managerial resource, IT implementation success) and sustainable competitive advantage in order to show which of these factors has significant effect on sustainable competitive advantage.

IT-Business Strategic Alignment and Sustainable Competitive Advantage

In this study the researcher will hypothesize the relationship between strategic alignment and sustainable competitive advantage.

Mediating Effect of Strategic Alignment

According to Peppard and Ward (2004, p. 169): "technology itself has no inherent value and that IT alone is unlikely to be a source of sustainable competitive advantage. The business value derived from IT investments only emerges through business changes and innovations, whether they are product/service innovation, new

business models, or process change, organizations must be able to assimilate this change if value is to be ultimately realized". So in this study the researcher theorize strategic alignment as a mediator in the relationship between the antecedents (Leadership, structure and process, service quality, value and belief, IT managerial resource, IT implementation success) and sustainable competitive advantage.

2.7.4   Hypotheses Formulation

According to Sekaran (2000b), to establish the difference between groups or the independence of more factors in a study, or to clarify the nature of certain relationships, studies generally engage in hypotheses testing. In this section formulation of the hypotheses for this research is presented. As defined by Sekaran, formulation of hypothesis involves expressing the logically conjectured relationship among more than one variable in a testable statement. Relationships are validated on the basis of network of associations recognized in the conceptual model formulated for the research study. It is expected that solutions can be found to correct the problem encountered by testing the hypotheses as "statistically significant". This mean that the researcher should be certain that the observed relationship will hold true 95 times out of 100. Several testable statements or hypotheses can be drawn from theoretical framework formulated in this study. Next is a list of the main hypotheses used to study antecedents of IT–business strategic alignment in influencing sustainable competitive advantage.

H1.Firms that pursue strategic alignment will enhance their sustainable   competitive advantage.

H2. The stronger leadership between business and IT managers, the greater the manager's engagement in strategic alignment.

H3.The stronger structure and process with the business plan and IT plan, the greater the manager's engagement in strategic alignment.

H4. The higher level of service quality between the business and IT managers, the greater the manager's engagement in strategic alignment.

H5.The stronger values and belief in the business plan and IT plan, the greater the manager's engagement in strategic alignment.

H6.The higher level of IT managerial resource between business and IT managers, the greater the manager's engagement in strategic alignment.

H7.The higher level of IT implementation success between business and IT managers, the greater the manager's engagement in strategic alignment.

H8.The stronger leadership between business and IT managers, the greater the manager's effect on sustainable competitive advantage.

H9.The stronger structure and process with business plan and IT plan, the greater the managers effect on sustainable competitive advantage.

H10.The stronger service quality between the business and IT managers, the greater the managers effect on sustainable competitive advantage.

H11.The stronger values and beliefs in business plan and IT plan, the greater the managers effect on sustainable competitive advantage.

H12.The higher level of IT managerial resource between business and IT managers, the greater the managers effect on sustainable competitive advantage.

H13.The higher level of IT implementation success between business and IT managers, the greater the managers effect on sustainable competitive advantage.

H14.The Strategic alignment will mediate the relationship between leadership and sustainable competitive advantage.

H15.The Strategic alignment will mediate the relationship between structure and process and sustainable competitive advantage.

H16.The Strategic alignment will mediate the relationship between service quality and sustainable competitive advantage.

H17.The Strategic alignment will mediate the relationship between values and beliefs and sustainable competitive advantage.

H18.The strategic alignment will mediate the relationship between IT managerial resource and sustainable competitive advantage.

H19.The strategic alignment will mediate the relationship between IT implementation success and sustainable competitive advantage.

2.8   Summary

This chapter has demonstrated that there is a lack of agreement in the literature as to how organization achieves sustainable competitive advantage by aligning success factors with respect to business and IT strategies. Part of this lack of agreement concerns theoretical rather than empirical studies, and also concerns the disagreements on how to achieve the best alignment. There is no single, universally accepted definition of strategic alignment and there is no one best way to establish strategic alignment in an organization, nor is there one best form of organization.

The IT-business strategic alignment can be defined as the support from the information technology for the business strategy combined with the ability of the business strategy to use existing IT resources to achieve the objective of the business strategy (Tallon & Kraemer, 2003) . In this context, strategic alignment is a process that is enabled or inhibited by number of factors experienced every day. Some factors that appear to inhibit the strategic alignment include lack of close relationships between information technology and business,where information technology does not prioritize well, information technology fails to meet its commitments, and information technology does not understand business.

This chapter has also provided a theoretical overview, explanation, and discussion of the concept of business value of IT. A lack of understanding of the business value of IT suggests a need for clarification. This study explains existing theory on the business value of IT, offers a definition of the concept, and discusse the interrelationship of business and IT strategies, business-IT strategic alignment and alignment gap.

This study also discusses how the success factors can fill this gap to achieve sustainable competitive advantage. Moreover, the chapter explained the development of the conceptual framework, which underlined the current study, and provided a detailed discussion on various sets of hypotheses that are being used in the current study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This chapter begins with the discussion of overall philosophical settings in social science. The justification behind this research approach to be employed in this study is also presented in this chapter. This chapter also discusses the preliminary study along with its purpose.

The specific details like the population and sample frame, adequacy of the sample size, the development of the research variables and pilot study, the translation issue of the survey questionnaires, data collection methods in terms of survey completing and preliminary study, the background of the reasons behind using SEM, and the choice of using SEM software all are discussed in this chapter.

In addition, this chapter considers the importance of reliability and validity in social science research.

3.2   Research Design

Research design is the science and art of planning procedures for conducting studies so as to get the most valid findings (Vogt, 1993). While the previous sections explained the philosophical foundations of social science research in detail, this section will clarify the detail of the research design for this study.

The Philosophical Position of the Study

The philosophical approach of a research method rests on its assumptions involving the accepted features of the world, encompassing aspects like the mind, matter, reason and proofs for knowledge (Blackburn, 1994). Thus, the philosophical aspect of the research is very important for the process of investigation. In order to explain the philosophical basis of the existing research, it is essential to highlight the key schools of thought in social science: the positivist and paradigm. In the current study, the positivist paradigm was mainly adopted for several reasons.

First of all, in social science research, positivists claim objectivity, rationality, and the presence of a replicable term. In relation to the current research, these trends and traits of positivists' research are primary to the main objectives that this study seeks to achieve by evaluating the managers' practice interventions. In this study, top managers' attitudes towards several strategic alignment antecedents are considered (e.g. leadership, structure and process, service quality, value and belief, IT managerial resource, and IT implementation success) in terms of strategic alignment gap, and firm's sustainable competitive advantage. The researcher has re-used a method used

by researchers in different regions of the world, which meets the requirements expressed by the term, replicable.

Research driven by the positivist tradition is a systematic and methodological process (Koch & Harrington, 1998). This process adopts particular values such as rationality, prediction, objectivity and control (Streubert et al., 1999). These seem to be appropriate for the current study, since this study desires to assess several Jordanian senior managers' attitudes towards the area of strategic alignment, by employing hypotheses testing that requires a quantitative technique to deal with the data. In other words, a large sample from several settings will be required to generalize the results to all Jordanian firms. This research needs to be systematic, and also has to be driven by exact methodology for achieving its goals and objectives. Both objectivity and control are necessary in this research for many reasons. The first one is to avoid prejudice by top-IT senior managers on the topic of strategic alignment, which will be based on their opportunity. Second one is to have numerical data, which can be analyzed statistically without researcher interference. The last reason is to assess all participants by the same instrument and under the same conditions.

Feldman (2004) claims that epistemology must rely on empirical results in order to assist people for critical analysis. Yet positivist researchers believe that the qualitative work will not produce the objectivity they desire (Guba & Lincoln, 1994; Jardine, 1990). Most of the scientific studies investigating the attitudes of strategic alignment adopted the positivist approach as the most convenient to apply. Chan and Reich (2007) indicated that this approach offers the opportunity to collect and measure numerical data. Considering the aims of the study, a positivist approach is thought to

be more suitable for the current study. Furthermore, a positivist approach would enable a detailed comparison of the results of this study with those of other studies. This would have been more difficult using the interpretative approach.

For this study, it seems that the positivist approach meets the study objectives, which will be implemented in Jordan for the first time. One of the most essential objectives of this study is to create universal rules and policies to organize managers' strategies of orientations, which results in greater firm's sustainable competitive advantage. This objective can be achieved using positivist inquiry. Holton (1993) and Poole and Jones (1996) indicated that for creating and building knowledge, the positivist approach focused on discovering perfect and universal laws through the collective piecing together of bits of knowledge. For the purpose of creating such universal laws and rules, it is important to collect a large amount of data from a representative sample, which has to represent Jordanian firms. Therefore, based on the above arguments, and with regard to the nature of the research in the current study, the researcher believes that a positivist approach is the most appropriate for this study. In other words, as this research seeks to examine the factors and processes that could lead to strategic alignment, and to investigate the relationships between strategic alignment antecedents, and firm's sustainable competitive advantage through one mediating variable, namely strategic alignment, the researcher has adopted a positivist philosophical position, since this enhances causal relationships among the variables.

Research methods are related to research tools that are used to collect and analyze the data. Initially, a preliminary study was carried out to get the managers' perspective regarding possible factors that may affect strategic alignment. Main analysis of this study used quantitative data. The quantitative analysis was used to test the hypotheses of the study derived from the literature review, and from the conceptual framework presented in previous chapter.

3.2.1 Preliminary study

A preliminary study was used to get some perspectives from four (4) IT managers and four (4) business managers. The researcher arranged a time and a place convenient to both himself and participants to conduct an interview with these participants. The interviews were audio-taped individually. Field visits were undertaken to major public shareholding firms in Jordan between 20-6-2008 and 1-8-2008. Each interview was planned approximately 1 hour in length but in realty the average time taken was 45 minutes. The entire organization representatives brought up issues involving both IT managers and business managers concerned on strategic alignment. The main goal of the interview was to explore the actual factors that affect strategic alignment and to know the current situation concerning the alignment between IT strategy and business strategy. Moreover, data were classified into a few categories to examine any association among them.

A total of eight interviews were conducted with IT managers and business managers in Jordan. The content analysis of some interviews concerning some current practices in Jordanian organizations with regard to IT – business alignment was carried out. The interviews were transcribed and categorized into a few themes. The medium of the interview were in Arabic although the quotes in the discussion of this chapter were translated into English.

The interview process involved extensive note taking, which helped the researcher to highlight the most common issues raised by the interviewees in each interview. The analysis of the interviews data was aimed to illuminate important aspects (themes) related to the effect of the antecedents on strategic alignment followed by its effect on sustainable competitive advantage. It has been stated earlier that the antecedents in this study are leadership, structure and process, service quality, value and belief, IT managerial resource, and IT implementation success. Regarding the sample size for the interview, there was no agreement. However, the recommendation by Spector (1992) was to use simply a small sample.

Many factors are found as relevant antecedents of IT business alignment from the literature review which basically covers the western context and little of which focuses Asian or Jordanian context. The preliminary interview leads the researcher to narrow down the factors as potential antecedents. These factors are leadership, structure and process, service quality, value and belief, IT managerial resource as well as IT implementation success.

The interviews were conducted with eight Jordanian IT managers and business managers in an attempt to get more insights into the constructs. The following Table 3.1 presents the profile of the informants interviewed.

Table 3.1: Informants' Profile

Number	Gender	Age	Position	Experience	Sector
1	Male	35	IT manager	5	Banking
2	Male	40	IT manager	7	Service
3	Male	55	IT manager	10	Manufacturing
4	Male	51	IT manager	9	Insurance
5	Male	45	Business manager	8	Banking
6	Male	47	Business manager	6	Service
7	Male	40	Business manager	5	Manufacturing
8	Male	50	Business manager	4	Insurance

Data Reduction and Display – Quotes

As shown in the following Table 3.2 there are two groups, each group was given codes as shown:

Table 3.2: The Groups and cods

Name of the Group	Code	Number
IT managers	IT	IT1 to IT4
Business managers	BS	BS1 to BS4

The Interview Questions

Following are the questions asked during the interview:

Q1. What is the relationship between IT strategy and business strategy?

Q2.How about leadership in your organization? Do business and IT managers interact and communicate? And how frequently does that happen?

Q3. Could you tell me about structure and process? Is there any interaction/connection between business and IT departments?

Q4. Could you tell me about service quality and (value and belief) toward strategic alignment in the organization?

Q5. How do business and IT managers share knowledge? Do IT managers know and understand the work environment of the business function? And do top managers know and understand the work environment of the IT department?

Q6. How does IT implementation success motivate the employee to enhance strategic alignment in the organization?

Q7. How do you see the level of utilization IT strategy to enhance business requirement?

Data Analysis Strategy

The main goal of the interview was to explore the actual factors that affect strategic alignment and to know the current situation concerning the alignment between IT strategy and business strategy. Furthermore, the researcher followed the open-coding process by which the emerging themes referring to the underlying constructs

identified (Strauss & Corbin, 1990). Moreover, data were classified into six (6) categories to examine any associations between them. The next section shows the findings of the analysis based on the transcribed interviews.

Strategic Alignment**:**

Strategic alignment was one of eight critical themes that could have a direct relation with IT. Strategic alignment was categorized into eight important themes namely leadership, structure and process, service quality and values and belief, IT managerial resource, IT implementation success.

Leadership

The interviews among IT managers and business managers revealed that leadership between managers affects the relationship between the IT department and business department. The following statements highlight this theme:

IT1 Banking: *"Every company has its own internal communication system. We are allowed to communicate with other departments via electronic mails and memos. The memos are considered to be the formal way of communication with other managers to request our demands. We connect with them via face-to-face meetings, emails, and memos, which raise the alignment between us and them. ''*

BM1 Banking:*"In one way or another, yes, there is a connection between business and IT plans. For example, when the company decided to implement new software solution (the one we have implemented), their goal was planned at a high level of long-term planning, and of course taking into consideration the business and IT goals of the company. ''*

IT2 Service: *"In our daily activities, we interchange emails with the top management. In addition, we have a regular weekly meeting with the assistant manager to discuss all issues regarding IT. During the day, we have*

79

communication and mails with other departments. We meet with the steering committee and a monthly meeting is held with all the managers of the organization. This is to discuss all issues, how to improve the products and suggest new ones as well as to plan the goals, review what has been achieved and what is missing, and what we suggest to enhance the performance or achieve the results and goals of the company.''

BM2 Service:*"We communicate IT managers via face-to-face meetings which raise the alignment issue between us and them.''*

IT3 Manufacturing: *"We do not have meetings for all of the departmental managers; we normally meet at the end of the year, and normally we discuss about our needs but the top manager does not agree to any requirement of the IT department and looks upon our needs as expenditure.''*

BM3 Manufacturing: *"as purchasing managers, we do not agree with all the ideas given by IT department, normally we have more experience than IT managers to do the best for the organization.''*

IT4 Insurance: *"I don't find any necessity to arrange meetings with business managers. Mostly, I can decide what the requirements of each department are and send them to top management without any meeting.''*

BM4 Insurance: *"I prefer meeting with IT department every month only to give our requirement.''*

Based on the above, it can be noted that the respondents focused on many issues related to the role of the Chief Information Officer (CIO) with regards to IT activities as well as the role of the Chief Executive Officer (CEO) in relation to business management activities. Some of them complained about lack of leadership of top management resulting from lack of communication. Some of them stated that there was verbal communication but not adequate enough to identify the requirements of the business department.

There was concern about structure and process among the respondents. This referred to the gap between IT plan and business plan. To facilitate IT/business integration, appropriate structure and process are necessary. Many respondents indicated that there were no procedural mechanisms such as the involvement of business management in IT strategy formulation. The following statements highlight this theme:

IT1 Banking: *" As an IT department, we make our plans in cooperation with the management and discuss them. For the coming five years, we look at the management needs, vision and requirements for the new systems; and after that, we, as a computer department, start implementing the requirements. They actually cooperate with us. They provide us with all of the tools, money and any requirement needed to make the projects successful. So, I think that the relationships are directional between us. ''*

BM1 Banking: *" being the members of business department, we develop our plans in cooperation with the IT department based on the discussion with them.*

IT2 Service: *"In one way or another, yes, there is a connection between business and IT plans. For example, when the company decided to implement an ERP solution (the one we have implemented), their goal was planned at a high level of long-term planning, and of course taking into consideration the business and IT goals of the company. ''*

BM2 Service: *" In my organization, there is misconnection between IT plan and business plan. ''*

IT3 Manufacturing: *"In this company, there is a clear separation between IT plans and the business plans. Therefore, there is a huge gap. This gap occurs because IT always looks for things that give the employees the capacity to upload mechanisms to their work to increase their productivity, such as solutions, guarantee, quality, easy graphical user interface, and a system that contains all modern features, but the business managers like the purchasing manager are always looking to cut costs without looking at the quality. Some of the business managers look at the IT department as a costly centre, and wish to shut it down! Also, sometimes we need to buy a Windows license - can you imagine that some of the business managers are against this basic need? They say that this will increase our costs and affect the profitability! So, in such a situation, the gap appears between us and them. ''*

BM3 Manufacturing: *"Frankly, I do not like to deal with IT department, I feel IT unit decrease the profit in the organization. ''*

IT4 Insurance: *" Actually, I have IT plans for my department, but I do not know really what the business plans are for the company. This question could be asked to the general manager who maybe knows what the business plans are, and what he wants from my department. ''*

BM 4 Insurance: *"I do not have any idea about IT plan in our organization, sometime I can not understand the IT terminology. ''*

Based on the above statements, some IT managers do not know about business plans which affect the path to achieve organizational objectives. The reverse is also true where business managers view the IT department as a costly unit.

Service Quality

IT service quality is necessary to assess user satisfaction with application or system, as well as with the service provided for IT functions. Service quality recognizes that the provision of some IT functions is based on a customer-supplier relationship. This might entail meeting predefined or expected criteria and service levels, some of which may be enshrined in formal service level agreements. The service quality refers to the way that an organization provides products or services, which impact the degree of their customer's satisfaction. The findings of this research revealed some concerns related to service quality such as inadequate training programs, which affects the quality of the product or the service. Besides, other concerns related to the delivery of products or services. The following eight quotes from respondents are representative of these views:

IT1 Banking: *"As IT managers, we are able to update the network and buy new software which meet the business requirements and help improve products and services for clients. ''*

BM1 Banking: *" We can not buy any software to enhance the quality of our*

product, some time the high cost for software make me frustrated in improving our performance.. ''

IT2 Service: *" As IT managers, we always send our employees for courses within or outside the organization to improve their skills and help other business departments to find the best solutions for producing good products and providing good services. ''*

BM2 Service: *"Our business staff do not like to improve their skills so they are unable to fix the problem in time. ''*

IT3 Manufacturing: *"As an IT manager, I always find the top management cooperative. They always ask our department about their needs. Such cooperation does enhance the quality of products and services offered by the organization. ''*

BM3 Manufacturing: *"sometimes we can call the experts from outsourcing companies to train our staff for the purpose of enhancing the quality of our product or service. ''*

Another important issue brought up by the respondents was, when problems occur during the daily work, it cannot be resolved immediately. The following statement illustrates this point:

IT4 Insurance: *"As IT managers, we are looking for best solutions while decreasing the expenses of the business department. That happens when experts from outside the organization are brought in to help the employees to deal with e-marketing strategy to create channels for promoting our products and services. Sometimes, we are not able to control all the mistakes made by employees, and the problem remains until experienced staff from outside visit the organization and revisit our strategies. ''*

BM4 Insurance: *"I always find the IT department cooperative. Such cooperation does enhance the quality of products and services offered by the organization. ''*

Jordanian organizations need more training programs in order to have high quality products and services. Such lack of training leads to disagreement and misunderstanding between the IT and business units.

Values and Belief

Values and belief are very important because they play a critical role in IT issues. Business managers have to believe that IT is a crucial strategic requirement which in turn will reflect how they manage and deal with IT issues. The following quotes reflect this view:

IT1 Banking: *"As an IT manager, I feel better able to use manual system than automatic system. I do not like to use complex technology as I feel frustrated and afraid to make mistakes especially when training is inadequate.''*

BM1 Banking: *''I do not like to use any technology during my work, I prefer manual system as I do not have any idea about IT.''*

IT2 Service: *"As an IT manager, I cannot convince the business manager to use new system in the organization.''*

BM2 Service: *''I do not believe about the benefit of using information technology.''*

IT3 Manufacturing: *"As an IT manager, I find that top managers do not have IT basics, so I do not believe that they can improve the work status if I deal with them.''*
BM3 Manufacturing: *''As a business manager, I prefer to improve my skills to be able to use information technology.''*

IT4 Insurance: *"As an IT manager, I am not motivated to cooperate with top managers especially if they are afraid about their positions within the organization. So, I have no confidence in their role to develop the status of work inside the organization.''*

BM4 Insurance: *''I do not like to improve computer skills as I do not have enough time to do that.''*

Based on the interviewees' experiences, the researcher found that there was a gap between cultural, educational and IT utilization level. Most IT managers refer to the fact that most top managers or decision makers completed their studies before 1980. At that time, exposure to IT was hardly given. As a result, IT managers claimed that IT utilization faced resistance from managers because there was insufficient training on how important IT utilization would be both on their organizations and themselves.

Shared knowledge between business and IT managers is very important to enhance the IT managers' ability to exploit the firms' products, services, and processes. Moreover, IT managers and business managers stated the following regarding importance of business-IT shared knowledge. They gave several examples expressing that they understand and appreciate the business environment in terms of roles, tasks, and aims. Also, the business managers understood and appreciated the work undertaken by the IT department. The following manager considered IT as a very important factor in the sustainability of a firm:

IT1 Banking: *"Shared knowledge will help us to make our requirements much clearer; we will be able to understand the requirements of the other side. In this company, we have both sides. As IT people, we work as businessmen, since we know most of the business of the bank. On the other side, the management is aware of IT, they reply our needs. Also they are aware of the IT implications, additionally, we have common concerns and our relationship is reciprocal. ''*

BM1 Banking: *"It helps if the management knows and has some knowledge about IT. It will help us to make our and IT department's requirements clearer. On the other side, if IT has the knowledge of the business, it also makes it easy to understand the business for them. In this company, we have both sides. ''*

IT2 Service: *" I think the GM (general manager) is keen on integrating the latest technology in the world. However, he does not have complete knowledge of the details of IT. He may have a real desire to know more. Also, as an IT manager, I know where I have to go. I have a very clear plan for the end of this year and for five years later. Also, my major target is to maximize the applications of IT solutions in the company. ''*

BM2 Service: *"As business people, we work as businessmen and we know most of the business of the organization. In addition, the IT management has a good knowledge of the IT, and they understand our needs when we ask for something, and if we have specific request that needs to be explained then they listen. Also, we do not need to explain everything to them like before. Now it is different, they are well-educated even in deep details of the IT. ''*

IT3 Manufacturing: *"In my organization Most of our managers are engineers, some of them are electrical and communication engineers, so they know exactly what is going on. Also, some of them are IT electrics. ''*

BM3 Manufacturing: *"I wish we had one IT specialist in the board of directors. In my organization the top manager has some knowledge about IT. He is not an IT specialist, but still knows little about IT in general. For example, he knows that the high-technology computers lead to better performance in their work.''*

IT4 Insurance: "Shared *knowledge between business and IT managers is vital issue to understand each other. When the IT suggests that a certain point is applicable and should or must be done in a certain way, the management will understand. In this company they really appreciate and understand the IT needs besides their business needs.''*

BM4 Insurance: *" From my experience, I have seen a case in a company where the management did not understand the IT basis, they asked for some things that are too difficult to implement or they cannot measure the real means for certain projects. So they overestimated or underestimated the situations. But if there is good understanding of the IT basics from the management, then this will help both the IT and the management.''*

Pondering over the above quotes, we realize that the eight IT and business experts recognized the importance of understanding and appreciating the business tasks and objectives. They also recognize the significant positive role which IT plays in affecting their products and services. Therefore, the above findings provide strong evidence for the potential relationship that can be established between knowledge sharing, business strategy, and IT strategy.

IT Implementation Success:

It refers to management's ability to conceive, develop, and exploit IT Applications. The success of IT implementation is very important for IT managers to enhance the firms' services and processes. In this context, the following IT managers and business managers emphasized the importance of IT implementation. The following is a reflection of this view as can be seen from the eight quotes from respondents:

IT1 Banking: " I find IT utilization will offer a lot of benefit for business department, for example applied automation system will increase the productivity and decrease the effort and time for workers. ''

BM1 Banking: "As a business manager I understand that the management worries about the costs. So I always try to find a midpoint between IT department and me to achieve equilibrium combination of cost and quality. So I am looking for a good price with acceptable – quality product. ''

IT2 Service: "We have skills and proficiency in their employees, it is very easy to provide them with an updated technology .There are many experts available to the firm to develop a website on internet use and email. ''

BM2 Service: " If we face difficult situations that might affect our services and products, then the management come back to us as an IT department and call upon to solve their problems, often after a conflict with them regarding accepting our demands and needs. Such conflict occurs because at the beginning the management blames us and our role in the company. ''

IT3 Manufacturing: "I think that skilled workers and highly educated employees are more flexible and will facilitate the adoption of recent IT. ''

BM3 Manufacturing: "In the last two decades actually the whole company started depending on the IT including ready packages or the software. No manual process takes place, even if sometimes you need to have. So in this case if they have a disaster, and the computer does not operate, then the system will fail and will be in crisis. As this company has to meet unexpected conditions for work regarding earthquakes, floods, wars, and whatever, we build up our disaster recovery centre. We have an image to replicate our current system in a disaster place. ''

IT4 Insurance: " Some people at the managerial level feel that they are at risk and they should refuse new IT, so failures also pose a threat to the working relationship between IT and business executives by lowering trust, cooperation and support from users and management. ''

BM4 Insurance: "Because IT utilizes a mixture of processes of producing different products in our firm, the IT manager strives to renovate various products. So IT is the basic line of the company, by communicating our customers through the information systems. Moreover, the management gives power to the IT department and to the IT managers, because if there is not enough power for us as IT managers to apply our strategies, then there will be a lack of discipline for us and our IT services. Therefore, IT can communicate freely to the universe about our IT strategies and requirements, and also the management has got the responsibility to train the users in how to use IT systems. ''

The above eight IT and business experts recognized the importance of successful IT

utilization. Therefore, the above findings provide strong evidence for a relationship

between IT implementation success and alignment between IT strategy and business strategy.

Strategic Alignment

Results from interviews indicated that in many firms the level of utilizing IT strategies and solutions was high in order to enhance the business requirements and to guarantee steady growth. Therefore, strategic alignment was obtained by perceiving high exploitation activities in which IT managers played a vital role in designing and implementing the appropriate techniques. This assures that they meet the top management obligations. For instance, the following managers argued that their activities and relevant knowledge helped them in solving the IT-related daily problems and several technical demands from the top management.

IT1 Banking: *" Our computer department has its own annual budget which varies from 10 to 15 percent of the income of the company. As a department, we can buy our hardware to meet the business needs. We design all the systems and programs and implement them. We also build up the IT infrastructure for the bank. We are responsible for all the IT functions related to the bank activities related to ATMs, computer programs development, new programs requirements, new jobs assignments for employees, new clients training, etc. We have the support section that supports the whole bank. "*

BM1Banking: *" As a purchasing department we have our own monthly training courses regarding all activities of the bank in addition to the outside training course like ORACLE, SISCO networking, and risk assessment. Right employees are sent to attend the right course or the seminar. Indeed, the management is interested in developing the career of the employee at the bank. For example, the managers meet every three months and sometimes every month with new employees to encourage them, to explain the policy, and to encourage them to attend any courses inside or outside the company. However, some of the employees are forced to attend some of the courses to gain the knowledge and the know-how of the business. "*

IT2 Service: *" We do have our own daily works or the routine work, and we have to do it. Also we have our own budget for the training courses. Some of them are internal and others are external. This is inside and outside the country. "*

BM2 Service: *"In my organization the management tries to control us for our department's basic needs and infrastructures like purchasing some computers. I remember that one day the management consulted me to buy some laptops, which, I thought, they should not purchase. However, they bought those laptops, and after using them for one month, I was asked to fix those computers, something which was not my responsibility from the beginning.''*

In a similar vein, another respondent pointed out that the exploitation work he accomplished has come largely from the business requirements. In addition, IT members have to be highly skilled in order to face the firm's demands. Therefore, they were sent inside and outside the country to attend appropriate training courses.

IT3 Manufacturing: *"First of all, our company is a member of a global French company. How we work here in LAVARCH group is: firstly, they have an ERP template, the enterprise resources planning application. The business people meet together to discuss their business needs and they write the rules and the process for finance, sales and inventory departments. After that they decide the process what should be in this or that way, like choosing the ERP system.''*

BM 3 Manufacturing: *"The business department sets their requirements or the process of the business when they have decided to establish a template for supply chain management application. Such a template is created from the group or the parent company, and then they decide that every company should use this template, so let us say that first of all the business requirement has been determined, after that we, as an IT department, have to implement the tool to fit their business. Therefore, in this case we have to set the IT infrastructure and training to fit their requirements. ''*

IT4 Insurance: *"In this company we have been forced to meet the management needs by modifying some processes like the customs process, by going back to the group to get the approval for such modifications. So IT is forced to fit the business, which is defined at the group level. However, it is very important to raise the level and experience of the IT staff. ''*

BM4 Insurance: *"We have a yearly budget for IT training for every IT member to improve their skills by sending them to attend training courses inside or outside Jordan. For the daily tasks, we do our routine work which must be done, like updating the applications, for instance. ''*

Based on the above comments, most of the interviewees in this study expressed their engagement in their routine works in different ways. Furthermore, these excerpts expressed how exploitation activities have enabled them as IT managers to be more

effective, and to offer more technological architecture and visions to their top management.

Conclusions and Implications from the preliminary study

These interviews demonstrate that there are six factors and themes that affect the relationship between IT strategy and business strategy. In summary, there are basically six factors which affect IT-business strategic alignment. Leadership is one of the most critical issues including communication via electronic mail and verbal communication. In this research, some IT managers are worried about communication with business managers. Therefore, it is vital for IT managers and business managers in an organization in order to know the requirements for the organization as a whole. Table 3.3 below summarizes the main themes related to the interview.

Jordan currently is in the early stages of integrating IT application. IT managers suffer from the lack of involvement in business strategy to achieve the objectives of their organizations. In other words, there is a gap between the IT plan and business plan. To alleviate this, business managers and IT managers must establish a rapport to fill this gap and consequently achieve the business objectives.

Table 3.3: Summary of Themes

Issues	IT1 banking BS1 banking	IT2 service BS2 service	IT3manufacturing BS3manufacturing	IT4insurance BS4 insurance
Leadership	Higher level of communication through face to face, electronic mail and memos	Higher level of communication through regular meeting	Less level of communication at the end of the year	There is no communication between IT department and top management
Structure and process	Higher level of cooperation between IT department and top management	Higher level of cooperation with high level of long term planning	Lower level of connection between IT plan and business plan	There is a gap between IT plan and business plan
Service quality	Greater level of concern to improve service	Greater level of concern to find best solution to enhance service	Greater level of concern to enhance service	Lower level of concern to enhance service
Value and belief	Have less technical knowledge	Have less technical knowledge	Higher Negative attitude toward s IT	Higher Negative attitude toward s IT
IT managerial resource	Higher level of sharing knowledge between IT department and top management	lower level of shared knowledge between IT department and top management	Lower level of sharing knowledge between IT department and top management	There is a Lowest level of sharing knowledge between IT department and top management
IT implementation success	Having higher success of IT utilization	Having higher success of IT utilization	Having higher success of IT utilization	Having lower success of IT utilization
Strategic alignment	high levels of utilizing IT strategies and solutions to enhance the business requirements and growth	Higher level of training to meet business requirement	high levels of utilizing IT strategies and solutions to enhance the business requirements and growth	high levels of utilizing IT strategies and solutions to enhance the business requirements and growth

The success of a company heavily depends on the success of IT in an organization. This research is also indicative that IT managers are not fully satisfied with the quality of products or services. They complain about inadequate training programs which lead to a lack of skills. Service quality is a good channel for some interactions among the departments, and it can assess user satisfaction with application or system as well as the service provided by the IT unit. Negative values, unconstructive beliefs, and resistance to change are due to fear of complexity in using technology, as well as lack of confidence to use technology to enhance business improvement.

IT managerial resource revolve around higher level of knowledge sharing between IT department and top management, which affect integration between IT strategy and business strategy. Finally, IT implementation success happens if the managers have higher success of IT utilization that will enhance alignment between IT strategy and business strategy and if the managers have less success of IT utilization that will hinder the alignment between IT strategy and business strategy.

This is represented by disharmonious relationship strength of which is substantially high or low between business strategy and IT strategy. This jeopardizes the opportunity to gain strategic advantage from using IT properly. Strategic alignment is a dynamic process and is very difficult to achieve due to the continuous change process in business and technology. Therefore, for organizations to achieve and sustain business-IT strategic alignment that will lead to a sustainable competitive advantage and gain business value, organizations have to address few important steps.

 Firstly, organizations must define effective management practices that involve knowledge, skill and practices for both business and IT management people where IT people and business people have to be highly skilled and knowledgeable with business management issues. Secondly, refresher courses on new IT knowledge and technology for both business and IT management are highly needed as IT is continuously evolving with rapid development and progress. In addition, more attention should be given to cultural change within the organization in order to change business practices. It is also crucial to   create a business-IT culture among people in the organization in order to have a business-IT culture oriented environment. The findings have been published in a journal (see Appendix P).

3.2.2   Survey Method

In surveys method data are collected from a sample of individuals in a self-reporting format. This is the most general design of obtaining quantitative data (Parahoo, 1997). A number of advantages make survey method a good choice. Among them, cheapness and greater geographical scope compared to other techniques including personal interviews are two. Also, it allows respondents to take more time to complete the survey. Therefore, this method is appropriate for the current study, since data collection involves a large number of respondents from several Jordanian economical sectors.

In addition, since the phenomenon aimed for partial investigation under current study is a new and unknown in Jordan, the author found that this study should be descriptive as well as causal. Besides, this study tends to describe strategic alignment antecedents and consequences as a phenomenon, knowledge of which is limited in the context of Jordanian firms. What's more, the quantitative research carried out to test the hypotheses, which are derived from the literature review and from the conceptual framework presented in the previous chapter. Therefore, the researcher decided to use a questionnaire as a key data collection method, due to its appropriateness for the aims of the study.

3.3   Research Execution

After the sections above explaining the philosophical basis and design of the research in great detail, this section describes the ways in which the study was executed. This

is done by explaining the research population and sample frame, the adequacy of the sample size, the development of the research variables and piloting study, the survey questionnaires translation, and data collection methods in terms of survey.

3.3.1   Research Population and Sampling Frame

According to Sekaran (2003), while population relates to the full group of people, events, or things of interest that a researcher requires to investigate, the population frame is a listing of the elements in the population from which the sample is drawn. In general, larger firms have more experience of IT than smaller ones, and strategic alignment is more likely to be visible in larger firms which have more organizational slack (resources). This, in turn, enables managers to invest in the alignment of business with IS strategies. Accordingly, current study chose this type of firm as the focus for the research. The research population consists of all Jordanian banking, insurance, services, and industrial companies that have a registered website, and which engage in business and IT activities.

A pilot study was conducted in February, 2010, on four Jordanian public companies. The sample frame was determined from the (ASE) Amman Stock Exchange (www.ase.com.jo) which included 280 firms from the four sectors. These firms are considered as the most powerful public shareholding firms. The companies consist of 23 banks, 92 insurance companies, 68 services companies, and 97 industrial (i.e., manufacturing) companies. Since it is so hard to collect data from each element (due to the limitation of the study regarding time and budget), sampling was considered as

the process by which a researcher selects adequate number of elements from the population.

However, since the main idea of this research is to develop and empirically test a comprehensive model that includes several factors affecting IT-business strategic alignment and the effects of IT-business alignment on firm's sustainable competitive advantage, it is intended that practitioners will be able to use the framework to walk through their investment decisions. They are also intended to understand, to recognize, and to appreciate the resources and conditions necessary to realize the potential value of their IT investments. Such idea will be achieved by collecting data and information from people who have experience, and who are working in Jordanian public shareholding firms as policy makers.

Stratified random sampling could be the best way from the above sampling designs when there are strata populations available and able to provide the information needed (Sekaran, 2003). The IT managers were targeted for the survey, since they would offer the primary source of information about the research variables. In addition, from the preliminary interview, the researcher found that there is a gap between cultural and educational level and IT utilization. Most IT managers refer to the fact that most top managers or decision makers completed their studies before 1980. At that time, exposure to the importance of IT was not given. As a result, IT managers claimed that IT utilization faced resistance from managers because at that time there was insufficient curriculum to teach them about the importance of IT utilization. It, subsequently, increased their consideration of its impact on both their organizations and themselves.

Another reason the researcher found is IT managers have educated in business issue and most of them have knowledge in marketing, purchasing, and in strategic planning. After this type of reasoning the researcher test response bias to see if there is significant difference between IT managers and business managers. The result indicated that there is no significant difference between IT managers and business managers toward these strategic alignment issues (see page, 121).

One important question can be whether the researcher has used a large enough sample to enable him to address his research questions adequately (Mason, 2002). This is why the researcher included the top IT personnel from each of the 280 companies in his sample size in an effort to achieve the highest response rate.

3.3.2   Adequacy of the Sample Sizes

Essentially, the larger the sample size, the more representative the sample will be of the population of interest and this in turn will lead to more generalized findings. However, whether the sample size is sufficient for the estimation of structural equation modeling is a debatable issue. While Hair et al. (1995) recommended that a feasible sample size should be between 100 and 200, in order to be adequate for the data analysis, Krejcie and Morgan (1970) provided guidelines for sample size decision, which are illustrated in Table 3.4. It was decided to make the sample size as large as the resources permitted, in order to secure a representative sample and to create more generalizable findings. The author aimed to engage all IT managers from the 280 firms. Thus, the minimum sample size for this study is 162 (refer to Table 3.4 below). The sample was randomly selected from the suitable population who meet the

inclusion criteria. Different IT managers were selected to ensure that the sample population included genders, all ages, and different sector specialties.

Table 3.4: Sample Size (S) for a Given Population Size (N)

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375

N	S	N	S	N	S
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

(Source: Sekaran, 2003)

3.3.3 The Development of the Instrument Constructs

The measures employed in this research were adapted from previous studies in management and IT. All the research constructs were measured using closed-end seven-point Likert-scale items, with scales ranging from 1 (strongly disagree), through 4 (neither agree nor disagree), to 7 (strongly agree). The scale of 1 represents the strongest negative attitude towards the statement, whereas the scale of 7 represents the strongest positive. The mean score calculated from the total scales for each construct were used in the analysis process.

Several scholars (e.g., McCormack & Hill, 1997) stated that piloting or pretesting in research should be carried out in order to examine the effectiveness of the survey before commencing the full operation. In addition, Bagozzi (1996) emphasized that the questionnaire should be reviewed by a group of experts who are knowledgeable about the theory and methodology used in a study. Accordingly, survey measures were assessed by one academic staff in Malaysia, and two academic staffs in Jordan, who participated in the pilot study and all of them, have professional qualifications in

management and IT. The survey was reviewed in Jordan by three IT managers as a sample of respondents. The managers are professional people working in different industrial sectors of the Jordanian public listed companies, with significant experience in management and IT fields. The feedback from the participants revealed several points about the question rating, wording, and length.

As one of the goal of pilot study, Sekaran (2000a) mentioned about the correction of any inadequacies in the instrument prior to data collection. The researcher sat and discussed with the respondents about any confusion they felt while they were completing the questionnaire to identify difficulties in wording and translation. The reliability test for each instrument was calculated using the pilot study data. In this regard, the researcher piloted the main study. The questionnaires were given to a sample of managers consisting of 30 respondents conducted in Amman. Then, the questionnaire was checked and revised by the researcher for any inadequacy that may have emerged when the respondents answer the items. After that, the data was analyzed using SPSS for reliability. Table 3.5 shows the reliability coefficient (Cronbach's Alpha) for multiple used items in the pilot study.

Table 3.5: Reliability Coefficient for Multiple Items in Pilot Study (n = 30)

Variable name	No. of items	Cronbach's Alpha Pilot/30
leadership	6	.90
Structure and process	6	.87
Service Quality	5	.75
Value and Belief	6	.92
IT managerial resource	4	.80

IT implementation success	5	.81
Strategic alignment	6	.88
Sustainablecompetitive advantage	6	.90
Total	44	

As shown in Table 3.5, each construct shows Cronbach's alpha readings of acceptable values of above 0.60 (Hair et al., 2006). A reliability values for all constructs are ranging from 0.75 to 0.92. This indicates that all constructs have acceptable internal consistency. Thus, the final actual distribution was conducted without any modification regarding the final form of English language questionnaire (see Appendix A).

First of all, since Churchill (1999) stated that both three or less, and eight or more points of scales are not superior enough, this study used a closed-end seven-point rating scale. The scale is ranged from 1 point, 'strongly disagree', through 4 points, seeing that 'neither agree nor disagree' to 7 points as 'strongly agree'. Besides it is recommended that the wording of the questionnaires should be simple, and the length of the instrument should be acceptable as well. For this purpose, some questions were re-modified to suit or present clearer questions. In the piloting process, it took about 20 minutes for the respondents to complete the questionnaire. As shown in Table 3.6, the questionnaire was quite lengthy, but still acceptable.

In the questionnaire, besides the data about the IT managers' demographics (e.g., age, gender, years of experience, Type of sector, and field of study) the constructs involved are: leadership, structure and process, Service quality, Values and beliefs,

IT managerial resource, IT implementation success, Strategic alignment, and sustainable competitive advantage.

The Leadership construct was measured using six items which were drawn from Ward and Griffiths (1999). After a modification and recommendation from the academic pilot study, this study used a six-items measure scale to suit the IT managers. The 7-point scale ranged from 1 (strongly disagree) to 7 (strongly agree). Structure and process was adapted from Peppard and Ward (2004), which consists of six-items. IT managerial resource was determined here to include the level of understanding and appreciation of the business managers about the IS work environment, the level of understanding and appreciation of the IS managers to the line organization, and how much business managers know about IT projects. The items that measure this construct were taken from Nelson and Cooprider (1996). However, after the pilot study was conducted, one item was removed from the scale, and some modifications of wording were made to suit the Jordanian industry. Service quality construct was measured using five items, which were drawn from Pitt et al. (1995). Values and belief construct was adapted from Grindly (1992) by including six items. Strategic alignment construct was measured using six items which were drawn from Pierce (2002). IT implementation Success construct was measured using five items, which were drawn from Sabherwal and Kirs (1994). Sustainable competitive advantage was measured using six items adapted from DeVilliers (2006).

All in all, the pilot testing procedure has improved the questionnaire in many ways. It refined the instrument, clarified the vagueness of the wording in the survey items, and

considered the issue of cultural differences where the expectations of the respondents in the developing country (i.e., Jordan) might be different from a developed country.

Table 3.6: The Research Questionnaire's Items

Leadership

A1. There are regular meetings between business and IT manager.

A2. There is a nominated liaison position between business and IT managers.

A3. Your firm uses temporary task forces for IT projects or new product development.

A4. Your firm uses stable teams or committees to steer IT development.

A5. Your firm sometimes let the IT managers to share in the product development teams.

A6. Your firm sometimes let the business managers to participate IT development teams.

Structure and process

A7. The IT plan reflects the business task.

A8. The IT plan reflects business goals.

A9. The IT plan supports the business strategy.

A10. The business plan refers to the IT plan.

A11. The business plan refers to specific IT applications software.

A12. The business plan refers to specific IT hardware.

Service Quality

A13. The services provided by IS have excellent quality.

A14. The service   provided by IS matches my expectations.

A15. IS system delivers superior service in every way.

A16. IS system offers a very competitive service.

A17. Organizations have good relationship with local or international businesses

Value and Belief

A18. Managers have trusts of their knowledge towards IS specialist.

A19. Managers trust the knowledge possessed by IT specialists .

A20. IS for experts must be responsible for consolidating their organizations.

A21. Managers comprehend IS terminology well at all levels.

A22. IS enhances their productivity among managers.

A23. IS specialists offer strategic plans for improvement.

IT managerial resource

A24. Business managers in your company understand problems, tasks, and roles of the IT department.

A25. Business managers in your company understand the accomplishments of the IT department.

A26. IT managers in your company understand the work environment of the business functions.

A27. IT managers in your company understand the activities of the business functions.

IT implementation success

A28. IS managers will be kept updated with strategic business plan.

A29. IS affect the efficiency/ effectiveness in decision making.

A30. IS will save expenditures of running an operation.

A31. Top management provides internal training.

A32. New products and services introduced in my company are based on advances in information technology.

Strategic alignment

A33. Our IT planners are aware of the firm's objectives, business strategies, and long term goal

A34. Our firms business plans offer clear directions for IT planning

A35. Our IT managers participate in strategic business planning

A36. Our IT and business planners interact closely in the formulation of the IT strategic plan

A37. Our IT strategy is derived from business strategy

A38. Our business and IT strategies are fully integrated and are developed together

Sustainable competitive advantage

A39. My organization gives attention to develop discovered ideas into new services, processes, and procedures.

A40. My organization introduces services that are new to the market it serves.

A41. Preferred market positioning can contribute to competitive advantages in the market place.

A42. Access to superior limit resources can contribute to competitive advantages in the market place

A43. Exploiting unlimited resources can contribute to competitive advantages in the market place.

A44. Access to superior competencies and capabilities can contribute to competitive advantages in the marketplace.

3.3.4   Questionnaires' Translation

The questionnaire was designed in English language in the Malaysia, and was tested previous to distribution by native English speakers to ensure that it was easy and clear to understand. However, because of the nature of the sample population, which consists of native Arabic language speakers, it was important to translate the questionnaire into Arabic. Therefore, the questionnaire was translated into the Arabic in Jordan by one of the linguistic lecturers at the University of Jordan. Furthermore, back translation from the Arabic to English was also conducted, and the differences were resolved due to the differences between the two languages. Finally, the questionnaires were distributed to the sampled Jordanian companies (see Appendix B).

3.3.5   Test Response Bias

Response bias assists the researcher to detect if respondents answered questions based on the researcher's idea in which it may affect the findings as a type of cognitive bias. T-test was conducted to examine if there was any significant difference between the early and the late response (Pallant, 2001). In this study the researcher used t-test to see if there was a statistically significant difference in the mean scores for two groups of respondents.

3.3.6 Data Collection Methods

Because of limited time and resources, and the author's experience of Jordanian firms' unwillingness to obtain part in telephone/postal/email surveys due to the erratic Jordanian internet and postal systems (i.e. underdeveloped and/or traditional systems), the research was conducted by using drop-and-collect surveys, which can cover large samples of the population.

This technique is less expensive, and consumes less time than some other methods such as interviews, and it covers a wider geographical area than self-administered surveys. In addition, the drop-and collect method response rate is high, because the researcher personally distributes and collects the questionnaire surveys from the respondents.

Survey Execution

The author travelled to Jordan to perform the fieldwork, including the subsequent follow-up actions, between February and April 2010. To conduct the fieldwork, the author visited following areas: Amman, Zarqa, Irbid, Sahab, Ramtha, and Salt. The area of research was distant (about 200 km). Moreover, the weather was very cold in Jordan during the data collection period; this was frustrating but unavoidable. In order to ensure adequacy of response, a cover letter accompanied each questionnaire to highlight the importance of the respondents' involvement to them. One cover letter from the researcher was attached with each questionnaire survey, explaining the research objectives with the assurance of the confidentiality of the information they

provided. Each cover letter was sent directly to the firms' IT managers, and they were asked to fill in the survey. Also, in order to increase the response rate of the drop-and-collect surveys, questionnaires were distributed to the companies by visiting them in person and asking them to meet the IT manager to fill the questionnaire. A letter from the department of IT, University Utara Malaysia was used for official recognition. This letter offered a brief introduction to the research and its objectives, and requested permission to conduct the research. The University supported by providing this letter in English and Arabic (see Appendix C, D).

An important consideration was the inability of most of the participants to allocate their work time for questionnaire completion immediately. In such cases, managers and executives were given a blank questionnaire that would be collected from them personally on completion after a few days. Since the sample was spread over a wide geographical area the timing of data collection was another serious issue. To manage this, the author developed a time-saving strategy by distributing the questionnaire surveys to each area separately.

Several follow-up actions were undertaken to guarantee a higher rate of response for the survey, which can support the criteria of the study requiring a minimum number of 162 respondents (Krejcie & Morgan, 1970). For example, friendly phone calls were used after two weeks from the date of the survey distribution to those IT managers in the sample whose responses have not been acknowledged. After another two weeks, polite reminders in the form of phone calls were sent to the managers (through their secretaries) to complete the surveys. Replacement survey questionnaires were sent to those who reported they had lost the originals.

The survey instrument used in the current study was questionnaires made up of several parts. These include the cover letters being distributed to a total of 200 IT managers from 280 companies, including 23 banks, 92 insurance companies, 68 services companies, and 97 industrial companies. The author himself and a volunteer delivered the questionnaires personally to the companies. Of the total sample, 172 survey questionnaires were returned, representing a response rate of 86 percent. An initial analysis of the responses indicates that 20 (11.6%) of the total 172 respondents belong to the banking industry, 72 (41.9%) belong to the insurance industry, 51 (29.7%) belong to the services industry, whereas the remaining 29 (16.8%) belong to the manufacturing industry.

In order to comply with the statistical sample size condition, the current study required a minimum number of 162 respondents, which is between 100 and 200 respondents (Hair et al., 1995). It is important to mention that the data collection method (i.e., drop-and-collect) was an effective way to get a high response rate. Initially, Sekaran (2003) said that the response rate using such method could potentially be 100%. Also, given the sensitive nature of the information requested from the respondents, and the length of the research instrument, the response rate achieved (i.e., 86%) is acceptable. Table 3.7 below shows the survey field work.

Table 3.7: Summary of Survey Field Work

Place for conducting survey	Jordan
Time for distribution questionnaire	1-2-2010 until 1-4-2010
Area for distribution questionnaire	Amman, Zarqa, Irbid, Sahab, Ramtha, and Salt
Unit of analysis	Jordanian public shareholding firm which consist of banking, insurance, service and industrial
Distribution questionnaire strategy	The researcher distribute questionnaire for each sector separately
Response rate	86%

3.3.7   Reliability and Validity

After dropping the final version of the survey to the targeted firms, the collected data were acceptable in the assessment of the reliability and validity of the instruments. Reliability analysis is related to the assessment of the degree of consistency between multiple measurements of a variable, whereas validity analysis refers to the degree to which a scale or set of measures accurately represents the construct (Hair et al., 1998).

There are several ways in which the reliability of research can be assessed. The most common reliability test is internal consistency, which measures consistency across the variables in a summated scale (Hair et al., 1998). Churchill (1979) stated that the individual items or indicators of the scale should be assessing the same construct, and should consequently be highly inter correlated. The recommended method to test the internal consistency of the total scale is Cronbach's alpha (Nunally, 1978). Churchill (1979) argued that a low coefficient alpha shows that the sample of items performs

poorly together in assessing the construct, while a larger coefficient alpha signifies that the indicator correlates well with true scores. However, some scholars (e.g., Robinson et al., 1991) recommended that the lower limit value for the coefficient alpha is 0.70, and might decline to 0.60 in exploratory research. Indeed, the values of all indicators or dimensional scales should be above the recommended value of 0.60 (Bagozzi & Yi, 1988; Baker, 2003). The values of Cronbach's alpha for this study are empirically presented in the analysis chapter.

There are several common techniques to test research validity, which includes content, or face validity, and construct validity. The construct validity consists of convergent validity and discriminant validity (Bagozzi, 1996; Churchill, 1999). Content validity relates to the extent to which measures seem to measure what they are supposed to measure (McDaniel & Gates, 1999). For this study, content or face validity is achieved by asking one academic staff member in the University Utara Malaysia, and two academic staffs in Jordan, to check on the survey items. The survey questionnaire was pre-tested in Jordan by three IT managers as a sample of respondents to get input on any question. After the modifications on this and some other minor issues, during the pilot process, the respondents agreed that the measures reflect the construct concerned.

In addition, convergent validity and discriminant validity tests are recommended by several scholars (e.g., Churchill, 1979; Jöreskog & Sörbom, 1996). Convergent validity refers to the degree to which items or measures are correlated with each other to measure the same construct. Therefore, higher correlation shows that the scale is assessing the aimed construct. Discriminant validity refers to the truth that measures

used in a study are unique, and are not a reflection of some other concept (Churchill, 1979). This is to say that the items for different constructs should not be very highly connected. Their degree of connection should not be such that someone might conclude that they measure the same thing. Therefore, the discriminant validity test aims to test whether two constructs differ. Also, convergent validity could be measured by using the reliability of individual items, the reliability of the constructs (i.e., composite reliability), and the average variance extracted (Fornell & Larcker, 1981; Bagozzi & Yi, 1988; Chau, 1997).

While the individual item reliability is recommended to be greater than 0.50 (Jöreskog & Sörbom, 1996), the composite reliability should be more than 0.60 (Bagozzi & Yi, 1988), and the average variance extracted should be at least 0.50 (Bagozzi & Yi, 1988). In addition, discriminant validity could be evaluated by constraining the correlation between any two constructs to 1.0, and performing a chi-square difference test between the constrained and unconstrained models (Anderson & Gerbing, 1988). Consequently, discriminant validity is achieved when the value of chi-square for the constrained model is larger than the value of the unconstrained model (Bagozzi & Phillips, 1982). The following chapter will present the empirical evaluation of these validity tests in detail. While this section described and explained the importance of reliability and validity employed in this research, the next section will investigate the data analysis techniques employed in the current study (i.e., the Structural Equation Modelling method), and the choice of using AMOS software.

3.4 Data Analysis Techniques

This study used two main statistical tools to analyse the survey data. This methods consider a general descriptive analysis was conducted by applying SPSS version 15, to obtain a summary about the respondents' demographic characteristics by using the response means, frequencies, and standard deviations, alongside initial data examination (such as reliability tests). Subsequently, the data was analysed by using the Structural Equation Modelling (SEM) method, with AMOS version 6, which involves confirmatory factor analysis and structural model analysis. Finally, the remaining discussion will provide some initial background of the reasons behind using SEM, and the choice of using SEM software.

3.4.1 Structural Equation Modeling (SEM)

This study identifies a new set of variables that should be taken into account if firms are to succeed. The relationship between strategic alignment antecedents, strategic alignment, and sustainable competitive advantage variables will be tested empirically using Structural Equation Modelling (SEM) techniques, using the AMOS software package. SEM is a statistical methodology that uses a confirmatory (i.e., hypothesis-testing) approach to the analysis of a structural theory, bearing certain phenomena in mind. Normally, this theory embodies 'causal' processes that make observations on multiple variables (Bentler, 1988).

SEM serves purposes similar to multiple regressions, but in a more powerful way, which takes into account the modeling of interactions, non-linearities, correlated

independents, measurement errors, correlated error terms, multiple latent independents (each measured by multiple indicators), and one or more latent dependents, also with multiple indicators. A confirmatory approach of data analysis is required to replace the exploratory factor analysis that multivariate procedures use. By using multivariate procedures it is difficult, if not impossible, to conduct hypothesis testing (Byrne, 2001).

In the examination of the complex pattern of the interrelationships among the numerous variables in the current study, SEM was chosen for several reasons. First, it allows the use of multiple indicators to measure constructs and to reduce measurement errors by having multiple indicators for each latent variable. Second, it can evaluate causal relationships between multiple constructs simultaneously (Jöreskog & Sörbom, 1982). Third, it can be used to get insights into the direction of influence between research constructs, and to test how variables affect each other and to what degree (Judge & Ferris, 1993). Fourth, it can provide an overall assessment of the fit of the proposed model, and test the individual hypotheses rather than coefficients, which is the case within multiple regressions. Fifth, it has the ability to model mediating variables (indirect effects), and features an attractive graphical modeling interface. Sixth, it can incorporate unobserved and observed variables in data analysis, rather than using only observed measurements with multivariate procedures (Byrne, 2001).

Given these advantages of SEM, it could be used to test different models of fit, and to build up an overall model that best presents the data, and in turn advances the development of theory. SEM can be divided into two sub-models: a measurement

model and a structural model. Whereas the measurement model identifies relationships between the observed and unobserved variables, the structural model defines relationships among the unobserved (i.e., latent) variables, by specifying which latent variables directly or indirectly influence (i.e., cause) changes in other latent variables in the model (Byrne, 2001). In other words, the structural equation modelling process consists of two components: validating the measurement model, and fitting the structural model. While the former is accomplished through confirmatory factor analysis, the latter is achieved by path analysis with latent variables.

By specifying a model on the basis of theory, each variable in the model is conceptualized as a latent or unobservable one, which is measured by multiple indicators. A number of indicators are developed, with at least two or three per latent variable (following confirmatory factor analysis). Also, based on a large representative sample, and to validate the measurement model, common factor analysis or principal axis factoring is used to establish which indicators seem to measure the corresponding latent variables. Two or more alternative models are then compared in terms of model fit, which measures the extent to which the covariance predicted by the model correspond to the observed covariance in the data. Further, modification indexes and other coefficients may be used by the researcher to modify one or more models to improve fit (Kline, 2005).

Dependent latent variable in one model equation plays as independent variable known as endogenous latent variable. These include mediating and pure dependent variable. This study consist of eight constructs (latent variable) which consist of six exogenous

variables (Independent variable) as follows: Leadership, structure and process, service quality, values and beliefs, IT managerial resource, IT implementation success. It also consists of two endogenous variables (dependent variable) as follows: strategic alignment, and sustainable competitive advantage. Finally, strategic alignment is undertaken as mediating variable.

The best-known SEM statistical programs include LISREL (Linear Structural Relationships); AMOS (Analysis of Moment Structures); and EQS (Equations). Among them, AMOS, is developed by Arbuckle (1977). It has a number of advantages over the other programs. This package has a user-friendly graphical interface and method of specifying structural models (Kline, 2005). In addition, it is easy to use the program, particularly, for showing hypothesized associations among variables. In addition, McDonald and Ho (2002) state that AMOS is widely used in the field of MIS and management studies for the structural equation models, which, together with other advantages, makes it applicable to this research.

3.4.2   Hypothesis Testing

This study is meant to test thirteen direct hypotheses, and six indirect hypotheses including the mediating effect as mentioned earlier in section 2.7.4 (refer to page, 68).

Direct Effect

Direct effects are the relationship between two constructs with a single path (Hair et al., 2006). In other words, a direct effect is the effect variables have on another in a

direct relationship. In this study there are thirteen direct effects, as mentioned earlier. To make sure that all paths in the model are either supported or rejected, we should be certain with the recommended values (C.R and P value). Critical ratio (C.R) refers to the parameter estimate divided by an estimate of its standard error. C.R should be more than 1.96 to achieve recommendation value (Hair et al., 2006). This means that if C.R is more than 1.96, it supports this path, but if C.R is less than 1.96 that means it does not support the path or rejects the hypothesis.

However, probability level (P value) provides a cut-off beyond which we assert that the findings are 'statistically significant' (by convention, this is $p<0.05$). Furthermore, "smaller p-values ($p<0.01$) are sometimes called (highly significant) because they indicate that the observed difference would happen less than once in a hundred times if there was really no true difference" (Davies & Crombie, 2009, p. 4).

Indirect Effect

Regarding the indirect effects, there are relationships that involve a sequence of relationships with at least one intervening construct involved (Baron & Kenny, 1986). This study examines satisfaction and intention as mediating effect. According to Brown (1996), to examine the indirect paths there are some steps to follow:

1. Total indirect effect, which consists of all paths from one variable to another that are intervened or mediated by at least one additional variable .
2. Second type is the total effect, which is the sum of the direct and total indirect effects in the model.

3. Third type is the standardized indirect effect, which is the decomposition of the total indirect effect into standardized indirect paths.

After comparing between indirect effect and direct effect, we can confirm if this path is a full mediator or not. This is through obtaining the values of both direct and indirect effect as in the example below.

As shown in Figure 3.1 , the mediating effect only can happen when there are three variables, namely, independent variable (Leadership), mediator variable (Strategic alignment), and dependent variable (Sustainable competitive advantage). We can calculate the result of mediating effect during estimating each variable from output of analysis. Therefore, if the indirect effect (LS→SA→ SUS) is more than direct effect (LS → SUS) and all paths are significant, then it can be considered as full mediator. In contrast, if indirect effect is less than direct effect, it is not considered a mediator.
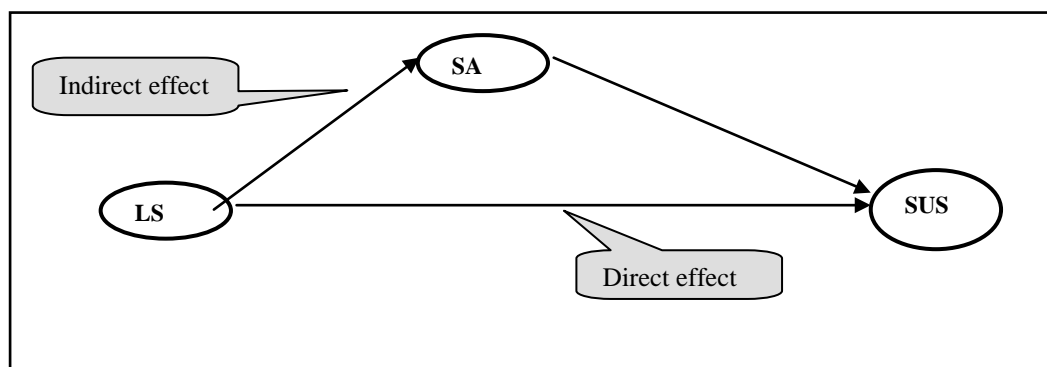
Figure 3.1 A SEM Model with an Example of Direct and Indirect Effects

 3.5   Summary

This chapter offers specific details regarding the research methodology and designs employed in the study.   Positivist studies attempt to test a theory and to increase the

predictive understanding of phenomena using quantitative approach. The methodological approach adopted to address research questions of this study is quantitative and interview in a preliminary study. The quantitative survey conducted in Jordan to reveal the factors that contribute to strategic alignment activities, and their relationships to firm's sustainable competitive advantage.

In the process of the survey, the questionnaire was pre-tested for readability with several academics and IT managers, which led to certain modifications. This study consisted two data sources: the returned questionnaire surveys of the 172 IT managers of their companies. For the purpose of analyses of data, SEM, which is appropriate in modeling causal relationships is stated to be the most suitable technique for analyzing the quantitative data from the questionnaires by using AMOS version 6.

CHAPTER FOUR

QUANTITATIVE ANALYSIS

4.1   Introduction

This chapter outlines the research results based on the analysis of collected data using

Structural Equation Modeling (SEM) technique. This chapter explains the data from

the main questionnaire survey, and the findings of the hypotheses testing. This chapter

is structured as follows. It begins by presenting the general demographic data and

statistical analysis of the samples. After that, the strategy of the SEM analysis is

explained. In addition, this chapter clarifies general data examinations, such as,

missing values, and the assumptions of multivariate analysis done by applying SPSS

version 15. The explanation of the measurement model, in terms of unidimensionality,

reliability, and validity, are presented based on the results found using the statistical

package, AMOS version 6.

4.2   General Demographic Analysis for the Sample

This section provides further details of the characteristics of the samples, before

carrying on the detail of the analysis. Initially, the survey instrument used in this study

was questionnaires made up of several parts including the covering letters. These

questionnaires were distributed to a total of 200 IT managers from 280

Jordanian companies, including 23 banks, 92 insurance companies, 68 services companies, and 97 industrial companies. By using a drop and collect method, out of the total sample, 172 survey questionnaires were returned, representing a response rate of 86 percent. The remaining section will present the respondents' demographic profiles, along with the description of the participating firms in this study.

Over the period of two months, among the total 172 respondents from the sample, about 53% were male, and rest 47% was female. In addition, regarding the education level of the respondents, 17% had PhD, 28% had master, and 55% was bachelor degree holders. All the respondents were at IT manager level (100%). Out of the total 172 respondents, the insurance sector accounted for the highest response rate (41.9%), followed by the manufacturing sector accounted with 16.8%, service sector accounted with 29.7%, and finally banks with 11.6% response rate. Table 4.1 provides the profile of the sample firms of the study.

Table 4.1: Firm Profile in the Study Sample (N = 172)

Category	Frequency	Percent %	Original number of firms in each sector
Industry			
Banks	20	11.6%	23
Insurance	72	41.9%	92
Services	51	29.7%	68
Industrial (i.e. Manufacturing)	29	16.8%	97
Total	172	100%	280

This section begins by presenting the general demographic data and statistical analysis of the research samples, and the next section will explain the SEM analysis strategy.

4.3   Test of   Response Bias

According to Pallant (2001), independent sample t-test can be used when the researcher wants to compare the mean scores on some continuous variable for two different groups of subjects. The researcher has categorized the sample into two groups: business managers and IT managers. Independent sample t-test was conducted on two variables such as sustainable competitive advantage (SUS) and experience of manager.

Table 4.2: Test of Response Bias

Variables	Levene's test for equality of variances			
		F	Sig.	Sig. (2-tailed)
sustainable advantage (SUS)	Equal variances assumed	.006	.939	.408
	Equal variances not assumed			.403
Experience of manager.	Equal variances assumed	.967	.327	.445
	Equal variances not assumed			.474

Based on the response type (business managers and IT managers) discussed above, 172 respondents were classified as IT manager while 30 were classified as business manager. Table 4.2 provides the result of the non-responses test. The p values of the analysis revealed no statistically significant difference between the two groups (significant p > .05). According to Pallant (2001), if the significance level of the Levene's test is above .05 (p > .05), this means that the assumption of equal variances between the business managers and IT managers has not been violated. In order to find out if there is a significant difference between the two groups, sig "2 tailed" (p > .05) was used. Table 4.2 shows the significance level of the Levene's test for experience of manager (p =.327) and SUS (p = .939), which indicates that the p value for both of them are greater than .05. This indicates that the assumption of equal variances has not been violated. Besides, the significance levels for experience of manager (p =.408) and for SUS (p = .445) further confirm that there is no significant difference between the two groups. Thus, as Table 4.2 shows that the p>.05, there is no significant difference between IT managers and business managers. Therefore, our data is free from response bias (see Appendix E).

4.4   Response Rate

In the process of conducting the main study, 200 questionnaires were distributed to IT managers. Out of this number, 25 were undelivered, and 3 were incomplete (missing responses). The researcher gave tremendous effort, hard work and extra financial cost to obtain the achieved high response rate. As mentioned before, a total of 172 responses were usable for subsequent analysis, giving a response rate of 86 %. Table 4.3 provides a summary on the response rates.

Table 4.3: Summary of Response Rates

Questionnaire administrated	200
Undelivered	25
Uncompleted	3
No. of responses	172
Response rate (172/ 200)	86

4.5   SEM Analysis Strategy

This research applied a dataset obtained from Jordanian IT managers (N=172) to test a set of hypotheses in order to investigate the relationships of the constructs in the study, the analysis of the data was executed in two phases: the initial phase and the major phase. While the initial phase involves general data analysis, the major one involves SEM analysis.

During the initial phase, the data was tested for outliers, and treatment was provided for missing values. Also, in this step the data was investigated for the assumptions of multivariate analysis. This is done by examining the data for their normality, linearity, multicollineraity, and sample size. Subsequently, before conducting the SEM, it was necessary to assess each scale for inter-consistency reliability by using Cronbach's alpha in order to purify the items,. After the initial examination of the data was completed, the second phase of data analysis was conducted. As mentioned in the following in depth discussion, the SEM method was conducted by AMOS version 6. The major phase of data analysis was supported by developing both the current research confirmatory factor analysis and the structural model.

4.6   General Data Examination

The data in this section was tested for missing values and outliers. It was investigated for the assumptions of multivariate analysis such as normality, linearity, multicollinearity, and sample size.

4.6.1   Missing Data Analysis

In order to perform statistical analysis, firstly, it was important to inspect the data file for missing data, and to consider if the missing values were happening randomly or in a systematic pattern (Pallant, 2005). A frequency test was run for every variable to identify any missing responses. Based on this, 172 of the completed questionnaires were found to be usable because there was no missing response.

4.6.2   Test of Multivariate Assumptions in SEM

This section investigates all the data for the assumptions of multivariate analysis in terms of normality, linearity, multicollinearity, and sample size.

4.6.3   Normality Assessment

Normality is used to show the symmetrical curve which has the greatest frequency of scores in the middle and smaller frequencies towards the extremes (Pallant, 2005). In order to assess the normality of the distribution of scores for the dependent and independent constructs, some researchers (e.g. Pallant, 2005) suggested evaluating

123

their skewness and kurtosis values. Because of the nature of the constructs in the social sciences, many measures and scales may have scores, which by nature, may be positively or negatively skewed (Pallant, 2005).Kurtosis is another feature in the form of a distribution representing the degree to which, for a given standard deviation, observations gather around a central mean. However, after careful assessment of the skewness and kurtosis, the data were found to be normally distributed. Indeed, most of the values were in conformity with the requirements of normality (i.e., -3.0 to +3.0), as shown in Appendix F and G.

Also the recommended test for outliers is to convert the data to standardized scores of greater than 2.5 for small samples and greater than 3 or 4 for large sample (Haire et al., 1998). Inspection of Z- scores allows the identification of outlying cases. This process is useful in data screening. Z- scores greater than +3 and less than -3 are considered to be outliers (Coakes & steed, 2003). However, based on the above recommendations, and after careful examinations, no noticeable outliers were found from the 172 valid cases. As a result, it was decided to proceed to further examination using the valid dataset of 172 responses (see Appendix H).

4.6.4   Linearity

According to Pallant (2005) and Hair et al. (2006), structural equation modeling presumes linear correlations between indicators and constructs and between construct variables (i.e., between the dependent variable and the independent variables). By examining the scatter plot residuals using SPSS statistical software, this study indicated a straight-line association with a predicted dependent variables score, and in

turn did not show any support for non-linearity. Consequently, there was no proof to challenge the linearity assumption (see Appendix I).

4.6.5   Multicollinearity

Several researchers (e.g., Kline, 1998) stressed that multicollinearity occurs when a high correlation between independent variables exists in a regression model. This in turn affects the reliability of SEM. Using SPSS software, two values are normally used to check for multicollinearity: tolerance and VIF (Variance Inflation Factor). The problem of multicollinearity is obvious if a tolerance value is less than 0.10 and/or a VIF value is above 10. As shown below, both values revealed in this study are against the existence of multicollinearity. The tolerance value is found to be less than 0.10 and a VIF value is found to be above 10. Indeed, both these values were within the acceptable ranges. Consequently, it can be concluded that the assumption of multicollinearity was not challenged (see Appendix J).

4.6.6   Sample Size

SEM technique depends on tests that are sensitive to sample size. In order to comply with the statistical sample size condition, some scholars recommended different sample sizes. For example, Loehlin (1992) recommended at least 100 cases, Hair et al. (1995) recommended between 100 and 200 respondents, and Hoelters (1983) recommended about 200 in the sample. Kline (1998) emphasized that a sample size of less than 100 would be untenable for the SEM method. Bentler and Chou (1987) suggested 5 cases per parameter estimate, whereas Stevens (1996) recommended at

least 15 cases per measured variable. However, the sample size of 172 in current study exceeded the condition of having a minimum number of 162 respondents.

As mentioned before, specific distribution of the sample is as follows: out of 172, 20 (11.6%) respondents belong to the banking industry, 72 (41.9%) belong to the insurance industry, 51 (29.7%) belong to the services industry, and the remaining 29 (16.8%) belong to the manufacturing industry. In a nutshell, the sample size is adequate for performing the SEM analysis.

The discussions above dealt in detail with the initial phase of the analysis, which included missing data treatment, detection of outliers, and investigation of the assumptions of multivariate analysis in terms of normality, linearity, multicollinearity, and sample size. The second phase of data analysis is presented in the following section.

4.6.7 Test of Scale Reliabilities

In order to proceed to the SEM analysis, it is important to assess each scale for interconsistency reliability by using Cronbach's alpha. This step is crucial to exclude all components with low reliabilities in the SEM analysis (i.e., purify the items before conducting the confirmatory factor analysis or CFA). Furthermore, some researchers (e.g., Hair et al., 2006) recommended Cronbach's alpha values between 0.60 and 0.70. While the description of the scale items as well as the reliabilities for the observed items of the survey constructs are presented in Table 4.4:

Table 4.4: Reliabilities of the Scales (N = 172)

Constructs	Indicators	Cronbach's Alpha
Leadership	Ls1-Ls6	.88
Structure and process	SP1-SP6	.83
Service quality	SQ1-SQ5	.68
Value and belief	VB1-VB6	.90
IT managerial resource	MR1-MR4	.62
IT implementation success	IS1-IS5	.86
Strategic alignment	SA1-SA6	.83
Sustainable competitive advantage	SUS1-SUS6	.94

As shown in the above Table, all of the research constructs exceeded the recommended value of Cronbach's alpha (i.e., between 0.60 and 0.70), and thus revealed a satisfactory degree of reliability. Having purified the sample by validating the scale reliabilities, the major phase of data analysis (i.e., CFA and structural model) is conducted in the next section.

4.7   Measurement Model

According to Byrne (2001) and Kline (2005), confirmatory factor analysis technique (CFA) is considered to be a more powerful tool if compared with multiple regressions. As examples of the strengths of CFA, it takes into account the modeling of interactions, nonlinearities, correlated independents, measurement errors, correlated error terms, multiple latent independents each measured by multiple indicators, and one or more latent dependents also with multiple indicators. Furthermore, it offers better coefficient estimates and variance analysis, by including

the error variance in the study model. Consequently, CFA was used in this study to examine the fit of the proposed measurement models with the surveyed data, and also to check the validity of the data.

4.7.1   Estimation and Model Fit

In order to have statistical power in the model fitness to the dataset, Maximum Likelihood Estimation (ML) is appropriate in SEM for several reasons. Firstly, ML is a widely-used estimation method, especially with limited sample sizes of 100 to 200 (Anderson & Gerbing, 1988). Also, it is applied to estimate all model parameters simultaneously (Kline, 1998). ML provides path coefficients and variances of the sample population, by presuming that the estimated parameter values maximize the likelihood (i.e., the probability) that the observed covariances are drawn from that population (Kline, 1998). Therefore, ML is an appropriate technique for estimating current research parameters. Furthermore, although there is no agreement on specific fit indices in assessing research models, some scholars (e.g., Hair et al., 2006) emphasized that, in order to beat the weaknesses of some of the indices several measures, as explained below, should be used to gauge the fit of each measurement model before validating it by assessing each construct for unidimensionality, reliability, and validity.

Firstly, the chi-square (x^2) statistic, chi-square per degree of freedom ratio (x^2/df), and the Root Mean Square Residual (RMSR) are absolute indices to be used to indicate the ability of the model to reproduce the actual covariance matrix. At a given significant level of 0.05, 0.01, or 0.001, the lower the x^2 statistics, the better is the fit

between the proposed model and covariances and correlations. Thus it can validate the null hypothesis of covariance matrix equality (Bassellier et al., 2003; Hair et al., 2006). The x^2/df ratio is also considered as one of the indices that requires three or less values for an acceptable model (Kline, 1998). In this case, the smaller the value of the ratio, the better is the fit.

However, some researchers (e.g., James et al., 1982) recommended the ratio to be between 2 and 5, but not over 5 (Hair et al., 1998). The Root Mean Square Residual (RMSR) is another index that measures the average difference between the elements in the sample and hypothesized covariance matrices. Standardized RMSR should not be greater than 0.10 to be acceptable (Segars & Grover, 1993).

Secondly, some of the incremental indices that compare the proposed model to the null model (i.e., single-factor model with no measurement error assuming that all covariances are 0) are Goodness-of- Fit Index (GFI), Adjusted Goodness-of- Fit Index (AGFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI).

GFI and AGFI are used to measure how much of the variances and covariances the model jointly accounts for. NFI represents the improvement in fit of the hypothesized model over the null model (also known as Independence Model which represents the worst fitting model). IFI and TLI examine the parsimony between the null model and the proposed model throughout a comparison of the degree of freedom.

However, Bentler (1990) found that some of the above indices like NFI underestimate the fit in small samples, and hence she proposed an index that is less sensitive to sample size, which is CFI. CFI compares the hypothesized model to the best fit model (i.e., saturated model). The closer the value of the above indices to 1, the greater is the indication of a very good fit. Furthermore, if the GFI, AGFI, NFI, IFI, TLI and CFI values are above 0.90, they are considered good. If they are from 0.80 to 0.90, they are considered moderate. These ranges of values in turn would result in the conclusion that the model is acceptable (Bentler & Bonett, 1980).

Thirdly, parsimonious fit measures could be used to examine the fit of the model needed to achieve in relation to the number of estimated coefficients. Root Mean Square Error of Approximation (RMSEA) is a measure of discrepancy per degree of freedom. RMSEA value takes the goodness-of-fit of the model into account. The accepted values should range between 0.05 and 0.08 (Hair et al., 1998; Hair et al., 2006). However, although lower value is associated with better fit, some researchers (e.g., Browne & Cudeck, 1993) argued that the value of 0.08 and higher shows a reasonable error of estimation. In addition, some researchers (e.g., Rai et al., 2002; Chou et al., 2007) argued that in low sample size studies, the acceptable RMSEA value should not be more than 0.10.

Based on the above discussion, several fit indices have been conducted in this study (see page 190). These are: chi-square (x^2) statistic test, chi-square per degree of freedom ratio (x^2/df), Incremental Fit Index (IFI), Tucker- Lewis Index (TLI), Comparative Fit Index (CFI), Goodness-of- Fit Index (GFI), Adjusted Goodness-of-

Fit Index (AGFI), Normed Fit Index (NFI) and Root Mean Square Error of Approximation (RMSEA). Figure 4.1 shows the measurement model in this study.

The measurement model is tested for all constructs at one time in one measurement model test. Constructs in this model consist of Leadership (=LS with six items), Structure and process (=SP with six items), Service quality (=SQ with five items), Values and beliefs (=VB with six items), IT managerial resource (= MR with four items), and IT implementation success (=IS with six items).

In order to validate the measurement model through CFA (confirmatory factor analysis), it is important to assess each construct for reliability and validity in terms of convergent validity and discriminate validity. Indeed, the standardized regression weights for the research's indicators were examined, and it was found that some indicators had a low loading towards the latent variables, in particular sp1=.484 / SQ3=.403/SQ5=.468/MR1=.431/MR3=.453/IS5=.436.

Moreover, since all of these items did not meet the minimum recommended value of factor loadings of 0.50 (Hair et al., 1998), and/or because the initial fit indices moderately fit the sample data, they were all removed and excluded from further analysis. Therefore, for structure and process 5 items remain, for service quality 3 items remain, for IT managerial resource 2 items remain, and for IT implementation success 4 items remain.
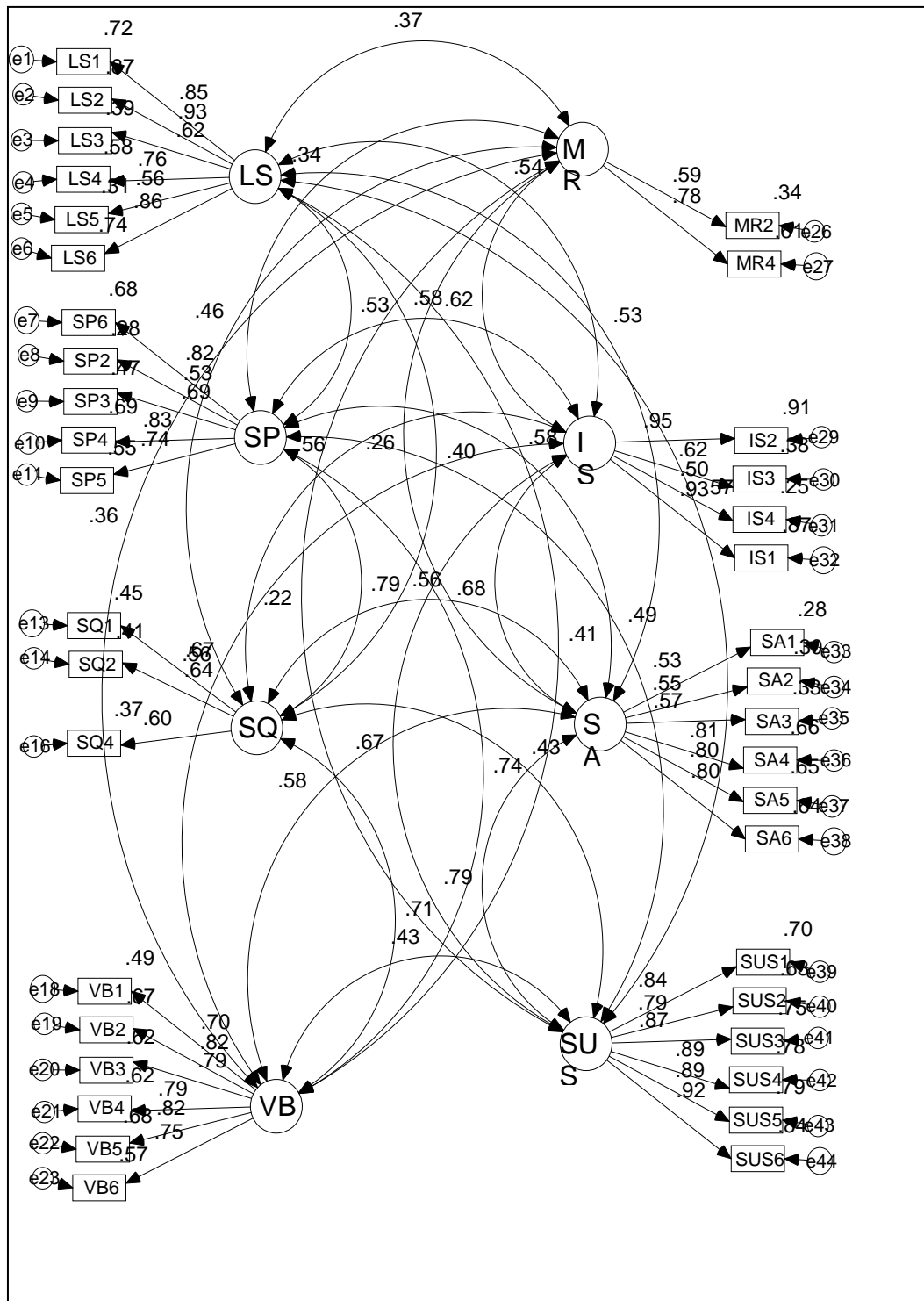
Figure 4.1:Measurement model

4.7.2 CFA Procedure

In order to validate the measurement model through CFA, it is important to assess each construct for unidimensionality, reliability, and validity in terms of convergent validity and discriminant validity. Examining the unidimensionality of each construct is essential in theory development, since it shows a set of indicators evaluating only an exact underlying variable which has been identified in a theoretical model (Hair et al., 2006). Therefore, standardized factor loadings for the items that comprise the constructs are expected to meet the minimum recommended value of 0.50 (Hair et al., 1998; Newkirk & Lederer, 2006), or be more than the 0.60 threshold suggested by Chin (1998). Also, all fit indices (i.e., absolute, incremental, and parsimonious) such as x^2 test, x^2/df ratio, IFI, TLI, CFI, and RMSEA should be satisfactory and significant.

Regarding the acceptability of the research scales, some scholars (e.g., Gerbing & Anderson, 1988) argued that CFA can supply a stricter explanation of unidimensionality than other techniques like coefficient alpha, item-total correlation, and EFA (Exploratory Factor Analysis). Consequently, composite reliability, developed by Fronell and Larcker (1981), is the most commonly used index for estimating reliability in SEM. Employing Fronell and Larcker's formula, the composite reliability is calculated using following equation:

$$\text{Composite reliability} = \frac{\left(\Sigma s\tan dizedloding\right)^2}{\left(\Sigma s\tan dizedloading\right)^2 + \sum \varepsilon j}$$

The formula above is described as squared sum of standard loading divided by sum of standard loading plus sum of standard error.

In this study, the reliability of the multi-item scale for every construct is measured using Cronbach's alpha, in which the values of all indicators or dimensional scales should be above the recommended value of 0.60 (Nunnally, 1978; Bagozzi & Yi, 1988; Baker, 2003). The composite reliability should be more than 0.60 according to Bagozzi and Yi (1988), or greater than 0.70 according to Holmes-Smith (2001).

While reliability is related to the stability of the instruments and the consistency of the measures, validity is the degree to which an instrument measures the construct it is supposed to measure (Kerlinger, 1973). Besides, convergent validity expresses the degree to which multiple methods or scales measuring the same concept are in agreement. Another one, the discriminant validity is the extent to which a measure is different from measures not measuring the same construct (Nunnally, 1978).

In order to assess convergent validity, initially, it is essential to evaluate the statistical significance of the estimated parameters between constructs and their items. After that, convergent validity is established by the high factor loadings and high significant levels for the indicator variable (Schwab, 1980). Following Anderson and Gerbing (1988), researchers examine the parameters and their associated t-value. Based on an alpha of 0.05, parameters having t-value more than 1.96 are considered to be significant, and in turn, sufficient evidence of convergent validity.

Normally, items from one variable are not supposed to converge too much with items from a different variable. This is why, if items of different variables are highly

correlated with items of other variables, they could be considered to measure the same variable rather than different variables. Therefore, low correlations between variables points to the existence of discriminant validity. Following Fronell and Larcker (1981), discriminant validity can be evaluated by the Average Variance Extracted (AVE) for every construct, which should exceed the squared correlation between that construct and any other constructs.The AVE is derived from the calculation of variance extracted using the following equation:

$$\text{Variance Extracted} = \frac{\Sigma(s\tan dardizedSMC)^2}{\Sigma(s\tan dardizedSMC)^2 + \Sigma\varepsilon j}$$

.

The formula above is described as the sum of squared multiple correlations divided by sum of squared multiple correlations plus sum of error variance. The AVE values should be at least 0.50 for each construct (Bagozzi & Yi, 1988; Holmes-Smith, 2001).

When reliability tests, convergent validity, and discriminant validity support the overall measurement quality, the measure is deemed adequate for testing the structural or path coefficient for the purpose of estimating the hypothesized relationships in the model of the study (Gerbing & Anderson, 1992). However, in order to test the structural model, it is essential to investigate the statistical significance of the standardised regression weights (i.e., t-value) at 0.01, 0.05, and 0.001 levels; and the coefficient of determination (Std. estim) for the research model.

4.7.3 Assessment for Exogenous and Endogenous Variables

Essentially, researchers use two well-known ways of testing a measurement model. This is conducted either by testing each construct individually, or by testing all constructs in one test. Cheng (2001) argued that when using the first way, the correlations between the indicators of the constructs will not be measured, and in turn, would not improve the psychometric properties of the measures such as investigating the discriminant validity between the constructs (i.e., high correlations among constructs shows that they measure the same items).

Therefore, in this study the measurement model is tested for all constructs at one time in one measurement model test, by using the maximum likelihood technique in AMOS version 6. Furthermore, Hair et al. (2006) suggested that before proceeding to the measurement analysis, the constructs should be checked for common offending estimates, including negative error variances and/or insignificant error variances, standardized coefficient exceeding 1.0, and very large standard errors related to any estimate coefficient. For example, in this study has standardized loading of 0.5 – 0.9, which indicates that, standardized loading less than 1 in whole case. Moreover, standard error is low (see Table 4.5). So after careful investigation for this research's constructs, the presence of these offending estimates did not occur in the measurement model. Therefore, it was convenient to carry on with further investigations using the measurement model of the research constructs.

4.7.4   Model Modification

Since the measurement model aims to clarify the relationships among latent variables concerned in the manifest indicators measuring these latent variables, it is essential to test the model to see if it fits the data adequately. If it does not, more examination should be used to specify the problems of the misfit. This process can improve the model before the structural model estimation. Indeed, as shown in Table 4.5, the initial specified model which defines the relationships among the research constructs fits the data moderately according to the absolute, incremental, and parsimonious model fit measures. These measures assess by goodness of fit indices such as chi-square per degree of freedom ratio (x^2/df), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA).

Carmines and McIver (1981) stated that the ratio of chi-square per degree of freedom (x^2/df) which ranges of 2 to 1 or 3 to 1, is considered to be an acceptable fit between the hypothesized model and the sample data. Nevertheless, Byrne (1989) emphasized that a stricter requirement for the ratio is necessary to show a sufficient model fit, therefore, a value for x^2/df of more than 2 indicates an insufficient fit. Consequently, the ratio of x^2/df for this study was within the suggested value (x^2/df =2.916). However, incremental fit index (IFI = 0.714), Tucker-Lewis index (TLI = 0.687), Goodness-of- Fit Index (GFI= .75), Adjusted Goodness-of- Fit Index (AGFI= .70), Normed Fit Index (NFI=.72) and comparative fit index (CFI = 0.711) did not fit the data well, since the value's closer proximity to 1 shows a better fit. In addition, although the smaller the RMSEA the better will be the model fit, in this study root

mean square error of approximation (RMSEA = .106) was not inside the recommended range of 0.05 and 0.08 (Hair et al., 1998; Hair et al., 2006), and was not less than 0.10 (Chou et al., 2007; Rai et al., 2002).

As explained above, although the initial specification was generally accepted all model fit indices (i.e., chi-square per degree of freedom ratio (x^2/df), IFI, TLI, CFI, and RMSEA) did not perfectly fit the sample data. Therefore, the next step is to improve these fit indices by investigating the model's misspecification, and then assessing the measurement model for unidimensionality, reliability, and validity. Validity should be improved both in terms of convergent validity and discriminant validity. Indeed, the standardized regression weights for the research's indicators were examined, and it was found that some indicators had a low loading towards the latent variables, in particular sp1=.484/ SQ3=.403/ SQ5=.468/ MR1=.431/ MR3=.453/ IS5=.436.

Moreover, since all of these items did not meet the minimum recommended value of factor loadings of 0.50 (Hair et al., 1998; Newkirk & Lederer, 2006), or above the 0.60 threshold suggested by Chin (1998), and because the initial fit indices moderately fit the sample data, they were all removed and excluded from further analysis. Consequently, the measurement model was modified and showed a better fit to the data.

Table 4.5 : Measurement Model Fit Indices

Model	x^2	Df	P	x^2/df	IFI	TLI	CFI	GFI	AGFI	NFI	RMSEA
Initial Estimation	2548.191	874	0.000	2.916	.714	.687	.711	.75	.70	.72	.106
Final model	884.181	335	0.000	2.639	.819	.80	.816	.85	.88	.84	.08
Minimum recommended value			0.000	1				.80			0.05

As shown in Table 4.5, although chi-square per degree of freedom ratio (x^2/df =2.639) and root mean square error of approximation (RMSEA=.08) did change for the final model, Also the incremental fit index (IFI = .819), Tucker-Lewis index (TLI = 0.80), Goodness-of- Fit Index (GFI= .85), Adjusted Goodness-of- Fit Index (AGFI= .88), Normed Fit Index (NFI=.84) and comparative fit index (CFI = 0.816) indicated a better fit to the data, after deleting the low factor loading items. Therefore, after purifying the final measurement model for the eight constructs, the next stage is to assess them for unidimensionality, reliability, and validity.

4.7.5 Assessing the Unidimensionality of the Constructs

Unidimensionality refers to the extent to which the research indicators form their latent variables. Therefore, examining the unidimensionality of the research constructs is essential, and is a prerequisite for construct reliability and validity analysis (Chou et al., 2007). Furthermore, according to Byrne (1989), the evaluation of unidimensionality involves the assessment of the standardised factor loadings and

the comparative fit index (CFI). While the former shows that the research indicators point out significant regressions toward the latent variables, the CFI indicates that all items load significantly on one latent variable. Table 4.6 shows strong evidence for the unidimensionality of the eight constructs specified in the measurement model. Indeed, all the values of the different parameter estimates met the minimum recommended value of 0.50 (Hair et al., 1998; Newkirk & Lederer, 2006), or above the 0.60 threshold suggested by Chin (1998).

Table 4.6: Properties of the Measurement Model

Constructs and Indicators	Standard Loading	Standard error	SMC	SMC^2	Error variance	Cronbach Alpha	Composite reliability	VE
Leadership						.88	.97	.92
LS1	.851	.054	.724	.524	.019			
LS2	.934	.066	.872	.760	.014			
LS3	.621	.094	.386	.148	.048			
LS4	.762	.090	.581	.337	.038			
LS5	.559	.103	.312	.097	.061			
LS6	.858	.073	.736	.541	.020			
Structure and process						.84	.96	.87
Sp2	.526	.083	.276	.076	.044			
Sp3	.687	.107	.471	.221	.063			
Sp4	.829	.086	.687	.471	.033			
Sp5	.742	.096	.550	.302	.047			
Sp6	.824	.056	.679	.461	.030			
Service Quality						.66	.88	.78
SQ1	.671	.165	.450	.202	.044			
SQ2	.636	.141	.405	.164	.044			
SQ4	.604	.147	.365	.133	.051			
Value and belief						.90	.97	.90
VB1	.700	.089	.490	.240	.050			
VB2	.816	.113	.666	.443	.034			
VB3	.787	.109	.619	.383	.035			
VB4	.790	.114	.625	.390	.038			

Constructs and Indicators	Standard Loading	Standard error	SMC	SMC^2	Error variance	Cronbach Alpha	Composite reliability	VE
VB5	.822	.114	.676	.456	.034			
VB6	.752	.108	.566	.320	.038			
IT managerial resource						.79	.80	.85
MR2	.586	.090	.343	.117	.022			
MR4	.781	.361	.610	.372	.058			
IT implementation success						.85	.97	.92
IS1	.935	.043	.874	.763	.024			
IS2	.953	.045	.908	.824	.023			
IS3	.617	.048	.381	.145	.032			
IS4	.501	.068	.251	.063	.065			
Strategic alignment						.83	.95	.82
SA1	.531	.096	.282	.079	.046			
SA2	.547	.116	.299	.089	.067			
SA3	.571	.143	.326	.106	.100			
SA4	.810	.107	.656	.430	.040			
SA5	.804	.123	.646	.417	.053			
SA6	.800	.215	.640	.409	.028			
Sustainable competitive advantage						.94	.98	.96
SUS1	.838	.056	.702	.492	.702			
SUS2	.793	.074	.629	.395	.629			
SUS3	.867	.053	.752	.565	.752			
SUS4	.885	.050	.783	.613	.783			
SUS5	.886	.069	.786	.617	.786			
SUS6	.918	.068	.843	.710	.843			

4.7.6 Assessing the Reliability of the Constructs

Once unidimensionality is necessary assumption for scale reliability, the reliability of the research scales have to be investigated to see the degree to which these scales

indicate the latent constructs. Cronbach alpha and composite reliability are seen as useful tests to measure construct reliability (Hair et al., 1995). Table 4.6 indicates that all Cronbach alpha values for the eight constructs exceeded the recommended value of 0.60 (Bagozzi & Yi, 1988; Baker, 2003; Nunnally, 1978), indicating that the instrument is reliable (see Appendix K).

In addition, as shown in Table 4.6, the composite reliabilities were calculated based on Fronell and Larcker's (1981) formula of the reliability of a latent construct. The composite reliability values ranged from 0.80 to 0.98, and all were greater than the recommended value of more than 0.60 (Bagozzi & Yi, 1988), or greater than 0.70 (Holmes-Smith, 2001). Consequently, according to the above two tests, all the research constructs in this study are considered reliable.

4.7.7   Assessing the Validity of the Constructs

While convergent validity test is essential in the measurement model to determine if the indicators in a scale load together on a single construct, discriminant validity test is also important to verify if the items developed to measure different constructs are definitely evaluating different constructs.

Convergent Validity

Some researchers (e.g., Schwab, 1980) argued that convergent validity is confirmed when the factor loadings (i.e., the standardized regression weights) are significant. Also, Bollen (1989) emphasized that the greater the factor loadings, the stronger is the indication that the measured scales represent the constructs. As shown in Table 4.6,

all items were significant, and had loadings of more than 0.50 on their underlying constructs. Consequently, all indicators in the current study were related to their specified constructs, and thus there was sufficient proof of the convergent validity of the model.

Discriminant Validity

Discriminant validity was investigated using several tests. Fronell and Larcker (1981) argued that discriminant validity could be examined in the measurement model by investigating the shared average variance extracted (AVE) by the latent constructs. Also, the correlations among the research constructs could be used to assess discriminant validity, by examining if there are any extremely large correlations among them. Presence of such extremely large correlations implies that the models have a problem of discriminant validity.

In addition, if the AVE for each construct exceeds the squared correlation between that construct and any other constructs, then discriminant validity occurs (Fronell & Larcker, 1981). As shown in Table 4.6, and following Fronell & Larcker's (1981) formula of calculating the average variance extracted of a latent construct, this study showed that all the constructs explained 50 percent or more of the variance, and ranged from 0.78 to 0.96, which met the recommendation that AVE values should be at least 0.50 for each construct (Bagozzi & Yi, 1988; Holmes-Smith, 2001). In addition, as shown in Table 4.7, discriminant validity was demonstrated, as the AVE values were more than the squared correlations for each set of constructs. Therefore, the measures significantly discriminated between the constructs. See Appendix L related with correlation between construct.

Table 4.7: AVE and Square of Correlations between Constructs

	SQ	LS	SP	VB	MR	IS	SA	SUS
SQ	**.78**							
LS	.080	**.92**						
SP	.332	.306	**.87**					
VB	.361	.149	.395	**.90**				
MR	.112	.062	.049	.139	**.85**			
IS	.137	.255	.269	.195	.063	**.92**		
SA	.168	.20	.216	.248	.023	.405	**.82**	
SUS	.104	.283	.242	.153	.015	.527	.461	**.96**

(Note: Diagonal elements are the average variance extracted for each of the eight constructs. Off-diagonal elements are the squared correlations between constructs.)

After examining the research data in which the final measurement model was conducted, and conducting the reliability and validity of the research constructs in terms of convergent and discriminant validities, the estimation of the structural model is discussed below.

4.8   Structural Model Analysis

Since reliability tests as well as the convergent and discriminant validities support the overall measurement quality, the measurement model is considered adequate for testing for the path coefficient estimating for hypothesized relationships of the model to study (Gerbing & Anderson, 1992).

As the model of this study is shown in Figure 4.2, current study proposes that IT-business strategic alignment strategies are influenced by several IT- business strategic alignment antecedent variables, which in turn will have an effect on firm's sustainable competitive advantage.
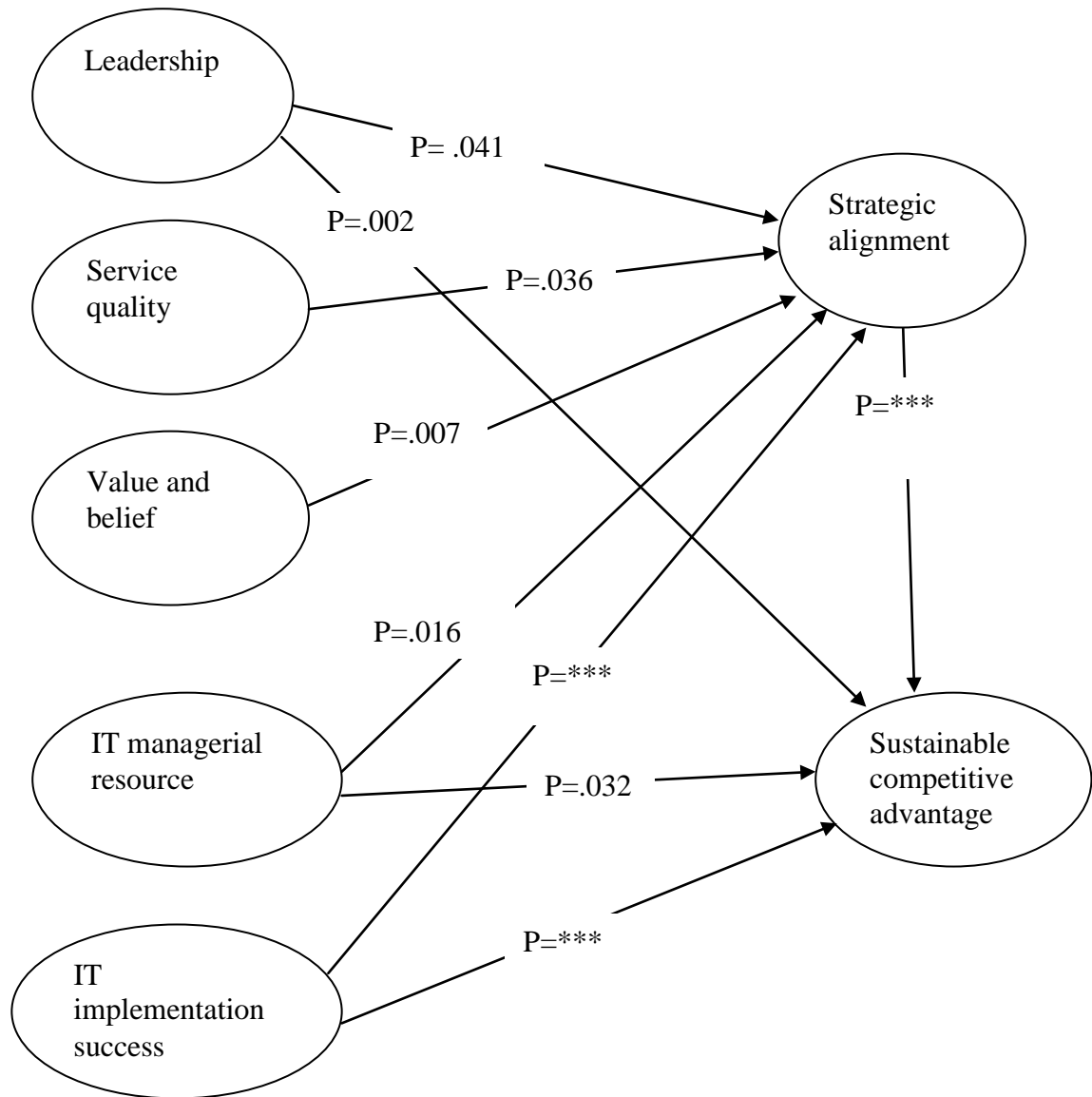
Figure 4.2: Final structural model

In order to test the structural model, it is essential to investigate the statistical significance of the standardized regression weights (i.e., *t*-value) of the research propositions at 0.01, 0.05, and 0.001 levels, and the coefficient of determination (Std. estim) for the endogenous variables. Following section presents the interpretations of the survey's data analysis.

4.8.1   Hypotheses Testing of the Study
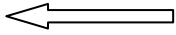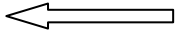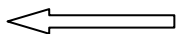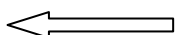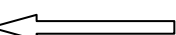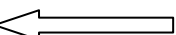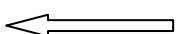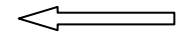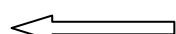
The purpose of this study was to investigate the relationship between strategic alignment antecedents and strategic alignment strategies, and its outcome on firm's sustainable competitive advantage. In particular, the strategic alignment antecedents include following variables: Leadership, structure and process, service quality, value and belief, IT managerial resource, and IT implementation success. In addition, the impacts of strategic alignment on firm's sustainable competitive advantage were tested both directly and indirectly. The findings from the empirical study, as shown in this section, offered interesting results for discussion, which extended earlier research in the areas of strategic alignment and firm' sustainable competitive advantage. As noted in Table 4.8, thirteen propositions related to the aims of this study were developed and tested. Out of the thirteen proposed relationships, (9) were supported.

Table 4.8 presents each parameter's C.R. estimate. Based on the results provided, it is clear that strategic alignment has a significant positive and direct impact on sustainable competitive advantage (β =.316, C.R = 4.779; *P* = ***). Therefore, H1 is supported. H2 is also supported as leadership has a significant positive and direct impact on strategic alignment (β =.114, C.R = 2.312, P= .041). H5 is supported

because value and belief has a positive significant direct impact on strategic alignment (β =.206, C.R =2.705, P= .007). For H6, IT managerial resource has a positive significant direct impact on strategic alignment (β = .141, C.R = 2.411, P= .016) indicating support for it. IT implementation success has a positive significant direct impact on strategic alignment (β =.513, C.R = 7.446; P= ***), indicating that H7 is also supported. In addition, for H4, service quality is found to have a positive direct impact on strategic alignment (β =.100, C.R = 2.420, P = .036) also indicating the support for it. However, structure and process is not found to have any direct impact on strategic alignment (β =.011, C.R = .144, P = .885) indicating that H3 is rejected.

Leadership has a significant positive and direct impact on sustainable competitive advantage (β =.175, C.R = 3.042, P= .002) indicating that H8 is supported. IT managerial resource has a significant positive and direct impact on sustainable competitive advantage (β =.110, C.R = 2.138; P= .032) indicating that H12 is supported. IT implementation success has a significant positive and direct impact on sustainable competitive advantage (β =.451, C.R = 6.577, P= ***) indicating that H13 is also supported.

Table 4.8: Summary of Proposed Results for the Theoretical Model

Research proposed paths		t- value (CR)	Coefficient value (Std.estim)	P – value	Empirical Evidence
SA	⟵ sp	.144	.011	.885	Not supported
SA	⟵ SQ	2.420	.100	.036	Supported
SA	⟵ VB	2.705	.206	.007	Supported
SA	⟵ MR	2.411	.141	.016	Supported
SA	⟵ IS	7.446	.513	***	Supported
SA	⟵ LS	2.312	.114	.041	Supported
SUS	⟵ SA	4.779	.316	***	Supported
SUS	⟵ LS	3.042	.175	.002	Supported
SUS	⟵ SP	1.004	.068	.315	Not supported
SUS	⟵ SQ	.080	.005	.936	Not supported
SUS	⟵ VB	.828	.056	.408	Not supported
SUS	⟵ MR	2.138	.110	.032	Supported
SUS	⟵ IS	6.577	.451	***	Supported

$(*** \ P \leq .005, ** \ P \leq .01, * \ P \leq .05)$

However, structure and process have insignificant direct impact on sustainable competitive advantage ($\beta = .068$, C.R = 1.004, P = .315) indicating that H9 is rejected. Service quality has a positive insignificant direct impact on sustainable competitive advantage ($\beta = .005$, C.R = .080, P = .936) indicating that H10 is rejected. Value and belief has insignificant direct impact on sustainable competitive advantage ($\beta = .056$, C.R = .828, P = .408) indicating that H11 is also rejected.

As shown in Table 4.8 above, the hypotheses are significant for C.R. values. Nine hypotheses (H1, H2, H4, H5, H6, H7, H8, H12, and H13) were supported, while four

hypotheses (H3, H9, H10 and H11) were rejected because they are lower than the recommended value of C.R (C.R less than -/+ 1.96) (see Appendix M).

4.8.2 Result of Strategic Alignment As a mediating Effect

For this study, the researcher tested the mediating effects of strategic alignment in the relationship between the antecedents (leadership, structure and process, service quality, value and belief, IT managerial resource, IT implementation success) and sustainable competitive advantage as shown in the Table (4.9). The insignificant result of empirical finding (direct effect .175 more than indirect effect .036) confirmed that strategic alignment does not mediate the relationship between leadership and sustainable competitive advantage. To conclude, this finding does not support H14. The insignificant result of empirical finding (direct effect .068 more than indirect effect .003) confirmed that strategic alignment does not mediate the relationship between (structure and process) and sustainable competitive advantage. Thus, H15 does not support.

In contrast, the significant empirical result (direct effect .005 less than indirect effect .03) confirmed that strategic alignment mediate the relationship between (service quality) and sustainable competitive advantage. So H16 is supported. Another significant result of empirical finding (direct effect .056 less than indirect effect .065) confirmed that strategic alignment mediate the relationship between value and belief and sustainable competitive advantage. So H17 supported.

However, the insignificant result of empirical finding (direct effect .110 more than indirect effect .044) confirmed that strategic alignment does not mediate the relationship between (IT managerial resource) and sustainable competitive advantage.

Thus, H18 does not have support. The insignificant result of empirical finding (direct effect .451 more than indirect effect .162) confirmed that strategic alignment does not mediate the relationship between IT implementation success and sustainable competitive advantage. Thus, H19 does not have support (see Appendix N, O).

Table 4.9: Mediating Effect of Strategic alignment

Hypothesis	From	Mediation	To	Direct effect	Indirect effect	Total Effect	Mediating
H14	LS	SA	SUS	.175	.036	.211	Not Mediating
H15	SP	SA	SUS	.068	.004	.072	Not Mediating
H16	SQ	SA	SUS	.005	.031	.036	Mediating
H17	VB	SA	SUS	.056	.065	.121	Mediating
H18	MR	SA	SUS	.110	.045	.155	Not Mediating
H19	IS	SA	SUS	.451	.162	.613	Not Mediating

4.9   Summary

The focus of this chapter was to discuss the data analysis procedures that involved the two phases of data examination. During the initial phase, and in order to purify the items before conducting the SEM analysis, data were tested for outliers and missing

values, and were investigated for the assumptions of multivariate analysis. All these analyses have been done by examining the data for their normality, linearity, multicollineraity, and sample size. Also, it was necessary to assess each scale for inter-consistency reliability by using Cronbach's alpha. After purifying the sample by investigating in the initial phase, the major phase was conducted by developing both measurement (i.e., confirmatory factor analysis) and structural models. When the measurement model was approved in terms of unidimensionality, reliability, and validity, the structural model was examined to arrive at a best fit model that represents the proposed model in the study.

In summary, a good response rate was achieved (86 %). For the survey, the test of non-response bias also demonstrated that there is no statistically significant difference between IT managers and business managers on their experience and sustainable competitive advantage.

The significance level of the Levene's test is above .05 (p > .05), this means that the assumption of equal variances between the business managers and IT managers has not been violated. In order to find out if there is a significant difference between the two groups, sig "2 tailed" (p > .05) was used. As a result of that, the issue of non-response bias did not significantly affect the generalization of the findings of this study (refer to page, 124). Table 4.8 presents the significant relationship of direct impacts and the insignificant relationships of direct impacts. Additionally, Table 4.9 displays the results of any mediating effects.

CHAPTER FIVE

CONCLUSION AND DISCUSSION

`

5.1   Introduction

Research may be defined as a process of systematic investigation leading to increased understanding of a phenomenon or an issue of interest. The systematic process of investigating an existing issue and seeing it in a different way provides the means for ensuring strong and effective processes of inquiry. In this way research is a form of transformational learning that increases the stock of knowledge providing new concepts, ideas, explanations or interpretations to the people enabling them to see the world in a different way and do things in a better way (Stringer, 2004).

This chapter is structured in many sections as an attempt to summarize the whole study. It begins by discussing the results and findings generated from both SEM analysis and interview analysis in full detail. This is followed by a summary of the study conclusions based on the findings of the quantitative and interviews are presented.

Moreover, this section discusses both the theoretical and practical contributions of the study. The limitations of the research, which may limit the ability to generalize the

research findings, are also presented in this chapter. Suggestions and further directions for future research and practical recommendations are also part of this chapter. Final part would be the summary of this chapter.

5.2   Discussion of Findings

In this chapter the researcher reflects on the study in its entirety. With that reflection, the researcher also considers the future research implications. It is worth mentioning that the prime objectives of this study were 1) To identify whether IT - business strategic alignment influence sustainable competitive advantage, 2) To determine if the proposed antecedents influence strategic alignment, 3) To determine if the proposed antecedents directly affect sustainable competitive advantage, 4) To identify if strategic alignment mediates the relationship between the proposed antecedents and sustainable competitive advantage.

Since the findings from both quantitative and interviews have supported several hypotheses, this section extends the argument by presenting the results from hypotheses testing along with the results from the interviews. This section discusses the results regarding the antecedents of strategic alignment and sustainable competitive advantage. In particular, unlike several researchers (e.g., Reich & Benbasat, 2000; Choe, 2003; Chan et al., 2006; Chan & Reich, 2007), who investigated some enablers on strategic alignment and its impact on firm performance, this study discriminate the antecedents of strategic alignment, and their impacts on sustainable competitive advantage through strategic alignment.

5.2.1 To identify whether IT - business strategic alignment influence sustainable competitive advantage

In line with the first objective, this study revealed that strategic alignment has significant influence on sustainable competitive advantage. The discussion in this variable has reported that strategic alignment has significant relationship with sustainable competitive advantage in both the survey as shown in hypotheses H1 and interview studies. This is to say the firms that pursuing strategic alignment has greater ability to enhance their sustainable competitive advantage. Indeed, in relation to this study, some IT managers stressed that strategic alignment enhance sustainable competitive advantage in Jordanian organization. The following statement illustrates this point:

> In my organization the management tries to control us for our department's basic needs and infrastructures, like purchasing some computers, for example I remember that one day the management consulted me to buy some laptops, which I did not advice them to do. However, they bought them, and after using them for one month they called me to help them to solve their problems. It was not my responsibility from the beginning. As an IT manager I understand that the management worries about the costs. So I always try to find a mid–point between myself and them to achieve some equilibrium, where the cost and the quality are faced logically. So I am looking for a good price with acceptable – quality product.

Another experienced manager reported:

> In our business I can say frankly that during the ERP implementation we managed in one way or another to minimize the cost in some areas, and we managed to minimize the scrap. The scrap itself is very costly in our business, so we managed that by taking care of some applications here and there, like inventories, the work cycle itself, the business cycle, and we have paid much more attention to some minor issues which other production managers and other managers were not aware of. While we implemented these applications, we were able to discover and find where this scrap and waste goes, and we

managed to minimize the cost, and the business managers appreciate that. Also, fortunately, one of the board of directors is an IT specialist, and some of them are engineers and know exactly what IT is, its needs, and how to use IT for the benefit of the company and improving the business. So they started helping us. In other case there is some situation pose a threat to the working relationship between IT department and business department.

Based on the above discussions, most of the interviewees in this study expressed about their benefit from alignment between IT strategy and business strategy which leads to higher profitability and performance. Overall, this study provides support from both surveys and interviews that firms pursuing strategic alignment can achieve the greater enhancement of their sustainable competitive advantage.

5.2.2   To determine if the proposed antecedents influence strategic alignment

In line with the second objective, having evidence for various main relationships between strategic IS alignment and its antecedents, this section discusses several hypotheses related to the link between several antecedent variables and IT-business strategic alignment. The results of the second objective revealed that there are five significant direct impacts consisting of leadership, IT managerial resource, IT implementation success, value and belief and service quality on strategic alignment. And there is one insignificant impact which refers for structure and process on strategic alignment.

Leadership

The element of business-IT interaction is an important focus in the fields of MIS and management. The principal finding of the survey study, as shown in hypotheses H2

and the interviews, was that the existence of leadership between business and IT managers in Jordan to have a positive relationship with strategic alignment. Hence, the more IT managers' involvement in interaction with top management was, the better was their experienced level of strategic alignment. The positive relationship between business-IT interaction and strategic alignment is consistent with the findings of Lind and Zmud (1991), Earl and Feeny (1994), Reich and Benbasat (2000), and Johnson and Lederer (2005), that the interaction between IT and business managers was highly correlated with the degree of convergence between the two parties concerning the strategic role of IT in the firm. Overall, this study provides support from both surveys and interviews that the greater the IT managers' involvement in interaction with top management, the greater is the likelihood that they will experience higher levels of strategic alignment.

Structure and Process

The discussion in this variable has reported the connection between IT plan and business plan to have no relationship with strategic alignment in both the survey as shown in hypotheses H3 and interview studies. Therefore, this study has failed to support the association between IT plan and business plan and strategic alignment. This is in line with Kearns and Lederer (2000), who frankly declared that if IT does not collaborate reciprocally with other functional areas, then alignments will not occur.

Indeed, in relation to this study, some managers stressed that business plans did not reflect the IT plans because of the lack of the support given to the IT department's

basic needs from top management, and therefore a clear separation between the plans occurred:

> In this company there is a clear separation between IT plans and business plans. Therefore, there is a huge gap. This gap occurs because the IT always looks for things that give the employees upload to their work which increase their productivity such as a solution, guarantee, quality, easy graphical user interface, and a system that contains all modern features, but the business managers like the purchasing manager are always looking for cutting costs without looking at the quality. Some of the business managers look at the IT department as a cost centre, and wish to delete it! Also, sometimes we need to buy a Windows license; can you imagine that some of the business managers are against this basic enquiry? They say that this will increase our costs and affect the profitability! So in such a situation the gap appears between us and them.

Also, some respondents offered proof that IT plans did not reflect the business plan since the IT manager did not know his firm's strategic plans:

> Actually I have an IT plans for my department, but I do not know really what the business plans are for the company. This question could be asked to the GM, who maybe knows what the business plans are, and what he wants from my department.

So far, the above discussion, which has been in line with evidence from the empirical research with IT managers, appears to lend support for the failure of the hypotheses that there was no association found between ISP-BP and strategic alignment, due either to lack of participation from the top management, or the reluctance of IT managers to get involved in the business plans.

157

Service Quality

The discussion in this variable has reported that service quality has significant relationship with strategic alignment in the survey as shown in hypotheses H4. However, this study successfully supported the relationship between service quality and strategic alignment in the survey. That implies that, if IT collaborates reciprocally with other functional areas, it will facilitate the alignments. Indeed, in relation to this study, some IT managers stressed in the interview that service quality does not support strategic alignment. This study found some concerns related with service quality such as inadequate training programs, which hinder the finding of solutions to enhance product or service. Besides this, other concerns include the issues affecting the overall delivery of products or services. Some IT managers stressed:

> As an IT manager, I find top management cooperative which enhances product and service offered by the organization. They always ask our department about their needs.

Another important issue which respondents brought up was the inability to resolve the problems occurring during the daily work immediately. Following statement illustrates this point:

> As IT managers, we are looking for best solutions while decreasing the expenses of the business department. That happens when experts from outside the organization are brought in to help the employee to deal with e-marketing strategy to enhance channels for product or service. Sometimes, we are not able to control all mistakes which are made by employees, and the problem remains until experienced help from outside the organization is sought.

So far, the above discussion, which has been in line with evidence from the quantitative research with IT managers, appears to lend support to the hypotheses

regarding the relationship between service quality and strategic alignment. However, there is failure from interview to support the relationship between service quality and strategic alignment due to the lack of training programs that affects the product and service levels, and often leads to disagreement and misunderstanding between the IT unit and business unit. One of the reason behind this contradictory result may be because some of the respondents do not have enough understanding on this issue or maybe those IT managers prefer to give further information which will assist for diagnosing real relationship between service quality and strategic alignment.

Value and Beliefs

The element of value and belief is an important focus in the fields of MIS and management. The principal finding of the survey study as shown in hypotheses H5 and in the interviews was that the existence of value and belief between business and IT managers in Jordan has a positive significant effect on strategic alignment. Hence, the stronger the value and belief between IT managers and the top management, the greater is the manager's engagement in strategic alignment. The following quotes reflect this view from interviewee:

> As an IT manager, I feel better able to use manual system than automatic system. I do not like to use complex technology as I feel frustrated and afraid to make mistakes especially when training is inadequate. As an IT manger, I cannot convince the business manager to use new system in the organization.

Overall, this study provides support from both surveys and interviews that the stronger value and belief between IT managers with top management will lead to greater engagement of the manager's in strategic alignment.

Another primary finding that is crucial for this study in Jordanian context is related to the knowledge sharing between business and IT managers. It was found that understanding the work environments between the two parties has a vital role to play in obtaining more strategic alignment. Furthermore, study of both the surveys, as shown in hypotheses H6, and interviews has evidenced the important role of IT-business knowledge sharing on the level of enhancement.

In the results of the survey, IT managerial resource was identified to have a significant impact on strategic alignment. These results imply that the more IT managers implement the business strategies, and the more the top management recognizes the IT resources and capabilities, the higher is the strategic alignment achievement. In addition, the major finding of the interviews conducted was that the presence of shared knowledge between business and IT managers has a relationship with strategic alignment. Indeed, the interviewees declared the importance of business-IT shared knowledge, and offered several examples to express the issue that they understand and appreciate the business environment in terms of roles, tasks, and aims. These are alongside the business managers' understandings, and their appreciation of the work accomplished by the IT department. The following quotes appear this issue:

> Shared knowledge will help us to make our requirements much clearer; we will be able to understand the requirements of the other side. In this company, we have both sides. As IT people, we work as businessmen, since we know most of the business of the bank. On the other side, the management is aware of IT, they reply our needs. Also they are aware of the IT implications, additionally, we have common concerns and our relationship is reciprocal.

> I think the GM (general manager) is keen on integrating the latest technology in the world; however, he does not have complete knowledge of the details of IT technology. He may have a real desire to know more. Also, as an IT manager, I know where I have to go. I have a very clear plan for the end of this year and for five years later. Also, my major target is to maximize the applications of IT solutions in the company.

Overall, this study provides support from both surveys and interviews that the stronger IT managerial resource between IT managers with top management will lead to greater engagement of the managers in strategic alignment.

IT implementation Success

As noted earlier, this study has found a significant positive relationship between IT implementation success and strategic alignment supporting hypotheses H7. The results from the follow-up interviews also illustrated similar results, where more knowledge of how to deal with IT utilization was linked to the extent of management engagement in the strategic alignment.

> I find IT utilization will offer a lot of benefit for business department, for example applied automation system will increase the productivity and decrease the effort and time for workers.
> We have skills and proficiency in their employees; it is very easy to provide them with an updated technology. There are many experts available to the firm to develop a website on internet use and email.

Therefore, through the results from both the survey and the interviews this study clearly indicated that the stronger IT implementation success would result in the enhancement of the role from the IT managers to play in processing of vital information.

5.2.3 To determine if the proposed antecedents directly affect sustainable competitive advantage

The results of the third objective revealed that there are three significant direct impacts on sustainable competitive advantage. These direct impacts are from leadership, IT managerial resource, and IT implementation success. The three insignificant direct impacts on the same are from structure and process, service quality, value and belief.

Leadership

This research investigated the relationship between leadership and sustainable competitive advantage. The result pointed out that there is a significant relationship between leadership and sustainable competitive advantage as shown in hypothesis H8. Thus, higher communication between IT managers with top management enhances capability for product or service to be offered from Jordanian organization. This study provides support from both survey and interviews that the stronger leadership between IT managers and top management results in greater enhancement of sustainable competitive advantage from the managers.

IT Managerial Resource

This research investigated the relationship between IT managerial resource and sustainable competitive advantage. The results indicate significant relationship between IT managerial resource and sustainable competitive advantage supporting

162

hypothesis H12. Thus, higher sharing of knowledge between IT managers with top management enhances the capability of offering product or service from Jordanian organization, and consequently achieves sustainable competitive advantage.

The interviewees also recognized the importance of understanding and appreciating the business tasks and objectives. They further speak for the recognition from top management to lead the significant role played by IT in affecting their products and services positively. Therefore, above findings provide stronger evidence for a relationship between IT managerial resource and sustainable competitive advantage.

IT Implementation Success

This research investigated the relationship between IT implementation success and sustainable competitive advantage. The results pointed out the significant relationship between IT implementation success and sustainable competitive advantage as shown in hypothesis H13. Thus, the higher ability for IT manager to implement successful work, the greater is the sustainable competitive advantage. The interviewees also recognized the importance of IT utilization. They appreciated the business tasks and objectives, and the recognition from top management for the significant role played by IT in affecting their products and services positively. Hence, this study provides stronger evidence for a relationship between IT implementation success and sustainable competitive advantage.

Structure and Process

As reported in the discussions above, the connection between IT plan and business plan has no relationship with sustainable competitive advantage based on both the survey and interview results. The result pointed out the insignificant relationship between structure and process and sustainable competitive advantage as shown in hypothesis H9.

The interviewees also expressed about lower level of connection between IT plan and business plan to play insignificant role for the organization in Jordan to improve product or service, and consequently miss sustainable competitive advantage.

Service Quality

The empirical data of this research investigated the relationship between service quality and sustainable competitive advantage. The result pointed out that there is insignificant relationship between service quality and sustainable competitive advantage as shown in hypothesis H10. However, neither the survey nor the interview of this study could support the relationship between service quality and sustainable competitive advantage. That means, if IT does not collaborate reciprocally with other functional areas, sustainable competitive advantage will not occur. Indeed, in relation to this study, some IT managers stressed that service quality did not support sustainable competitive advantage. This study found some concerns related to service quality such as inadequate training programs, which hinder the finding of solutions to enhance product or service.

Value and Belief

The principal finding of the survey and the interviews was that the existence of value and belief between business and IT managers in Jordan has insignificant effect on sustainable competitive advantage. The result pointed out that there is insignificant relationship between value and belief and sustainable competitive advantage as shown in hypothesis H11.

In addition, among the major findings of the interview conducted was that the value and belief between business and IT managers has no influence on sustainable competitive advantage. Indeed, the interviewees expressed that if the business manager believes that IT is crucial for activities that will not affect the product or service capability, and consequently will not affect sustainable competitive advantage.

5.2.4 To determine if strategic alignment mediates the relationship between the proposed antecedents and sustainable competitive advantage.

The results of fourth objective revealed that there are four factors, namely, leadership, Structure and process, IT managerial resource, and IT implementation success, for which strategic alignment did not play mediating effect on sustainable competitive advantage. Besides, there are two factors, namely, service quality, and value and belief, for which strategic alignment played mediating effect on sustainable competitive advantage.

Leadership:

This research investigated for the strategic alignment to have mediating effect in the relationship between leadership and sustainable competitive advantage. The results pointed out strategic alignment not to mediate the relationship between leadership and sustainable competitive advantage as shown in hypothesis H14. Thus, higher communication between IT managers with top management directly enhances capability for product or service offered from Jordanian organization, and consequently helps to achieve sustainable competitive advantage.

This study provides support from both the survey and the interview that the stronger leadership between IT managers with top management, the greater is the manager's ability to enhance sustainable competitive advantage. This study further suggests that if there is a strong leadership between IT managers and Business managers inside the organization that will enhance organization capability to gain sustainable competitive advantage directly.

Structure and Process

This research investigated strategic alignment to have mediating effect in the relationship between (structure and process) and sustainable competitive advantage. The result pointed out that strategic alignment did not mediate in the relationship between structure and process and sustainable competitive advantage as shown in hypothesis H15. Also, the interviewees expressed about lower level of connection between IT plan and business plan and its insignificant role for the organization in

Jordan to improve product or service and consequently miss sustainable competitive advantage.

IT Managerial Resource

This research investigated strategic alignment to have mediating effect in the relationship between IT managerial resource and sustainable competitive advantage. The result pointed out strategic alignment not to mediate in the relationship between IT managerial resource and sustainable competitive advantage as shown in hypothesis H18. Thus, higher sharing of knowledge between IT managers and top management directly enhances capability for product or service offering by Jordanian organization and consequently achieves sustainable competitive advantage. So, Jordanian organization should be concerned about this factor in order to enhance their capability of offering product or service to achieve sustainable competitive advantage.

The interviewees also recognized the importance of understanding and appreciating the business tasks and objectives, and also recognized from top management about the significant role which IT plays in affecting their products and services positively to enhance directly sustainable competitive advantage. Therefore, the above findings provide stronger evidence for a relationship between IT managerial resource and sustainable competitive advantage.

IT Implementation Success

This research investigated strategic alignment to have mediating effect in the relationship between IT implementation success and sustainable competitive advantage. The result pointed out strategic alignment not to mediate in the relationship between IT implementation success and sustainable competitive advantage as shown in hypothesis H19. Thus, the greater ability of the IT managers to implement successful work can directly result in the greater engagement in sustainable competitive advantage.

The interviewees also recognized the importance of IT utilization by appreciating the business tasks and objectives, and the recognition from top management of the significant role which IT plays in affecting their products and services positively. Therefore, the above findings provide stronger evidence for the relationship between IT implementation success and sustainable competitive advantage.

Service Quality

This research investigated strategic alignment to mediate in the relationship between service quality and sustainable competitive advantage. The result pointed out that strategic alignment played mediating role in the relationship between service quality and sustainable competitive advantage as shown in hypothesis H16. Thus, this study has become successful to support the mediating effect of strategic alignment in the relationship between service quality and sustainable competitive advantage using both the survey and interview method. That means, if IT collaborates reciprocally with

other functional areas, it will affect the strategic alignment which consequently will affect the achievement of sustainable competitive advantage.

In relation to this study, some IT managers stressed that service quality did not support sustainable competitive advantage. This study found some concerns related with service quality such as inadequate training programs, which hinder the finding of solutions to enhance product or service. In addition, Jordanian organization must give concern for training program, inside or outside the organization, which will encourage managers to be familiar with unmanageable issues related with IT issues or business issues. This study has support for this result from survey and interview.

Value and Belief

This research investigated strategic alignment for its mediating effect in the relationship between value and belief and sustainable competitive advantage. The result pointed out strategic alignment to play mediating role in the relationship between value and belief and sustainable competitive advantage as shown in hypothesis H17. However, this study has succeeded to support the mediating effect of strategic alignment in the relationship between value and belief and sustainable competitive advantage in both the survey and interviews.

In addition, one of the major findings of the interviews conducted was that the value and belief between business and IT managers has no relationship on sustainable competitive advantage. So the harmonization between IT strategy and business strategy will effect on strategic alignment and consequently will help to achieve

sustainable competitive advantage. Indeed, the interviewees expressed that if the business manager believes that IT is crucial for activities that will not have effect on capability for product or service and consequently will not affect sustainable competitive advantage. Some of the interviewee expressed that there is necessity to give concern for IT function and business function to increase the collection of the requirements from all departments that can be used to encourage the integration between IT department and businesses departments to achieve sustainable competitive advantage. This study has supported this result from both interview and survey.

5.3   Summary of the Research Investigation

This thesis explored several issues of IT-business strategic alignment, which were revealed in an intensive literature review, and which in turn resulted in a new causal model.

Indeed, this study tested the underlying research model by conducting questionnaires survey in 172 public shareholding firms in Jordan. This thesis showed links among the variables in the research model. Since some researchers (e.g., Kearns and Lederer, 2001; Chan et al., 2006; Chan & Reich, 2007) argued that the effect of IT-business strategic alignment strategies on business performance may possibly be delayed for some time, the dynamic model was used in this study to investigate the delays which could be seen over time.

Prior to the main study described in this thesis, some possible issue in this regards had been found in a preliminary investigation. The study was undertaken with primary

aim of identifying and providing an understanding of factor standing behind misalignment between IT strategy and business strategy. This was done in order to provide solution to the problem of misalignment in public shareholding firms in Jordan detected in the preliminary study:

- Lack of leadership of top management resulting from lack of communication

- There is a clear separation between IT plan and business plan, in other word, there is inappropriate structure and process can hinder linkage between IT plan and business plan

- Managers indicated that IT managers are not fully satisfied with the quality of services. They complain about inadequate training programs which lead to a lack of skills. Service quality is a good channel for some interactions within the departments, and it can assess user satisfaction with application or system as well as the service provided by the IT unit.

- Resistance to change: There is lack of confidence to use technology to enhance business improvement. Thus, value and belief consider is one of the importance factor stands behind missing linkage between IT unit and business unit.

- There is lowest level of sharing knowledge between IT management and top management that could hinder linkage between IT plan and business plan

- Training process in developing country was slow and difficult so this factor makes implementation technology slow in Jordanian organization

In this chapter, the findings of the current research are briefly presented. Indeed, the results of the main survey questionnaires through the SEM analysis showed strong evidence for the impact of following variables: leadership in the interaction between

business and IT managers, value and belief, IT managerial resource, IT implementation success, and service quality, on IT-business strategic alignment in terms of alignment gap. However, SEM failed to support the link between structure and process on IT-business strategic alignment in terms of alignment gap.

The SEM found positive and significant relationships between strategic alignment and sustainable competitive advantage. Also, the results of the main survey questionnaire through the SEM analysis showed strong evidence for the effect of leadership, IT managerial resource, and IT implementation success on sustainable competitive advantage. On the other hand, the SEM failed to support the link between structure and process, service quality, and value and belief on sustainable competitive advantage. In addition, the result of the main survey questionnaires through the SEM analysis showed strong evidence about mediating effect of strategic alignment on the relationship between service quality, value and belief, and sustainable competitive advantage. However, the SEM failed to support the mediating effect of strategic alignment on the relationship of Leadership, structure and process, IT managerial resource, and IT implementation success with sustainable competitive advantage.

The findings of the interviews provided support for the hypothesis that the more the IT managers are involved in interaction with the top management, the greater is the likelihood they experience higher level of strategic alignment. In addition, the interviews appeared to lend support to the failure of the hypotheses that there was no association found between IT plan and business plan and managers' strategic alignment, owing either to a lack of participation from the top management, or the ignorance of IT managers with regard to involvement in the business plans.

172

Furthermore, the interviews confirmed that the greater the shared knowledge between business and IT managers, the greater is the managers' engagement in strategic alignment. Moreover, this study has supported the associations between value and belief, IT implementation success, leadership, IT managerial resource and strategic alignment in the interviews.

The significant relationships between strategic alignment and in turn, higher profitability and sustainable competitive advantage have been supported in this study. The interviewees verified during the semi structured interviews' results on the mediating role of strategic alignment in the relationship between value and belief, and service quality. Thus, based on the findings of the quantitative   conducted in the study, this thesis contributes to theory as well as to practice. The following section addresses the contributions of this research in detail.

5.4   Contribution of the Research

Current study has contributed to theory by rooting the research 'causal' model and its variables in the literature of IT-business strategic alignment and sustainable competitive advantage. In addition, the thesis has contributed to practice by recommending approaches and mechanisms which would support practitioners and managers to accomplish and sustain alignment over time under several conditions. This section will present the contributions made by this research from two main angles: theoretical and practical contributions.

5.4.1 Theoretical Contributions

Strategic fit or IT-business strategic alignment has been measured from several perspectives including matching, moderation, mediation, covariation, gestalt, and profile deviation. However, the linkages between business and IT strategy offer a more sensitive analysis of the needed resources and conditions for realizing IT potential. Furthermore, researchers generally assume a type of alignment where business strategy determines IT strategy (e.g., Miller, 1993; Kearns & Lederer, 2000, 2003; Sabherwal et al., 2001). On the contrary, few studies theorize how IT strategy could determine business strategy (Henderson & Venkatraman, 1993; 1999).

Notably, there is little research on the effect of fits on firm's sustainable competitive advantage, particularly on the conditions that prefer one to fit with another. In addition, some researchers (e.g., Bergeron et al., 2001) found that IT-business strategic alignment affected performance when they used mediation, covariation, gestalt, and profile deviation approaches, whereas no influence on performance occurred when matching and moderation methods were used. Therefore, based on the above gaps, this study has provided additional literature by looking at new conceptualization of IT-business strategic alignment into alignment gap.

Current thesis also reported that the new conceptualization of IT-business strategic alignment presents superior insights into the conditions of alignment in terms of the antecedent variables, and the consequences in terms of the mediating processes in leveraging the organizational capabilities, and in turn, realizing the possible business values of IT. The major focus of the current study is on strategic alignment, and its

importance to firm's sustainable competitive advantage. Consequently, it is dissimilar to most of the preceding literature, which investigated either the impact of antecedents on alignment, or the impact of alignment on performance. In contrast, current thesis examines an integrated model that comprises the impact of antecedents on alignment and the impact of alignment on sustainable competitive advantage and also the direct impact of antecedent on sustainable competitive advantage.

Moreover, since the models of Morton (1991), MacDonald (1991), Baets (1992), Henderson and Venkatraman (1993), and Papp (1995) models did not state the conditions that a firm could follow in applying causal chains, besides the absence the antecedent and contingency variables that guide the concept of strategic alignment; This thesis, however, explores the links between strategic alignment and the antecedents involved.

Several antecedents were proposed to affect the state of strategic alignment in terms of alignment gap activities among the Jordanian IT managers. These antecedents, which were being discussed in this study, include the leadership, structure and process, service quality, value and belief, IT managerial resource, and IT implementation success. This thesis extends the discussion of IT-business strategic alignment, with particular attention being paid to a new conceptualization of the term, alignment gap, as an attempt to contribute further to the MIS field, and to test the impact of the new conceptualization on sustainable competitive advantage.

In addition, another contribution of this thesis is that this study may be the first research of its kind to integrate several aspects of strategic alignment antecedents,

strategic alignment, and firm's sustainable competitive advantage into an assessment instrument based on a model using structural equation modelling (SEM). Indeed, no research was found that combined and empirically tested these research constructs.

In addition, the applications of SEM and   interviews in this research have offered advantages by allowing the study to compare and validate the study's results and findings. Therefore, this research has added more insight into the body of knowledge in the MIS literatures by providing several results from IT managers and business perspectives, ascertained both quantitatively and with interview.

Furthermore, this study may well be the first to explore the research model in developing countries in general, and in Jordan (or even in the Middle East), in particular. Therefore, it is hoped that this contribution will offer a precious insight for both academia and practitioners.

The findings of this study would facilitate IT and business managers to have a better understanding of the importance of the convergence between the two parties. Also, when top management conceptualizes their investment decisions, they can depend on the study's causal model to guide them to understand the resources and conditions required for the purpose of realizing the potential value of their IT investment. Thus, the findings of this study can be useful to the top management of business and IT when they plan, develop, and deploy their own strategic business and information systems. The following section reports the study's practical contributions.

5.4.2   Practical Contributions

Previous section elaborated the theoretical contributions to the body of knowledge for the MIS. This section continues this elaboration by presenting the findings of this study, which has several significant practical implications for IT and business managers, including all other decision makers related to the public shareholding firms. The first practical contribution has strategic implications for the top management of IT and business parties in relation to strategic alignment mechanisms.

This research strongly encourages IT and business managers and researchers to pay more attention to the IT-business strategic alignment aspect, and to examine its antecedents and sustainable competitive advantage. In addition, the implication of the results of the surveys and interviews related to the strategic alignment in terms of alignment gap is perceived in different ways by IT managers. The causal model offers firms some indication of the ways in which they can organize their IT to promote strategic alignment. It could help them to develop their practices and mechanisms driving toward supporting interaction, plans, and shared knowledge.

The model would also help the firms to clarify what they have already been doing to cope with structure and process. For instance, the current research from both surveys and interviews has supported firms that are best able to exploit their existing IT resources if they employ both mechanisms of shared knowledge and successful of IT implementation. Therefore, it is fundamentally important to maintain shared knowledge between business and IT managers in order to achieve the benefits of managers. On this point, several initiatives can be introduced to achieve strategic

alignment. These would include: an understanding and appreciation of the business managers of the IS work environment, an understanding and appreciation of the IS managers of the line organization and (value and belief) between business and IT manager.

However, because of the rapid development of IT applications, and since the development of more business initiatives relating to the newer expansion of IT technology, an interaction perspective between IT and business managers is crucial in realizing a firm's sustainable competitive advantage. This is to say that firms would explore further IT opportunities if they employ the mechanisms of leadership between business and IT managers, value and belief, IT managerial resource, IT implementation success and service quality. As an implication, it is important for both managers and researchers to investigate such relationship and to focus on the ways of strengthening the relationship.

Interviews in this research failed to support relationship between service quality, structure and process and strategic alignment, but the empirical result support the relationship between service quality and strategic alignment. Based on this result, IT managers need to acknowledge the importance of aligning business plans to IT plans. Moreover, the results from both surveys and interviews suggested that the leadership between IT managers and business, IT managerial resource, IT implementation success has a significant influence on sustainable competitive advantage through the competency needed for offering product or service.

Nevertheless, the research findings reported that IT managers perceived that there is lacked connection between IT plan and business plan. Thus, on the one hand, the role of IT should be treated as a fundamental division of a firm. This is by showing that IT managers, besides doing their routine work as IT-senior management, are supposed to participate in the formulation of the business strategy of firm. On the other hand, several ways should be employed, such as attending particular exercises to learn how to develop formal and informal plans with the business side, and training programs and workshops. These are some techniques to ensure that IT managers would achieve further insight to strengthen the association between IT plan and business plan and their activities.

In addition, the findings of the research have reported that firms can achieve sustainable competitive advantage through service quality, and value and belief. Therefore, alignment between IT plan and business plan should be regarded as an important role for motivating managers and encouraging them to improve their work. Current study explored the significant fact supporting strategic alignment in relation to sustainable competitive advantage.

The research model could be used by top management, academics, and practitioners as an analytical instrument to help firms spot where essential progress is missing, and at the same time as a practical method to identify processes that need to be created. Moreover, based on the above presentation, top management should agree to share responsibility for achieving IT-business strategic alignment, sustaining it, and realizing firm's sustainable competitive advantage through it.

Managers also have to understand that strategic alignment is a dynamic practice, which needs frequent adjustment and readjustment. Indeed, since every firm are subject to an exclusive environment, the practical responses to the challenges of strategic alignment vary from one firm to another. Thus, a successful partnership is one that can evaluate and react to the particular conditions faced. The next section will address the limitations of current study, which may possibly limit the generalization of the research.

5.5   Limitation of the Study

Although this study reported insights in numerous ways by using various methods to understand the alignment problem with sustainable competitive advantage, it is subject to several limitations.

Since the interviewees in the current research were all at senior organizational levels, all of them were very busy, and thus the time available for interviews was limited. This might have limited the findings of the research and also the understanding of the strategic alignment process, its antecedents, and sustainable competitive advantage. Accordingly, further interviews are clearly needed to explore the associations identified as the research's gaps.

In addition, although the response rate of this study was sufficient for the condition of statistical analysis, the percentage of those who did not respond was still observable. In other words, even though the research results could be representative, it is

reasonable to be cautious in their generalization. Therefore, to increase statistical validity, further research should consider higher response rates.

The data and results reported in this thesis were based on a single country, Jordan. Thus, they are applicable specifically to the Jordanian context. This raises inquiries regarding the generalization of the findings for other cultures and contexts. Consequently, further research is needed in several other countries, since this would help to advance the understanding of the IT business strategic alignment issue, and the conditions of achieving it from different international origins in different contexts.

However, this research was well-grounded, relying on previous theories, through the development and testing of a conceptual model of the antecedents and consequences of IT-business strategic alignment. Furthermore, various literatures from MIS, and management were used for employing the survey questionnaires, and semi structured interviews were employed to arrive at the final results. Despite these limitations, this thesis has contributed to both theory and practice.

While this study has provided several valuable insights, the mixed empirical support for the hypotheses in this study has identified future research avenues, which will be presented in the following section.

5.6   Further Research Consideration

Although the research findings validated the conceptual model, further examination is needed over a longer period. Therefore, a longitudinal research of the current research

model is required in order to build a solid ground for the associations studied, and to strengthen the theoretical underpinnings of this study.

Furthermore, in order to achieve more validation of the research model and to achieve more generalized findings, further investigation needs to be conducted with an international perspective, developing the research model to take into account in other countries. In other words, more research could validate the model by replicating it in other Arab and non-Arab countries.

Also, the same model could be used in a comparative study between the banking, insurance, services, and manufacturing sectors, as an attempt to test the differences of research associations in these sectors, and to ascertain if the model could be more general across different industries. Overall, although this thesis investigated several hypotheses, and offered empirical support for the acceptance and refusal of some of these hypotheses, more generalizations on the application of the theoretical premises in building the research model will be needed to enrich and build upon the alignment theory. This is to say, in future research, a more generalized research model that compensates for the limitations of current study, by adding further impacting variables to the model, and by obtaining a more representative sample from different sectors, is required.

5.7   Conclusion

The topic of strategic fit still remains one of the most essential areas in the MIS field. For instance, in a formal survey on managers about their top IS concern, the top five

were: IT and business alignment, attracting, developing, and retaining IT professionals, security and privacy, IT strategic planning, and business process reengineering (Luftman et al., 2006). Also, there have been recent calls from scholars and researchers (e.g., Chan & Reich, 2007; Dong et al., 2008; Masa'deh & Kuk, 2009) to investigate the topic area further. Therefore, this reflects the importance of this thesis in the field of MIS generally, and in the field of strategic management and IT management, in particular.

The proposed causal model implemented in this study contributes to the enrichment of the research in the field of strategic alignment of IT by considering an integrative approach containing antecedents of IT–business alignment, strategic alignment as mediating, and sustainable competitive advantage. Moreover, this research makes a methodological contribution to IS theory by using structural equation modeling with the powerful AMOS approach that assists data analysis. By using the rigorous SEM tests in this thesis, a precise foundation has been established for the theory, building in the area of strategic alignment. In summary, it is expected that this study will provide a better understanding of how managers experience into strategic alignment, and in turn how it affects sustainable competitive advantage. Therefore, based on the research findings, the current research model should be considered as a starting point for future research in identifying the best ways of realizing strategic alignment, so that firms can maximize the benefit from it.

Since some of the research hypotheses were supported, and some were not, further research is clearly needed to reveal better insights into the nature of these associations. In conclusion, it is expected that the results and findings obtained from

this research will improve the relationship between firms' IT and business managers, and in turn help to realize better sustainable competitive advantage.

REFERENCES

Aldhmour, F. (2009). Towards understanding the relationship between information and communication technology and competitive advantage in a developing economy. *International Review of Business Research Papers, 5*(1), 307-320.

Al majali, D., & Dahalin, Z. (2010). Diagnosing the gap in IT – business strategic alignment: a qualitative analysis among public shareholding firms in Jordan. *International Journal of Electronic Business Management , 8* (4),255- 262.

Amman Stock Exchange. (n.d.). Retrieved May 04, 2009, from http://www.ase.com.jo/

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423.

Ansoff, H. (1987). Strategic management of technology. *Journal of Business Strategy, 7*(3), 28-39.

Applegate, L., Holsapple, C., Kalakota, R., Radermacher, F., & Whinston, A. (1996). Electronic commerce: Building blocks of new business opportunity. *Journal of Organizational Computing and Electronic Commerce, 6*(1), 1-10.

Arbuckle, J. (1977). *Amos User Guide, Version 3.6.* Small Water Corporation.

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.

Baets, W. (1996). Some empirical evidence on IS strategy alignment in banking. *Information & Management, 30*(4), 155-177.

Baets, W. (1992). Aligning information systems with business strategy. *The Journal of Strategic Information Systems, 1*(4), 205-213.

Bagozzi, R. (1996). Measurement in marketing research: Basic principles of questionnaires design. In R. Bagozzi (Ed.), *Principle of Marketing Research.* Cambridge, Blackwell Business.

Bagozzi, R., & Phillips, L. (1982). Representing and testing organizational theories: A holistic construal. *Administrative Science Quarterly, 27* (3), 459-489.

Bagozzi, R., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of The Academy of Marketing Science, 16*(1), 74-94.

Baker, J., Parasuraman, A., Grewal, D., & Voss, G. (2004). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of Marketing, 66*(2), 120-141.

Baker, M. (2003). *Business and Management Research: How to Complete your Research Project Successfully.* Scotland: Westburn Publishers.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17* (1), 99-120.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Bassellier, G., Benbasat, I., & Reich, B. (2003). The influence of business managers' IT competence on championing IT. *Information Systems Research, 14*(4), 317-336.

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.

Bentler, P. (1988). Causal modeling via structural equation systems. *Handbook of Multivariate Experimental Psychology, 2*, 317-335.

Bentler, P., & Chou, C. (1987). Practical issues in structural modeling. *Sociological Methods and Research, 16*(1), 78-117.

Bentler, P. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238-246.

Bentler, P., & Bonett, D. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological bulletin, 88*(3), 588-606.

Bergeron, F., & Raymond, L. (1995). The contribution of IT to the bottom line: A contingency perspective of strategic dimensions. *Proceedings of the 16th International Conference on Information Systems,* 167-181, Amsterdam.

Bergeron, F., Raymond, L., & Rivard, S. (2001). Fit in strategic information technology management research: An empirical comparison of perspectives. *International Journal of Management Science, 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.

Bharadwaj, A. S. (2000). A resource based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly, 24*(1), 169-195.

Blackburn, S. (1994). *Dictionary of Philosophy.* Oxford University Press: Oxford.

Bollen, K. (1989). *Structural Equations with Latent Variables.* Wiley: New York.

Boynton, A., Zmud, R., & Jacobs, G. (1994). The influence of IT management practice on IT use in large organizations. *MIS Quarterly, 18*(3), 299-318.

Broadbent, M., & Kitzis, E. (2005). *The new CIO leader: setting the agenda and delivering results*: Harvard Business Press.

Brown, C., & Magill, S. (1994). Alignment of the IS functions with the enterprise: Toward a model of antecedents. *MIS Quarterly, 18*(4), 371-403.

Brown, R. L. (1996). *Assessing specific mediational effects in complex theoretical models* (Technical Report No. SON-2-96). Schools of Medicine and Nursing, University of Wisconsin-Madison.

Browne, M., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Testing Structural Equation Models, 154*, 136–162.

Brown, M. M. (2001). Can ICT address the needs of the poor? *Choices*, June. N.Y. UNDP.

Bryman, A. (2004). *Social research methods*. New York: Oxford University Press Inc.

Brynjolfsson, E., & Hitt, L. M. (1998). Beyond the productivity paradox. *Communications of the ACM, 41*(8), 49-55.

Burn, J., & 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.

Byrd, T., Lewis, B., & Bryan, R. (2006). The leveraging influence of strategic alignment on IT investment: An empirical examination. *Information & Management, 43,* 308-321.

Byrne, B. (1989). *A primer of LISREL: Basic applications and programming for confirmatory factor analytic models*: Springer New York.

Byrne, B. (2001). *Structural equation modeling with Amos: basic concepts*. Applications, and Programming, Mahwah, New Jersey.

Campbell, B., Kay, R., & Avison, D. (2005). Strategic alignment: A practitioner's perspective. *Management, 18*(6), 653-664.

Carmines, E., & McIver, J. (1981). Analyzing models with unobserved variables. *Social Measurement: Current Issues*, 65-115.

Celuch, K., Murphy, G., & Callaway, S. (2007). More bang for your buck: Small firms and the importance of aligned information technology capabilities and strategic flexibility. *The Journal of High Technology Management Research, 17*(2), 187-197.

Chan, Y. (2002). Why haven't we mastered alignment? The importance of the informal organization structure. *MIS Quarterly Executive, 1*(2), 97-112.

Chan, Y., & Huff, S. (1992). Strategy: An information systems research perspective. *The Journal of Strategic Information Systems, 1*(4), 191-204.

Chan, Y., & Huff, S. (1993). Investigating information systems strategic alignment. *The Proceedings of the 14th International Conference on Information Systems,*345-363, Orlando.

Chan, Y., Huff, S., Barclay, D., & Copeland, D. (1997). Business strategic orientation, information strategic organization, and strategic alignment. *Information Systems Research, 8* (2), 125-150.

Chan, Y., & Reich, B. (2007). IT alignment: what have we learned? *Journal of Information Technology, 22*(4), 297-315.

Chan, Y., Sabherwal, R., & Thatcher, J. (2006). Antecedents and outcomes of strategic IS alignment: An empirical investigation. *IEEE Transactions on Engineering Management, 53*(1), 27- 47.

Chandler, A. (1962). *Strategy and structure: Chapters in the history of the American industrial enterprise*: Beard Books Inc.

Chang, L., & Powell, P. (1998). Towards a framework for business process re-engineering in small and medium-sized enterprises. *Information Systems Journal, 8*(3), 199-215.

Chau, P. (1997). Reexamining a model for evaluating information center success using a structural equation modeling approach. *Decision Sciences, 28*(2), 309-334.

Cheng, E. (2001). SEM being more effective than multiple regression in parsimonious model testing for management development research. *Journal of Management Development, 20*(7), 650-667.

Chin, W. (1998). Issues and opinion on structural equation modeling. *Management Information Systems Quarterly, 22*(1), 7-16.

Cho, H., & Pucik, V. (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic Management Journal, 26*(6), 555-575.

Choe, J. (2003). The effect of environmental uncertainty and strategic applications of IS on a firm's performance. *Information & Management, 40*(4), 257-268.

Chou, T., Chang, P., Cheng, Y., & Tasi, C. (2007). A path model linking organizational knowledge attributes, Information processing capabilities, and perceived usability. *Information & Management, 44*, 408-417.

Christensen, K. & Fahey, L. (1984). Building distinctive competences into competitive advantage. *Strategic Planning Management*, 113-23.

Churchill, G. (1999). *Marketing Research: Methodological Foundation,* New York: The Dryden Press.

Churchill, G. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research,* 16, pp. 64-73.

Coakes, S. J., & Steed, L. G. (2003). *SPSS Analysis without Anguish.* Sydney, Australia: John Wiley & Sons.

Coakley, J. R., Fiegner, M. K., Leader, B. A., & White, D. M. (1995). An approach to assess the degree of integration between an organization's is and business strategies. *Proceedings of the 1st Americas Conference on Information Systems*, 220-222.

Collis, D., & Montgomery, C. (n.d.). Competing on Resources: Strategy in the 1990s. *Knowledge and Strategy*, 25-40.

Collis, D. J., & Montgomey, C. A. (1995). Competing on resources: Strategy in the 1990. *Havard Business Reivew*, *73*(40), 118-128.

Collis, D. J., & Montgomey, C. A. (1995). Competing on Resources: Strategy in the 1990. *Havard Business Reivew*, *73*(40), 118-128.

Cragg, P., & King, M. (1993). Small-firm computing: motivators and inhibitors. *MIS Quarterly, 17*(1), 47-60.

Cragg, P., King, M., & Hussin, H. (2002). IT alignment and firm performance in small manufacturing firms. *The Journal of Strategic Information Systems, 11*(2), 109-132.

Croteau, A., & Bergeron, F. (2001). An information technology trilogy: business strategy, technological deployment and organizational performance. *The Journal of Strategic Information Systems, 10*(2), 77-99.

Croteau, A., Bergeron, F., & Raymond, L. (2001). Business strategy and technological deployment: Fit and performance. *Information System and Management, 6* (4).

Davies, H. T., & Crombie, L. K. (2009). What are confidence intervals and p-values? Published by Hayward Medical Communications, a division of Hayward Group Ltd. (2009). Decrop, A. (2000). Tourists' Decision-Making and Behavoir Processes. *Consumer Behavior in Travel and Tourism Haworth Press*, 103-135.

Day, G., & Wensley, R. (1988). Assessing advantage: A framework for diagnosing competitive advantage superiority. *The Journal of Marketing, 52*(2), 1-20.

Day, G. (1994). *Strategic Market Planning: The Pursuit of Competitive Advantage*. West Publishing, St Paul, MN.

De Villiers, R . (2006). *Sources of sustainable competitive advantage for business operating in global market place*. Unpublished doctoral Dissertation, University of Pretoria: The USA

DeLone, W., & McLean, E. (1992). Information systems success: the quest for the dependent variable. *Information Systems Research, 3*(1), 60-95.

Dong, X., Liu, Q., & Yin, D. (2008). Business performance, business Strategy, and information system strategic alignment: an empirical study on Chinese firms. *Tsinghua Science and Technology, 13* (3), 348-354.

Drazin, R., & Van de Ven, A. (1985). Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, 514-539.

D'Souza, D., & Mukherjee, D. (2004). Overcoming the challenges of aligning IT with business. *Information Strategy: The Executive's Journal, 20*(2), 23-31.

Earl, M. (1993). Experiences in strategic information systems planning. *MIS Quarterly, 17*(1), 1-24.

Earl, M., & Feeny, D. (1994). Is your CIO adding value. *Sloan Management Review, 35* (3), 11-20.

Feeny, D., Edwards, B., & Simpson, K. (1992). Understanding the CEO/CIO relationship. *MIS Quarterly, 16*(4), 435- 448.

Feldman, R. (2004). Methodological naturalism in epistemology. In J. Greco & E. Sosa, *The Blackwell Guide to Epistemology,* USA: Blackwell Publishing.

Fink, L., & Neumann, S. (2009). Exploring the perceived business value of the flexibility enabled by information technology infrastructure. *Information & Management, 46*, 90-99.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Galbraith, J. (1977). *Organization Design Reading*. Massachusetts, Addision-Wesley.

Galliers, R., Meriali, Y., & Spearing, L., (1994). Coping with information technology? How British executives perceive the key information systems management issues in the mind-1990s. *Journal of Information Technology*, *9*, 233-238.

Gerbing, D., & Anderson, J. (1992). Monte carlo evaluations of goodness of fit indices for structural equation models. *Sociological Methods and Research, 21*, 132-160

Grindley, K. (1992). Information systems issues facing senior executives: The culture gap. *The Journal of Strategic Information Systems, 1*(2), 57-62.

Guba, E., & Lincoln, Y. (1994). Competing paradigms in qualitative research. *Handbook of Qualitative Research, 2*, 163-194.

Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (1998). *Multivariate Data Analysis*: Prentice hall Upper Saddle River, NJ.

Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate Data Analysis.* Upper Saddle River, NJ: Prentice Hall.

Hair Jr, J., Anderson, R., Tatham, R., & Black, W. (1995). *Multivariate Data Analysis: With Readings*. Prentice-Hall, Inc. Upper Saddle River, NJ, USA.

Hatcher, L. (1994). *A Step-By-Step Approach to Using the SAS System for Factor Analysis and Structural Equation Modeling*. SAS Publishing.

Henderson, J., & 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 transforming organizations. *IBM Systems Journal, 38*(2&3), 472-484.

Hill, C., & Jones, G. (2001). *Strategic Management Theory*: Houghton Mifflin.

Hirschheim, R., & Sabherwal, R. (2001). Detours in the path toward strategic information systems alignment. *California Management Review, 44*(1), 87-108.

Hodgkinson, S. (1996). The role of the corporate IT function in the federal IT organization. *Information Management: The organizational Dimension*, 247-268.

Hoelters, J. (1983). The analysis of covariance structures: Goodness-of-fit indices. *Sociological Methods and Research, 11*, 325-344.

Holmes-Smith, P. (2001). Introduction to Structural Equation Modelling Using LISREAL. *Perth: ACSPRI-Winter Training Program.*

Holton, G. (1993). *Science and Anti-Science*: Harvard Univ Pr.

Horovitz, J. (1984). New perspectives on strategic management. *Journal of Business Strategy, 4*(3), 19-33.

Hu, Q., & Huang, C. (2005). Aligning IT with firm business strategies using the balance   scorecard system. *Proceedings of the 38th Hawaii International Conference on System Sciences.*

James, L., Mulaik, S., & Brett, J. (1982). *Causal analysis: Assumptions, Models, and Data.* Sage Publications, Inc.

Jardine, D. (1990). Awakening from Descartes' nightmare: On the love of ambiguity in phenomenological approaches to education. *Studies in Philosophy and Education, 10*(3), 211-232.

Jayaraman, N., & Tandon, K. (1993). The impact of international cross listings on risk and return: The evidence from American Depository Receipts. *Journal of Banking & Finance, 17*(1), 91-103.

Johnson, A., & Lederer, A. (2005). The effect of communication frequency and channel richness on the convergence between chief executive and chief information officers. *Journal of Management Information Systems, 22*(2), 227-252.

Johnson, A., & Lederer, A. (2010). CEO/CIO Mutual understanding, strategic alignment, and   the contribution of IS to the organization. *Information & Management, 47*(3), 138-149.

Jöreskog, K., & Sörbom, D. (1982). Recent developments in structural equation modeling. *Journal of Marketing Research, 19*(4), 404-416.

Jöreskog, K., & Sörbom, D. (1996). *LISREL 8: User's Reference Guide.* Chicago: Scientific Software International.

Jr, V., Cavazotte, F., & Valente, D. (2009). Strategic alignment and its antecedents: A critical analysis of constructs and relations in the international and brazilian literature. *Journal of Global Information Technology Management, 12*(2), 33-60.

Judge, T., & Ferris, G. (1993). Social context of performance evaluation decisions. *Academy of Management Journal*, *36*(1),80-105.

Kanellis, P., Lycett, M., & Paul, R. (1999). Evaluating business information systems fit: From concept to practical application. *European Journal of Information Systems, 8*(1), 65-76.

Kanter, R. (1990). Change is everyone's job: Managing the extended enterprise in a globally connected world. *Organizational Dynamics, 28*(1), 7-23.

Karahanna, E., & Straub, D. (1999). The psychological origins of perceived usefulness and perceived ease-of-use. *Information & Management, 35*, 237-250.

Kearns, G., & Lederer, A. (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. (2001). Strategic IT-Alignment: A model for competitive advantage. *Proceedings of the 22nd ICIS,* 1-12, Barcelona.

Kearns, G., & Lederer, A. (2003). A resource-based view of strategic IT alignment: How knowledge sharing creates competitive advantage. *Decision Sciences, 34*(1), 1-29.

Keen, P. G. (1991). Redesigning the organization through information technology. *Planning Review, 19*(3), 4-9.

Kefi, H., & Kalika, M. (2005). Survey of strategic alignment impacts on organizational performance in international European companies. *Proceedings of the 38th Hawaii International Conference on Systems Sciences*.

Kerlinger, F. (1973). *Multiple Regression in Behavioral Research,* New York, London: Holt, Rinehart and Winston Inc.

King, A. (2007). Disentangling interfirm and intrafirm causal ambiguity: A conceptual model of causal ambiguity and sustainable competitive advantage. *Academy of Management Review, 32*(1), 156.

King, W. (1998). How effective is your information systems planning. *Long Range Planning, 21*(5), 103-112.

Kline, R. (1998). *Principles and Practice of Structural Equation Modeling* (1st ed.). New York.

Kline, R. (2005). *Principles and Practice of Structural Equation Modeling* (2nd ed.). New York: The Guilford Press.

Koch, T. (1995). Interpretive Approaches in Nursing Research: The influence of husserl and heidegger. *Journal of Advanced Nursing*, *21*, 827-836.

Koch, T., & Harrington, A. (1998). Reconceptualizing rigour: The case for reflexivity. *Journal of Advance Nursing*, *28*(4), 882-890.

Krejcie, R., & Morgan, D. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607-610.

Labovitz, G., & Rosansky, V. (1997). *The Power of Alignment*, John Wiley and Sons.

Lederer, A., & Mendelow, A. (1989). Co-ordination of information systems plans with business plans. *Journal of Management Information Systems,* 6(2), 5-19.

Lind, M., & Zmud, R. (1991). The influence of a convergence in understanding between technology providers and users on information technology innovativeness. *Organization Science, 2*(2), 195-217.

Loehlin, J. (1992). *Latent variable models: An Introduction to Factor, Path, and Structural Analysis*: Lawrence Erlbaum Associates Hillsdale, NJ.

Luftman, J., Lewis, P. R., & Oldach, S. H. (1993). Transforming the enterprise: The alignment of business and information technology strategies. *IBM Systems Journal, 32*, 198-221.

Luftman, J., Papp, R., & Brier, T. (1995, August 2-5). The strategic alignment model: Assessment and validation. *Proceedings of the Information Technology Management Group of the Association of Management (AoM) 13th Annual International Conference,* 57-66, Vancouver, British Colombia: Canada.

Luftman, J., & Brier, T. (1999). Achieving and sustaining business-IT alignment. *California Management Review, 42*(1), 109-122.

Luftman, J., Papp, R., & Brier, T. (1999). Enablers and inhibitors of business-IT alignment. *Communications of the Association for Information Systems, 1*(11), 1-32.

Luftman, J. (2000). Assessing business-IT alignment maturity. *Communication of AIS, 4*(14).

Luftman, J. (2003). Measure your business-IT alignment. *Optimize: Business Execution for CIOs Magazine, 26*.

Luftman, J., Bullen, C., Liao, D., Nash, E., & Neumann, C. (2004). *Managing the Information Technology Resource*. Pearson Education.

Luftman, J. (2005). Key issues for IT executives 2004. *MIS Quarterly Executive, 4*(2), 269-285.

Luftman, J., Kempaiah, R., & Nash, E. (2006). Key Issues for IT Executives 2005. *MIS Quarterly Executive, 5*(2), 81-101.

MacMillan, I. (1983). Preemptive strategies. *Journal of Business Strategy, 4*(2), 16-26.

MacDonald, H. (1991). The strategic alignment process. In S. Morton & S. Michael (Eds.), *The Corporation of the 1990s: Information Technology and Organizational Transformation*, 310-322, London: Oxford Press.

Magal, S., Carr, H., & Watson, H. (1988). Critical success factors for information center managers. *MIS Quarterly, 12*(3), 412-425.

Masa'deh, R., & Kuk, G. (2009, August 7-11). Antecedents and intermediaries between strategic alignment and firm performance. *Proceedings of the 2009 Conference of the Academy of Management Annual Meeting(AOM)*, Illinois, Chicago, U.S.A.

McDaniel, C., & Gates, R. (1999). *Contemporary Marketing Research* (4th ed.). London: West Publishing.

McDonald, R. & Ho, M. (2002). Principles and practice in reporting structure equation analyses .psychological Methods, *7*(11),64-82.

Michelli, J. A. (2006). *The Starbucks Experience.* New York: McGraw-Hill.

Miles, R., & Snow, C. (1978). *Organizational Strategy, Structure, and Process.* New York: McGraw-Hill.

Miller, D. (1981). Toward a new contingency approach: The search for organizational gestalts. *Journal of Management Studies, 18*(1), 1-26.

Miller, J. (1993). Measuring and aligning information systems with the organization. *Information & Management, 25*(4), 217-228.

Morton, M. S. (1991). *The Corporation of the 1990s: Information technology and organizational transformation*. New York: Oxford University Press.

Nelson, K., & Cooprider, J. (1996). The contribution of shared knowledge to IS group performance. *MIS Quarterly, 20*(4), 409-432.

Newkirk, H., & Lederer, A. (2006). The effectiveness of strategic information systems planning under environmental uncertainty. *Information & Management, 43*, 481-501.

Nunnally, J. (1978). Psychometric Methods. *NY: McGraw-Hill.*

Oana, V. (2010).Strategic alignment of ERP implementation stages: An empirical investigation. *Information & Management, 47*(3), 158-166.

Pallant, J. (2001). SPSS *Survival Manual: A Step By Step Guide To Data Analysis Using SPSS for Windows* (1st ed.). Australia: Allen & Unwin.

Pallant, J. (2005). *SPSS Survival Manual: A Step Guide to Data Analysis Using SPSS version 12.* Chicago, Illinois: Open University Press.

Palmer, J., & Markus, M. (2000). The performance impacts of quick response and strategic alignment in specialty retailing. *Information Systems Research, 11*(3), 241-259.

Papp, R. (1995). *Determinants of strategically aligned organizations: A multi-industry, multi-perspective analysis*. Dissertation, Stevens Institute of Technology, Hoboken, NJ.

Papp, R. (2001). Introduction to strategic alignment. In R. Papp (Ed.), *Strategic Information Technology: Opportunities for Competitive Advantage,* 1-24, Hershey, PA: Idea Group.

Parahoo, K. (1997). *Nursing research: Principles, process, and issues,* New York, NY: Palgrave Publications.

Parker, M., Benson, R., & Trainor, H. (1988). *Information Economics: Linking Business Performance to Information Technology*. Prentice Hall Englewood Cliffs, NJ.

Passemard, D., & Kleiner, B. (2000). Competitive advantage in global industries. *Management Research News, 23*(7/8), 111-117.

Peak, D., Guynes, C., & Kroon, V. (2005). Information technology alignment planning: A case study. *Information & Management, 42*(5), 635-649.

Pearlman, E. (2004). Welcome to the Crossroads .*CIO Insight, 1*(45).

Peppard, J., & Ward, J. (2004). Beyond strategic information systems: Towards and IS capability. *Journal of Strategic Information Systems, 13*, 167-194.

Pierce, A. C. (2002). *The effect of business and information technology strategic alignment on information technology investment returns and corporate performance*. Unpublished Doctoral Dissertation, Nova Southeastern University. Retrieved May 15, 2010, from the UMI ProQuest Digital Dissertations database.

Pitt, L., Watson, R., & Kavan, C. (1995). Service quality: A measure of information systems effectiveness. *MIS Quarterly, 19*(2), 173-187.

Poole, K., & Jones, A. (1996). A re-examination of the experimental design for nursing research. *Journal of Advanced Nursing, 24*(1), 108-114.

Porter, M. (1980). Industry structure and competitive strategy: Keys to profitability. *Financial Analysts Journal, 36*(4), 30-41.

Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.

Porter, M., & Millar, V. (1985). How information gives you competitive advantage. *Harvard Business Review, 63*(4), 149-160.

Porter, M. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal, 12*(S2), 95-117.

Porter, M. (1996). From competitive advantage to corporate strategy. *Managing the Multibusiness Company: Strategic Issues for Diversified Groups, 285.*

Porter, M. (1998). *Competitive advantage: creating and sustaining superior performance: With a new introduction*: Free Pr.

Porter, M., & Takeuchi., H. (2000). *Can Japan Compete*. Collier Macmillan publishers.

Powell, P. (1992). Information technology and business strategy: A synthesis of the case for reverse causality. *Proceedings of the 13th International Conference on Information Systems,* pp. 71-80, Texas: USA, December 13-16.

Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review, 68*(3), 79-91.

Pyburn, P. (1983). Linking the MIS plan with corporate strategy: An exploratory study. *MIS Quarterly, 7* (2), 1-14.

Rai, A., Lang, S., & Welker, R. (2002). Assessing the validity of IS success models: An empirical test and theoretical analysis. *Information systems research, 13*(1), 50-69.

Raymond, L., & Croteau, A. (2009). Manufacturing strategy and business strategy in medium-sized enterprises: Performance effects of strategic alignment. *IEEE Transactions on Engineering Management, 56*(2), 192-202.

Raymond, L. (2005). Operations management and advanced manufacturing technologies in SMEs: A contingency approach. *Journal of Manufacturing Technology Management, 16*(8), 936-955.

Reich, B., & Benbasat, I. (1990). An empirical investigation of factors influencing the success of customer-oriented Strategic systems. *Information Systems Research, 1*(3), 325-347.

Reich, B., & Benbasat, I. (1996). Measuring the linkage between business and information technology objectives. *MIS Quarterly, 20*(1), 55-81.

Reich, B., Chan, Y., & Bassellier, G. (1997). *Investigating IT Competence in Business Managers,* SIM Workshop, Atlanta.

Reich, B., & Benbasat, I. (2000). Factors that influence the social dimensions of alignment between business and information technology objectives. *MIS Quarterly, 24*(1), 81-113.

Robinson, J., Shaver, P., & Wrightsman, L. (1991). *Measures of Personality and Social Psychological Attitudes*. Academic Pr.

Rockart, J., Earl, M., & Ross, J. (1996). Eight imperatives for the new IT organization. *Sloan Management Review, 38*(1), 43-55.

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., & Chan, Y. (2001). Alignment between business and IS strategies: A study of prospectors, analyzers, and defenders. *Information Systems Research, 12*(1), 11-33.

Sabherwal, R. Hirschheim, R., & Goles, T. (2001). The dynamics of alignment: Insights from a punctuated equilibrium model. *Organization Science, 12*(2), 179-197.

Sage, A. P., (2002). *Information Technology*. In AccessScience@McGraw-Hill, http://www.accessscience.com, DOI 10.1036/1097-8542.757582; last modified: March1,2002 – Last accessed 2009-03-14.

Schwab, D. (1980). Construct validity in organizational behavior. *Research in Organizational Behavior, 2*(1), 3-43.

Segars, A., & Grover, V. (1993). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *MIS Quarterly, 17*(4), 517-525.

Segars, A., & Grover, V. (1999). Profiles of strategic information systems planning. *Information Systems Research, 10*(3), 199-232.

Sekaran, U. (2000a). Research Methods For Business: A Skill – Building Approach. NYC: John Wiley & Sons, Inc.

Sekaran, U. (2000b). *Research Methods for Business*. New York: Hermitage Publishing Services.

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach* (4th ed.). John Wiley and Sons.

Silvius, A. (2009). Business and IT Alignment: What we know and what we don't know. *International Conference on Information Management and Engineering*, p558-563.

Sledgianowski, D., & Luftman, J. (2005). IT-business strategic alignment maturity: A case study. *Journal of Cases on Information Technology, 7*(2), 102-120.

Sledgianowski, D., Luftman, J., & Reilly, R. (2006). Development and validation of an instrument to measure maturity of IT business strategic alignment mechanisms. *Information Resources Management Journal, 19*(3), 18-33.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative Science Quarterly, 28*(3), 339-358.

Spector, P. (1992). *Summated Rating Scale Construction: An Introduction*. New bury park CA: Sage.

Stevens, J. (1996). *Applied Multivariate Statistics for the Social Sciences*. Mahwah, NJ, Lawrence Erlbaum.

Strassmann, P. (2003). A line an included in, and responds to Nicholas Carr Article in Harvard Business Review: IT Doesn't Matter. *Letter to the Editor: Harvard Business Review,* May.

Strauss, A., & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage publications: Newbury Park, CA.

Streubert, H., Speziale, H., & Carpenter, D. (1999). *Qualitative Research in Nursing: Advancing the Humanistic Imperative*: Lippincott Williams & Wilkins.

Stringer, E. (2004). *Action Research in Education*. New Jersey: Pearson.

Synnott, W. (1987). *The Information Weapon: Winning Customers and Markets with Technology*. John Wiley & Sons Inc.

Szeto, E. (2000). Innovation capacity: working towards a mechanism for improving innovation within an inter-organizational network. *The TQM Magazine, 12*(2), 149-157.

Tallon, P., Kraemer, K., & Gurbaxani, V. (2000). Executives' perceptions of the business value of information technology: A process-oriented approach. *Journal of Management Information Systems, 16*(4), 145-173.

Tallon, P., & Kramer, K. (2003). *Investigating the Relationship between Strategic Alignment and Business Value: The Discovery of A Paradox. Creating Business Value with Information Technology: Challenges and Solutions*. Idea Publishing Group.

Tavakolian, H. (1989). Linking the information technology structure with organizational competitive strategy: A survey. *MIS Quarterly, 13*, 309-317.

Teo, T., & King, W. (1996). Assessing the impact of integration business planning and information systems planning. *Information & Management, 30*(6), 309-321.

Teo, T., & Ang, J. (1999). Critical success factors in the alignment of IS plans with business plans. *International Journal of Information Management, 19*(2), 173-185.

Van Dyke, T., Kappelman, L., & Prybutok, V. (1997). Measuring information systems service quality: Concerns on the use of the SERVQUAL questionnaire. *MIS Quarterly, 21*(2), 195-208.

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., & Prescott, J. (1990). Environment-strategy coalignment: An empirical test of its performance implications. *Strategic Management Journal, 11*(1), 1-23.

Venkatraman, N., & Tanriverdi, H. (2004). Reflecting "Knowledge" in Strategy Research: Conceptual Issues and Methodological Challenges. *Research Methodology in Strategy and Management, 1*, 33–67.

Vitale, M., Ives, B., & Beath, C. (1986). Linking information technology and corporate Strategy: An organizational view. *Proceedings of the 7th International on Information Systems,* 265-276, San Diego.

Vogt, W. (1993). *Dictionary of Statistics and Methodology.* London: Sage Publication.

Wang, E., & Tai, J. (2003). Factors affecting information systems planning effectiveness: Organizational contexts and planning systems dimensions. *Information & Management, 40*(4), 287-303.

Ward, J., Griffiths, P., (1999). *Strategic Planning For Information Systems.* Wiley, New York.

Watson, R., Kelly, G., Gilliers, R., &Brancheau, J. (1997). Key Issues in Information Systems Management: An International Perspective. *Journal of Management Information Systems,* 13,4, 91-115.

Ward, J., & Peppard, J. (1999). 'Mind the gap': Diagnosing the relationship between the IT organization and the rest of the business. *Journal of Strategic Information Systems*, *8*(1), 29-60.

Ward, J., & Peppard, J. (1996). Reconciling the IT/business relationship: A troubled marriage in need of guidance. *Journal of Strategic Information Systems, 5*(1), 37-65.

Ward, J., & Peppard, J. (2002). *Strategic Planning for Information Systems* (3rd ed.). John Willey & Sons.

Weiss, J., Thorogood, A., & Clark, K. (2006) . Three IT-Business Alignment Profiles: Technical Resource, Business Enabler and Strategic Weapon. *Communications of the AIS,*18 , 676-691.

Wernerfelt, B. (1984). Consumers with differing reaction speeds, scale advantages, and industry structure. *European Economic Rev., 24*, 257-270.

Wernerfelt, B., & Montgomery, C. (1988). Tobin's q and the importance of focus in firm performance. *American Economic Review, 78*, 246-251.

Xia, W., & King, W. (2002). Determinants of organizational it infrastructure capabilities. Retrieved February 6, 2010, from http://misrc.umn.edu/workingpapers/fullpapers/2002/0210_030102.pdf

APPENDIX A: THE RESEARCH QUESTIONNAIRE IN ENGLISH

<div align="right">Questionnaire No: (   )</div>

Questionnaire survey on Antecedent of IT- Business alignment factors in influencing sustainable competitive advantage.

Dear Respondents,

I am a doctoral student in the college Art and Science , the University Utara Malaysia (UUM) under the supervision of professor Dr Zulkhairi Md Dahalin; I am currently working on a doctoral dissertation regarding "Antecedent of IT- Business alignment factors in influencing sustainable competitive advantage".

This study aims to find out factors of IT- business alignment in influencing sustainable competitive advantage in Jordan.

I would appreciate if you could spare some time in completing this questionnaire. I hope that you would co-operate in completing the questionnaire with the best of your ability.

This questionnaire consists of four parts. Part one consists of questions about your demographic profile. Part two is about factors that affect strategic alignment, part three consists of questions about strategic alignment, and part four consists of questions about sustainable competitive advantage. Your responses will be treated as confidential and used for research purposes only. There is no right or wrong answer.

Thank you for your willingness to participate in this study

Best regards

The researcher: Dmaithan almajali

MIS PHD program

Universiti Utara Malaysia.

Admethan2004@yahoo.com

Date: _____

If you would like to receive a report of the research results please tick (√) in the box. ☐

PART 1: DEMOGRAPHIC PROFILES

(This part intends to get information the respondents' demographic background)

Tick (√) in the space that answers that best describe you.

Gender: (   ) Male

                                 (   ) Female

Age: (   ) years

Years of experience
in the present job   (   ) years

Educational level   (   ) Higher studies

                                    (   ) Bachelor

                                    (   ) College

Field of Education   (   ) IT

                                    (   ) none IT

Type of sector: (   ) Banking sector

                                    (   ) insurance sector

                                    (   ) service sector

                                    (   ) Manufacturing sector

                                    (   ) others

PART 2: STRATEGIC ALIGNMENT ANTECEDENTS

Please indicate to what extent you agree or disagree with the following statements by Marking (√) at the appropriate answer. The scale can be interpreted as:

(1): Strongly disagree	(2): disagree	(3):somewhat disagree	(4):undecided	(5):somewhat agree	(6):agree	(7): strongly agree

Item Num	Items	1	2	3	4	5	6	7
1	There are regular meetings between business and IT manager.							
2	There is a nominated liaison position between business and IT managers.							

3	Your firm uses temporary task forces for IT projects or new product development.							
4	Your firm uses stable teams or committees to steer IT development.							
5	Your firm sometimes let the IT managers to share in the product development teams.							
6	Your firm sometimes let the business managers to participate IT development teams.							
7	The IT plan reflects the business task.							
8	The IT plan reflects business goals.							
9	The IT plan supports the business strategy.							
10	The business plan refers to the IT plan.							
11	The business plan refers to specific IT applications software.							
12	The business plan refers to specific IT hardware.							
13	The services provided by IS have excellent quality.							
14	The service provided by IS matches my expectations.							
15	IS system delivers superior service in every way.							
16	IS system offers a very competitive service.							
17	Organizations have good relationship with local or international businesses							
18	Managers have trusts of their knowledge towards IS specialist.							
19	Managers trust the knowledge possessed by IT specialists .							
20	IS for experts must be responsible for consolidating their organizations.							
21	Managers comprehend IS terminology well at all levels.							
22	IS enhances their productivity among managers.							
23	IS specialists offer strategic plans for improvement.							
24	Business managers in your company understand problems, tasks, and roles of the IT department.							
25	Business managers in your company understand the accomplishments of the IT department.							
26	IT managers in your company understand the work environment of the business functions.							
27	IT managers in your company understand the activities of the business functions.							
28	IS managers will be kept updated with strategic business plan.							
29	IS affect the efficiency/ effectiveness in decision making.							
30	IS will save expenditures of running an operation.							
31	Top management provides internal training.							
32	new products and services introduced in my company are based on advances in information technology.							

PART 3 **:** STRATEGIC ALIGNMENT

Please indicate to what extent you / your firm performs the following statements by marking (√) at the appropriate answer. The scales in this section are to be interpreted as:

(1): Strongly disagree	(2): disagree	(3):somewhat disagree	(4): undecided	(5): somewhat agree	(6):agree	(7):strongly agree

Item Num	Items	1	2	3	4	5	6	7
33	Our IT planners are aware of the firm's objectives, business strategies, and long term goal							
34	Our firms business plans offer clear directions for IT planning							
35	Our IT managers participate in strategic business planning							
36	Our IT and business planners interact closely in the formulation of the IT strategic plan							
37	Our IT strategy is derived from business strategy							
38	Our business and IT strategies are fully integrated and are developed together							

PART 4: SUSTAINABLE COMPETITIVE ADVANTAGE

Please indicate to what extent you agree or disagree with the following statements by marking (√) at the appropriate answer. The scale can be interpreted as:

(1): Strongly disagree	(2): disagree	(3):somewhat disagree	(4): undecided	(5): somewhat agree	(6):agree	(7):strongly agree

Item Num	The item	1	2	3	4	5	6	7
39	My organization gives attention to develop discovered ideas into new services, processes, and procedures.							
40	My organization introduces services that are new to the market it serves.							
41	Preferred market positioning can contribute to							

	competitive advantages in the market place.							
42	Access to superior limit resources can contribute to competitive advantages in the market place							
43	Exploiting unlimited resources can contribute to competitive advantages in the market place.							
44	Access to superior competencies and capabilities can contribute to competitive							

Thank you very much for your time and cooperation. We greatly appreciate your help in assisting us with this study

APPENDIX B: THE RESEARCH QUESTIONNAIRE IN ARABIC

بسم الله الرحمن الرحيم

استبانه حول العوامل التي تؤثر على الميزه التنافسيه المستدامه من خلال الموائمه الاستراتيجيه
رقم الاستبانه (   )

عزيزي المستجيب:
انا طالب في برنامج الدكتوراه في كليه تكنولوجيا المعلومات في جامعه اوتارا الماليزيه تحت اشراف الد   كتور
زوالخيري , وأعمل الان على رساله الدكتوراه تحت عنوان " العوامل التي تؤثر على الميزه التنافسيه المستدامه
من خلال الموائمه الاستراتيجيه".

يتمثل الهدف من هذه الاستبانه الى اكتشاف العوامل التي تؤثر على الميزه التنافسيه المستدامه من خلال الموائمه
الاستراتيجيه بين استراتيجية الاعمال واستراتيجية تكنولوجيا المعلومات.

هذه الاستبانه تحتوي على اربع اقسام   . القسم الاول يحتوي على مجموعه من الاسئله التي تبحث العوامل
الديموغرافيه (العوامل الشخصيه) للمستجيبين. القسم الثاني يحتوي العوامل التي تؤثر على الموائمه
الاستراتيجيه. القسم الثالث يحتوي على الموائمه الاستراتيجيه بين استراتيجية تكنولوجيا المعلومات واستراتيجية
الاعمال.القسم الرابع يحتوي على الميزه التنافسيه المستدامه.

عزيزي المستجيب :
سنكون ممتنيين كثيرا اذا قضيتم بعض الوقت في اكمال هذه الاستبانه وآمل مشاركتكم في تعبئه هذه الاستبانه
بخالص قدرتكم ونحرص على ان اجاباتكم سوف تعامل بسريه تامه ولاغراض البحث فقط.

شكرآ لتعاونكم باكمال هذه الاستبانه

مع اطيب الامنيات
الباحث : دميثان عبدالكريم المجالي
جامعه اوتارا الماليزيه
اذا اردت الحصول على نسخه من نتائج البحث الرجاء وضع علامة (√) في المربع

الجزء الاول: المعلومات الشخصية:
الرجاء الاشارة على الاجابة الصحيحة.

1 - الجنس : ☐ ذكر   ☐ انثى

2- العمر: ☐

3- الخبره: : ☐

4- المستوى العلمي: ☐ دراسات عليا ☐ بكالوريس ☐ دبلوم

5- اختصاص الدراسه: ☐ تكنولوجيا المعلومات ☐ اخرى

6- تصنيف القطاع : ☐ قطاع البنوك   ☐ قطاع الخدمات

☐ قطاع التأمين   ☐ قطاع الاتصالات

☐ قطاعات اخرى

القسم الثاني: الرجاء تحديد درجة موافقتك / عدم موافقتك على العبارات التاليه بوضع اشارة (√) في المكان المناسب والذي تتمثل في الخيارات التالية:

(1): لا أوافق بشدة	(2): لا أوافق	(3): لا أوافق نوعا ما	(4): حيادي	(5): أوافق نوعا ما	(6): أوافق	(7): أوافق بشدة

7	6	5	4	3	2	1	الفقرات	رقم الفقره
							يوجد اجتماعات منتظمه بين مديري أل IT ومديري الاعمال.	1
							يوجد تبادل في التعيين في الوظائف بين مديري أل IT ومديري الاعمال.	2
							تستخدم شركتي قوى عامله مؤقته لمشاريع قسم أل IT.	3
							تستخدم شركتي طواقم ولجان دائمه لتطوير قسم أل IT.	4
							تسمح شركتي احيانا لمديري أل IT بتوجيه طواقم طواقم تطوير الانتاج.	5
							تسمح شركتي احيانا لمديري الأعمال بتوجيه طواقم تطوير أل IT.	6
							خطة قسم أل IT تعكس رسالة المنظمه ومهماتها.	7
							خطة قسم أل IT تعكس اهداف المنظمه.	8
							خطة قسم أل IT تدعم استراتيجية المنظمه.	9
							خطة المنظمه مرتبطه بخطة أل IT .	10
							خطة المنظمه مرتبطه ببرامج تطبيقيه محدده في أل IT (Software).	11
							خطة المنظمة مرتبطه ب Hardwar محدد في أل IT.	12

207

							الفقرات	الرقم
							الخدمات المقدمة من نظام المعلومات ذات جوده ممتازه.	13
							الخدمات المقدمة من نظام المعلومات تحقق التوقعات.	14
							الخدمات المقدمة من نظام المعلومات يقدم خدمه مميزه بكل الوظائف.	15
							الخدمات المقدمة من نظام المعلومات ذات تنافسيه عاليه.	16
							المنظمه تملك علاقات جيده داخليه وخارجيه.	17
							المدراء لديهم ثقه بالمعرفه تجاه نظام المعلومات.	18
							المدراء لديهم ثقه بالمعرفه المكتسبه من نظام المعلومات.	19
							نظام المعلومات يجب ان يكون مسؤول عن توحيد اقسم المنظمه.	20
							المدراء يفهمون المصطلحات التكنولوجيه في كافة مستويات المنظمه.	21
							نظام المعلومات يعزز الانتاجيه بين المدراء.	22
							المتخصصين في تكنولوجيا المعلومات يقدمون خطه استراتيجيه لتحسين العمل.	23
							يفهم مديري الاعمال في شركتي بيئة العمل في قسم أل IT.	24
							يقدر مديري الأعمال في شركتي انجازات قسم أل IT.	25
							يفهم مديري أل IT في شركتي بيئة العمل في قسم الأعمال.	26
							يقدر مديري أل IT في شركتي انجازات قسم الأعمال.	27
							مديري أل IT يواكبون التغيير تبعا لخطة المنظمه.	28
							نظام المعلومات يؤثر على كفاءة وفعالية صناعة القرار.	29
							نظام المعلومات سوف يخفض نفقات المنظمه.	30
							الاداره العليا تزود العاملين بتدريب داخلي.	31
							خدمات ومنتجات جديده في المنظمه تعتمد على التقدم في IT.	32

القسم الثالث: الرجاء ذكر لأي درجه تقوم شركتكم بما يلي ، والمتمثل بما يلي :

(7): أوافق بشدة	(6): أوافق	(5): أوافق نوعا ما	(4): حيادي	(3): لا أوافق نوعا ما	(2): لا أوافق	(1): لا أوافق بشدة

7	6	5	4	3	2	1	الفقرات	رقم الفقره
							مديري أل IT مدركين لاهداف واستراتيجية المنظمه على المدى الطويل.	1
							خطة المنظمه تقدم اتجاهات مفهومه لمديري أل IT.	2
							مديري أل IT ومديري الاعمال يتفاعلون في صياغة خطة استراتيجية أل IT.	3
							مديري أل IT يشاركون في خطة استراتيجية المنظمه.	4
							استراتيجية أل IT مشتقه من استراتيجية المنظمه.	5
							خطة المنظمه وخطة أل IT متداخله ومطوره معا".	6

القسم الرابع: يحتوي الجزء التالي على اسئله حول الميزه التنافسيه المستدامه لدى شركتكم . الرجاء وضع اشارة (√) في المكان المناسب لتحديد انجازات الشركه لديكم مقارنه مع المنافسين الرئسين لشركتكم في السنوات الماضيه. ويتمثل المقياس في هذا الجزء بالخيارات التاليه :

		(7): أوافق بشدة		(6): أوافق		(5): أوافق نوعا ما		(4): حيادي		(3): لا أوافق نوعا ما		(2): لا أوافق	(1): لا أوافق بشدة

7	6	5	4	3	2	1	الفقرات	رقم الفقره
							المظمه تعطي اهتمام لتبني الافكار الجديده في الخدمات والمنتجات والاجراءات الجديده.	1
							المنظمه تقوم بتقديم خدمات جديده الى الاسواق التي تخدمها.	2
							تحديد المواقع المفضله في السوق تسهم في مزايا تنافسيه للمنظمه.	3
							الحصول على الموارد ذات الجوده تسهم في الحصول على الميزه التنافسيه.	4
							يمكن استغلال موارد غير محدده لكي تساهم في الميزه التنافسيه.	5
							يمكن الحصول على كفاءات وقدرات متفوقة المساهمه في الميزه التنافسيه.	6

		(7): أوافق بشدة		(6): أوافق		(5): أوافق نوعا ما		(4): حيادي		(3): لا أوافق نوعا ما		(2): لا أوافق	(1): لا أوافق بشدة

APPENDIX C: COVER LETTER TO FIRMS

To whom it may concern
1 February 2010
Dear Sir,

I am writing to request permission for my student, Dmaithan al majali, to conduct research in your firm. Mr. Almajali is currently studying for a PhD in the School of MIS at The University Utara Malaysia. The focus of his research is to identify the relationships between factors affecting strategic alignment between IT and business strategies, and its effect on firm's sustainable competitive advantage. The approach to be taken for this research will be using well-establish questionnaires and semi-structured interviews with participants throughout Jordan. The study has the potential to strategic alignment by developing an evidence base to improve better business value, IT investments, and sustainable competitive advantage in Jordanian firms. I appreciate your assistance and support for Mr al majali research. If you have any questions about the research please do not hesitate to contact me.
Yours sincerely,

Dr Zulkhairi Md Dahlin
Professor in Information Systems

APPENDIX D: COVER LETTER TO FIRMS TRANSLATED IN ARABIC

دراسه مسحيه لموائمة تكنولوجيا المعلومات الاستراتيجي

سيدي العزيز/ سيدتي العزيزه:
يقوم السيد دميثان المجالي بهذه الدارسه الميدانيه كجزء من متطلبات الحصول على درجة الدكتوراه في نظم المعلومات الادارية من جامعة اوتارا في ماليزيا حيث تهدف هذه الدراسه الى تفهم وجهة نظر المدراء او صناع القرار في الشركات المساهمه العامه الأردنيه تجاه موضوع موائمة تكنولوجيا المعلومات الاستراتيجي واثر ذلك على الميزه التنافسيه المستدامه.
هذا وقد تم اختياركم ضمن عينه عشوائيه للمشاركه في هذا المسح والمقابلات اللازمه وسيثمل رأيك اهميه كبيره في تحقيق اهداف الدراسه.

الرجاء المساعده في الاجابه على فقرات الاستبانه المرفقه علما بأن المعلومات التي ستقدمونها ستكون سريه ولن يسمح بالاطلاع عليها وستستخدم لاغراض البحث العلمي .

شاكرين لكم حسن تعاونكم

zul@uum.edu.my

البرفسور
زو الخيري
جامعة اوتارا الماليزيه

211

APPENDIX E: TEST OF RESPONSE BIAS

Group Statistics

	Resbais	N	Mean	Std. Deviation	Std. Error Mean
Msus	1	172	3.2759	.94303	.07029
	2	30	3.1222	.91803	.16761
Experience	1	172	2.89	1.054	.079
	2	30	2.73	1.143	.209

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
MSUS	Equal variances assumed	.006	.939	.830	208	.408	.15370	.18529	-.21158	.51899
	Equal variances not assumed			.846	39.897	.403	.15370	.18175	-.21366	.52107
Experience	Equal variances assumed	.967	.327	.766	208	.445	.161	.210	-.254	.576
	Equal variances not assumed			.723	37.691	.474	.161	.223	-.290	.613

APPENDIX F: ASSESSMENT OF NORMALITY (GROUP NUMBER 1)

Variable	Min	max	Skew	c.r.	kurtosis	c.r.
SUS5	3.000	7.000	.002	.010	-.421	-1.128
SUS1	4.000	6.000	.000	.000	-1.314	-3.517
SUS2	3.000	6.000	-.353	-1.890	-.810	-2.169
SUS3	4.000	6.000	.159	.849	-1.275	-3.414
SUS4	4.000	6.000	.028	.149	-1.188	-3.181
SUS6	4.000	6.000	-.040	-.216	-1.344	-3.597
SA5	3.000	7.000	-.107	-.574	-.426	-1.141
SA1	4.000	6.000	.206	1.105	-1.231	-3.295
SA2	3.000	6.000	-.174	-.931	-.794	-2.126
SA3	3.000	7.000	.204	1.092	-.666	-1.782
SA4	4.000	7.000	.208	1.115	-.768	-2.055
SA6	4.000	6.000	.096	.513	-1.230	-3.293
IS4	3.000	6.000	-.251	-1.346	-.707	-1.893
IS2	4.000	7.000	.161	.861	-.972	-2.601
IS3	4.000	6.000	.096	.512	-.856	-2.290
IS1	4.000	7.000	.232	1.242	-.938	-2.510
MR2	4.000	5.000	-.306	-1.638	-1.906	-5.104
MR4	4.000	6.000	.047	.249	-1.186	-3.175
VB2	4.000	7.000	-.132	-.707	-.689	-1.844
VB6	4.000	7.000	.031	.165	-.630	-1.686
VB5	4.000	7.000	.076	.405	-.714	-1.912
VB4	4.000	7.000	.100	.537	-.728	-1.949
VB3	4.000	7.000	-.004	-.021	-.628	-1.681
VB1	4.000	7.000	.193	1.035	-.761	-2.037
SQ2	4.000	6.000	.123	.660	-1.202	-3.218
SQ4	4.000	6.000	-.051	-.275	-1.389	-3.718
SQ1	4.000	6.000	.058	.308	-1.240	-3.318
SP2	4.000	6.000	-.100	-.535	-1.133	-3.034
SP5	4.000	7.000	.156	.836	-.772	-2.065
SP4	4.000	7.000	-.089	-.475	-.600	-1.605
SP3	4.000	7.000	.250	1.336	-.987	-2.644
SP6	4.000	7.000	.182	.973	-.436	-1.166
LS2	4.000	6.000	.009	.047	-1.110	-2.971
LS6	4.000	6.000	.068	.363	-1.255	-3.361
LS5	3.000	6.000	-.362	-1.940	-.568	-1.521
LS4	3.000	6.000	-.041	-.221	-.827	-2.215
LS3	3.000	6.000	.345	1.848	-.435	-1.165
LS1	4.000	6.000	.087	.468	-1.075	-2.877
Multivariate					142.826	16.987

APPENDIX G: ASSESSMENT OF NORMALITY
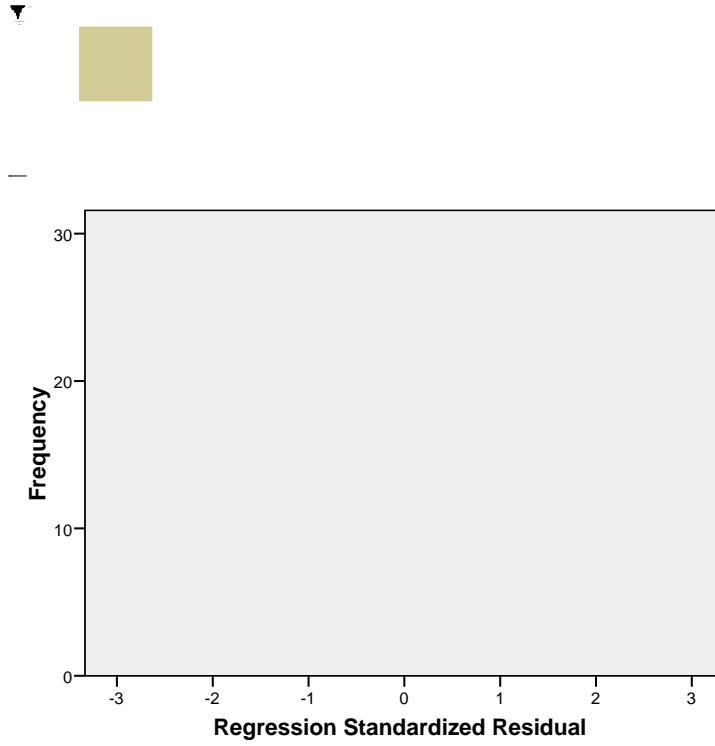
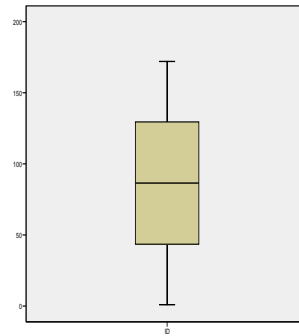# APPENDIX H : Q – Q PLOTS OF EACH CONSTRUCT

**Q-Q Plots of
SERVICE QUALITY**
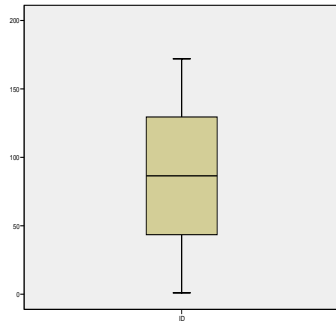
**Q-Q Plots of
LEADERSHIP**

**Q-Q Plots of
STRUCTURE AND PROCESS**
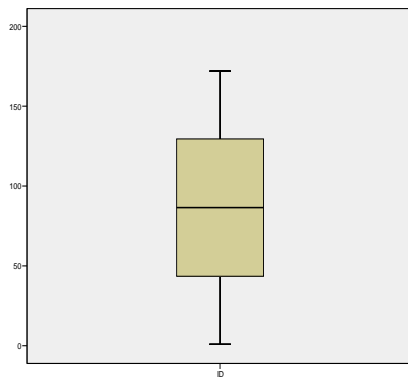
**Q-Q Plots of
VALUE AND BELIEF**
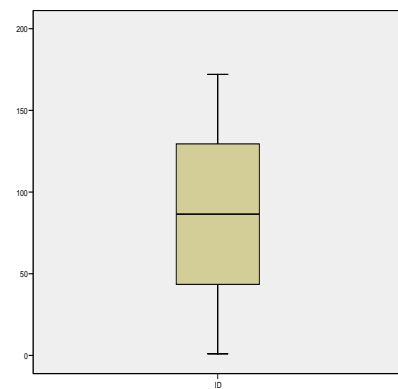
**Q-Q Plots of
IT MANAGERIAL RESOURCE
SUCCESS**
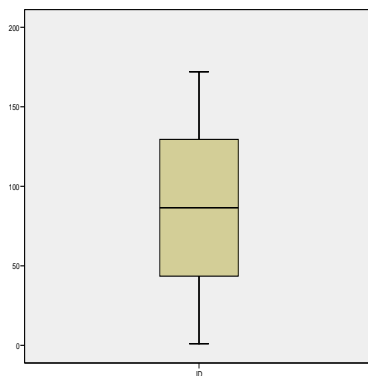
**Q-Q Plots of
IT IMPLEMENTATION**

215
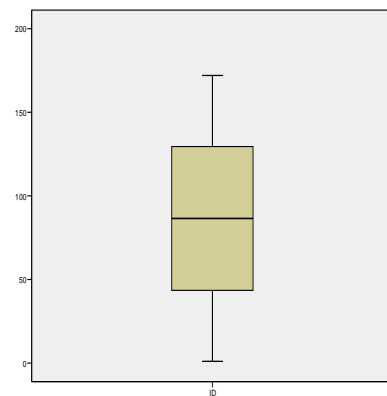
Q-Q Plots of
STRATEGIC ALIGNMENT
ADVANTAGE
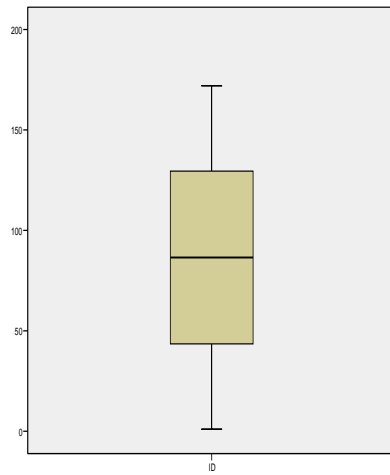
Q-Q Plots of
SUSTAINABLE COMPETITIVE
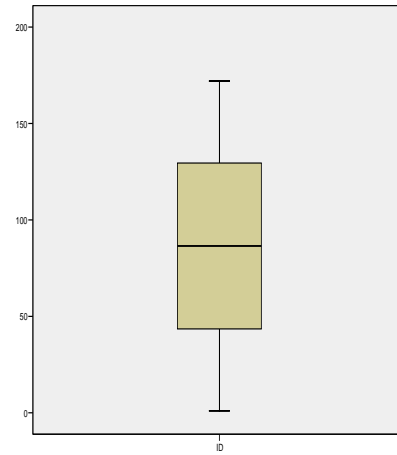
APPENDIX I: LINEARITY
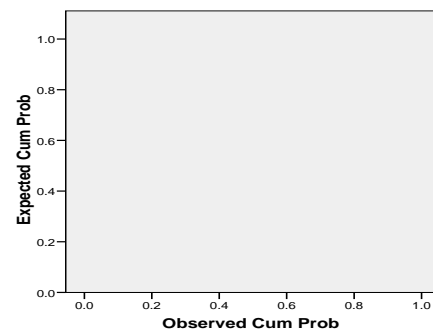
APPENDIX J: MULTICOLLINEARITY STATISTICS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	89.891	49.506		1.816	.071	-7.865	187.646					
	MSQ	-10.364	9.939	-.110	-1.043	.299	-29.991	9.262	-.033	-.081	-.081	.540	1.851
	MLS	-6.585	7.921	-.085	-.831	.407	-22.227	9.056	-.011	-.065	-.065	.572	1.747
	MSP	14.312	9.571	.180	1.495	.137	-4.587	33.211	.065	.116	.116	.414	2.416
	MVB	-2.366	7.948	-.034	-.298	.766	-18.059	13.328	.001	-.023	-.023	.458	2.183
	MMR	1.935	8.631	.020	.224	.823	-15.107	18.978	-.014	.018	.017	.783	1.277
	MIS	-4.520	8.959	-.062	-.505	.615	-22.211	13.171	.001	-.039	-.039	.396	2.528
	MSA	3.203	8.361	.045	.383	.702	-13.306	19.713	.024	.030	.030	.442	2.264
	MSUS	3.198	8.541	.048	.374	.709	-13.667	20.064	.030	.029	.029	.365	2.738

a. Dependent Variable: ID

APPENDIX K: RELIABILITY OF CONSTRUCTS

1- Leadership

Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.888	6

1- Structure and process

Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.846	5

3 - Service quality

Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.663	3

4. Value and belief

Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.901	6

IT managerial resource

Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.793	2

6- IT implementation success
Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.851	4

7- Strategic alignment
Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.839	6

Sustainable competitive advantage

Case Processing Summary

		N	%
Cases	Valid	172	100.0
	Excluded(a)	0	.0
	Total	172	100.0

a Listwise deletion based on all variables in the procedure.

221

Reliability Statistics

Cronbach's Alpha	N of Items
.942	6

APPENDIX L: CORRELATIONS AMONG THE STUDY CONSTRUCTS

		SQ	LS	SP	VB	MR	IS	SA	SUS
SQ	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	172							
LS	Pearson Correlation	.283(**)	1						
	Sig. (2-tailed)	.000							
	N	172	172						
SP	Pearson Correlation	.577(**)	.554(**)	1					
	Sig. (2-tailed)	.000	.000						
	N	172	172	172					
VB	Pearson Correlation	.601(**)	.387(**)	.629(**)	1				
	Sig. (2-tailed)	.000	.000	.000					
	N	172	172	172	172				
MR	Pearson Correlation	.336(**)	.250(**)	.222(**)	.374(**)	1			
	Sig. (2-tailed)	.000	.001	.003	.000				
	N	172	172	172	172	172			
IS	Pearson Correlation	.371(**)	.505(**)	.519(**)	.442(**)	.251(**)	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.001			
	N	172	172	172	172	172	172		
SA	Pearson Correlation	.411(**)	.448(**)	.465(**)	.498(**)	.152(*)	.637(**)	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.047	.000		
	N	172	172	172	172	172	172	172	
SUS	Pearson Correlation	.324(**)	.532(**)	.492(**)	.392(**)	.124	.726(**)	.679(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	.106	.000	.000	
	N	172	172	172	172	172	172	172	172

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Note. LS: Leadership; SP: Structure and Process; SQ: Service Quality; VB: Values and Beliefs; MR:IT Managerial Resource; IS: IT Implementation Success; SA: Strategic Alignment; SUS: Sustainable Competitive Advantage.

APPENDIX M: REGRESSION WEIGHTS

(Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SA <--- SP	.011	.080	.144	.885	
SA <--- SQ	.100	.082	2.420	.036	
SA <--- VB	.206	.074	2.705	.007	
SA <--- MR	.141	.082	2.411	.016	
SA <--- IS	.513	.065	7.446	***	
SA <--- LS	.114	.071	2.312	.041	
SUS <--- SA	.316	.071	4.779	***	
SUS <--- LS	.175	.067	3.042	.002	
SUS <--- SP	.068	.074	1.004	.315	
SUS <--- SQ	.005	.077	.080	.936	
SUS <--- VB	.056	.070	.828	.408	
SUS <--- MR	.110	.077	2.138	.032	
SUS <--- IS	.451	.069	6.577	***	

APPENDIX N: STANDARDIZED DIRECT EFFECTS

(Group number 1 - Default model)

	LS	IS	MR	VB	SQ	SP	SA
SA	.114	.513	.141	.206	.100	.011	.000
SUS	.175	.451	.110	.056	.005	.068	.316

APPENDIX O: STANDARDIZED INDIRECT EFFECTS

(Group number 1 - Default model)

	LS	IS	MR	VB	SQ	SP	SA
SA	.000	.000	.000	.000	.000	.000	.000
SUS	.036	.162	.045	.065	.031	.004	.000

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
SA	<---	SP	.011
SA	<---	SQ	.100
SA	<---	VB	.206
SA	<---	MR	.141
SA	<---	IS	.513
SA	<---	LS	.114
SUS	<---	SA	.316
SUS	<---	LS	.175
SUS	<---	SP	.068
SUS	<---	SQ	.005
SUS	<---	VB	.056
SUS	<---	MR	.110
SUS	<---	IS	.451

Appendix P: Preliminary study

DIAGNOSING THE GAP IN IT - BUSINESS STRATEGIC ALIGNMENT: A QUALITATIVE ANALYSIS AMONG PUBLIC SHAREHOLDING FIRMS IN JORDAN

Dmaithan Al majali[*] and Zulkhairi Md Dahlin
Department of IT
University Utara Malaysia
Kedah (06010), Malaysia

ABSTRACT

Many organizations in Jordan are currently frustrated with the benefit and value obtained from their investment in IT. An understanding of why Jordanian organizations do not benefit from IT investment can assist these organizations to explore the factors that organizations use to align IT with their business objectives. In-depth qualitative interviews with IT managers in Jordanian organizations suggest that leadership, structure and process, service quality and values and belief are the most important factors which are representative of the culture gap between IT strategy and business strategy. The lack of these factors hinders organizations from gaining benefits from their investment in IT. From the findings of this study, it is found that the alignment gap is often used to explain or justify an organization's inability to effectively leverage on IT.

Keywords: Business-IT strategic alignment, Business strategy, IT strategy, Alignment gap, Sustainable competitive advantage, ICT

1. INTRODUCTION

Over the past decade, information technology (IT) has progressed simultaneously with the rapid global development, and emerged as a very important part of most business firms. Most organizations in all sectors of industry are dependent on IT [12, 25, 34]. For organizations to stay competitive in a dynamic business environment, they have to understand how to manage IT strategically. A key success factor for a successful industry in such a dynamic business environment is an effective and efficient IT strategy that supports business strategies and processes [17]. The importance of how the strategic use of IT for effective business performance which then makes a contribution to the creation of business value has been a proven subject of study and well recognized now [17, 23]. The alignment between the business strategy and the strategic choices of IT deployment are therefore the most important areas of concern that remain high on the priority list of business IT issues as well as management endeavor to remain competitive [18, 19, 30, 34]. A substantial body of literature emphasizes the importance of IT to the organization and of aligning IT with the business objectives of the organization. Boar [7], for example, states: "In response to ever growing worldwide competition, the business needs to use IT to build, sustain and extend competitive advantage . . . Most major strategic thrusts require the crafted use of IT to succeed (p16)".

The business strategic alignment with IT is considered to be a very important issue particularly when IT has become a fundamental part of the business and is used to leverage special business competencies, merge companies, restructure industries and facilitate global competition [10, 12, 25, 28, 30]. This paper, therefore, presents strategic alignment and alignment gap between business strategy and IT strategy in general. It practically focuses on how to manage the business-IT strategic alignment, in particular, for organizations to achieve sustainable competitive advantage and success in business.

2. IT- BUSINESS STRATEGIC ALIGNMENT AND CULTURAL CONTEXT IN JORDAN

Most developing countries have recently started realizing the important role which information and communication technology (ICT) can play to solve their development problems. Arabic countries, as part of the developing countries, present a unique setting. The complex societal

---

[*] **Corresponding author: admethan2004@yahoo.com**

beliefs and values of the Arab world provide a rich setting to investigate the issues of ICT diffusion and transfer and is a very strong predictor of resistance to ICT transfer [31]. Thus, the researchers are interested to investigate this issue in Jordan as a developing country, and explore the relationship between ICT diffusion and organization culture. Moreover, Arab countries face common challenges in view of the absence of a well developed technology system and the lack of ICT culture. According to Aldhmour and Shannak [2], there are many challenges that face Jordanian organizations in terms of ICT applications. Firstly, there is an increasing demand for expertise and skilled ICT people, and secondly, managers' resistance to agree to new ideas.There is also an increasing investment cost for ICT tools and maintenance cost for hardware and software and telecommunications. However, there is a lack of common understanding of the concept of alignment between IT strategy and business strategy that can lead to sustainable competitive advantages and opportunities being missed out, increase in time wasted, increase in costs, all of which result in the creation of a negative environment for IT investments [4]. Also, there is lack of empirical research about this issue in Jordan [3]. According to Alkhaldi and Alfaoury [5], there seem to be only a few studies that discussed IT-business strategic alignment in Jordan. The studies which have been carried out, however, seem to indicate that IT/Business strategic alignment is dependent on nurturing a supportive knowledge sharing climate. In addition, companies should enable and support IT departments and participate in shaping the company's vision, mission and strategies. The authors, in particular, looked at telecommunication companies in Jordan. In this study, the researchers propose that further research in this area, specifically to examine how loss of potential knowledge affects strategic alignment and sustained competitive advantage, should be conducted. Al hashem [1] investigated the strategic alignment maturity level and how it can be improved by firms using business transformation alignment which addresses how IT is in harmony with business and how the business should, or could be in harmony with IT. This study finds that there is a positive relationship between business transformation and strategic alignment maturity and there is a significant statistical effect of business transformation upon strategic alignment maturity level.

3. LITERATURE REVIEW

3.1 Strategic alignment

Over the last ten years, there has been a considerable amount of research into whether the money invested in IT by organizations is beneficial and whether or not IT has been able to assist the organization to achieve its goals and objectives. This latter area of research has been commonly referred to as "aligning" IT with the business strategies, something which has been a major concern of organizations since the 1980s [8]. The strategic use of IT has become a very important issue for businesses as it can modify the fundamental nature of industries. The effective and efficient utilization of IT requires the alignment of the IT strategies with business strategies and business plan. This can subsequently be implemented to improve the overall competitiveness of the enterprise by enhancing the core business processes and exploiting the opportunities provided by IT to redesign the business processes [20]. Although the concept of strategic alignment was developed more than a decade ago and has been in use for many years now, it is still valuable to corporate executives looking to achieve alignment of their business and technology strategies [11, 34]. It therefore cannot be denied that the concept of strategic alignment is necessary to achieve sustainable competitive advantages for many business or industrial organizations. Over the decade of research into this area, many definitions to this concept have been offered by different scholars, for instance:

Strategic alignment refers to "The degree to which the IT mission, objectives and plans support and are supported by the business mission, objectives and plans" [26, 27].

Strategic alignment refers to "Applying IT in an appropriate and timely way, in harmony with business strategies, goals and needs" [20].

Strategic alignment is "Synonymous with such terms as integration, cohesion, fusion, fit, match and link" [21].

3.2 Alignment gap

Despite the criticality of business and IT relationship, few attempts have been taken to investigate that relationship further. There is a lot of literature about business-IT strategic alignment that are concerned with issues of control of resources rather than managing relationships [32]. Although the alignment gap represents an important concept in business-IT strategic alignment, it has not been presented or discussed explicitly in business-IT strategy context. Moreover, in all the literature that the researchers have studied, there was no evidence as to who has referred to the concept of alignment gap between business strategy and IT strategy, in particular. Therefore, the focus in this paper is to identify and to know this concept and to focus attention on the question of aiming to determine the reasons why the alignment gap exists between business strategy and IT strategy. This will benefit management in business and industrial organizations to deal with unmanageable issues as a result of the

alignment gap, and different management practices for bridging the alignment gap between business strategy and IT strategy. Several scholars and authors mentioned and discussed the term 'gap' or 'culture gap' in different articles [15, 22, 33]. However, none of these scholars or authors attempted to provide a critical review of the concept "alignment gap" between business strategy and IT strategy in a conceptual manner. Some scholars (e.g. [9]) called for further adjustments to the concept of alignment by applying new theoretical approaches which have not been explored in the field of IT. Therefore, this study aims to conceptualize IT-business strategic alignment into the alignment gap.

The concept of alignment gap between business strategy and IT strategy has emerged due to the fact that there are two separate organizational units in any organization, normally the IT department, which is responsible for IT activities And the business department. That has led to the appearance of the gap between IT functions and business activities. IT function generally refers to the individuals who provide IT services to the organization. These individuals are usually highly skilled IT professionals, who have certain amount of knowledge and experience in software engineering and technical aspects of computer hardware and software systems, and who carry out a variety of tasks to deal with the requirements of the firm for IT services. A few of the functions of the IT professionals may include design, implementation, and maintenance of the software programs, including data processing [29, 34].

The concept of gap used here, based on literature, refers to what is called 'culture gap' which is a variable that explains the challenges that can exist between the IT function and the business activities. The culture gap concept consists of four dimensions, i.e. leadership, structure and process, service quality and values and belief [33, 34]. The culture gap has been identified as a key factor in limiting the successful utilization of IT in the organization [15]. Leadership is elaborated upon by reflecting both the leadership of the CIO and the leadership of the CEO. Baker [6] argues that a successful alignment between business strategy and IT needs a well-built leadership structure. Structure and process are concerned with the way in which an organization manages its IT, such as the involvement of business management in IT strategy development, aligning IT strategy with business objectives, and delivering IT benefits. Service quality is considered to be vital in determining the customer supplier relationship. Such relationships could be strengthened by the IT department by focusing on the development of IT outsourcing and the level of service that clients expect from the vendor. The last dimension, values and belief, shape how attitudes,

behaviors and practices develop. Hence, the values and belief of a firm member have great effect on several dimensions of IT, including the way it is managed. Culture is an abstract concept which refers to the organizational culture in the organizational context. It is a shared set of values, behaviors and beliefs together with attitudes and experiences that represent unique characters which take the form of rules of behavior in a work group or organization [14].

4. RESEARCH METHODOLOGY

Most of the concepts in this study have been occasionally examined before, but mostly in the Western context. Only a little work covers Asia. Thus, to gain deeper understanding of the issues in the Jordanian context, this research conducted a qualitative study to explore the factors which affect the relationship between IT strategy and business strategy among public shareholding firms. Using a qualitative approach provides richer details for exploring view points in the early stage of research, allowing the researcher to gain a better initial understanding of the problem and to identify phenomena, attitudes and influences [16, 24]. The respondents were IT managers in the firms who have responsibility for IT functions of their companies. The qualitative research consisted of face-to-face in-depth interviews with IT managers. The interviews were conducted in a semi-structured format that allowed respondents to express their own view points [13]. A set of interview topics guided the interview, with a list of probing questions to draw out respondent opinions. Topics were discussed as brought up by respondents occasionally supplemented by new issues that arose in the interviews.

All in-depth interviews were conducted in the Arabic language. (Quotes in discussion were translated into English by the first author). Extensive notes were taken during the interview. We highlight here key issues mentioned in each interview and combined the most common issues mentioned by the interviewee. To identify the major issues to the factors which affect the relationship between IT strategy and business strategy, passages and rewording of the same or similar interpretations were summarized and categorized according to the four dimensions discussed above.

The following Table 1 presents the profile of the informants interviewed:

Table 1: Informants' Profile

Number	Gender	Age	Position	Experience	Sector
1	Male	35	IT manager	5	Banking
2	Male	40	IT manager	7	Service
3	Male	55	IT	10	Manufacturing

Number	Gender	Age	Position	Experience	Sector
			manager		
4	Male	51	IT manager	9	Insurance

5. FINDINGS

The content analysis determined four critical issues related to IT - business alignment which can be roughly categorized into four dimensions as previously discussed, i.e. leadership, structure and process, service quality and values and belief.

5.1 Leadership issue:

The interviews among Jordanian organizations indicated that leadership between managers affects the relationship between the IT department and business department. The following statements highlight this issue:

IT1 banking " Every company has its own internal communication system. We are allowed to communicate with other departments via electronic mails and memos. The memos are considered to be the formal way of communication with other managers to request our demands. We connect with them via face-to-face meetings, emails, and memos, which raise the alignment between us and them."

IT2 service "In our daily activities, we interchange emails with the top management. In addition, we have a regular weekly meeting with the assistant manager to discuss all issues regarding IT. During the day, we have communication and mails with other departments. We meet with the steering committee and a monthly meeting is held with all the managers of the organization. This is to discuss all issues, how to improve the products and suggest new ones as well as to plan the goals, review what has been achieved and what is missing, and what we suggest to enhance the performance or achieve the results and goals of the company."

IT3 manufacturing "We do not have meetings for all of the departmental managers; we normally meet at the end of the year, and normally we discuss about our needs but the top manager does not agree to any requirement of the IT department and looks upon our needs as expenditure."
IT4 insurance " I don't find any necessity to arrange meetings with business managers. Mostly, I can decide what the requirements of each department are and send them to top management without any meeting."

Based on the above, it can be noted that the respondents focused on many issues related to the role of the Chief Information Officer (CIO) with regards to IT activities as well as the role of the Chief Executive Officer (CEO) in relation to business management activities. Some of them

complained about lack of leadership of top management resulting from lack of communication. Some of them noted there is verbal communication but not adequate enough to know requirements of the business department.

5.2 Structure and process issue:

There was concern about structure and process among respondents. This referred to the gap between IT plan and business plan. To facilitate IT/business integration, appropriate structure and process are necessary. Many respondents also indicated that there are no procedural mechanisms such as the involvement of business management in IT strategy formulation. The following statements highlight this issue:

IT1 banking "As an IT department, we make our plans in cooperation with the management and discuss them. For the coming five years, we look at the management needs, vision and requirements for the new systems; and after that, we, as a computer department, start implementing the requirements. They actually cooperate with us. They provide us with all of the tools, money and any requirement needed to make the projects successful. So, I think that the relationships are directional between both of us."

IT 2 service " In one way or another, yes, there is a connection between business and IT plans. For example, when the company decided to implement an ERP solution (the one we have implemented), their goal was planned at a high level of long-term planning, and of course taking into consideration the business and IT goals of the company."

IT3 manufacturing "In this company, there is a clear separation between IT plans and the business plans. Therefore, there is a huge gap. This gap occurs because IT always looks for things that give the employees the capacity to upload mechanisms to their work to increase their productivity, such as solutions, guarantee, quality, easy graphical user interface, and a system that contains all modern features, but the business managers like the purchasing manager are always looking to cut costs without looking at the quality. Some of the business managers look at the IT department as a costly centre, and wish to shut it down! Also, sometimes we need to buy a Windows license - can you imagine that some of the business managers are against this basic need? They say that this will increase our costs and affect the profitability! So, in such a situation, the gap appears between us and them."

IT4 Insurance "Actually, I have IT plans for my department, but I do not know really what the business plans are for the company. This question could be asked to the general manager who maybe

knows what the business plans are, and what he wants from my department."

Based on the above statements, some IT managers do not know about business plans which affect the path to achieve organizational objectives. The reverse is also true where business managers view the IT department as a costly unit.

5.3 Service Quality issue

IT service quality is necessary to assess user satisfaction with application or system as well as the service provided for IT functions. Service quality recognizes that the provision of some IT functions is based on a customer-supplier relationship. This might entail meeting predefined or expected criteria and service levels, some of which may be enshrined in formal service level agreements. The service quality refers to the way that an organization provides products or services which impacts the degree of satisfaction of its customers. Our research found some concerns related with service quality such as inadequate training programs, which hinder the finding of solutions to enhance product or service. Besides this, other concerns include issues which affect the overall delivery of products or services.

The following four quotes from respondents are representative of these views:

IT 1banking " As IT managers, we are able to update the network and buy new software which cover business requirements that help to improve products and services for clients."

IT 2 service "As IT managers, we always send our employees for courses within or outside the organization to improve skills and help other business departments to find best solutions towards good products and services."

IT3 manufacturing "As an IT manager, I find top management cooperative which enhances product and service offered by the organization. They always ask our department about their needs."

Another important issue which respondents brought up was that when problems occur during the daily work, the problem cannot be immediately resolved. The following statement illustrates this point:

IT4insurance "As IT managers, we are looking for best solutions while decreasing the expenses of the business department. That happens when experts from outside the organization are brought in to help the employee to deal with e-marketing strategy to enhance channels for product or service. Sometimes, we are not able to control all mistakes which are made by employees,

and the problem remains until experienced help from outside the organization is sought."

Jordanian organizations suffer from lack of training programs which affect the product and service levels, often leading to disagreement and misunderstanding between the IT unit and business unit.

5.4 Values and Belief issue

Values and belief are very important because these factors play a critical role in IT issues. Business managers have to believe that IT is a crucial strategic requirement which in turn will reflect on how they manage and deal with IT issues. The following is representative of this view as can be seen from the four quotes from respondents:

IT1 banking "As IT manger, I feel better able to use manual system than automatic system. I do not like to use complex technology as I feel frustrated and afraid to make mistakes especially since training is inadequate."

IT2 service "As IT manger, I cannot convince the business manager to use new system in the organization."

IT3 manufacturing "As IT manager, I find that top managers do not have IT basics, so I do not believe that those managers can enhance the work if I deal with them."

IT 4 insurance "As IT manager, I cannot find motivation to cooperate with top managers especially if they are afraid about their positions within the organization. So, I have no confidence in their role to develop the work inside the organization."

Based on the interviewees' experiences, particularly IT managers, the researchers found that there is a gap between cultural and educational level and IT utilization. Most IT managers refer to the fact that most top managers or decision makers completed their studies before 1980. At that time, exposure to the importance of IT was not given. As a result, IT managers claimed that IT utilization faced resistance from managers because there was insufficient curriculum to teach them at that time about the importance of IT utilization and subsequently, increase their consideration of its impact on both their organizations and themselves.

6. CONCLUSIONS AND IMPLICATIONS

These in-depth interviews demonstrate that there are still some factors that affect the relationship between IT strategy and business strategy. In

summary, there are basically four factors which affect IT-Business strategic alignment. Leadership is one of the most critical issues, including communication via electronic mail and verbal communication. In our research, some IT managers are worried about communication with business managers. It is therefore important for IT managers and business managers in an organization to keep in touch to know the requirements for the organization as a whole. The following Table 2 summarizes the main issues related to the interview.

Table 2: Summary of issues

Issues	IT1 banking	IT2 service	IT3 manufacturing	IT4insurance
Leadership	Higher level of communication through face to face, electronic mail and memos	Higher level of communication through regular meeting	Less level of communication at the end of the year	There is no communication between IT department and top management
Structure and process	Higher level of cooperation between IT department and top management	Higher level of cooperation with high level of long term planning	Lower level of connection between IT plan and business plan	There is a gap between IT plan and business plan
Service quality	Greater level of concern to improve service	Greater level of concern to find best solution to enhance service	Greater level of concern to enhance service	Lower level of concern to enhance service
Value and belief	Have less technical knowledge	Have less technical knowledge	Higher Negative attitude towards IT	Higher Negative attitude towards IT

Jordan is currently in the early stages of developing IT application and IT managers suffer from lack of involvement in business strategy to achieve the objectives of their organizations. In other words, there is a gap between the IT plan and business plan. To alleviate this, business managers and IT managers must establish a rapport to fill this gap and consequently achieve business objectives. Inadequate or inappropriate structure and process can severely impinge on the success of IT in an organization. Our research is also indicative that IT managers are not fully satisfied with the quality of products or services. They complain about inadequate training programs which lead to a lack of skills. Service quality is a good channel for some interaction within the departments, and it can assess user satisfaction with application or system as well as the service provided by the IT unit. Finally values and belief revolve around resistance to change. This is due to fear of complexity in using technology, as well as lack of confidence to use technology to enhance business improvement. Based on the above discussion, the concepts of strategic alignment and alignment gap are defined as follows:

Strategic alignment refers to the state of congruence between business strategy and IT strategy in the firm to support the overall business purpose that influences the firm's sustainable competitive advantage.

Alignment gap between business strategy and IT strategy refers to the degree of incongruence between the business management and the IT

management. This is represented by disharmonious relationship that is substantially high or low between business strategy and IT strategy. This jeopardizes the opportunity to gain strategic advantage from using IT properly. Strategic alignment is a dynamic process and is very difficult to achieve due to the continuous change process in business and technology. Therefore, for organizations to achieve and sustain business-IT strategic alignment that will lead to a sustainable competitive advantage and gain business value, organizations have to address the following: Firstly, define effective management practices that involve knowledge, skill and practices for both business and IT management people, where IT people and business people have to be highly skilled and knowledgeable with business management issues, Secondly, refresher courses on new IT knowledge and technology for both business and IT management, as IT is continuously evolving due to the rapid development and progress in IT, and finally give attention to cultural change within the organization to change business practices, and create a business-IT culture among people in the organization so as to create a business-IT culture environment.

REFERENCES

1. Al hashem. A, 2008, Strategic alignment using business Transformation, Preceding of international conference on change management, AL – Zaytoonah university, Jordan
2. Aldhmour, F., and Shannak, R., 2009, The Effective Utilization of Information and Communication Technology and its Impact on Competitive Advantage. *European Journal of Scientific Research, 29*(3), 302-314.
3. Al-Dhmour, F., 2003, The Impact of the Utilization of Information Technology on Organizational Innovation: An Applied Study on the Publicshare Holding Jordanian Industrial Companies**.** MBA. Dissertation, Jordanian University.
4. Al-Faouri, A., 2004, The impact of organizational silence on the participation in decision making: case study –Mutah University .In Arabic language. *Journal of Mutah libohoth wa Alderasat*.19(2):151-188.
5. Alkhaldi, F., and Al-Faoury, A., 2007, organizational learning and strategic alignment process: a suggested systemic view.preceding of International Conference on strategic management Thinking, March,AL-ISRA University , Amman, Jordan.
6. Baker, J., parasuraman, A., Grewal, D., and Voss, G. 2004,"The Influence of Multiple Store Environmental Cues on perceived Merchandise Value and Patronage Intentions", Journal of Marketing , 66(2), pp.120-141.

7. Boar, H. 1994, Logic and information technology strategy: separating good sense from nonsense", Journal of systems Management, 45(5), pp16-21.

8. Brancheau, J., Janz, B., and Wetherbe, J. 1996, Key issues in information systems management: 1994-95 SIM Delphi results. *MIS Quarterly, 20*(2), 225-242.

9. Chan, Y., and Reich, B. 2007, "IT Alignment: What Have We Learned", *Journal of Information Technology*, 22 (4), pp. 297-315.

10. Chan, Y., Huff, S., Barclay, D., and Copeland, D. 1997, " Business strategic orientation,Information Strategic Organization,and Strategic Alignment", Information Systems Research, 8(2), 125-150.

11. Coleman, P., and Papp, R. 2006, "Strategic alignment: analysis of perspectives", Proceedings of the 2006 Southern Association for Information Systems Conference.

12. Earl, M. J., 1992, "Putting IT in its place: A polemic for the nineties", *Journal of Information Technology*, Vol. 7, Issue 2, pp. 100-108.

13. Flick, u. 2002, *An Introduction to qualitative Research* , Sage, London

14. Galliers, R., Meriali, Y., and Spearing, L., 1994, "Coping with information technology? How British executives perceive the key information systems management issues in the mind-1990s", *Journal of Information Technology*, Vol. 9, Issue #, pp. 233-238.

15. Grindley, Kit, 1992, "Information Systems issues facing senior executives: the culture gap", *The Journal of Strategic Information Systems*, Vol. 1, Issue 2, pp.57-62.

16. Healy, M. and Perry, C. 2000, "Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm," *Qualitative Market Research: An International Journal*, Vol.3 No.3, pp.118-28.

17. Henderson. J. and Venkatraman. N., 1993, Strategic alignment: Leveraging Information Technology for Transforming Organizations*, IBM system journal*, Vol. 32, No. 1, pp. 472-484.

18. Johnson, A., and Lederer, 2010, A. "CEO/CIO Mutual Understanding, Strategic Alignment, and the Contribution of IS to the Organization," *Information & Management* (47:3), pp. 138-149.

19. Kafi, H., and Kalika; M., 2005, "Survey of Strategic Alignment Impacts on Organizational Performance in International European Companies", Proceedings of the 38th Hawaii International Conference on Systems Sciences.

20. Luftman, J. N. 2000, "Assessing Business-IT Alignment Maturity", *Communications of the Association for Information Systems,* Vol. 4, Article 14, December 2000.

21. Luftman, J. N. 2005, "Key Issues for IT Executives 2004", *MIS Quarterly Executive* Vol. 4, No. 2, pp. 269-285.

22. Luftman, J., 2003, Measure Your Business-IT Alignment, The long standing business IT gap can be bridged with an assessment tool to rate your efforts, Optimize magazine, Issue 26, p. 76, http://www.optimizemaag.com.

23. Luftman, J., Lewis. P. R., and Oldach, S. H. 1993, "Transforming the Enterprise : The Alignment of Business and Information Technology Strategies", IBM Systems Journal, 32, 198-221.

24. Maxwell, J. A. 1996, Qualitative Research Design, An Integrative Approach, Sage, Beverly Hills, CA.

25. Peppard, J., and Ward, J., 2004, "Beyond strategic information systems: towards an IS capability", *Journal of Strategic Information Systems*, Vol. 13, Issue 2, pp. 167-194.

26. Reich, B. H., and Benbasat, I. 1996, "Measuring the linkage between business and information technology objectives", *MIS Quarterly*, Vol. 20, No. 1, pp.55-81.

27. Reich, B. H., and Benbasat, I., 2000, "Factors that influence the social dimension of alignment between business and information technology objectives," *MIS Quarterly,* Vol. 24, No. 1, pp. 81-113.

28. Sabherwal, R., and Chan, Y. 2001, Alignment between Business and IS Strategies: A Study of Prospectors, Analyzers, and Defenders. *Information Systems Research,* 12(1), 11-33.

29. Sage, A. P., 2002, "Information technology", in AccessScience@McGraw-Hill, http://www.accessscience.com, DOI 10.1036/1097-8542.757582; last modified: March1, 2002 – Last accessed 2009-03-14.

30. Silvius, A. 2009, Business and IT Alignment:What we know and what we don't know, International Conference on Information Management and Engineering, p558-563.

31. Straub, D., Loch, K. and Hill, C. 2001, Transfer of information technology to the Arab world: A test of cultural influence modelling. *Journal of Global Information Management*, 9(4), June, pp.6-28.

32. Ward, J., and Peppard, J., 1996, "Reconciling the IT/business relationship:a troubled marriage in need of guidance." *Journal of Strategic Information Systems, 5, 1, 37-65.*

33. Ward, J., and Peppard, J., 1999, "Mind the Gap; diagnosing the relationship between IT organization and the rest of the business", *Journal of Strategic Information Systems,* Vol.8, Issue 1, pp.29-60.

34.   Ward, J., and Peppard, J., 2002, "Strategic Planning for Information Systems", John Willey & Sons, Ltd3rd edition.

ABOUT THE AUTHORS

Dmaithan Al majali is an IT professional having managerial experience in several business organizations in Jordan. In addition to his research contribution as the author of several papers on IT – business alignment and sustainable competitive advantage, he currently is finalizing his thesis as a PhD candidate in the college of Arts and Science, Universiti Utara Malaysia.

Zulkhairi Md Dahlin is Professor in Information Systems . In addition to his research contribution as the author of several papers on IT – business alignment , he currently is Lecturer in the college of Arts and Science, Universiti Utara Malaysia.