

**A Framework for Aligning Project Management to  
Business Strategy: A Qualitative Case Study in Saudi  
Telecommunications Industry**

**Submitted in fulfilment of the requirement for the degree of  
Doctor of Philosophy**

**By**

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# Dedication

This PhD thesis is dedicated to the loving memory of my great and lovely mother who raised me to love, hope, believe and achieve.

# Acknowledgements

First and foremost I would like to thank Allah for his blessings and guidance throughout this research process.

I would like to express particular gratitude to Prince Sultan bin Abdulaziz Al-Saud, former Vice Custodian of the Two Holy Mosques, former First Deputy Prime Minister and former Minister of Defence of Saudi Arabia.

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## List of publications

The following journal and conference papers are outputs and based on the research conducted during my PhD study:

Alsudiri, T., AL-Karaghoul, W. and Eldabi, T. (2013). Alignment of large project management process to business strategy: A review and conceptual framework, *Journal of Enterprise Information Management*, Vol. 26, No. 5, pp. 596-615

Alsudiri, T., AL-Karaghoul, W. and Eldabi, T. (2013) An investigation of aligning large project management process to business strategy: A review and conceptual framework. *Proceedings of the European, Mediterranean & Middle Eastern Conference on Information Systems (EMCIS)*. 7-8 June, Munich, Germany.

Alsudiri, T. and AL-Karaghoul, W. (2011) A Framework on Aligning Project Management to Business Strategy. *Proceedings of the International Journal of Arts & Sciences (IJAS)*. 29 May – 2 June, Harvard University, Massachusetts, USA.

## **Declaration**

I Turki AlSudiri declare that this research, its idea, analysis, findings and conclusions that are included in this PhD thesis are entirely developed by me for the purpose of this program only and have not been submitted for another qualification.

# Abstract

Project management (PM) plays a significant role in achieving the company's goal and objectives. Due to its significant role, it is essential that the project managers use processes which remain focussed on the company's business strategy. However, some implementations of the company's business strategy have led to failures as a result of misalignment between project management and the company's business strategy. Such misalignment has an impact on both the project management and business strategy and may lead to problems in the overall functioning of the business, including the implementation of the company's business strategy through the projects.

This research was undertaken to investigate the problem of aligning project management process with the company's business strategy which has not been fully investigated to-date. This investigation aims to provide a deeper understanding and more holistic analysis of the key factors, such as stakeholders and contextual factors (AF), which enable or inhibit this alignment in order to develop a conceptual framework that addresses this research gap.

This study examines and analyses the alignment process, by considering the key factors at the early planning phase of project management. To address the research gap, the study employs a qualitative, multiple case study approach in the interpretive paradigm. Data was collected via interviews of senior personnel (executives and project managers), mainly from three managerial levels of the organisation, including corporate, business, and functional levels in four telecommunication companies of the private sector in Saudi Arabia. The investigation was carried out by collecting data through semi-structured interviews to critically explore collectively the perspectives of the executives and the project managers on their experience of managing and executing the company's business strategy and the projects. Written and electronic documentations as well as non-participant observations also served as important triangulation and complementary sources in understanding the phenomenon being studied and as a means of gaining additional perspectives and further insights on key issues. This study provides a novel contribution to the alignment process of project management to business strategy.

The original contribution and findings of this study contribute to the growing body of knowledge of project management by developing a practical framework to benefit both academics and practitioners and to increase awareness of the alignment process. This holistic conceptual framework includes two sets of factors that impact the alignment process. Additionally, it provides a unique prescriptive standard and a code of practice for practitioners seeking to realise efficient and effective alignment.

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## List of abbreviations

AF	Alignment Factors
AHP	Analytic Hierarch Process
BS	Business Strategy
CEO	Chief Executive Officer
CF	Contextual Factors
CFO	Chief Financial Officer
CITC	Communications and Information Technology Commission
CPM	Critical Path Method
CRM	Customer Relationship Management
CSF	Critical Success Factor
CSMD	Corporate Strategy Management System
DSL	Digital Subscriber Line
DSM	Dependency Structure Matrix
EMO	Execution Management Office
ESH	External Stakeholders
EVM	Earned Value Management
FTTx	Fiber to the x
GCC	Golf Corperation Council
IJPM	International Journal of Project Management
IRR	Internal Rate of Return
IS	Information System
ISDN	Integrated Services Digital Network
ISH	Internal Stakeholders
IT	Information Technology
KPIs	Key Performance Indicators

LTE	Long Term Evolution
NPV	Net Present Value
PERT	Project Evaluation and Review Technique
PM	Project Management
PMI	Project Management Institute
PMIS	Performance Measurement and Improvement Systems
PMJ	Project Management Journal
PP	Payback Period
PPH	Project Planning Phase
PRM	Project Manager
PS	Project Success
R&D	Research and Development
RF	Radio Frequency
ROI	Return on Investment
SCECO	Saudi Consolidated Electric Company
SH	Stakeholders
SLAs	Service Level Agreement
SMEs	Small and medium enterprises
SOW	Statement of work
SPMO	Strategic Project Management Office
SWOT	Strength, Weaknesses, Opportunities, and Threats
WBS	Work Breakdown Structure
WiMAX	Worldwide Interoperability for Microwave Access



# **Chapter One: Introduction**

## **1.1 Introduction**

This introductory chapter aims to provide an overview of the research that is presented in the body of this thesis. The chapter is divided into twelve sections, including this introduction. Section 1.2 aims to provide an overall background of the research undertaken. Section 1.3 presents the research problem. Section 1.4 highlights the research gap. Section 1.5 states the research motivation. Section 1.6 shows the focal theory of the research. Section 1.7 includes the aim and objectives of the research. Research questions are highlighted in section 1.8. The research methodology and data collection are described in section 1.9. Section 1.10 explains the relevance and significance of the research. Section 1.11 indicates the research contribution and section 1.12 explains the thesis structure.

## **1.2 Research background**

Due to the dynamic market and high competition during the last decade, projects and particularly big projects, have clearly become a central activity in most companies and project management has become a strategic tool for business (McCullen and Tyeman, 2013; Harrin, 2013). Many studies have demonstrated that most projects do not meet the project constraints or fail to meet the company's goal and objectives (Miller, 2002; Mankins and Steele, 2005). Specifically, a study by Zwikael (2009) shows that many communication projects have high costs and overrun their schedules. For example, 17% of the projects in the communications sector exceed the planned schedule and 11.5% of the projects exceed the planned cost (Zwikael, 2009).

A common factor in many organisations is that some projects have been executed with no apparent link to the company's business strategy (Miller, 2002; Patanakul and Shenhar, 2011; Morgan and Dale, 2013). There is a belief by business leaders that eventually the achievement of the company's business goals and objectives can be improved effectively by aligning the project management with business strategy (Shenhar, 2007; Srivannaboon, 2006a; Williams and Samset, 2010; Young et al., 2012). However, given the importance and benefits of the alignment, few companies successfully achieve it. For example, a study by Rosa (1998) reveals that only 8% of IT/IS and business managers consider themselves very effective in aligning IT/IS to the

company's business strategy. Similarly, Luftman et al. (1999) note that only half of more than one thousand executives who participated in their survey reported that their companies had achieved some degree of alignment. Naturally, questions like "why haven't we mastered alignment?" have been raised by scholars (Chan, 2002; Shenhar et al., 2007; Williams and Samset, 2010).

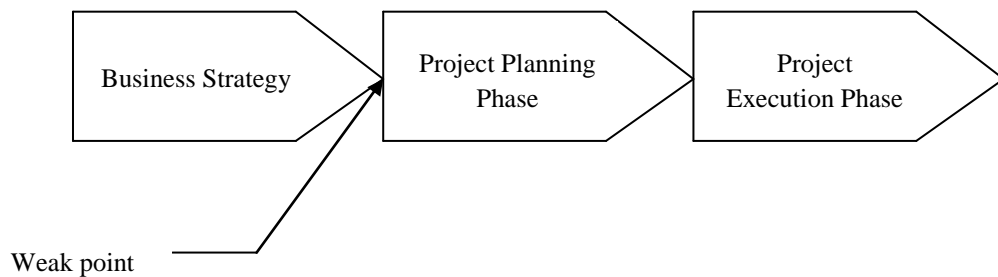
Research and experience in project management indicate that aligning project management (PM) to business strategy (BS) leads the company to achieve its business goal and objectives. McCullen and Tyerman (2013, p. 17) highlight "the importance of aligning project management to business strategy to achieve the 90% success rate that high performing organisations enjoy". However, empirical research offers limited direction on how to achieve such alignment. This study investigates the alignment between project management and business strategy in-depth, the effect of such alignment on the project and the likelihood of success, the alignment factors (AF) that affect the implementation of the company's business strategy and the alignment process, and the effect of these factors on the alignment and on the nine knowledge areas of project management (PMI, 2008).

This research utilises the telecommunications industry as it is one of the most dynamic, complex, and competitive industries in Saudi Arabia (see section 2.3.13) which demonstrated a high rate of project failure. To overcome these challenges the telecommunication companies require operating in efficient ways (Moreno et al., 2013). Such efficiency can be achieved by aligning the project management with the company business strategy. Saudi Arabia is selected as it is the world's 22nd largest economy and the telecommunication market is growing rapidly and has positive contribution to the national GDP (see section 2.3.14). Therefore, increasing the rate of successful projects will contribute positively to the economy.

### **1.3 Problem overview (misalignment)**

Hauc and Kovač (2000) investigate a critical problem which totally or partially prevents the implementation of business strategy in a project. This problem occurs through a weak point which is the point of transition from business strategy to the project. According to them "this point has always been exposed", see figure 1.1. Strategic objectives, regardless of whether they involve corporate strategy, business strategy, or

strategy of a business unit, are translated into project objectives and, furthermore, into an overall project start-up process (planning phase).



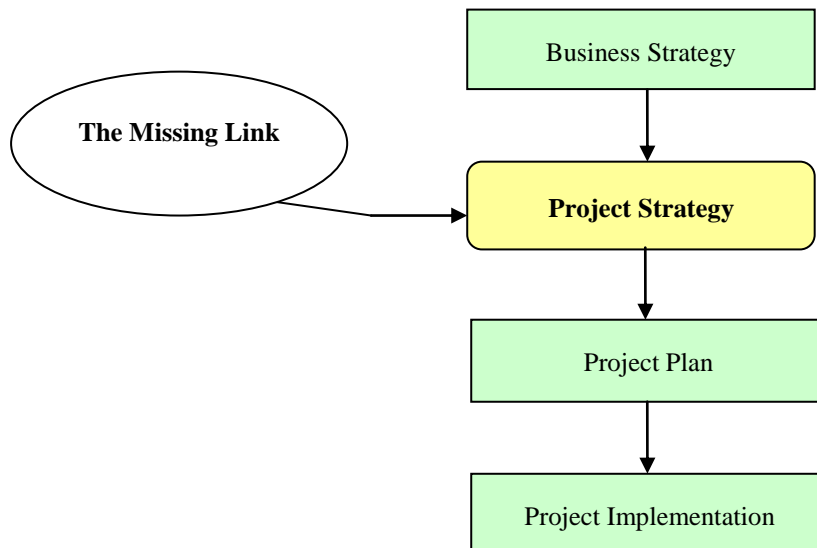
**Figure 1.1 Weak point between business strategy and project plan**

*Source:* Hauc and Kovač (2000)

They argue that the separation of the strategy formulation process and the strategy implementation process is the main deficiency of most models of strategic management. Hauc and Kovač suggest a solution for this problem by involving the project management team during the process of the strategy formulation (development). Thus, the company's business strategy becomes understandable for the project management team and applicable for implementation in the project so the gap between the strategy formulation and implementation will be eliminated (Alsudiri et al., 2013).

Shenhar et al. (2005) argue that most projects start with a project plan which normally includes the project goal, project scope, project deliveries, project milestones, project resources, and activities for execution. However, implementing the company's business strategy successfully in a project also needs a strategic plan. The project management team needs to know how to plan and execute the project so that it is aligned with the company's business strategy?

In a recent study, Shenhar et al. (2005 & 2007) and Patanakul and Shenhar (2011) show "a missing link" that exists between the business strategy and the project plan. They label this missing link "the project strategy" (see Figure 1.2). Because of this gap, project management teams plan and execute projects with no apparent link to the business strategy.



**Figure 1.2 Project strategy (the missing link)**

Source: Shenhar et al. (2005 & 2007)

The missing link (misalignment) between the business strategy and the project plan exists because most projects today are conceived with a business perspective in mind, and with a clear goal and objectives (e.g. better business and performance in the future, more profits, additional growth, and improved market position). Yet, ironically, when the project management team is either engaged in day-to-day work or encounter some difficulties during the execution phase they, typically, are not focused on the company's business strategy. Such a problem may lead to disappointing business results and even failure (Shenhar et al., 2005). Eventually, this problem causes about 30% of projects to fail to support the companies' goals and objectives (Miller, 2002; Mankins and Steel, 2005; Shenhar, 2007) and in only about 10% of the cases was the strategy implemented in the project (Kiechell, 2010).

Moreover, Thirty (2003) argues that often strategic goals are not identified as part of the project. Srivannaboon, (2006a) showed that the business strategies of several companies failed when they transferred from the strategy level to the project management level. Srivannaboon suggests that aligning project management with business strategy will overcome the problem.

## **1.4 Research gap**

After identifying the research problem of alignment of PM and BS as shown in section 1.3, the study explores and analyses the relevant publications to search for a possible

solution. However, publications in the area of project management and alignment have not identified a solution to the problem (see tables 1.8, B1, B2, A6 and A7); as a result they leave a gap in the literature which this research aims to fill. Subsections 1.4.1 and 1.4.2 show the gap in the literature.

### **1.4.1 Project management**

In a study by Söderlund (2011) of project management, which reviews the publications over the last five decades in 30 leading management and organisation journals (see appendix A, tables A1 to A4), he proposes a categorisation of the published studies into seven schools of thought: optimisation school, factor school, contingency school, behaviour school, governance school, relationship school, and decision school.

Academic articles published in journals such as the International Journal of Project Management (IJPM) and Project Management Journal (PMJ) were not considered in Söderlund's work. To have a complete picture of what has been published in the area of project management, Crawford et al. (2006) review and analyse publications dealing with project management over the period 1994 to 2003. They categorise the project management topic in both the IJPM and PMJ for the period 1994 to 2003 with 18 categories of topics and 48 project management topics (see appendix A, table A5). The study shows the diversity of project management topics and their significance in the field.

In an attempt to review the publications in the field of project management from 2003-2013 in both journals (IJPM and PMJ), this study adopts the categorisations used by Crawford et al. (2006) in the project management field (see appendix A, tables A6 and A7). After reviewing the existing publications, the most popular topics and interests of the publishers (see table A8) can be summarised next:

- Decision-making and managing risk
- Critical success factors and project success criteria
- Project lifecycle
- Project management competencies
- Stakeholder management
- Innovation and new product development projects
- Resource management
- Risk Management

- A few papers on strategic management

#### **1.4.2 The alignment between BS and functional levels**

The publications summarised in appendix B, tables B1 and B2 in the alignment between business strategy and departments at the functional level such as IT/IS, marketing, manufacturing, and human resources are used to validate the research constructs, identify possible factors that affect the alignment, validate the relationship between the constructs, and search for a possible solution to the problem. The research recognises that the alignment between the functional level departments and business strategies dominates the interests of researchers. (Tan and Gallupe, 2006; Gutierrez et al., 2008; Preston and Karahanna, 2009; Tallon, 2007; Avison et al., 2004; Cragg et al., 2002; Byrd et al., 2006; Gutierrez et al., 2009; Yayla and Hu 2009; Rathnam et al., 2005; Bergeron et al., 2004; Sun and Hong, 2002).

Since project management in many companies is considered as one of the functional departments it should, logically, be aligned with the business strategy (Srivannaboon, 2009) in order to be effective. However, the existing literature in the area of aligning projects with business strategy is limited. For example, most studies aim to align the company's business strategy with projects at the strategy level only (when the project is selected and prioritised) not at the functional level when the project is executed (see figure 2.1). For example, many researchers aim to align the project with the company's business strategy through project selection by seeing the selection or prioritisation of projects that contribute to the company's business strategy as an alignment (Artto and Dietrich, 2004; Hartman, 2000; Englund and Graham, 1999). Other researchers aim to align the project with the company's business strategy by project portfolio management (PPM) (Rajegopal et al., 2007; Gareis, 2004; Jamieson and Morris, 2004; Pennypacker, 2005; Turner and Simister, 2008). On the other hand, Hill (2004) argued that this can be achieved by the project management office (PMO). However, the above studies aim to align the project with the company's business strategy at the corporate or business levels only and do not ensure alignment at the functional level where the project is planned and executed, which this research aims to do.

Only recently a few researchers have started to explore the alignment between the project management and business strategy at the functional level more thoroughly (Artto and Dietrich, 2004; Morris and Jamieson, 2005; Srivannaboon, 2006a; Morris,

2009). However, none of the research in this area provides an empirical framework which includes the relationship between variables such as business strategy, project management, factors that affect the alignment, and the impact of the alignment on the project outcome. Srivannaboon (2006a) highlights the need for more comprehensive research on the alignment between project management and business strategy.

From the extensive literature review (sections, 1.4.1 and 1.4.2), this study recognises that little work has been done in the area of project management and very few scholars address the alignment between project management and business strategy as a strategic process for bridging the gap between them in order to ensure a proper implementation for the company's business strategy in the projects.

## **1.5 Research motivation**

The motivation for this research was to address the gap in the literature of project management and business strategy in addressing the alignment issue, i.e. missing link as shown in section 1.4, by developing a framework which highlights the factors that inhibit or enable the alignment process.

## **1.6 Focal theory of the research**

This research utilises stakeholder theory. One of the definitions of a stakeholder is any group or individual which can affect, or is affected by, the project such as suppliers, customers, contractors, vendors, the project team, executives, other departments, or governments (Freeman, 1994; Larson and Gray, 2011; Assudani and Kloppenborg, 2010) and on the derived contribution of Srivannaboon and Milosevic (2006) who show that the influence of business strategy and project management is two-way and Luftman and Brier (1999) and Tan and Gallupe (2006) who highlight the main enablers and inhibitors of IT& IS alignment.

## **1.7 Aim and objectives of the research**

This research aims to investigate and develop a framework to address the problem of a missing link by aligning project management with business strategy during the planning and execution phases at the functional level (project management level) in the telecommunications sector in Saudi Arabia. Additionally, it aims to help increase the

efficiency of strategy implementation in projects and to ensure that project objectives and business objectives are unified.

To facilitate achieving these aims, more detailed objectives were developed and were linked to the initial aim:

1. To explore critically and analyse the current literature of the PM and BS.
2. To investigate the effect of the alignment factors (AF), such as the executives' support, effective communication between the project manager and the project stakeholders, the involvement of the project manager in business strategy development, and the leadership competency of the project manager on the alignment.
3. To identify the project stakeholders and contextual factors (AF) in the telecommunications sectors in Saudi Arabia which affect the alignment process and the implementation of the company's business strategy in the projects.
4. To examine the effect of the project stakeholders and contextual factors (AF) on the nine knowledge areas of the planning phase of the project management.
5. To develop a framework to align PM to BS in the telecommunications companies in Saudi Arabia.

## **1.8 Research questions**

To operationalise the investigation, and to keep it focused on achieving the aim and objectives, two research questions are developed which guide the formulation of the data collection strategy, procedures, methods and techniques. They are also relevant to the objectives of the research and ensure consistency and rigorous alignment between different parts of the research design. The two research questions are:

- How could the alignment process of project management (PM) and business strategy (BS) be achieved and what are the factors included?
- How does the alignment process between project management and business strategy influence the project's success?

## **1.9 Research methodology and data collection**

Due to the limited research on the subject of the alignment of project management and business strategy (Srivannaboon, 2009; Shenhar et al., 2007), the methodology used in



this research is the case study. The case study is a good approach for exploring and understanding the alignment process in depth and for investigating the effect of such alignment on the project's success, in the telecommunication industry as the field of the research.

The study employs a qualitative approach in order to assure validity and reliability. Multiple sources of data were used (e.g., interviews, followed by annual reports and documents). Thirty nine participants were interviewed, from the three levels of the organisation including corporate, business, and functional levels (e.g., business executives, CIOs, project managers, project management team) and this sample helped the researcher to reach saturation (Yin, 2009; Guest et al., 2006). Using a combination of sources to ensure validity is known as “triangulation”, which is the use of more than one method in data collection, research design, and data analysis to increase the level of confidence in the ensuing findings (Yin, 2009).

Four case studies were conducted covering four big projects in four big communications companies in Saudi Arabia. Multiple cases were used to establish whether the findings of one case is confirmed by the other cases (Yin, 2009) and, as a consequence, discovering if there is a possibility of generalising from these findings.

To select case studies, multiple criteria were defined and cases that matched those criteria were selected. Invitations were sent to the four telecommunications companies and interview sessions were conducted over a three month period. Immediately after each session, the interview was transcribed and coded, see section 4.12.

## **1.10 Research relevance and significance**

This study is relevant to practitioners as well as academics. The need for this study is illustrated by an observation of the real-world situation where approximately 30% of projects failed to meet their objectives (Miller, 2002). There is also a need to fill the gap in the literature and to respond to many scholarly studies (Association for Project Management - APM, 2004; Shenhar et al., 2005; Srivannaboon, 2006a; Williams and Samset, 2010) which highlight the need for linking project management with the company's business strategy in the next decade in order to improve its business performance. To better explain how to align the project management to business strategy successfully, a more holistic approach is required in order to identify and

investigate the factors that affect the implementation of the company business strategy in the project. Therefore, this study is relevant and timely for PM professionals.

This thesis makes a significant contribution to project management practice by developing a framework which shows how to align project management with the company's business strategy. To the best of the author's knowledge, this is the first study that develops an integrative framework that combines elements such as business strategy, project management, factors that affect the alignment process, and project success.

### **1.11 Research contribution**

This study makes a novel contribution to project management practice. It is the first study conducted in Saudi Arabia that has collected empirical data from executives and project managers. Also, it provides a comprehensive understanding of the process of strategic alignment and reveals the influential factors that affect the alignment process. The study will thus enable telecommunications companies to meet their goals and objectives. Therefore, this study can provide a deeper understanding, direction and insight for a successful alignment. Finally, this research meets the standards of scientific research, such as validity and reliability.

The main contribution of this research is to develop a framework with the purpose of achieving a proper alignment between project management and the company's business strategy that includes factors such as the various stakeholders who affect the alignment effort. Considering that such factors enables alignment and helps telecommunication companies to achieve their goals and objectives. Testing the framework and validating its dimensions empirically, by exploring the effect of such factors on the alignment and on the nine knowledge areas of project management, indicates the importance of considering these factors during the project lifecycle.

Studies in the project management field have not catered for a framework to understand the role of the project stakeholders in impacting the company's business strategy in the projects and on the alignment process. For example, although Jamieson and Morris (2004) identify strategic planning, portfolio management and an emergent approach as important steps in the alignment process, they do not provide a framework and do not position their research as a set of case studies or as a theoretical foundation of

alignment. Furthermore, Turner and Simister (2008) argue conceptually and without any empirical validation, that portfolio management is an important step in aligning projects with the business strategy. Srivannaboon (2006a), on the other hand, provides a framework based on an empirical study for aligning project management with business strategy. Although Srivannaboon incorporates variables in his framework such as business strategy and project management, he does not explore the factors that affect the alignment process and which enable or inhibit alignment and the role of such factors on the alignment as well as on the project management process. Also, he does not show the impact of the alignment on the project outcome.

This study addresses the following three issues:

- The alignment process between project management and business strategy
- The effect of the alignment on the project success
- The impact of the project stakeholders and the contextual factors (AF) on the processes of the alignment and the project management

The research also contributes to validating the impact of the alignment on a project's success, and advancing the field theoretically, practically, and methodologically. Linking the gap with the findings, contributions, and implications is comprehensively discussed and explained in chapter 7.

## **1.12 Outline of the thesis**

This study consists of seven chapters, which are:

**Chapter one:** introduces the topic and provides the background and the scope of the study. It offers an introduction to the alignment between project management and business strategy. The chapter highlights the problem and the gap in the literature. It also includes the aim, objectives, research questions, research methodology, main contributions of the study and the structure of the thesis.

**Chapter two:** highlights the relevant literature review of alignment of PM and BS and the alignment of different functional areas (e.g. IS, IT) and BS. The chapter, through synthesising a multidisciplinary literature review of project management, business strategy, alignment, and project success critically reveals a gap which needs to be bridged.

**Chapter three:** presents the developed phase one of the framework based on the findings from the literature and the pilot stage and the refined phase two of the framework based on the findings of the field study. It also includes a discussion of the framework, its main concepts, structures, variables and factors.

**Chapter four:** discusses the philosophical underpinnings and the epistemological stance of the author. The research design, the research methodology, and data collection and analysis methods are justified.

**Chapter five:** provides in-depth details of the findings from the four case studies. It offers an initial analysis of the collected data. The chapter provides within and cross case analysis and explains the steps for measuring the alignment. It highlights the project's stakeholders and the contextual factors (AF) that affect the implementation of the company's business strategy. In addition, it shows the effect of such factors on the project management process in the nine knowledge areas of project management i.e. integration, scope, time, cost, risk, quality, human resources, communications, and procurement. It follows the selected data analysis techniques and presents the results based on the research questions and objectives.

**Chapter six:** offers an in-depth discussion of the findings while highlighting the implications and the lessons which can be drawn from the findings. This chapter captures the findings from the interviews and links them to the conceptual framework

**Chapter seven:** concludes the final results of the study and empirically confirmed contributions and lessons. It classifies the three contributions into theoretical, practical or managerial, and methodological contributions. The chapter addresses the research strengths, research limitations and suggestions for future research.

# Chapter Two: The Literature Review

## 2.1 Introduction

This chapter explores the current research and offers insights and critically analyses the literature of the main themes of the research to establish a firm and solid understanding of the degree of alignment between project management and business strategy. Also, it helps in identifying the research gap and developing a conceptual framework whereby its theoretical underpinnings are derived from the findings and the results of the literature synthesis. This chapter is organised into three main sections covering the main themes in the empirical framework. Section 2.2 reviews the business strategy literature. Section 2.3 reviews the project management literature. Section 2.4 looks at the alignment between the functional level, such as project management and business strategy, and the factors that affect the alignment process.

## 2.2 Business strategy

There is no universal definition of business strategy. For example, Mintzberg (1987 & 1994) offers multiple definitions of business strategy where it is seen as plan, pattern, position and perspective. Chandler (1962, p.13) defines business strategy as “the determination of the basic long-term goals of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals”. According to Hunger and Wheelen (2010), business strategy is a comprehensive plan that aims to achieve the company’s goals and objectives by maximising the competitive advantage and minimising the competitive disadvantage. Porter argues that to achieve a sustainable competitive advantage the organisation’s chosen strategy needs to be implemented properly (Porter, 1985). Miles and Snow (1978) state that business strategy is a pattern or stream of major and minor decisions about an organisation’s possible future activities.

It is worth highlighting that, the above definitions share the same interest in how to deal properly with competition by means of creating competitive advantage (Johnson et al., 2008) which gives a company an edge over its competitors in attracting customers and surviving in conditions of hyper competition (Lynch, 2006). However, the key is not simply having the right strategy, but being able to implement it in projects since that implementation is more difficult than the formulation of the strategy (Morris, 2009). In

addition, most telecommunications projects are executed in a competitive environment due to the fast changing nature and cutting edge nature of the industry (Sherif, 2006). Thus, in today's environment, the project goal is not simply to build the product or service, but exceeding that, to contribute positively to the company's goals and objectives (Shenhar et al., 2005). Morris (2009) also highlights the importance of selecting the proper projects that support the company's business strategy with emphasis on the value that the project produces for the company.

Even though expert executives formulate and develop the company's business strategy to achieve the company's goals and objectives, the environment which surrounds the project, for example, the internal and external project stakeholders, forces the company's strategy as well as the selected competitive advantages to be changed during the project lifecycle (Farjoun, 2002). So, companies should respond flexibly to a changing environment (Porter, 1990 & 2011).

Business strategy should be clear and understood by all of the employees in a company (Holbeche, 2009). Clear and feasible strategies which can be implemented properly play important roles in a company's success. In today's competitive environment, a company more than ever needs a strategy that specifies competitive advantage and articulates how that advantage will be achieved (Hunger and Wheelen, 2010). However, due to some obstacles such as the internal and external factors which affect the project and the alignment process between the project management and the company's business strategy, many companies have failed to implement their business strategies in their projects correctly. For example, leading strategy consultants admit that as few as 10% of their strategies are implemented (Kiechell, 2010).

Even though several scholars highlight the importance of identifying explicitly the strategy of the organisation and select the project that contributes to the company's business strategy (Cooke-Davies, 2009) there is little evidence of how the strategy is translated into projects (Jamieson and Morris, 2007).

### **2.2.1 Hierarchy of business strategies**

According to Thompson and Strickland (2011), a company that seeks one type of business (such as telecommunications) usually considers three levels of strategy, including corporate, business, and functional, see figure 2.1. Corporate strategy describes the company's overall direction in terms of its general attitude toward growth

and management of its various businesses and product lines. Once corporate strategy is defined, the business strategy for how to deal with competition it is the responsibility of the business-unit level. Then, the functional strategy needs to be defined which deals with the ways the functional areas work together to achieve the chosen business strategy. Functional strategy is the approach taken by the functional areas (e.g. project management, R&D, marketing, production) to achieve corporate and business unit objectives (Hunger and Wheelen, 2010).

There is a two-way influence between each of these levels (Thompson and Strickland, 2011). For example, while the business strategy drives functional strategies by defining its goals, functional strategies support the business strategy by providing the plan of how to operate functional activities within a business unit. Strategies are generally divided into different hierarchical levels, also known as the “strategy-making pyramid” (see figure 2.1).

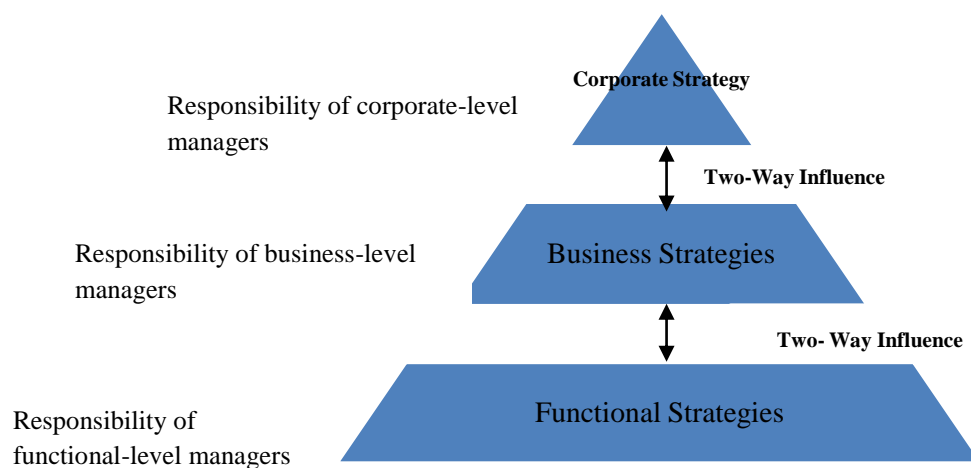


Figure 2.1 Strategy - making pyramid

*Source:* Thompson and Strickland (2011)

As discussed in chapter one section 1.4.2, an alignment between project management and business strategy can be achieved through three methods including project selection, project portfolio management (PPM), and the project management office (PMO). It is worth mentioning that, the above methods seek alignment at the strategic level only and do not ensure alignment at the functional level where the project is planned and executed. Since the functional level is responsible for planning and executing the project. Executing the project is considered as the most critical step where most of the company’s business strategies become lost; hence, it is believed that

aligning the project management with the company's business strategy at the functional level will provide the required solution to this problem.

### **2.2.2 Strategy typologies**

According to Doty and Glick (1994), strategy typologies are well recognised. Previous studies make frequent references to these typologies (Miles and snow, 1978; Mintzberg, 1973 & 1992; Porter, 1980 & 1985). Such strategies have motivated many researchers and scholars to show several types of business strategies (Hambrick, 1983; Murray, 1988; Miller, 1986; Dvir et al., 1993; Chrisman et al., 1988; Stambaugh et al., 2011; Sumer, 2012). Among them, Miles and Snow's typology (Miles and Snow, 1978) and Porter's generic strategies (Porter, 1980) are perhaps the most widely cited.

- **Miles and Snow's typology**

Miles and Snow (1978) provide a model of four ideal-types of strategy including 1) prospector, 2) analyser, 3) defender and 4) reactor. Such strategies describe the strategic orientation of a company. The basic assumption of this model is that the companies adapt to the external and internal environment through choices of strategy, structure, technology, and process. According to Miles and Snow, a company could be associated with one of the strategic types depending on how it solves its entrepreneurial problem of strategic management of the product-market domain, its engineering problem of choice of technical system such as production and distribution (the engineering problem), and its administrative problem of the development of organisational structures and processes to support entrepreneurial and engineering decisions (the administrative problem). As a result, a company can be classified as a defender, prospector, analyser, or reactor according to its solutions to these three problems. This distinction helps explain why companies facing similar problems behave differently and why they continue to do so over a long period of time. The description of these strategies will be discussed next.

- 1) **Defenders:** Companies of this type have narrow market domains with a limited product line that focuses on improving the efficiency of their existing operations. "They do not tend to search outside their narrow domains for new opportunities" (Miles and Snow, 1978, p. 29). Growth for this type of company does not come in expansion, but is created by improving the stable market that they are already in and as a result they seem unlikely to innovate into new areas.



Such companies perceive the environment to be certain and stable, and seek stability and control in their operations (the entrepreneurial problem). Thus, they rarely need to make major adjustments in their technologies or methods of operation (the engineering problem). Structurally, they are mechanistic and achieve coordination through formalisation, centralisation, specialisation, and vertical differentiation. As a result, the level of interdependence tends to be reduced (the administrative problem). The success of the defender depends on its “ability to maintain aggressively its prominence within the chosen market segment” (Miles and Snow, 1978, p.37).

2) **Prospectors:** According to Miles and Snow (1978), companies that continually search for market opportunities with fairly broad product lines that focus on product innovation and market opportunities. They see the environment to be uncertain and dynamic, and maintain their flexibilities (the entrepreneurial problem). Thus, they often need to adjust their technologies or methods of operation (the engineering problem). Moreover, they have organic structures with low levels of formalisation and specialisation and high levels of decentralisation they have relatively few hierarchical levels (the administrative problem). Unlike the defender, the structure of the prospector company takes a matrix form, with low levels of formalisation and specialisation and high degrees of independence. In short, everything (e.g. efficient, stable, grounded, etc.) that the defender is, the prospector is not. While the defender lies at one end of the strategy scale, the prospector lies at the opposite end. The prospector’s “prime capability is that of finding and exploiting new product and market opportunities” (Miles and Snow, 1978, p.55).

3) **Analysers:** This type of company can operate in two types of product-market domains, one relatively stable, and the other changing. In the stable domain, efficiency is emphasised and in the changing domain, innovation is emphasised. They locate new product and market opportunities while still maintaining a firm base of traditional products (the entrepreneurial problem). Therefore, they possess a dual technological core (stable and flexible component) (the engineering problem). Structurally, they favour a matrix structure combining both functional divisions and product groups (the administrative problem). The analyser lies in between the defender and the prospector. Such companies

minimise risk while maximising the opportunities for profit (Miles and Snow, 1978, p. 68). In addition, the analyser successfully copies other companies through broad scanning of market mechanisms (Miles and Snow, 1978). Because these companies occupy dual roles, the major administrative problem is deciding how to adapt structure and process components to contain both stable and fluid areas of operation. In short, the analyser aims to discover new market opportunities while at the same time maintaining a firm base in their traditional product line.

- **Reactors:** This type of company does not appear to have a consistent product market orientation. Such companies respond to environmental pressures slowly. They usually seem not to be aggressive toward their competitors and seem not to be risk takers. Reactors are unsettled and rarely embark on any environmental scanning or long-range forecasting. It is worthy of notice that the four types of strategies exist in all type of industries (Miles and Snow, 1978). Practical strategies such as defender, prospector, and analyser arguably, if implemented properly, are equally effective and do better than the reactor strategy (Parnell and Wright, 1993; Conant et al., 1990). Such an argument appears to be conflicting with the traditional one which suggests that a particular environment favours a specific type of strategic behaviour (Hambrick, 1983) and a number of empirical studies confirm this argument. Although several scholars propose different types of company strategy (Mintzberg, 1973; Porter, 1980), the typology proposed by Miles and Snow offers one of the most comprehensive pictures of strategic choices (Doty et al., 1993; Hambrick, 1983).

- **Porter's generic strategies**

Porter's generic strategies' framework is a major contribution to the development of the strategic management literature. Generic strategies were first established by Professor Porter of the Harvard Business School (Porter, 1980 & 1985). Porter suggests that some of the most basic choices faced by companies are essentially about the scope of the markets that the company could serve and how the company could compete in these markets. Porter uses the terms 'cost leadership' and 'differentiation', to describe how companies can earn a price premium. Porter claims that a competitive advantage is the

heart of any strategy and the strength or the weakness a company possesses. It will eventually be a function of its impact on relative cost or differentiation (Porter, 1980 & 2006). Figure 2.2 illustrates the choices of “generic strategy” a firm can follow. According to Porter (1980 & 2008) a company's relative position within an industry is given by its choice of competitive advantage between cost leadership and differentiation and its choice of competitive scope.

According to Porter (1980), there are three generic strategies including 1) cost leadership, 2) differentiation and 3) focus strategy (see figure 2.2). Choosing one of the generic strategies helps the company to achieve competitive advantage and perform better than its competitors. However, if the company chooses more than one of the generic strategies it performs less well than its competitors (below average performance) (Porter, 1980). The following quadrant illustrates Porter’s generic strategies.

		COMPETITIVE ADVANTAGE	
		Lower Cost	Differentiation
COMPETITIVE SCOPE	Broad Target	1. Cost Leadership	2. Differentiation
	Narrow Target	3A. Cost Focus	3B. Differentiation Focus

**Figure 2.2 Porter’s generic strategies**

*Source:* Porter (1985, p.12)

- 1) **Cost leadership strategy:** This is where a company decides to be the lowest possible cost producer in the market (Porter, 1980). Companies that pursue a cost leadership strategy aim to gain competitive advantage and increase market share by being the lowest cost producers in the industry. Cost leadership strategy is not the most desirable strategy since the companies may put pressure on the price of their products or services. Such pressure would lead the companies to reduce their prices significantly. Moreover, cost leadership strategy may encounter several risks. For example, the competition

between the companies may leapfrog the company's production capabilities which, therefore, affects their competitive advantage or the competition forces one of the companies to imitate the technology of another (Porter, 1980 & 2006).

- 2) **Differentiation strategy:** According to Porter (1980 & 2008), differentiation strategy is where a company aims to be unique in its industry (e.g. provide value for its customers). Companies can achieve competitive advantage, essentially, by differentiating their products and services from other competitors. They pursue a differentiation strategy to place themselves in a unique and desirable position. However, such a strategy is usually associated with many expensive activities that the company would have to engage in to create uniqueness for the company including extensive R&D, product design, high advertising spending, and marketing expenditures (Porter, 1980). Similar to the cost leadership strategy, differentiation strategy may encounter risks such as imitation by competitors. A successful differentiation strategy may attract competitors to enter the same market segment and copy the differentiated product (Lynch, 2006) or the strategy may be affected by changes in the customer's preferences.
  
- 3) **Focus strategy:** Focus strategy (cost focus or differentiation focus) differs from the above strategies because the companies that choose such a strategy aim to target a narrow competitive scope within an industry (Porter, 1980; 2008). Porter initially presented focus as one of the three generic strategies but later considered focus as a moderator of two strategies. Companies pursue focus strategy (sometimes known as niche strategy) by focusing on a market that has little competition or select a market niche (such as organic food, Ferrari and Rolls-Royce) by focusing on a particular group of customers. Such a strategy helps the company to charge a premium price for superior quality (differentiation focus) or by producing a low price product to a small and specialised group of buyers (cost focus). Companies that attempt to achieve cost or differentiation focus strategies aim to gain cost advantage or differentiate in their market niche only. However, several risks may affect this strategy including imitation and changes in the market segment, the possibility of the market cost leader adopting such a strategy, the possibility for competitors to

focus on the same niche market (Harrison and John, 1998), and the niche may disappear over time as the business environment or customer preference changes (Lynch, 2006).

- **Treacy and Wiersema's typology**

Treacy and Wierseman (1995) offer three business strategies including operational excellence (providing middle products for the market at the best price with the least inconvenience), customer intimacy (focusing on delivering specific customer needs), and product leadership (offering products that push performance boundaries).

- **Technology adoption life cycle (TALC)**

TALC was developed by Rogers (2003) and later expanded by Moore (2002) to address the diffusion of innovation. Five types of companies, or market segments, including technology enthusiasts (adopters who appreciate technology for its own sake and pursue new technology products aggressively); visionaries (adopters who have the insight to match an emerging technology to a strategic opportunity and to relate the potential benefits to their other concerns); pragmatists (adopters who are driven by a strong sense of practicality and are willing to pay a modest premium for top quality or services, except in the absence of any special differentiation); conservatives (adopters who buy and use technology because they really have no choice); and sceptics (adopters who do not participate in any new technologies, except to block their purchase).

- **Strategy typologies comparison**

Business strategies were discussed in section 2.2.2 to classify the strategies presented in the previous literature and to understand the alternative business strategies investigated in telecommunications companies in pursuit of understanding alignment and the relationship between alignment and project outcome. Summary of the above typologies is shown in table 2.1.

**Table 2.1 Strategy typologies summary**

<b>Strategy Typology</b>	<b>Strategic Type</b>	<b>Dimensions</b>
Miles and Snow (1978)	Reactors, defenders, analysers, prospectors	Strategic pattern: entrepreneurial, engineering and administrative problems
Porter (1980)	Differentiation, cost leadership, focus	Strategic positioning: cost and differentiation
Treacy and Wiersema (1995)	Operational excellence, product leadership, customer intimacy	Customer needs: price, performance, and specific needs
Moore (2002)	Technology enthusiasts, visionaries, pragmatists, conservatives, sceptics	Marketing: rate of innovation Diffusion

Finally, Miles and Snow’s typology and Porter’s generic strategies are well known and have been empirically validated, as opposed to other typologies that have not been widely empirically tested but are more up-to-date. However, Miles and Snow’s typology and Porter’s framework may not effectively explain contemporary business strategies because many businesses, today, are high speed businesses which work in a rapid and changing environment (dynamic market). Perhaps a major limitation of the generic strategies is that they may not provide relevant strategic routes in the case of fast growing markets (Lynch, 2006).

After reviewing the strategy, section 2.3 will discuss important issues in project management including definitions, the need for project management, project phases, project success factors and criteria, measuring project success, statistics of project failure, the relationship between project management and business strategy, and theory of stakeholders.

## **2.3 Project management**

There are two well-recognised definitions of project management. Firstly, the Project Management Institute (PMI) defines project management as “the application of

knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI, 2008, p. 6). Secondly, “the planning, delegating, monitoring and control of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits and risks” (OGC, 2009, p.9).

It is worth highlighting that the above definitions do not include managing and satisfying stakeholders by the project management team in order to achieve the project objectives and the company’s business strategy, which is a very important issue. Many scholars (Thomas and Mullaly, 2007; Zhai et al., 2009; Winter and Szczepanek, 2008; Shi, 2011) highlight the value that the right implementation of project management generates for different stakeholders such as increasing revenue, saving cost, time, and improving quality; improving corporate competencies; cultivating personnel; improving the satisfaction of customers, suppliers, subcontractors and employees and protecting the environment. Nevertheless, some organisations have gained little value from project management due to the fact that they have not applied project management correctly (Shi, 2011). For example, according to a study that explores the implementation of the strategy in the projects, Young et al. (2012) find project management and investment practices comparable to best practice but also find 100 billion dollars invested in projects over the past decade without any evidence of improvement in strategic goals. They suggest that deficiencies in the way projects are currently selected and managed limit the capability to realise strategic goals.

In addition, most of the scholars (Cooke- Davies and Arzymanow, 2002; Ibbs and Kwak, 2000; Zwikael and Globerson, 2006) agree that differences in project management styles exist amongst industry types. Therefore, this research aims to explore factors such as the project stakeholders that affect in a big way the project management process in the telecommunications industry to take them into consideration during the project management planning and execution phases which, as a result, will ensure alignment between the project management and the business strategy.

Kloppenber and Opfer (2002) examine the trends of project management research, and find that project management has been used in most industries. Nevertheless, most project management literature is relatively recent and still suffers from a scanty theoretical basis. Therefore, there is a lack of a deeper understanding of project management processes in many areas, and in particular, in alignment. As a result, the

uniqueness of the business strategy chosen by the company may disappear when it is translated to the project management level (Shenhar, 2001).

Interestingly, managing projects in a strategic way (in a way to support the company's business strategy) does not have much attention from scholars if compared with managing the project in a traditional way (the project management team focuses on the triple constraint such as time, cost, and quality) (Shenhar et al., 2005). Successful projects are those projects that support the business strategy to meet needs in the market place. The strategy of a selected project cannot be limited to conforming to time, cost and scope constraints since primarily it has to deliver business oriented results and operate both in organizational and market environments (Vuori et al., 2012). To ensure a proper implementation of the business strategy in projects, project management and business strategy should be aligned.

### **2.3.1 The need for project management**

Project management is no longer a specialised application of management. It is rapidly becoming a standard way of doing business. The future promises an increase in the role of project management in contributing to the strategic direction of the company (Larson and Gray, 2011). Project management is important to implement corporate strategy since the implementation of the company's business strategy in the programmes and projects is recognised as a core process (Jamieson and Morris, 2004; Morris and Jamieson, 2005). Moreover, projects and project management take place in an environment that is broader than that of the project itself. Understanding this broader context helps ensure that work is carried out in alignment with the goals of the enterprise and manage in accordance with the established practice of the company (PMI, 2000 & 2008).

The need for project management stems from several challenges such as the need for companies to be externally effective (e.g., fast to market) and internally efficient (e.g., doing more, faster, with less) (Cleland, 1998; Meredith and Mantel, 2011), the need for a high level of coordination and cooperation between groups of people with diverse skills (Harrison and Lock, 2004; Meredith and Mantel, 2011), and the potential to increase the number of customers and improve customer relations (Kenzner, 2004; Kenzner and Saladis, 2009), interdepartmental coordination, and worker morale (Meredith and Mantel, 2011). In addition, the need for project management comes from

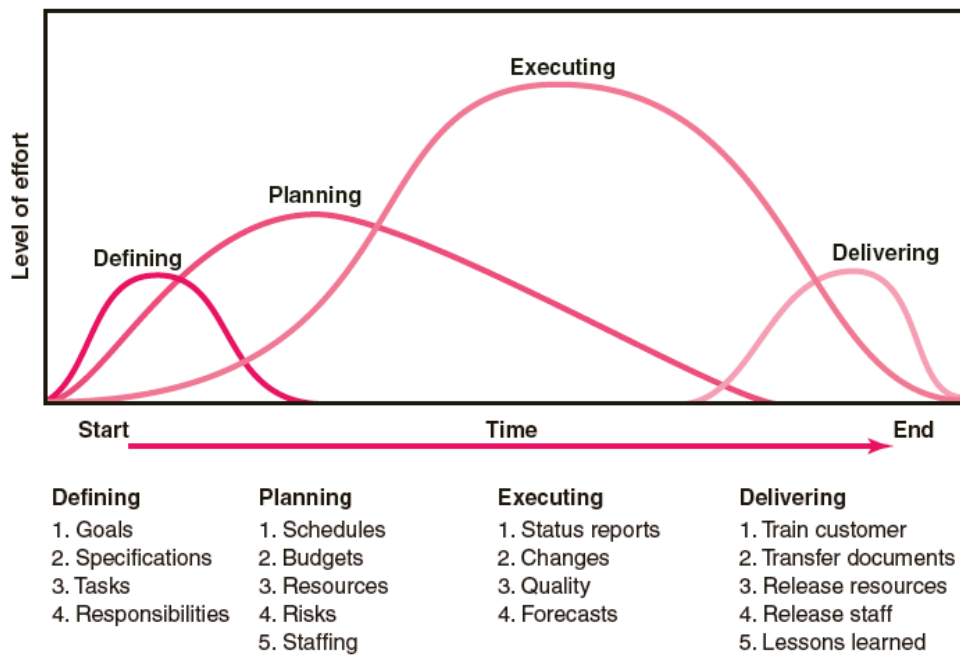


the real life of business competition nowadays. For example, the hyper competition locally or internationally encountered by companies is increasing enormously. Such an environment forces companies to invest in project management as a method for survival (Larson and Gary, 2011).

Some products or services become obsolete due to a dynamic market, increased speed of innovation, and hyper competition. This makes the life of products or services in the market short. Project management helps to increase the average life of products and services (Kerzner, 2004), reduce project costs, development time and time to market (Bommer et al., 2002; Harrison and Lock, 2004; Meredith and Mantel, 2011; Bernasco et al., 1999; Uppal, 2002; Patanakul and Milosevic, 2009). Moreover, technical complexity grows as the technical advances are diffused. New global challenges and opportunities are raised causing customers have more choices. Companies competing in the global economy require project management as the way to survive (Kerzner, 2010). Project management provides companies with better integration and control over operations to deal with technological complexity (Cicmil et al., 2009). Additionally, company profitability is reduced because of rising prices and more streamlining of internal operations to become ever more efficient. The majority of companies employing project management most likely experience an increase in their returns on investment, sales and profitability (Kerzner, 2004; Lientz and Rea, 2001; Meredith and Mantel, 2011).

### **2.3.2 Project lifecycle**

The project lifecycle is defined as, “The period from the start-up of a project to the acceptance of the project product” (OGC, 2009, p.153). According to Gardiner (2005) and Hughes (2012), any project generally is accomplished through a set of phases. Each lifecycle phase has its own distinctive characteristics that have an effect both on the capacity of stakeholders to take action and on the project management’s willingness to take into account different stakeholders’ claims (Aaltonen and Kujala, 2010). Each phase is responsible for the completion of one or more deliverables (e.g. a tangible, verifiable piece of work such as a feasibility report, a work breakdown structure, a project network or a project end product) (see figure 2.3). These phases will be discussed in the following subsections, focusing on the planning phase since this research aims to align project management with business strategy during this phase.



**Figure 2.3 Project lifecycle demonstrating phases, actions and deliverables**

*Source:* Larson and Gary (2011, p.7)

- **Defining (initiation) phase**

The initiation phase can be defined as “the process performed to define a new project or a new phase of an existing project by obtaining authorisation to start the project or phase” (PMI, 2008, p. 44). Project initiation is the first phase in the project life cycle and, essentially, involves starting up the project. This phase is responsible for defining and identifying important issues such as the project goals, specifications, tasks, and responsibilities. The project management team initiates a project by defining its purpose and scope, the justification for initiating it and the solution to be implemented. This phase is important for the project, that is, this stage determines the nature and scope of the development. If this stage is not performed well, it is unlikely that the project will be successful in meeting the business’s needs (Gardiner, 2005; Hughes, 2012).

- **Planning phase (misalignment)**

According to PMI (2008, p. 39) the planning phase is, “the processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve”. Planning involves setting out the roadmap for the project by creating the following plans: project plan, resource plan, financial plan, quality plan, acceptance plan and communications

plan. The planning phase focuses on planning and developing some issues which form the basis of project control through project execution and delivery (Gardiner, 2005; Zwikael, 2009). For example, establishing a set of directions in sufficient detail that the project management team can be told what should be done, when it should be done, and what resources should be used in order to successfully produce the project deliverables (Meredith and Mantel, 2011). In the vast middle on most projects there is a combination of planning and executing of project work. The most deliberative approach would have all of the planning completed before starting any project execution. The most emergent approach would have planning and execution totally in parallel (Assudani and Kloppenborg, 2010; Hughes, 2012).

The plan normally includes the project goal, project scope, project deliveries, project milestones, project resources, and activities for execution. According to Artto et al. (2008) project strategy is mostly about goals and plans. Existing research suggests that such goals and plans should be aligned with a parent organisation's strategy. Project strategies and plans are typically presented as part of a hierarchy of strategies, objectives and plans for a company (Milosevic and Srivannaboon, 2006a).

Planning is considered as one of the important factors for project success (Cooper and Kleinschmidt, 1995 & 2007; Fortune and White, 2006), a mediator to improve business-IT alignment (Kearns and Sabherwal, 2007), and recognised as one of the critical success factors of project management (Johnson et al., 2001; Turner, 1999; Zwikael and Sadeh, 2007; Zwikael, 2009). Although, projects are initiated as part of a grand-plan which is consistent with business strategy and conceived at the corporate or business unit level, the question is how to implement and control this plan successfully during the execution phase especially when the project encounters some internal and external obstacles?

Although, project managers are responsible for completing the project to the satisfaction of the stakeholders, they should execute the project according to the plan and, more essentially, that the plan should be reliable and properly represent the stakeholders' requirements (Zwikael, 2009). According to PMI (2008), a project manager is expected to perform 42 processes, including 20 planning processes. Therefore, planning processes represent about 48% of all the processes that should be performed properly by a project manager (the project management team) during the project life cycle. The PMI identifies nine areas of knowledge including integration, scope, time, cost, quality,

human resources, communications, risk, and procurement that the project team should manage properly during the planning phase which, therefore, affect the project during the execution phase. However, PMI (2008) tends to describe what a project manager should be managing, and not much about how to manage it.

Indeed, some criticism of project planning practices can also be found in the literature, especially as regards the ability to accurately plan the project with appropriate links to the business strategy (Hauc and Kovač, 2000; Shenhar et al., 2005; Srivannaboon, 2006a). Conceptually, there is a missing link between the business strategy and the project plan (Shenhar et al., 2005 & 2007) see figure 1.2. For example, in evaluating the maturity of 38 companies in the United States, Ibbs and Kwak (2000) found that project managers focus heavily on managing the project triple constraint: time, cost and quality. Shenhar later called the approach of project managers who focus heavily on managing the project triple constraint, with little emphasis on the company business strategy, a “traditional mind-set” (Shenhar et al., 2005).

In addition, when re-examining some examples of failure or poor performance of projects, the most important reason for project failure often originates in poor management particularly at the planning phase rather than poor downstream execution. The planning phase represents the biggest opportunity for creating value for the company but when misalignment takes place between this phase and the company business strategy, it creates a devastating legacy of poor performance (Anderson and Merna, 2003). Poor project planning is considered as one of the significant causes of project failure (Hartman and Ashrafi, 2004). Such deficient planning is explained by the project managers not always having the time, knowledge, support, and tools to effectively perform all of the project management processes included in the PMBOK® Guide (Zwikael, 2009; Furlong and Al-Karaghoul, 2010). Moreover, early recognition of undesirable internal and external events is critical for managing the project and a precondition for managing risks associated with the project. In addition, project managers must not only recognize potential risk factors in general, but also know when they are most likely to occur in the project life cycle. Recognizing and considering these events and contingencies before they occur or early in their development is critical for a successful plan and successful management (Thamhain, 2013).

According to the literature, studies should not offer general advice for the whole project lifecycle (Zwikael, 2009) because each phase has its own characteristics (Zwikael,

2009; Zwikael; Globerson, 2006). In addition, the traditional project management methods place a completely different emphasis on different parts of the project lifecycle. For example, PRINCE2 and PMI put a heavy emphasis on the planning phase. To respond to the above literature, this research focuses on the planning phase, as it is considered a critical phase in any project (Cooper and Kleinschmidt, 1995; Fortune and White, 2006; Johnson et al., 2001; Zwikael, 2009). Even the best execution will fail if it follows a flawed plan. For example, recent studies show that when the planning process is improved, the likelihood of project success increases (Zwikael and Globerson, 2004).

- **Execution phase**

PMI (2008, p.39) defines the execution phase as “the processes performed to complete the work defined in the project management plan to satisfy the project specifications”. Executing and controlling the project come after the planning phase; this is where the project deliverables are expected to launch on time, within the budget, meeting the specifications, providing new business opportunities for the organisation, and fulfilling the project objective (Larson and Gray, 2011).

- **Delivering (closing) phase**

The last stage in a project lifecycle is the delivery phase (closure), representing the end of a project, and it is characterised by the closing of the project budget, completing the documentation and administration requirements of the project, including any final payments to contractors and suppliers, also documenting lessons learned for future projects (Gardiner, 2005; Hughes, 2012). Closure begins when the project’s customers formally accept the project deliverables and ends when all the books are closed, documentation is complete and resources are reassigned. “Managing all along the project lifecycle contributes to project success” (Assudani and Kloppenborg, 2010). Project closure involves releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources and communicating project closure to all stakeholders.

### **2.3.3 Strategic planning and project success**

The planning phase is a central element of modern project management since it contributes positively to the project’s success (Dvir et al., 2003; Dvir, 2005; Samset, 2008) and the preparation for the formal design and documents during the planning

phase has a positive effect on meeting the project's goal and objectives. Such a perspective is commonly shared with the perspective of the PMI PMBOK which highlights the importance for investing in project management especially during the planning phase since a proper plan reduces uncertainty and increases the possibility of project success (Furlong and Al-Karaghoul, 2010). Additionally, while proper planning does not guarantee project success, the lack of planning will probably guarantee failure (PMI, 2008).

### **2.3.4 Projects**

A project is defined by PMI as “a temporary endeavour undertaken to create a unique product, service, or result” (PMI, 2008, p.5). “The temporary nature of the project indicates a definite beginning and end, where the end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists” (PMI, 2008 p.5). Project management is, therefore, seen as a process applied to manage the implementation of strategy (PMI, 2008). OGC (2009, p. 7) describes a project as: “A temporary organization that is created for the purpose of delivering one or more business products according to an agreed business case”. The British Standards Institution defines a project as “a unique set of coordinated activities, with a definite starting and finishing point, undertaken by an individual or organisation to meet specific objectives within defined schedule, cost and performance parameters” (BS 6079, 2000, p. 2).

Indeed, the above project definitions share common characteristics including starting and ending points and meeting specific goals and objectives within the triple constraint. However, they do not include the linkage between the company's business requirements. Turner (1999) suggests the development of a comprehensive definition at the start of the project, in which business plans are aligned with project plans containing key elements of project strategy. According to Raymond and Bergeron (2008) projects in industries such as engineering services, telecommunications, information technology, construction, and pharmaceuticals have one thing in common: they need to be managed, that is, they need to be planned, staffed, organised, monitored, controlled, and evaluated. Such management includes establishing objectives, balancing competing demands, and adapting to the expectations of various stakeholders (PMI, 2008).

The purpose of undertaking projects is to deliver benefits for stakeholders and achieve the company's goals and objectives (Shenhar et al. 2005; Thiry, 2005; Bradley, 2006; Lloyd-Walker and Walker, 2011). Therefore, the strategy of an investment project cannot be reduced to the need for conforming to time, cost and scope, as first and foremost they have to deliver business oriented results (Vuori et al., 2012). Patanakul et al., suggest that such a strategy should be used by a project team as a guideline for effectively performing project activities (Patanakul et al., 2012).

However, some projects create the new and sometimes knock down the old. Managing this change requires proper project management (Winter et al., 2006). Moreover, in recent decades the number of large and complex projects has continued to grow significantly. For example, projects such as engineering projects, information technologies, construction, infrastructure, and telecommunications require thousands of activities, done by hundreds or even thousands of people (Samset, 2008). However, insufficient management wastes the equivalent of billions of dollars around the world each year (Winter et al., 2006).

### **2.3.5 Company vs. project**

Projects and companies appear to have much in common. They both have desired outcomes or objectives and they both have leaders, structures, systems and procedures. However, they have some differences such as life cycle. For example, projects have a defined and limited lifecycle (PMI, 2008; OGC, 2009). On the other hand, companies have no such constraints. Also, the outcomes for companies are replicating another at some point of its history, where in projects the outcomes are unique, singular and one-off. Even though differences exist, the relationship between them should be a two-way relationship. For example, the company should support the project and the project management team with adequate resources and the project should support and meet the company goals and objectives (Shenhar et al., 2005).

It is not surprising to find that the project and the parent company influence each other (Shenhar and Dvir, 2007). For example, companies, in one form or another, provide resources, e.g. human and financial, that the project management uses; they fund its activities; they train and educate its people and they represent the interests of the diverse stakeholders and, most importantly, they are the clients of the projects (Baguley, 2011).

On the other hand, projects are about adding value to the companies (Morris, 2009). Nevertheless, only a small fraction of many companies' effort (products or services) actually adds value for the end customer. For example, Toyota estimates only 5% of activities add value, 35% are necessary but do not add value (non-value adding activities) and 60% add no value at all but place strains on internal staff, equipment and systems (Trans Constellation conference, 2012). Eliminating this waste is the greatest potential source of improvement in corporate performance and customer service. This waste can be reduced by good project management which focuses its efforts to create value for the company (Maylor, 2010).

### 2.3.6 Project success factors

The perception of project success in the literature over the past forty years has changed. For example, Jugdev and Müller (2005) retrospectively identify three distinct periods. Firstly, from 1960 to 1980 the phase was called the “project implementation and handover period”. Secondly, the 1980s to 1990s was the “project critical success factor (CSF) list period” and thirdly the 1990s to present is the “CSF framework period.” According to them the next period will be the “strategic project management period”. Fortune and White (2006) conducted a study of IS projects using a systems model for framing the critical success factors identified 27 critical success factors among 402 publications. Table 2.2 shows these factors.

**Table 2.2 Critical success factors identified across 402 publications**

Critical factor	Literature	Count of citations
Support from senior management	Avots (1969); Cleland and King (1983); Morris (1986); Pinto and Slevin (1987); Morris and Hough (1987); Stoddart-Stones (1988); Magal et al. (1988); Pinto and Mantel (1990); McComb and Smith (1991); Cash and Fox (1992); Yap et al. (1992); Pollalis and Frieze (1993); Tennant (1993); Selin and Selin (1994); Martinez (1994); The Standish Group (2000); Couillard (1995); Wastell and Newman (1996); Tan (1996); Munns and Bjeirmi (1996); Belassi and Tukel (1996); KPMG (1997); McCormack (1997); McGolpin and Ward (1997); Dvir et al. (1997); Kasser and Williams (1998); Jang and Lee (1998); Whittaker (1999); Turner (1999); Weir (1999); Taylor (2000); Thite (2000); Poon and Wagner (2001); Cooke-Davies (2002); Andersen et al. (2002); Caldeira and Ward (2002); Yeo (2002); Westerveld (2003); Turner (2004)	39
Clear realistic objectives	Baker et al. (1983); Morris (1986); Hughes (1986); Pinto and Slevin (1990); Pinto and Mantel (1990); Tennant (1993); Selin	31



	and Selin (1994); Harding (1995); Couillard (1995); Yeo (1995); Wateridge (1995); The Standish Group (2000); Beare (1995); Tan (1996); Munns and Bjeirmi (1996); Spinelli (1997); Cicmil (1997); Dvir et al. (1998); Glass (1998); Kasser and Williams (1998); Jang and Lee (1998); Clarke (1999); Weir (1999); Taylor (2000); Thite (2000); Poon and Wagner (2001); Anderson et al. (2002); Caldeira and Ward (2002); Yeo (2002); Westerveld (2003); Turner (2004)	
Strong/detailed plan kept up to date	Avots (1969); Baker et al. (1983); Cleland and King (1983); Morris (1986); Morris and Hough (1987); Pinto and Mantel (1990); Pollalis and Frieze (1993); Martinez (1994); The Standish Group (2000); Wateridge (1995); Couillard (1995); Smart (1995); Williams (1995); Belassi and Tukul (1996); KPMG (1997); Spinelli (1995); McCormack (1997); McGolpin and Ward (1997); Dvir et al. (1998); Kasser and Williams (1998); Glass (1998); Whittaker (1999); Clarke (1999); Turner (1999); Taylor (2000); Andersen et al. (2002); Yeo (2002); Westerveld (2003); Turner (2004)	29
Good communication/ feedback	Avots (1969); Cleland and King (1983); Morris (1986); Hughes (1986); Pinto and Slevin (1987); Curtis et al. (1996); Magal et al. (1988); Pinto and Mantel (1990); McComb and Smith (1991); Cash and Fox (1992); Pollalis and Frieze (1993); Wateridge (1995); Couillard (1995); Tan (1996); Gowan and Mathieu (1996); Hilderbrand (1996); Spinelli (1997); Dvir et al. (1998); Kasser and Williams (1998); Clarke (1999); Turner (1999); Thite (2000); Cooke-Davies (2002); Andersen et al. (2002); Yeo (2002); Westerveld (2003); Turner (2004)	27
User/client involvement	Morris (1986); Pinto and Slevin (1986); Curtis et al. (1996); Magal et al. (1988); Pinto and Mantel (1990); McComb and Smith (1991); Yap et al. (1992); Pollalis and Frieze (1993); Wateridge (1995); Smart (1995); Beare (1995); Wastell and Newman (1996); Belassi and Tukul (1996); Munns and Bjeirmi (1996); Cicmil (1997); Spinelli (1997); McCormack (1997); Dvir et al. (1998); Jang and Lee (1998); Turner (1999); Caldeira and Ward (2002); Yeo (2002); Westerveld (2003); Turner (2004)	24
Skilled/suitably qualified/ sufficient staff/team	Baker et al. (1983); Morris (1986); Pinto and Slevin (1986); Curtis et al. (1988); Magal et al. (1988); Pinto and Mantel (1990); McComb and Smith (1991); Cash and Fox (1992); Pollalis and Frieze (1993); Tennant (2004); Martinez (1994); Willcocks and Griffiths (1994); The Standish Group (2000); Dvir et al. (1998); Glass (1998); Jang and Lee (1998); Weir (1999); Poon and Wagner (2001); Caldeira and Ward (2002); Westerveld (2003)	20
Effective change management	Avots (1969); Pinto and Mantel (1990); McComb and Smith (1991); Cash and Fox (1992); Pollalis and Frieze (1993); Martinez (1994); Willcocks and Griffiths (1994); Smart (1995); The Standish Group (2000); Hougham (1997); Cicmil (1997); McGolpin and Ward (1997); Dvir et al. (1998); Weir (1999); Taylor (2000); Thite (2000); Poon and Wagner (2001); Cooke-Davies (2002); Yeo (2002)	19
Competent project manager	Avots (1969); Baker et al. (1983); Morris (1986); Pinto and Slevin (1986); Pollalis and Frieze (1993); Martinez (1994); Cannon (1994); Couillard (1995); Pinto and Kharbanda (1996); Belassi and Tukul (1996); Munns and Bjeirmi (1996); Spinelli (1997); Dvir et al. (1998); Glass (1998); Weir (1999); Taylor (2000); Andersen et al. (2002); Westerveld (2003); Turner (2004)	19

Strong business case/ sound basis for project	Avots (1969); Pollalis and Frieze (1993); Smart (1995); Pinto and Kharbanda (1996); Munns and Bjeirmi (1996); KPMG (1997); McGolpin and Ward (1997); Dvir et al. (1998); Whittaker (1999); Poon and Wagner (2001) ; Cooke-Davies (2002); Andersen et al. (2002); Caldeira and Ward (2002); Yeo (2002); Westerveld (2003); Turner (2004)	16
Sufficient/well allocated resources	Morris (1986); Pinto and Slevin (1986); Morris and Hough (1987); Yap et al. (1992); Pollalis and Frieze (1993); Tennant (2004); McCormack (1997); The Standish Group (2000); Belassi and Tukul (1996); Gowan and Mathieu (1996); Dvir et al. (1998); Kasser and Williams (1998); Turner (1999); Caldeira and Ward (2002); Westerveld (2003); Turner (2004)	16
Good leadership	Morris and Hough (1987); Cash and Fox (1992); Pollalis and Frieze (1993); Tennant (2004); Martinez (1994); Smart (1995); Gowan and Mathieu (1996); Pinto and Kharbanda (1996); Dvir et al. (1998); Turner (1999); Thite (2000); Andersen et al. (2002); Caldeira and Ward (2002); Westerveld (2003); Turner (2004)	15
Proven/familiar technology	Morris (1986); Pinto and Mantel (1990); McComb and Smith (1991); Pollalis and Frieze (1993); Cannon (1994); Williams (1995); Yeo (1995); Tan (1996); KPMG (1997); Dvir et al. (1998); Glass (1998); Poon and Wagner (2001); Caldeira and Ward (2002); Yeo (2002)	14
Realistic schedule	Cleland and King (1983); Morris (1986); Morris and Hough (1987); Pinto and Mantel (1990); McComb and Smith (1991); Tennant (2004); Selin and Selin (1994); Dvir et al. (1998); Glass (1998); Kasser and Williams (1998); Weir (1999); Yeo (2002); Westerveld (2003); Turner (2004)	14
Risks addressed/assessed/ managed	Morris and Hough (1987); Selin and Selin (1994); Smart (1995); Beare (1995); Williams (1995); KPMG (1997); Baldry (1998); Dvir et al. (1998); Whittaker (1999); Weir (1999); Cooke-Davies (2002); Yeo (2002); Westerveld (2003)	13
Project sponsor/champion	Morris (1986); Morris and Hough (1987); Cash and Fox (1992); Yap et al. (1992); Martinez (1994); McGolpin and Ward (1997); Jang and Lee (1998); Baldry (1998); Thite (2000); Poon and Wagner (2001); Caldeira and Ward (2002); Yeo (2002)	12
Effective monitoring/control	McComb and Smith (1991); Cash and Fox (1992); Pollalis and Frieze (1993); Selin and Selin (1994); Cicmil (1997); Dvir et al. (1998); Weir (1999); Thite (2000); Poon and Wagner (2001) ; Cooke-Davies (2002); Westerveld (2003); Turner (2004)	12
Adequate budget	Baker et al. (1983); Cleland and King (1983); Morris and Hough (1987); Dvir et al. (1998); McComb and Smith (1991); Pollalis and Frieze (1993); Tennant (2004); Glass (1998); Caldeira and Ward, (2002);Westerveld (2003); Turner (2004)	11
Organisational adaptation/ culture/structure	Pollalis and Frieze (1993); Cannon (1994); Willcocks and Griffiths (1994); Martinez (1994); Couillard (1995); Hougham (1997); Gowan and Mathieu (1996); Taylor (2000); Thite (2000); Cooke-Davies (2002)	10
Good performance by suppliers/ contractors/consultants	Morris and Hough (1987);Pollalis and Frieze (1993); McCormack (1997); KPMG (1997); Glass (1998); Jang and Lee (1998); Caldeira and Ward (2002); Yeo (2002); Westerveld (2003); Turner (2004)	10
Planned close	Avots (1969); Cleland and King (1983);Sauer (1993);Beare	9

down/review/ acceptance of possible failure	(1995);Pinto and Kharbanda (1996); Munns and Bjeirmi (1996) ;McCormack (1997) McGolpin and Ward (1997); Dvir et al. (1998)	
Training provision	Magal et al. (1988); Yap et al. (1992) ; Pinto and Kharbanda (1995); Pinto and Kharbanda (1996); McCormack (1997); Dvir et al. (1998); Caldeira and Ward (2002)	7
Political stability	Morris and Hough (1987); Pollalis and Frieze (1993); Tennant (2004);Sauer (1993); Yeo (1995); Pinto and Kharbanda (1996)	6
Correct choice/past experience of project management methodology/tools	Hughes (1986); Munns and Bjeirmi (1996); Dvir et al. (1998); Glass (1998); Jang and Lee (1998); Turner (2004)	6
Environmental influences	Morris (1986); Cleland and King (1983); Archibald (1992); Pinto and Kharbanda (1996); Caldeira and Ward (2002); Westerveld (2003)	6
Past experience (learning from)	Yap et al. (1992) ; Dvir et al. (1998) ; Jordan et al. (1988) ; Sauer (1993) ; Cooke-Davies (2002)	5
Project size (large)/level of complexity (high)/number of people involved (too many)/ duration (over 3 years)	Hughes (1986); Selin and Selin (1994); Cannon (1994); Cooke- Davies (2002)	4
Different viewpoints (appreciating)	Curtis et al. (1988); Pinto and Kharbanda (1995); Turner (2004)	3

*Source:* Fortune and White (2006)

These critical success factors identified by Fortune and White are adopted in this study in order to compare the final results of this study with the results of their study. Furthermore, this study adopted the enabler factors of the alignment that have high scores such as communication between the project management team and project stakeholders, the involvement of the project manager in strategy development, the support from the company's executives, and the leadership competency of the project manager in order to construct the conceptual framework, phase one of this study and, later, to compare the final results of this research with Luftman and Brier, (1999). The alignment enabler factors will be discussed more thoroughly in the alignment section (Section 2.4).

### **2.3.7 Measuring project success**

Definitions of project success vary over time and there is no universal definition. The traditional criteria (iron triangle) to measure project success have long depended on the

triple constraint. Traditionally, schedule, cost and quality compliances commonly referred to as the 'iron triangle' have been accepted as the most widely used criteria to measure project success (Jha and Iyer, 2007). However, relying on only the three constraints may not evaluate the project outcome properly since the traditional criteria (triple constraint) used to measure the project success ignores other important criteria such as opening a new market and the impact of the project on the company goals. The project management team should plan and execute the project within the triple constraint and look beyond that to meet the company goal and objectives (Williams and Samset, 2010). According to Dvir (2005) project success can be measured by three criteria. These criteria are:

- Meeting the planning goal (success at the project manager level)
- End-user benefits (success from the customer's point of view).
- Overall success (an integrative measure of project success e.g. success at the contractor's level, including their last two criteria: commercial success of the project and potential for future revenues).

However, measuring project success by any criteria (e.g. triple constraint) appears to be difficult and vague because meeting one criterion may be considered as a success for one of the project stakeholders but failure to another (Pheng and Chuan, 2006). This occurs when the project management team disregards the other criteria, for example, when a project has been managed efficiently (meeting the project triple constraint only) but at the end does not meet the customer or company expectations (Shenhar et al., 1997).

Supporting this view, Wateridge (1995 & 1998) states that IT project managers often consider the project as failed if the project does not meet time, budget and schedule which means project managers focus heavily on the short-term success but not on long-term success, such as delivering a product or a service which satisfy the end user. On the other hand, many scholars (Shenhar et al., 1997; Pheng and Chuan, 2006; Müller and Jugdev, 2012) highlight two criteria to measure project success, i.e. project management success and product or project success. Project management success can be measured by meeting budget, time and quality while product success can be measured by effectiveness (e.g. customer satisfaction or contribution to company development by meeting the company goal and objectives). Pinto (2007) also argues that the triple constraint approach toward project evaluation is too narrow; they mention

customer satisfaction as an important criterion for project evaluation. The measure of success can no longer be restricted to the traditional criteria.

In conclusion, project success can be measured by four criteria. The first three criteria (time, cost, and project quality) are called in the literature the “golden/iron triangle” of “project management success” because they measure the efficiency of project management (Atkinson, 1999; Jha and Iyer, 2007; Shenhar et al., 2001; Dweiri, 2006). However, it is important that the company gains benefits from their projects (Dvir et al., 2003; Jugdev and Müller, 2005; Kerzner, 2013; Turner, 2006; Turner and Muller, 2003). For example, the project should contribute positively to the company’s development. Therefore, the last criterion of success should evaluate the impact of the project on the customer, on the stakeholders, and on the future of the company (Dvir et al., 2003; Kerzner, 2013; Turner and Muller, 2003; Zwikael, 2009; Müller and Jugdev, 2012).

Based on these arguments, four success criteria will be adopted for this study including time, cost, quality (efficiency) and effectiveness such as the contribution to company development by meeting the company’s goal and objectives since they contribute to the success of the project management traditionally (meeting time, cost, and quality) and to the company strategically (meeting the company goal and objectives).

### **2.3.8 PM practices affecting project outcome**

There are nine knowledge areas that the project manager should manage, including forty two different processes grouped into four lifecycle phases: initiation, planning, execution, and closure. This study adopts the PMI’s nine knowledge areas of project management of the planning phase because of its popularity and recognition (Zwikael, 2009) including integration, scope, time, cost, risk, quality, human resources, communications, and procurement since they represent the scope of this research. These nine knowledge areas consist of 20 planning processes that the project manager should manage properly during the project planning and execution phase (PMI, 2008). These knowledge areas will be discussed next.

### **2.3.9 Nine knowledge areas of the planning phase**

According to PMI (2008), forty two processes represent nine knowledge areas that the project manager should manage during the project lifecycle. These nine knowledge areas are initiating, planning, executing, monitoring and controlling, and closing

properly, see table 2.3. However, project managers do not always have the time, knowledge, and tools to effectively perform all of the project management processes included in the PMI (Zwikael, 2009). Among the forty two processes, twenty processes represent the planning phase (see table 2.3) since the planning phase is the most critical phase, if it is managed properly, it will lead to a successful project. These processes interact with each other among one planning process group and with processes in the other knowledge areas; each process can involve effort from more than one group or person, based on the needs of the project (PMI, 2008).

Globerson and Zwikael (2002) adopted the nine knowledge areas of PMI which represent the planning phase only including the twenty processes. According to Globerson and Zwikael, the planning phase is considered to be the most important phase in the project lifecycle since the product of this phase affects and shapes the other phases that come after it (execution, monitoring and controlling, and closure phases) (Globerson and Zwikael, 2002 & 2009; PMI, 2008). In their study, they evaluated the quality of the twenty planning processes during the execution phase. In other words, they evaluated the product of each single process of the planning phase processes (table 2.3). Similarly, this study adopts the above nine knowledge areas which focus on the twenty processes of the planning phase in order to investigate the effect of the alignment factors (AF) on the nine knowledge areas during the planning phase. These knowledge areas, including the planning processes group, are explained next.

- **Project integration management**

Project integration management is defined as “the processes and activities needed to identify, define, combine, unify, and coordinate the various processes and project management activities within the project management process groups” (PMI, 2008, p. 71). In the project management context, integration includes a description of unification, consolidation, articulation, and integrative actions that are crucial to project completion, successfully managing stakeholder expectations, and meeting requirements (PMI, 2008). Project integration management has one process, the planning process, including developing the project management plan. The project management plan defines how the project is executed, monitored and controlled, and closed through a series of integrated processes. Developing the project management plan is “the process of documenting the actions necessary to define, prepare, integrate, and coordinate all subsidiary plans” (PMI, 2008, p. 78). It is important to highlight that project managers

should be aware that the main objective is the implementation of all the company's projects, and not the execution of an individual project. This will require project managers to ensure that there is clear and continuing integration between the policy requirements, the programme and the project's scope and deliverables. Changes of policy might affect the programme and, in turn, cause the project to be modified or even cancelled (PMI, 2008).

- **Project scope management**

Project scope management states that “the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully” (PMI, 2008, p. 103). The planning processes group collects requirements, defines the scope, and creates WBS. Collecting requirements is the process of defining and documenting stakeholders' needs to meet the project objectives (PMI, 2008). Such requirements become the foundation of the WBS. Cost, schedule and quality planning are all built upon these requirements.

Definition of the scope is the process of developing a detailed description of the project and product (PMI, 2008). Such detail is important for the project's success. During planning, the project scope is defined and described. Creating WBS is the process of subdividing project deliverables and project work into smaller, more manageable components (PMI, 2008).

- **Project time management**

“Project time management includes the processes required to manage timely completion of the project” (PMI, 2008, p.129). The planning processes group are defining activities, sequencing activities, estimating activity resources, estimating activity durations, and developing schedules. Defining activities is “the process of identifying the specific actions to be performed to produce the project deliverables” (PMI, 2008, p. 133). Sequencing activities is “the process of identifying and documenting relationships among the project activities” (PMI, 2008, p. 136). Sequencing can be performed by using project management software or by using manual or automated techniques. Estimating activity resources is “the process of estimating the type and quantities of material, people, equipment, or supplies required to perform each activity” (PMI, 2008, p. 141). Estimating activity durations is “the process of approximating the number of

work periods needed to complete individual activities with estimated resources” (PMI, 2008, p.146). The estimated activity durations process requires that the amount of work effort required to complete the activity is estimated along with the amount of resources to be applied to complete the activity. Schedule development is the process of analysing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule (PMI, 2008, p. 152).

- **Project cost management**

Project cost management includes “the processes involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget” (PMI, 2008, p. 165). These processes include estimating costs and determining the budget. Estimating the cost of the project is “the process of developing an approximation of the monetary resources needed to complete project activities” (PMI, 2008, p. 168). Estimating costs is a prediction that is based on the information known at a given point in time. Determining budget is “the process of aggregating the estimated costs of individual activities or work packages to establish an authorised cost baseline” (PMI, 2008, p. 174). Costs are estimated for all resources that are applied to the activity cost estimate (e.g. direct employees, materials, equipment, services, facilities, and information technology).

- **Project quality management**

Project quality management is “the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken” (PMI, 2008, p. 189). Project quality management in the planning phase has one process called “quality planning”. Plan quality is the process of identifying quality requirements and/or standards for the project and product, and documenting how the project will demonstrate compliance (PMI, 2008).

- **Project human resource management**

Project human resource management includes “the processes that organize, manage, and lead the project team” (PMI, 2008, p. 215). Project human management in the planning phase has one process called developing a human resource plan. It is the process of



identifying and documenting project roles, responsibilities, and required skills, reporting relationships and creating a staffing management plan (PMI, 2008).

- **Project communication management**

Project communications management includes, “the processes required to ensure timely and appropriate generation, collection, dissemination, storage, retrieval, and ultimate disposition of project information” (PMI, 2008, p. 243). Project communication management in the planning phase has one process called “plan communications”. It is the process of determining the project stakeholder information needs and defining a communication approach (PMI, 2008).

- **Project risk management**

Project risk management includes “the processes of conducting risk management planning, identification, analysis, response planning, and monitoring and control on a project” (PMI, 2008, p. 273). Project risk management in the planning phase has five processes including plan risk management, identify risks, perform qualitative risk analysis, perform quantitative risk analysis and plan risk responses. Plan risk management is the process of defining how to conduct risk management activities for a project (PMI, 2008). Careful and clear planning enhances the probability of success for the four other risk management processes. Identifying risks is the process of determining which risks may affect the project and documenting their characteristics. Performing qualitative risk analysis is the process of prioritising risks for further analysis or action by assessing and combining their probability of occurrence and impact (PMI, 2008). Performing quantitative risk analysis is the process of numerically analysing the effect of identified risks on overall project objectives (PMI, 2008). Planning risk responses is the process of developing options and actions to enhance opportunities and to reduce threats to project objectives (PMI, 2008).

- **Project procurement management**

Project procurement management includes “the processes necessary to purchase or acquire products, services, or results needed from outside the project team” (PMI, 2008, p. 313). Project procurement management in the planning phase has one process called plan procurements. It is the process of documenting project purchasing decisions,

specifying the approach, and identifying potential sellers (PMI, 2008). The major products of the planning process are shown in table 2.3.

**Table 2.3 Major product of each planning process**

Knowledge Areas	Planning Process Group	Major Product
1. Project integration management	1. Development of project management plan	Project management plan
2. Project scope management	2. Collect requirements 3. Define scope 4. Create WBS	Project deliverables Work breakdown structure
3. Project time management	5. Define activities 6. Sequence activities 7. Estimate activity resources 8. Estimating activity durations 9. Development Schedule	Project activities PERT or Gantt chart Activity duration estimates Activity start and end dates
4. Project cost management	10. Estimating costs 11. Determine budget	Activity required resources Resource cost Time-phased budget
5. Project quality management	12. Plan quality	Quality management plan
6. Project human resource management	13. Develop human resource plan 14. Staff acquisition	Role and responsibility assignments Project staff assignments
7. Project communications management	15. Plan communications	Communications management plan
8. Project risk management	16. Plan risk management 17. Identify risks 18. Perform qualitative risk analysis 19. Plan risk responses	Risk management plan Risk list Project overall risk ranking Prioritized list of quantified risks Risk response plan
9. Project procurement management	20. Plan procurement	Procurement management plan Procurement documents

*Sources:* Globerson and Zwikael (2002) and PMI (2008)

### **2.3.10 Relationships between PM and project success**

Project success is a strategic management concept where project management effort must be aligned with both the short and long-term goals of the company (Al-Tmeemy et

al., 2011). Likewise, strategic project management has been realised as a critical issue for project success (Rodrigues and Bowers, 1996). Many researchers have merged the strategic impact of the project with the project success factors. For example, Baccarini (1999) considers project success as the success of two components including project management success and product success. Although, most projects conceived with a business perspective in mind, such as profits, additional growth, and improved market position, the management of the projects contributes heavily to the company's performance (Dvir, 2006).

In addition, many studies highlight the impact of project management on the project outcome and consequently on company performance (Ittner and Larcker, 1997; Menke, 1997). However, when the management of the project is not focusing on the business aspects, the project will probably not contribute to the development of the company (Dvir et al, 2006). Moreover, Dvir et al. (2006) shows a strong relationship between the project manager's personality, the project types, and the project's success. They indicate that the projects that are managed by managers whose personality characteristics match their projects' profiles will be successful and, therefore, managers will be more successful when managing projects that fit their personality characteristics.

### **2.3.11 Relationship between PM and BS**

Morris (2009) indicates that the company's business strategy is implemented by the project management and the project management contributes to the formulation of the company's business strategy (strategic management). Morris states that the project management's contribution "can add value to the emerging strategy and ensure that benefits are reaped from its realisation" (Morris, 2009, p. 42). Similarly, many scholars indicate that the influence between project management and business strategy is a two-way influence (Srivannaboon and Milosevic, 2006; Williams and Samset, 2010). Projects and project management are often quoted as an important means of implementing strategy, but there is some confusion in the literature about how this happens (Morris and Jamieson, 2005).

### **2.3.12 Project failures**

As might be expected, many scholars reported on companies' project success and failure. For example, one research study (Thomas et al., 2002) has found that 30 % of all projects are cancelled midstream, and over half of the completed projects which

overran their budget by 190 % and 220 % were late. It is clear that the intent is to use projects to support and link the companies with their strategic target. Linking all projects to the strategic direction of the company is crucial to success (Larson and Gray, 2011).

According to Meredith and Mantel (2011) many companies are facing challenges of how to tie their projects more closely to the company's business strategy. The difficulty here, is that the strategic plans are usually developed at the executive level (e.g. business strategy department) and the implementation is done by the middle level managers (e.g. project managers). Such a problem causes a gap between the business strategy and the project management which this study aims to solve. Such a gap exists because of the mismanagement of the project's internal and external environment such as the stakeholders which, therefore, causes many projects to be conducted completely at odds with the strategy and the goals of the company (Cleland and King, 1983). Consequently, many companies lose huge amounts of money since projects may be failing to contribute to strategic outcomes (Raymond et al., 2012). For example, in the IT sector, the Chaos survey from the Standish Group shows that 71 percent of all projects are "challenged" because of late delivery, being over budget, of less quality, or "failed" because of being cancelled prior to completion or being obsolete (Stanleigh, 2005).

In 2004, a survey which was conducted by Price Waterhouse Coopers (Stanleigh, 2005) in a broad range of industries in 30 countries covering 10,640 large and small projects for a total value of \$7.2 billion, found that only a handful of the projects ever achieve success and only 2.5 % of global businesses achieve 100 % project success. Although the literature provides many project critical success factors (Raymond and Bergeron, 2008; Fortune and White, 2006, see table 2.2, project failures of IT projects is often reported in the national newspapers. For example, according to Pinto (2007) a US Army study which was conducted on IT projects found that 47% of the projects were delivered to the customer but not used; 29% were paid for but not delivered; 19% were abandoned or reworked; 3% were used with minor changes; and only 2% were used as delivered. Software development projects are known for exceeding budget and schedule (Larson and Gray, 2011).

The national newspapers and professional publications such as “Computing” and “Computer Weekly” in the UK frequently report on project failures from construction, military projects, to IT. For example, the United Kingdom’s Scottish Parliament costs “10 times over budget and more than three years late” (Tempest, 2004), and software projects, in particular, have a poor success rate for reliability, meeting due dates and completing to budget (Ahsan, 2010). Moreover, Standish Group (2007) reported that 39 percent of projects with budgets over US \$10 million failed. For instance, one of the biggest current projects in the United Kingdom is the “National Programme for IT” in the National Health Service, with a predicted expenditure of over £12 billion during 2004–2014 has failed. A recent Parliamentary report concluded, “Four years after the start of the programme, there is still much uncertainty about the costs of the programme for the local NHS and the value of the benefits it should achieve. As reported, such a programme will not be completed anywhere near its original schedule” (House of Commons, 2007, p. 5).

It can be concluded that there are three issues which contribute to frequent project failures. Firstly, the company’s strategy does not include a clear role of the projects in delivery of the company goal and objectives. Secondly, project management is not viewed by some companies as a strategic issue since the project management team influences the company’s performance. For too long, the subject of project management has focused on the functional level, ignoring its role in the development of the company business strategy. Thirdly, the project goal and objectives are not supporting the company’s goals and objectives (Maylor, 2010). For instance, about 25 % of the executives who contributed to a Fortune and White study believed that there is no strong linkage, consistency, and agreement between the strategies that they formulated and the strategies that were implemented in the projects (Fortune and White, 2006). Indeed, strategic management requires a strong link to mission, goals, objectives, strategy and implementation (Floyd and Wooldridge, 1992) and implementation requires companies to develop business strategy properly and complement and support project management (Morris, 2009).

### **2.3.13 Nature and complexity in the telecommunications industry**

The telecommunications industry is one of the most dynamic and competitive industries. This industry has been one of the most competitive industries since the liberalization of the market in 1996. Competitiveness requires operating in efficient

ways (Moreno et al., 2013). In addition to competitiveness, the telecommunications companies face complicated problems regarding the limitation of frequencies for mobile telecommunications (Al Khanjari1 et al., 2013). Therefore, efficiency seems to be a preferable strategy for most of the telecommunications companies (Moreno et al., 2013).

Over the past three decades, the telecommunications industry has experienced fundamental changes, some of which are still ongoing (Grove and Baumann, 2012). For example, due to market liberalization and the successful penetration of the Internet, telecommunications companies were able to offer, for instance, additional voice telephony (e.g., Skype) or search and portal services (e.g., Google or Facebook) (Grove and Baumann, 2012).

The telecommunications industry spans many different activities that fall into two main categories: building equipment and using that equipment to connect people and machines. Both equipment manufacturers and service providers are regulated in one way or another (Sherif, 2006). Changes in regulatory commands and acceleration in telecommunications technologies have forced the telecommunications companies to invest in their infrastructure continuously. Also, combination of regulatory and technological changes has led to an increase in the number of candidate solutions (Sherif, 2006). Rapid and short-lived technology advances, deregulation and greater competition have forced the telecommunications industry to bring new products into the market faster (Kosaroglu and Hunt, 2009).

In addition, competitive pressure forces the telecommunications companies to deliver their products faster, with higher quality and with lower cost. Conducting successful projects in such a dynamic and risky environment requires the project management team to manage the project stakeholders properly (Thomas and Sahin, 2010). However, the complexity of the telecommunications projects has made the interactions among the project managers, vendors, sponsors, regulators and customers extremely complex (Thomas and Sahin, 2010).

Although, information and communication technology in Saudi Arabia provides enormous benefits to economic development, a cost overrun leads to a serious threat to the development of telecommunication infrastructure (Ameh et al., 2010). According to Xue-Mei et al. (2008), managing telecommunication projects is a very complicated

procedure with lots of risks including on time completion, service quality, risks from contractors, and cost control. Therefore, project managers need administrative skills in telecommunications, since they are usually working for big companies that consist of several groups formed around technologies. In addition, telecommunications projects are highly capital-intensive and developing countries have limited financial resources available to meet developmental needs. Therefore, it is important to identify and avoid factors associated with telecommunication projects that have the potential to result in millions of dollars of cost overruns (Ameh et al., 2010).

The rising popularity of Internet-based services and the growing role of bit pipes for electronic mass media, most current telecommunications have likewise started to offer their own services (Noam, 2010). Internet-based services in the mobile industry are a very dynamic and rapidly growing industry where the telecommunications companies offer an ever-expanding range of services and products. The number of mobile subscribers has grown enormously because of, among other things, the introduction of prepaid calling, better mobile phones and the marketing efforts of the network operators (Jaspers et al., 2007).

In the mobile telecommunications industry many technological changes are taking place. The second generation GSM (Global System for Mobile Communication; 2G with speed 9.6 Kbps) networks are not only used for voice services, but for data applications like mobile internet and text messaging service (SMS) as well. Therefore, the telecommunications companies have modified their GSM networks to assist General Packet Radio Service (GPRS) technology (2.5G with speed 35Kbps to 171kbps). Such development allows for faster data transmission, making mobile internet services more user-friendly and allowing for new applications such as multimedia messaging services or MMS (Jaspers et al., 2007).

In addition, the capacity for data transmission over mobile networks will further increase with the introduction of UMTS (Universal Mobile Telecommunications System; 3G with speed 384Kbps to 2Mbps). Unlike GPRS, UMTS uses different frequencies from the ones used by GSM, which means that large investments will have to be made in the development of a new network (Jaspers et al., 2007).

A growing literature recognizes the positive link between the telecommunications infrastructure and economic growth in developing countries such as Saudi Arabia

(Chakraborty and Nandi, 2011). Therefore, the telecommunications technology will play a major role in supporting the growth and development process in the increasingly integrated global economy. Beginning from the late 1980s, a majority of the developing countries conducted continuous improvement in their communications industry to enhance investment in telecommunications infrastructure (Chakraborty and Nandi, 2011).

To overcome these challenges, project managers need to understand the policies, processes, structure and tools to manage projects and cross-boundaries between these groups, in order to execute project plans efficiently (Kosaroglu and Hunt, 2009). Leadership skills are essential in every phase of the telecommunications projects from beginning to product delivery. Such skill is important for leading telecommunications projects to achieve the goals and objectives of the company (Thomas and Sahin, 2010).

#### **2.3.14 The IT/IS sector in the Kingdom of Saudi Arabia**

Between 2003 and 2007, the telecommunications industry in the Middle East region witnessed a 44% annual average compound growth rate with subscriber numbers increasing from 24 million to 103 million. Overall, the Middle East telecom market may be reaching saturation levels, but significant growth is anticipated in Saudi Arabia. The world's 22nd largest economy with a GDP (Gross Domestic Product) of more than \$370 billion and where the telecommunications sector's monthly average revenue per user is a comparatively high \$35 (Williams, 2008). The telecommunication market in Saudi Arabia is growing rapidly and the number of mobile cellular subscription has tripled in the last five years.

According to the CITC Governor and Deputy Chairman (CITC, 2012), the Information and Communications Technology sector is one of the most important and dynamic sectors for two reasons. Firstly, it contributes to sustainable development in all scientific, cultural and social areas. Secondly, it has a positive impact on the general population as well as a tangible impact on increasing productivity and growth in all other economic sectors through applications that enhance business performance. Therefore, the IT/IS sector has become a key component in the development of all other sectors as a vehicle for increased efficiency and performance.



Spending on IT/IS services in Saudi Arabia reached an estimated SAR 94 (£16.2) billion in 2012 compared to SAR 21 (£3.6) billion in 2002, an average annual growth rate of about 16%. This indicates that all segments of Saudi society including individuals, the private sector and government have contributed to and benefited from the significant development in this important sector (CITC, 2012). The telecommunications market in Saudi Arabia shows significant growth in mobile, fixed telephony, broadband, and the internet services. Such growth will be discussed next.

- **Mobile Telecommunications Market**

The mobile telecommunications market indicates significant growth since 2002. For example, according to the annual report of the CITC (2012), in 2002 there were about 5 million mobile subscriptions. Such market shows growing continuously in each year reaching about 53 million mobile subscriptions at the end of 2012 (CITC, 2012).

- **Fixed telephony market**

According to CITC, (2012), the growth in the fixed lines market in Saudi Arabia shows that in 2002 there were about 3.3 million fixed telephone lines and there were about 4.8 million fixed telephone lines at the end of 2012. The demand for fixed services, especially in major cities, is expected to grow as a result of growing demand for fixed broadband services, especially for fiber optic network (FTTx) services.

- **Broadband market**

In recent years, the demand for broadband services has increased significantly. This demand is associated with the growing need for high-speed services, especially after the strong support of the Government for high-tech projects requiring good digital infrastructure, as well as an increase in e-government transactions. Broadband services are currently provided by both fixed and mobile networks. Fixed broadband subscriptions including Digital Subscriber Line (DSL), fixed wireless (WiMAX), fiber optics (FTTx) and other fixed lines have grown to about 2.54 million at the end of 2012. The fixed broadband household penetration rate was about 40.8%. Total mobile broadband subscriptions reached 12.28 million at the end of 2012 representing a population penetration rate of about 42.1%. This includes both voice and data-only subscriptions. The penetration rates for the fixed or mobile broadband highlight the need for more projects to satisfy future needs (CITC, 2012).

- **Internet services market**

The CITC annual report for 2012 indicates that internet users in the Kingdom reached 16 million at the end of 2012 representing a population penetration rate of about 54.1% compared to 5% in 2001. It is expected that the demand for Internet services will increase significantly in the next few years due to the availability of fiber optic (FTTx) networks at very high speeds, growing Internet content, and the spread of handheld smart devices and applications (CITC, 2012).

- **Telecom services sector revenues**

Telecommunications services revenues from operations in Saudi Arabia have been growing at an average annual rate of about 12% over the last ten years, increasing to about SAR 71 (£12.3) billion in 2012. Mobile services revenues represent about 78% of all telecommunications sector revenues, with fixed and data services accounting for the remaining 22% (CITC, 2012).

- **Spending on IT/IS services**

According to CITC (2012), the IT/IS market in the Saudi Arabia is the largest in the Middle East in terms of capital value and volume of spending, and it accounts for more than 70% of the (GCC) IT/IS market. Capital investment in the past ten years has exceeded SAR 135 (£23.3) billion. CITC estimates that spending on IT/IS services was about SAR 94 (£16.2) billion in 2012 compared to SAR 21 (£3.6) billion in 2002, an average annual growth rate of about 16%. The spending on information technology (IT) was around 30% of the total, mostly concentrated on hardware and IT services. The spending on IT/IS products and services is expected to grow by more than 10% in 2013 driven mostly by large investments by government, the private sector and by expected strong growth in demand for the latest technologies such as cyber security software and interactive applications. All of this will result in the growth of direct investment and support services in the sector (CITC, 2012).

- **IT/IS contribution to the national GDP**

The growth of capital investments and the development and expansion of information and communication technology networks have led to a significant increase in the contribution to the national gross domestic product (GDP) of Saudi Arabia. In addition

to its own direct contribution to the GDP, the ICT sector has the indirect effect of increasing the efficiency of other economic sectors. For example, according to CITC estimates, the direct contribution to the GDP in 2012 was about 2.75% compared to 4.4% in 2007. The indirect contribution has been increasing over the past three years. It is worth mentioning that the decrease in the direct contribution is the result of higher oil prices and production rates. If, however, the oil and mining sector components of GDP are excluded, it is estimated that the IT/IS contribution to the national GDP was 7% in 2012.

The huge investments in infrastructure and networks, particularly for broadband services, will increase the contribution of the IT/IS sector to the GDP. Studies show that there is a direct relationship between the availability of broadband services and the rate of growth in the GDP (CITC, 2012). It is estimated that a 10% increase in the availability of broadband services could result in growth in the GDP of about 1.3% (CITC, 2012).

The misalignment between the project management and the company's business strategy will increase the projects that fail to support the company's goal and objectives in Saudi Arabia which, therefore, will impact negatively the contribution of the telecommunications companies to the national GDP and will affect the other industries as well.

### **2.3.15 Stakeholder theory**

Many definitions of stakeholder are presented by many scholars. For example, Freeman's (1984, p. 46) classic definition defines a stakeholder as "any group or individual who can affect or is affected by the achievement of the organisation's objective". Although, Freeman's definition was criticised as broad, it was cited as a starting point for the work of many scholars. Such a broad conception would include suppliers, customers, stockholders, the media, political action groups, communities, and governments. A more narrow view of stakeholders would include employees, suppliers, customers, financial institutions, and local communities where the corporation does its business.

Many scholars attempt to narrow this definition to be more specific than "can affect" and "affected", for instance, stakeholders who have "potential for collaboration" "potential for threatening" (Blair and Whitehead, 1988), "fiduciary and non-fiduciary"

stakeholders (Goodpaster, 1991), “primary and secondary” stakeholders (Clarkson, 1995), “voluntary and involuntary” stakeholders (Clarkson, cited in Mitchell, et al., 1997), and “actively and passively involved” stakeholders (Vos, and Achterkamp, 2006).

Stakeholder theory has recently begun to receive attention in the project management literature (Bourne and Walker, 2006; Sutterfield et al., 2006; PMBOK® Guide, 2008; Jiang et al. 2009; Jepsen and Eskerod, 2009). For instance, PMI (2004) has basically adopted the Freeman (1984) definition. For example, PMI states that project stakeholders are individuals and organizations that are actively involved in the project or whose interests may be affected as a result of project execution or project completion.

Stakeholder theory can be used to identify and determine the main stakeholders ‘who and what really counts’ in the project (Freeman, 1994). Freeman’s work is highly informative on who counts as a stakeholder. However, the application of this theory in identifying stakeholders is still limited (Elias, Cavana and Jackson, 2002; Knox and Gruar, 2007; Assudani and Kloppenborg, 2010). One of the contributions of this research is to identify who counts in the telecommunications industry.

Furthermore, this theory seems to suggest a rather static view of salient stakeholders, where stakeholder analysis is conducted at the front end of the project (Assudani and Kloppenborg, 2010). Conversely, in their recent research, Jepsen and Eskerod (2009) found that stakeholder analysis at the front end of the project is incomplete. According to Assudani and Kloppenborg (2010) project managers were limited in a detailed front end (initiation phase) stakeholder analysis since it was difficult to predict interactions with stakeholders in the distant future and contributions from each stakeholder may vary in different stages of the project phases due to unpredictable events in the project.

According to Assudani and Kloppenborg (2010), some stakeholders have more influence over a project than others and since the extent of their influence can change over the course of a project, identifying and highlighting the main project stakeholder during the course of the project is good practice. The list of stakeholders can become large. Therefore, project managers recognise the need to have a way to identify who counts among the stakeholders as they impact the project and the project management process. Project managers have to realise that some stakeholders are more important

than others and need to be more central to project planning and execution (Assudani and Kloppenborg, 2010). As stakeholders, they have a perceived stake in the project, they have certain expectations and, consequently, engage in certain types of behaviour, sometimes constructive and sometimes destructive (Bourne and Walker, 2006).

Although, research on various project stakeholders received attention from scholars, there is a lack of research that examines the process of project management through a theoretical lens of stakeholder theory (Bourne and Walker, 2005, 2006; Marjolein and Janita, 2008; Ives, 2005; Jugdev and Muller, 2005; Norrie and Walker, 2004; Sutterfield et al., 2006). Therefore, this paper fills the gap in the literature by employing the stakeholder theory for constructing the framework in order to investigate the impact of the stakeholders on the alignment process as well as on the nine knowledge areas of the planning phase of the project management process.

More specifically, the term “project stakeholders” will be used throughout this thesis to refer to any individual or group of individuals that might directly or indirectly impact the project. Stakeholders can be internal or external to the project management team or they can be internal or external to the project scope. Therefore, the determination of whether an individual or a group of individuals is internal or external to a project is dependent upon the point of view of the observer.

### **2.3.16 Managing project stakeholders**

The project management team should take into account the project stakeholders’ needs and requirements which are essential elements in the project success (Sutterfield et al., 2006; Zwikael, 2009; Aaltonen and Kujala, 2010; Morgan and Dale, 2013). It is worth highlighting that project stakeholders’ potential to take action and their ability to influence the project management’s decision making changes over the project lifecycle, as the project proceeds from the initiation phase through the project execution phase to the closing phase (Cleland, 1986). Therefore, stakeholder management is an important and common practice in any project, as it allows project managers to better manage process, performance and risk. In essential projects, collaboration and engagement with stakeholders is relatively more complex, challenging and critical for project success (Zwikael et al., 2012).

Project stakeholders could include internal (e.g. project managers, functional managers, business executives, CIO’s, project team) and/or external stakeholders (e.g. vendors,

contractors, government agencies, regulators). Similarly, such stakeholders could impact the project management process. Therefore, they could influence the alignment process as they have different expectations and interests (Young, Brady and Nagle 2009; Jiang et al., 2009) which, therefore, makes stakeholder management an important issue in project management as a project can be seen as a temporary combination of stakeholders having to create something together. According to McElroy and Mills (2003), stakeholder management in projects is the development of relationships with stakeholders for project success. To ensure the success of the project, project managers need to consider three issues including identification of all stakeholders who are important for the project, building relationships with and managing the expectations of such stakeholders, and communicating effectively with all of them (Assudani and Kloppenborg, 2010).

Indeed, project managers need to understand the differences in interests among the stakeholders and to do their best to unify and satisfy them. Stakeholder analysis, therefore, is an important component of stakeholder management since project success is tied to effectively communicating and managing relationships with the various stakeholders of the project (Fowler and Walsh, 1999; Boddy, 2002; Achterkampnd and Vos, 2008). This makes stakeholder management an important issue in project management (Assudani and Kloppenborg, 2010).

Project managers should identify, analyse, and manage the influence of the various stakeholders in relation to the project requirements to ensure a successful outcome (PMI, 2008) and conduct early meetings during the planning phase with each group to communicate the project's vision with that group and understand the unique needs and interests of each group (Young, Brady and Nagle, 2009; Olander and Landin, 2005; Olander, 2007; Post et al., 2002). Then, they should determine the impact of each stakeholder on the project for instance by using a stakeholder influence grid (Milosevic, 2003), a power/interest grid (PMBOK® Guide, 2008), a stakeholder/project success grid (Young, Brady and Nagle, 2009) or by a stakeholder circle TM (Bourne, 2006).

While, the above tools help to identify and determine the most important stakeholders to the project, what is less understood is how to manage these stakeholders during the entire project phases since stakeholder management is a dynamic and shifting process (Altinay and Miles, 2006; Bourne and Walker, 2006; Assudani and Kloppenborg, 2010).

The success of project management work is, at least in part, measured by identifying various relevant stakeholders, managing strong relationships with them, making decisions that satisfy stakeholder objectives and leveraging the resources necessary to achieve the objectives (Bourne, 2006; Milosevic, 2003; Morgan and Dale, 2013).

Successful business strategy implementation in the project depends on the cooperation of a wide range of individuals and groups. Many of those do not directly report to the project manager. The management of large telecommunications projects interacts with different individuals or groups of stakeholders. Each brings different expertise, standards, priorities and agendas to the project. The complexity of the relationships that need to be managed distinguishes project management from regular management. According to Larson and Gray (2011), project managers should develop methods for managing stakeholders and consider the dependency among them. The nature of such dependency will be discussed next.

- **Project team**

A project team includes the project manager, project management team, and other team members who carry out the work but who are not necessarily involved with management of the project (PMI, 2008). The project team manages and completes project work. They want to plan and execute the project in a proper way but they are concerned about how the project contributes to their personal goals and aspirations. Recognizing and dealing with undesirable internal and external events requires broad involvement and collaboration of the project team during the project lifecycle (Thamhain, 2013). The project team, indeed, plays a major role in the project management process and in the success of the project (Achterkampnd and Vos, 2008; Harrin, 2013) which leads Shenhar and Dvir (2007) to highlight the need for an additional stakeholder in the form of the project team.

- **Project managers**

Project managers are assigned by the company to achieve project objectives. Such a mission is challenging. It requires “flexibility, good judgment, strong leadership and negotiating skill, and a solid knowledge of project management practices” (PMI, 2008, p. 26; Harrin, 2013). The project manager is the lead person responsible for communicating with all stakeholders, particularly the project sponsor, project team, and other key stakeholders (PMI, 2008, p. 26). Naturally they compete with each other for

resources and the support of top management and they have to share resources and exchange information. According to PMI, a project manager is responsible for all aspects of the project including, but not limited to:

- a) Developing the project management plan and all related component plans
- b) Keeping the project on track in terms of schedule and budget
- c) Identifying, monitoring, and responding to risk
- d) Providing accurate and timely reporting of project metrics

- **Administrative support groups**

Groups such as human resources, information systems, purchasing agents and maintenance provide valuable support services. However, they impose constraints and requirements on the project such as the documentation of expenditure and the timely and accurate delivery of information (Larson and Gary, 2011).

- **Functional managers**

Functional managers are key individuals who play a management role within a functional area of the business, such as human resources, finance, accounting, or procurement (PMI, 2008). Functional managers can play a minor or major role in the project and implementation of the business strategy depending on how the project is organised. For example, in matrix arrangements, they may be responsible for assigning the project team, resolving technical problems, and supervision of the completion of important parts of the project work. Functional managers want to cooperate up to a point, but only up to a certain point. They are concerned with maintaining their status within the company and minimising the disruptions the project may have on their own operations (Larson and Gray, 2011).

- **Top management**

Top management (executives) approve funding for the project and establish priorities within companies. They define success and decide rewards for accomplishments. Significant adjustments in budget, scope, and schedule typically need their approval. They have an interest in the success of the project, but at the same time have to be responsive to what is best for the entire company (Larson and Gray, 2011).

- **Project sponsors**



Project sponsors champion the project and use their influence to gain approval for the project. Their reputation is tied to the success of the project, and they need to be kept informed of any major developments. They defend the project when it comes under attack and are a key project supporter (Larson and Gray, 2011).

- **Contractors**

Contractors and vendors may do all the actual work, in some cases, with the project team just coordinating their contributions. In other cases, they are responsible for additional parts of the project scope. Poor work and schedule slips can affect the work of the project management team. It is rare to find important projects that are being completed totally in-house (Larson and Gray, 2011). Outsourcing or contracting important parts of project to other companies is commonplace. However, there are some advantages as well as disadvantages entailed in outsourcing. For example, the advantages that may lead to competitive advantage are cost reduction, faster project completion, high level of expertise, and flexibility. On the other hand, the disadvantages are coordination breakdowns, loss of control and conflict. In the planning phase project managers have to overcome these disadvantages if they plan to use outsourcing (Xue-Mei et al., 2008).

As differences between telecommunications companies and contractors certainly exist in cultural, legal, values and management methods, various risks will be encountered in projects during their lifecycle. For example, contractor opportunism, culture incompatibility between contractor and company and contractor ethics, result in lower customer satisfaction, lower quality of service, and other adverse consequences like leaking enterprise technology (Xue-Mei et al., 2008). Therefore, contractor selection is a very complex procedure.

- **Government agencies**

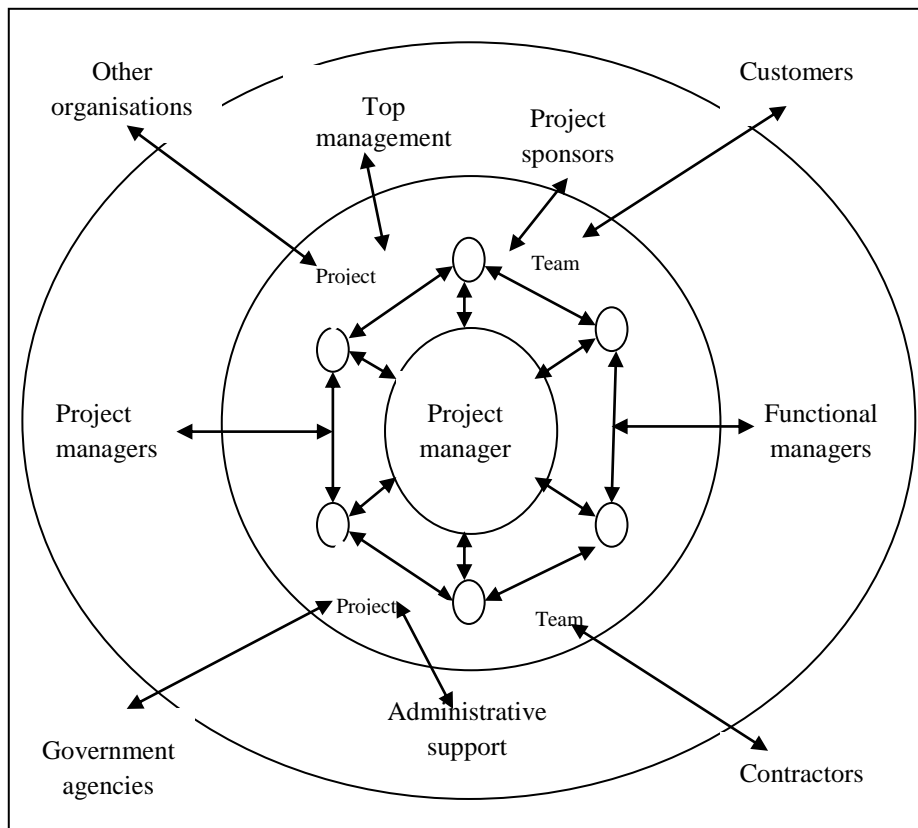
Government agencies such as municipalities place constraints on project work. Permits need to be issued. Construction and telecommunications work have to be built to code. Other products and services have to meet safety standards and government regulation (Larson and Gray, 2011).

- **Other organisations**

Some organisations may directly or indirectly affect the project. For example, suppliers provide the necessary resources for completion of the project work. Delays, shortages, and poor quality can bring a project to termination (Larson and Gray, 2011).

- **Customers**

According to Larson and Gray (2011), customers define the scope of the project, and ultimate project success rests on their satisfaction. Project managers need to consider changing customer needs and requirements and to meeting their expectations (see figure 2.4).



**Figure 2.4 Network of stakeholders**

*Source:* Larson and Gray (2011)

The relationships between the project manager and the project stakeholders are interdependent in that the project manager’s ability to work effectively with one group will affect their ability to manage another group. For example, functional managers are

likely to be less cooperative if they recognise that top management's commitment to the project is decreasing. Within this web of relationships, the project manager should discover what needs to be done to achieve the goal and objectives of the project and build a cooperative network to accomplish it.

Due to the rapid change in the business environment and hyper competition between companies such as companies that work in the telecommunications industry, these companies use project management as a method for survival. Such an environment forces the project management team to become more complex. For example, the interest of the project managers changes from focusing on the triple constraint to business results and from managing people to managing stakeholders. Moreover, project success criteria should include realisation of the strategic objectives of the company, satisfaction of customers and satisfaction of other stakeholders (Ika, 2009).

The salience of stakeholders may shift during the project lifecycle (Altinay and Miles, 2006). While the current literature recognises the changes in the salience of stakeholders, managing those relationships over the project lifecycle provides valuable insight into the success of project work (Assudani and Kloppenborg, 2010). However, identifying and managing the project stakeholders during the project has been given little attention (Jepsen and Eskerod, 2009; PMBOK1 Guide, 2008).

Therefore, this research adopts stakeholder theory since this theory is a useful and relevant theoretical tool to identify and explore the importance of stakeholders during the project life cycle. Stakeholder theory helps to identify the stakeholders by exploring 'who and what really counts' in the project among the project stakeholders who may influence the project success and at what level of influence each has. Also, this research explores the project stakeholders who are involved at various phases of the process and, therefore, complements stakeholder theory. Stakeholders may vary in their level of importance therefore, tracking the interactions may identify 'who and what really counts' for project success (Assudani and Kloppenborg, 2010).

## **2.4 Alignment**

This section discusses many relevant issues, including the background of alignment, why companies need alignment, how to measure alignment, and factors that enable or inhibit alignment (stakeholders).

### **2.4.1 Alignment theoretical background**

Boyer and McDermott describe alignment as the relative importance of cost, quality, delivery and flexibility to organisational goals (Boyer and Mc Dermott, 1999). Alignment in general has many synonyms including “integration” (Weill and Broadbend, 1988); fit (Porter, 1996); “strategic alignment” (Henderson and Venkatraman, 1993); “harmony” (Luftman et al., 1996); “bridge” (Ciborra, 1997); “fusion” (Smaczny, 2001); and “linkage” (Henderson and Venkatraman, 1989).

Despite the various names or labels used for alignment, alignment between the functional departments (e.g. R&D, production, human resource, and information technology, information system, project management) and the company’s business strategy is an essential and critical process for the success of projects (Cooper, 2011; Boar, 1994; Dutta, 1996; Reich and Benbasat, 2000; Fonvielle and Lawrence, 2001; Papke and Malhotra, 2001; Srivannaboon, 2006a; Chan, Sabherwal and Thatcher, 2006; Gutierrez et al., 2008; Preston and Karahanna, 2009; Yayla and Hu 2009; Holbeche, 2009; Williams and Samset, 2010; Alsudiri et al., 2013).

When things are in a state of alignment, they naturally work together to accomplish a common end. They perfectly complement and support each other (Boar, 1994). In other words, by “alignment”, full agreement on the company’s goals and objectives will be achieved by the company’s internal (e.g. employees from the three levels of strategies such as corporate, business, and functional level) and external stakeholders (e.g. vendors, contractors, government agencies) (Fonvielle and Lawrence, 2001; Gutierrez et al., 2008; Alsudiri et al., 2013). Such alignment can be achieved when the project activities are integrated and executed with apparent links to the company’s goals and objectives (Holbeche, 2009; Alsudiri et al., 2013).

When looking at a company, important elements such as humans, departments, strategies, business processes appear. It is argued that successful companies are companies that achieve a proper alignment between these elements (Tan and Gallupe, 2006; Gutierrez et al., 2008; Preston and Karahanna, 2009; Tallon, 2007; Gutierrez et al., 2009; Yayla and Hu 2009; Rathnam et al., 2005). Success depends on the degree of obtaining alignment which underlies the business strategy. When projects are aligned with business strategy, the company is more likely to meet profitability targets and generate the necessary return on investment (Boyer and Mc Dermott, 1999).

Furthermore, when alignment is strong, the project management team obtains encouragement, energy runs high, and team efficiency increases, but when alignment is weak, the project team focuses less on the main goal and objectives of the company, and actions become less effective (Holbeche, 2009).

Nevertheless, achieving such alignment is an evolutionary process which requires strong support from top management, good working relationships, strong leadership, appropriate prioritisation, trust, effective communication (Luftman, 2000; Williams and Samset, 2010; Alsudiri et al., 2013). Such requirements, therefore, lead many companies into unsuccessful alignment between their projects and strategies (Dietrich and Lehtonen, 2005). It seems that a dilemma exists between the company's desire to link strategies and projects, and the concrete actions that companies take to achieve them (Van den broecke et al., 2005; Morris and Jamieson, 2005). Hence, a business strategy that the company intends to follow can be very different from the strategy that actually becomes realised (Bower and Gilbert, 2006, p 26) since the strategic business plan is developed by one group (executives), projects are selected by another group, and projects are planned and executed by yet another (project management). Such independent decisions by different groups of managers create a set of conditions leading to conflict, confusion, and, frequently, an unsatisfied customer (Larson and Gray, 2011). Under these conditions, projects and project management often fail to support the strategic business plan and resources of the organisation are wasted in non-value added activities. Therefore, analysing alignment across different organisational levels (strategic, business and functional) provides a complete picture of the organisation's alignment maturity that could facilitate the design of specific actions to improve project alignment with business objectives (Gutierrez et al., 2008).

Aligning business strategy with departments at the functional level, including IT, IS, marketing, manufacturing, and human resource dominates alignment research (Tan and Gallupe, 2006; Gutierrez et al., 2008; Preston and Karahanna, 2009; Tallon, 2007; Avison et al., 2004; Cragg et al., 2002; Byrd et al., 2006; Gutierrez et al., 2009; Yayla and Hu 2009; Rathnam et al., 2005; Bergeron et al., 2004; Sun and Hong, 2002; Kearns and Sabherwal, 2007).

Since project management is considered as one of the functional departments, project management, similarly, should be aligned with business strategy (Srivannaboon, 2009;

Williams and Samset, 2010; Raymond et al., 2012; Alsudiri et al., 2013). The alignment between project management and business strategy is necessary because misalignment could cause the company to have difficulties in implementing their strategies in their projects (Kaplan and Norton, 2006). According to Stanleigh, misalignment is the main reason for project failure since 68 % of organisations have no systematic approach in place to prioritise projects or link them to strategic goals (Stanleigh, 2005). As a result, the uniqueness of the business strategy (e.g. speed to market, superior product quality or low cost) may disappear (Srivannaboon, 2009). Indeed, several problems lead to poor implementation including weak management roles in implementation, lack of communication, lack of commitment to the strategy, unawareness or unclear strategy, poor coordination and inadequate capabilities (Alexander, 1991; Giles, 1991; Galpin, 1998; Beer and Eisenstat, 2000).

However, the relevant literature in the area of aligning projects with business strategy is vague. For example, most studies aim to align the company's business strategy with projects at the strategy level only where the project is selected and prioritised not at the functional level where the project is executed. For example, several researchers suggest aligning the project with the company's business strategy through the project selection by seeing the selection or prioritising the projects that contribute to the company's business strategy as an alignment (Artto and Dietrich, 2004; Hartman, 2000; Englund and Graham, 1999). Other researchers suggest aligning the project with the company's business strategy by project portfolio management (PPM) (Rajegopal et al., 2007; Gareis, 2004; Jamieson and Morris, 2004; Pennypacker, 2005; Turner and Simister, 2008) or by the project management office (PMO) (Hill, 2004).

Only recently have researchers started to explore the alignment between project management and business strategy more thoroughly (Artto and Dietrich, 2004; Morris and Jamieson, 2005; Srivannaboon, 2006a; Shenhar, et al., 2007; Srivannaboon and Milosevic, 2006). To ensure successful implementation, companies should align their business strategy with project management (Srivannaboon, 2006a). However, such alignment is challenging since the business strategy is not always well-communicated or consistent with the aims of the project which makes understanding alignment one of the major challenges to effective project management processes (Srivannaboon, 2006a). Srivannaboon suggests conducting more studies comprehensively in this area and

monitoring alignment during the execution phase since misalignment may cause a project to miss the goal and objectives of the company and, as a result, correcting such action is difficult.

## 2.4.2 Measuring the alignment

To identify the impact of the alignment on the project’s success and responding to Sirivannaboon (2006) who stresses the need for further study to determine the degree of alignment required under different circumstances to assure project and business success, this study adopts the Euclidean distance basis to measure the degree of alignment between project management and business strategy. Alignment can be measured using the matching model by assuming that fit is inversely related to the difference between two elements (Hoffman et al., 1992). In other words, the fit is viewed as the opposite of the level of disagreement (e.g., executives and project managers). It is worthy of mention that alignment can be calculated to quantitatively complement collected data from interviews (Srivannaboon, 2006b).

The first step of measuring alignment is to calculate the disagreement (or misalignment) score based on the Euclidean distance using a square root of the sum of squared differences between the perceptions (e.g., executives and project managers) (formula 1).

$$\text{Disagreement (misalignment score)} = \sqrt{\sum_{i=1}^n \left( \bar{X}_{Ei} - \bar{X}_{PMi} \right)^2} \quad (1)$$

Where:

$\bar{X}_{Ei}$  = the average value of executive perception for each dimension

$\bar{X}_{PMi}$  = the average value of project manager perception for each dimension

Due to executives’ relatively senior position in any company and correspondingly higher involvement in strategy formulation, their perception of priorities is considered as “ideal” profiles relative to their project managers and team members (Joshi, et al. 2003). Therefore, the second step is to convert the disagreement score to an alignment score by subtracting their respective disagreement score from the maximum disagreement score (formula 2).

$$\text{Alignment score} = \text{Maximum disagreement score} - \text{Misalignment score} \dots\dots\dots (2)$$

The maximum disagreement score for n = 4 can be calculated by assuming that executives give the maximum value of 5 while project managers provide the minimum value of 1, or vice versa.

$$\text{Maximum disagreement score} = \sqrt{(5 - 1)^2 + (5 - 1)^2 + (5 - 1)^2 + (5 - 1)^2} = 8$$

According to Srivannaboon (2006b), the alignment scores of the examined projects vary from 5.26 to 7.4 (65.8% to 92.5%). The average scores are 6.85 (85%) for executive-and-project manager pairs, 6.28 (78.5%) for project manager-and-team member pairs, and 5.77 (72.1%) for executive-and-team member pairs. This range of scores is considered to represent medium to high alignment, which confirms the solid alignment of the examined projects with their business strategy.

### 2.4.3 Factors affecting alignment

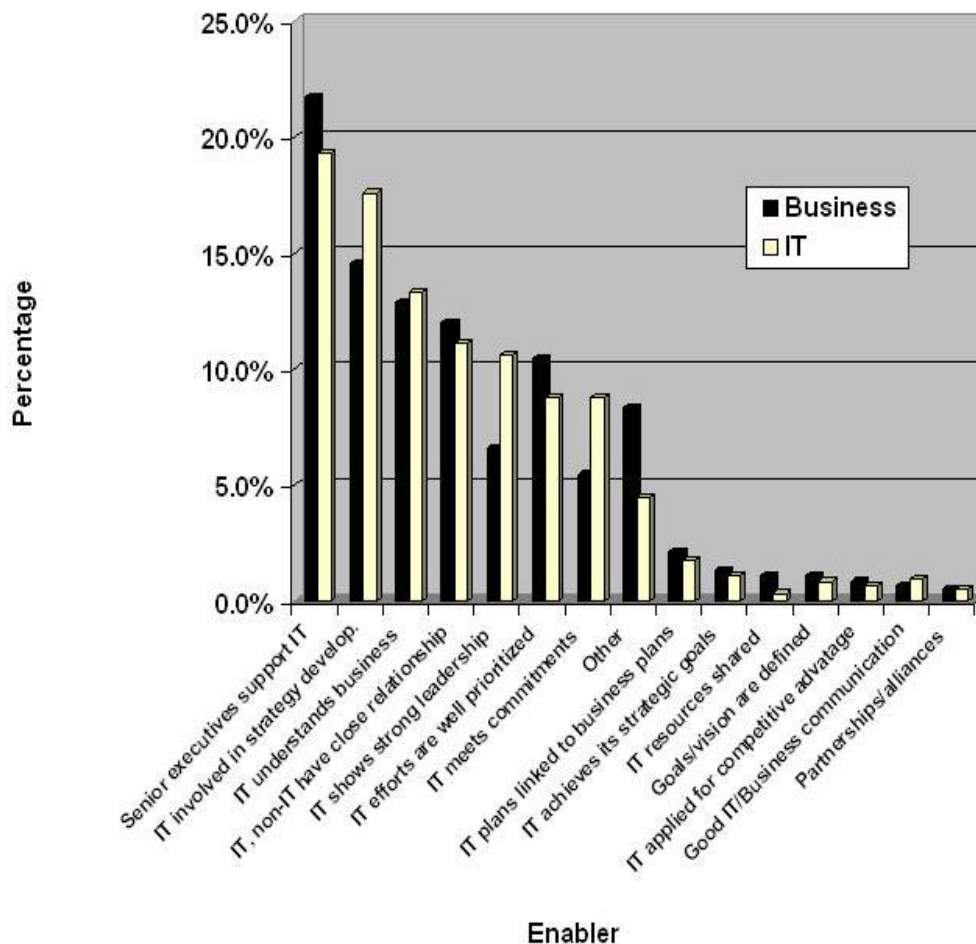
Previous research and empirical frameworks in the area of aligning functional departments with business strategy provide several factors that affect their alignment. Since the project management department is considered as one of the functional levels of any company, this research reviews such studies in order to validate the main constructs of the framework of this research and then adopt the main factors that affect the alignment of such studies which correspond with stakeholder theory (project stakeholders) to build the first phase of the framework (see appendix B tables B1 and B2).

For example, in a five years' study (1993-1997) in the area of a strategic alignment between business strategy and IT, Luftman and Brier (1999) conducted a survey of 500 companies, representing 15 industries including finance/banking, health services, manufacturing, public administration, government/defence, business/consulting, transportation, and commerce. Data were obtained from business and IT executives and managers from various functional departments (e.g., finance marketing, sales, human resources, manufacturing or project management). Executives and managers were asked to describe the actions that enable the alignment. According to Luftman and Brier (2000), achieving such alignment is evolutionary and dynamic and requires strong



support from senior management, involvement of functional managers in strategy development, close relationships, leadership and effective communication. Such factors are comparable across industries, business function, and time (Luftman and Brier, 1999) (table B3 in Appendix B).

Luftman and Brier found senior executives' support ranked in the first place as one of the most important factors which affect alignment between the IT department and business strategy whereas the involvement of IT in strategy development appeared in second place. Enablers such as "IT understands the business", "IT and non-IT have close relationships", and "IT demonstrates leadership" appeared respectively after "senior executive support" and "involving IT in strategy creation" (figure 2.5).



**Figure 2.5 Enabler factors for the alignment**

Source: Luftman and Brier (1999)

Luftman and Brier suggest improving the relationship between the business and IT, working on mutual cooperation and participation in strategy development, communicating effectively in terms of their business partners understanding and appreciating, and maintaining executive support. In addition, Tan and Gallupe (2006) conducted a study in the area of aligning IS with business strategy. They adopted some of the relevant factors of Luftman and Brier's (1999) that affect alignment in IT.

IT, IS, and project management are departments at the functional level. Hence, aligning those departments to business strategy is often recommended in the literature in order to meet the company's goal and objectives. The factors that Luftman and Brier identify in their study have support in the literature. This point will be discussed next.

- **Communication between PM and project stakeholders**

According to PMI (2008), project communications management includes “the processes to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information” (PMI, 2008, p. 243). Such processes include identifying stakeholders, planning communications, distributing information, managing stakeholder expectations and reporting performance. Collyer and Warren (2009) summarise some of the project management approaches to dealing with dynamic environments, among them communication.

It is important to emphasise that “project managers spend the majority of their time communicating with team members and other project stakeholders, whether they are internal (at all organisational levels) or external to the organisation” (PMI, 2008, p. 243). According to Rosser (2002) communication is at the heart of the alignment process. Therefore, communicating business strategy to the project stakeholders effectively is a great potential solution for improving the alignment process of business strategy and IT (Rathnam et al., 2005; Hughes, 2012). Also, inadequate communication between the project manager and the project stakeholders such as regulators can delay or even destroy a project (PMI, 2000 & 2008).

In addition, in an empirical study conducted in different industries but mostly in telecommunications, software, and IT to evaluate the critical success and failure factors in project management, Hyväri (2006) and Verburg et al. (2013) found communication is one of the important success factors for project management (ranked the highest) during the project phases. Hyväri suggests for further study to investigate the role of

effective communication in project management. Henderson (2008) states that project managers' communications competency influences the project team productivity as the project managers play an important role in providing information to the project team and to the project stakeholders (Andrews and Kacmar, 2001; Connaughton and Daly, 2004). Project managers exchange information with the project stakeholders about tasks and project situation (Abu Bakar et al., 2007).

Moreover, the communication process between superiors (e.g. executives) and subordinates (e.g. project managers) affects the company's efficiency and the project outcome as well (Kramer, 2004; Lee, 2005; Lee and Jablin, 1995; Abu Bakar et al., 2007; Yrle, et al., 2002, 2003). Such a process impacts on the commitment of the individual in the work group (Abu Bakar et al., 2009). Such a commitment will be successful if the individual is encouraged to communicate their requirements to their executives (Van Vuuren et al., 2007; Abu Bakar et al., 2009). However, due to time pressure, executives can develop close relationships with only a few of their key subordinate(s) while keeping a formal relationship with the rest of their group on continuum continuous basis (Graen and Scandura, 1987; Graen and Uhl-Bien, 1995; Graen and Wakabayashi, 1994; Graen et al., 1990; Liden and Graen, 1980).

- **Involving PM in BS development**

Poor management during business strategy development creates unnecessary risks that lead to a weak strategy with poor performance and implementation. This happens because some of the business management executives believe that the contribution of the project managers in the early stage of strategy development is not necessary (Anderson and Merna, 2003; Crawford, 2005; Thomas et al., 2002) and project managers need to focus on the task to achieve the targets for the project, and leave strategic thinking to others such as executives (Müller and Turner, 2007). Such a belief results, often, in the company's business strategy and vision not being clear for the project management team (Morris, 2005) and unimportant and even detrimental for project managers (Müller and Turner, 2007).

Project managers should participate with business executives in formulating the strategy and coordinate with the company's functional managers (Hyväri, 2006). However, the PMBOK® Guide assumes no real involvement of the project management team in the front end definition and strategy formulation (Morris and Jamieson, 2005) which

highlights the need for mutual cooperation and close working relationships between business strategy people and functional departments' employees during the development of the company's business strategies (Luftman and Brier, 1999).

- **Executive support**

According to Young and Jordan (2008) top management support (TMS) is when senior managers, project sponsors, and CEOs spend time to review plans, follow up on results and facilitate management solutions. Their focus should also be on effective communication, which will encourage other stakeholders in the project to openly and truthfully report on project progress (Unger et al., 2012). Hyväri (2006) and Verburg et al., (2013) in evaluating the critical success and failure factors in project management, found that executive support is correlated with project's success and one of the important success factors for project management during the project phases since such support makes the project stakeholders contribute effectively with the project management team (Achterkamp and Vos, 2008; Zwikael, 2008) in order to implement the company business strategy properly and achieve the project goal and objectives (Young and Jordan, 2008; Broner, et al. 2002). It is not surprising that project failures are not controlled since senior executives are not focusing to provide guidance, direction and support to projects (Stanleigh, 2005). Therefore, lack of executive support may lead to insufficient resources or missed opportunities for innovation and growth (Luftman and Brier, 1999).

- **Project manager leadership competency**

According to Prabhakar (2005) leadership is the manner and approach of providing direction, implementing plans, and motivating people. Such competency is vital for project managers since each phase of a project needs a different management style and each phase has different tasks and requirements (Skulmoski and Hartman, 2010). A project manager who shows leadership competency is most likely to see the project's success as the project that contributes to the company's strategy (Shenhar et al, 2005; Verburg et al., (2013). Hence, successful projects are led by individuals who own not only technical and management knowledge, but also leadership skills that are internally compatible with the motivation of the project team and externally compatible with client focus (Hyväri, 2006).

Collyer and Warren (2009) summarise some of the project management approaches to deal with dynamic environments, among them leadership style. They suggest using leaders with high levels of subject knowledge and leadership competency. In addition, managing projects in the 21st century requires the project manager to have specific knowledge and skills. The functional departments' employees such as IT, IS and the project management team can acquire top management support if they have sufficient skills including business and managerial knowledge (Stemberger et al., 2011).

Therefore, a new leadership style is required for the management of the projects (Toor and Ofori, 2008) since such competency enables the project manager to manage and execute the project strategically (Crawford, 2005; Leybourne, 2007) and leadership extends beyond efficiency and even customer impact (Lloyd-Walker and Walker, 2011). For instance, leadership qualities are required to persuade, influence, and inspire a diverse group of stakeholders in order to count on their cooperation, commitment and support (Lloyd-Walker and Walker, 2011).

Although, some scholars link project manager leadership competency with project success (Crawford, 2001; Dvir et al., 2006; Geoghegan and Dulewicz, 2008; Belassi, Kondra, and Tukel, 2007) and find significant link between the manager's leadership style and employees' commitment, project type, and motivation (Keegan and den Hartog, 2004; Dvir et al., 2006), the literature does not typically recognise project manager leadership competency as one of the success factors that affect the projects (Turner and Müller, 2005; El- Sabaa, 2001). Such contrast provides a strong case for understanding and improving the project manager's leadership competency (Skulmoski and Hartman 2010) especially in the IT, telecommunications and IS industries where repeatable project success can be vague (CHAOS Chronicles, 2004).

Meredith et al. (2012) categorise the skills needed for a project manager into six skill areas: communication, organisational, team building, leadership, coping and technological skills. According to Chen and Lee (2007), success criteria for project managers is not limited to their capability of acquiring profit for the company, but dependent on implementing the managerial practices of the leadership effectively and efficiently. There are 14 managerial practices of leadership including planning and organising, problem solving, consulting, motivating and inspiring, recognising, rewarding, networking, conflict management and team building, supporting, developing, monitoring, informing, clarifying, and delegating (Chen and Lee, 2007).

Hyvari (2006) further classified these 14 managerial practices into four clusters as follows.

1. Making decisions: This cluster includes the managerial practices of planning/organising, problem-solving, consulting, and delegating. Based on a study, Li et al. (2011) found that problem solving competency contributes positively to project quality since such competency reduces the negative impact of uncertainty on the quality of IS projects. Therefore, project managers should consider problem solving skills when building a project team to achieve a quality product or service (Li et al., 2011).
2. Influencing people: Motivating/inspiring, recognising, and rewarding are classified into this cluster.
3. Building relationships: This cluster comprises the managerial practices of networking, conflict management/team building, supporting, and developing.
4. Giving–seeking information: They are monitoring, informing, and clarifying.

A manager's leadership style in a general management context influences the performance of their organisation. Hence, different leadership styles are appropriate for different contexts (Kets De Vries and Florent-Treacy, 2002; Dulewicz and Higgs, 2003; Müller and Turner, 2007). Specifically, in a project management context, different leadership styles are appropriate for different types of projects and the project manager's leadership style influences project success (Müller and Turner, 2007; Verburg et al., 2013).

Leadership skills are essential in telecommunications projects in every critical project phase from beginning to product delivery. Project managers care for their team members, but only in order to get the project work done on time. Project manager's leadership skill was found to be limited in practice in telecommunications projects (Kosaroglu, and Hunt, 2009). Leadership competence seems to play a significant role in influencing or affecting project success. Therefore, this research investigates the effect of project manager leadership competence on the alignment process and on project success as well in order to revise the above arguments and provide successful alignment between project management and business strategy.

Similar to Tan and Gallupe (2006) (Table B4 Appendix B), who adapted the Luftman and Brier factors that influence alignment (Luftman and Brier, 1999) and match their

study in the area of aligning business strategy and information systems, this research will adapt Luftman and Brier factors to build the first phase of the framework that matches the scope of this study, is suggested by them, assured by at least 10 percent of the participants, has support in the literature, and corresponds to stakeholder theory.

## **2.5 Conclusion**

Advancing the field of project management requires appropriate attention be given to the alignment process between project management and business strategy and contextual factors that are associated with implementing the company's business strategy in the project in the private sector. This need for theoretical and empirical efforts in those dimensions is necessary to minimise uncertainties, reduce the high rate of projects failure, and mitigate deficiencies among the project stakeholders. There are several conclusions that can be drawn from this chapter that are critically influential in this field.

The primary conclusion, a multidisciplinary literature review in project management in the private sector context, has revealed a gap that stems from the absence of multilevel lenses or frameworks that analyse simultaneously the alignment process between project management and business strategy, the effect of the project stakeholders and the contextual factors (AF) on the alignment process, the effect of the project stakeholders on the nine knowledge areas of project management, and the effect of the alignment process on project success.

It also points to the need to clarify the nature of the alignment process. It appears clear that there is still room for development, particularly in identifying the likely critical alignment factors (AF) to avoid misalignment between the PM and BS. In addition, the level of uncertainty about the alignment process remains an inhibitive aspect for many companies when they think of aligning their projects with their business strategies. Therefore, clarifying and identifying the contextual factors that affect the implementation of their business strategies in their project are found to be significant for further development in the field.

Stakeholder' theory indicates a need for a focus that explores the main project stakeholders in the telecommunications industry who affect the projects. The empirical framework can embrace the contextual project stakeholders in the telecommunications

industry. The research intends to formulate a framework that represents the constructs for the alignment phenomena and the main project stakeholders. The anticipated outcome from applying the framework is to offer new insights to the project management field that can help the telecommunications companies and the project managers, as well, to put their strategic goals and objectives into action.

Chapter three provides a discussion and explanation of the conceptual framework derived from the literature review and refined through a pilot stage conducted by the researcher.



# Chapter Three: The conceptual Framework

## 3.1 Introduction

The chapter begins with the development of the framework to help clarify the sources of the theoretical assumptions that inspire the development of the proposed framework. In this chapter, the researcher also justifies the need for a framework. Moreover, the chapter identifies the components of the developed framework from both the literature and the pilot stage, in order to address the gap of the research which was presented in chapter one, section 1.4.1. This chapter is organised in six main sections, section 3.2 explains the common characteristics of a theoretical framework and links them to the framework developed by this study. Section 3.3 validates the main constructs of the conceptual framework. Section 3.4 explains the main constructs of the conceptual framework (phase one). Section 3.5 operationalising the conceptual framework and section 3.6 draws conclusions.

The review and critical analysis of the existing literature helps in identifying important factors and issues to be included in the design and formulation of the conceptual framework (phase one) which begins with a set of constructs including project management (PM), business strategy (BS), alignment between PM and BS, and illustrates simultaneously the outcomes of this alignment (PS). Five main constructs are considered in this study as important for the creation of phase one of the conceptual framework as follows: project management (planning phase), business strategy, alignment, project success, and the alignment factors (AF) that affect the alignment process such as communications between the project manager and the project stakeholders, project manager leadership competence, business executive support, and the involvement of the project manager in development of the company's business strategy. A conceptual framework was designed which was based on the literature and stakeholder theory (Figure 3.4).

The following sections will depict the proposed research conceptual framework and some factors that can affect the implementation of the company's business strategy and also the alignment process that will be further investigated and explored. To devise a rigorous formulation of the conceptual framework, the proposed framework is derived

from three sources: 1) the review of the relevant literature, 2) the findings from the pilot stage, and 3) stakeholder theory.

### **3.2 Characteristics of a theoretical framework**

In this study, the “theoretical framework” is primarily defined as a set of well-developed concepts related to each other through statements of interrelationships, including an integrated structure that can be used to describe or predict phenomena, similar to the concept of “theory” defined by Strauss and Corbin (2008).

To develop a theoretical framework, the common characteristics of theoretical frameworks should be understood. According to Dubin (1978) the characteristics of a theoretical framework should consist of variables or units of analysis, the laws of interaction among units of the framework, boundaries within which the theory is expected to hold, and propositions of the framework. These characteristics match the theoretical framework of the study and are explained. Firstly, variables or units of analysis whose interactions comprise the focus of the study are business strategy and project management. Secondly, the framework indicates the manner in which these variables/units interact with each other. This is a two-way influence of business strategy and project management through a strategic alignment process. Thirdly, the boundaries within which the framework is expected to hold need to be determined. In particular, the anticipated application of the framework is with respect to various projects within four large telecommunications companies in Saudi Arabia. The following sections will explain the interaction between the main constructs of the framework.

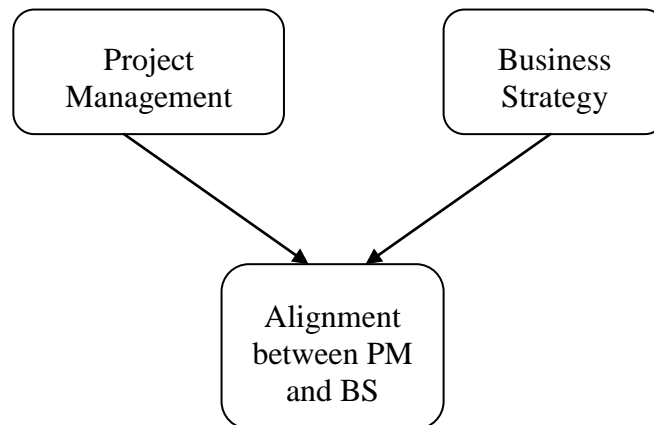
#### **3.2.1 Relationship between PM and BS**

Srivannaboon and Milosevic (2006) conducted a case study research to investigate nine projects in seven organisations. An empirically based theoretical framework was developed to show that the configuration of project management such as project strategy, project organisation, project processes, project tools, project metrics, and project cultures are influenced by the attribute of the business strategy such as time-to-market, quality, and cost. Also, the attribute of business strategy is affected by the configuration of the project management (two-way influence). In other words, competitive attributes of the business strategy drive the focus and content of project management configuration and project management contributes to the implementation

of the company's business strategy. Therefore, this research recognised the two-way relationship between business strategy and project management.

### 3.2.2 Relationship between PM/BS and alignment

In theory, the compatibility of priorities of business strategy executives and the project management priorities affect the alignment process. For example, if the priorities and interests of the project management team are different from the priorities and interests of the business strategy people, it will affect negatively the alignment process (mismatch). The interaction between business strategy and project management and alignment is considered as a direct relationship in many frameworks (Joshi et al., 2003; Byrd et al., 2006). In other words, the highest level of compatibility between business strategy (BS) and project management (PM) leads to the highest score of alignment and vice versa (Srivannaboon, 2006a) (figure 3.1).



**Figure 3.1 Relationship between PM/BS and alignment**

### 3.2.3 Relationship between the enabler factors (AF) and alignment

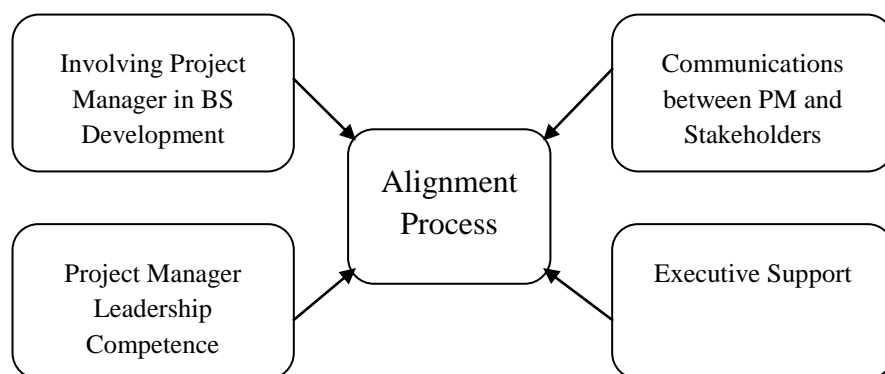
Through alignment, functional managers such as IT and business managers work in harmony and improve their strategic actions (Nelson and Coopriider, 1996). According to Byrd et al. (2006), the alignment of business strategies and functional strategies improve the contribution of business managers (executives) in IT activities. Such a contribution, therefore, is an important factor for the IT project's success and the integration between functional managers and executives enhances the functional manager's knowledge (Armstrong and Sambamurthy, 1999).

The most important enabling factor for alignment is sharing knowledge between business and functional managers (Chan et al. 2006; Hu and Huang, 2006; Reich and

Benbasat, 2000; Yayla and Hu, 2009; Preston and Karahanna, 2009). To maintain knowledge sharing, this research proposes factors including executive support, the involvement of project managers in strategy development, effective and intensive communication between the project manager and project stakeholders, and project manager leadership competence.

Leadership competence, for the project manager, is considered as one of the skills that the project manager has to acquire, to lead the project team in order to achieve the company's goal and objectives. Hence, such competence is considered one of the enabling factors for alignment (Luftman and Brier, 1999). The communication process involves sharing and exchanging information between parties for the purpose of coordination and common understanding (Johnson and Lederer, 2005). When business executives meet with functional managers frequently to discuss the intended business strategy and projects, the projects will achieve their strategic goals and objectives (Johnson and Lederer, 2005; Pearlman and Baker, 2005). Overall, communications between functional managers and project stakeholders such as business executives will enable alignment (Hu and Huang, 2006; Johnson and Lederer, 2005; Tan and Gallupe, 2006).

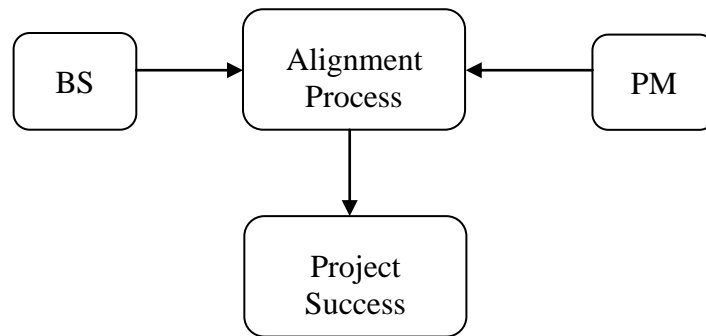
Therefore, the researcher believes that the enabling factors (AF) such as executive support, the involvement of the project managers in strategy development, effective and continuous communication between the project manager and project stakeholders, and project manager leadership competence should be investigated more thoroughly in telecommunications companies, in order to clearly understand the nature of the relationship between them and the alignment process (figure 3.2).



**Figure 3.2 Relationship between the enabling factors and the alignment**

### 3.2.4 Alignment process and project success

Figure 3.3 shows that the alignment is expected to enhance the project outcome, just as misalignment is expected to contribute negatively to project success. In certain environments, alignment influences the project's outcome and the company's performance as well (Broadbent and Weill, 1993; Palmer, and Markus, 2000; Sabherwal and Chan, 2001). For example, companies can increase revenues and profits without investing more in IT but by a proper alignment between functional departments (e.g. IT, manufacturing, sales, marketing, project management) and business strategies (Byrd et al., 2006; Sun and Hong, 2002).



**Figure 3.3 Relationship between the alignment process and project success**

### 3.3 Validation of the main constructs of the conceptual framework

Table 3.1 presents previous research studies regarding the alignment between business strategy and functional departments. These studies employ and validate constructs including business strategy, functional strategy, strategic alignment, organisation infrastructure, communication, business performance, manufacturing performance, project management and project management elements.

**Table 3.1 Main constructs of the alignment for previous research**

Theme	Subject Title	Nature of study	Construct	Authors

Aligning business strategy with information systems (IS)	Aligning business and IS-thinking: A cognitive approach	Empirical	Commonalities (similarities) and individualities (differences) in the executives' cognition	Tan and Gallupe (2006)
	Business – IS Alignment Process to Align IT Projects with Business Strategy	Empirical	Business-IS alignment, corporate alignment assessment, IT projects alignment assessment	Gutierrez et al., (2008)
	Antecedents of IS Strategic Alignment: A Nomological Network	Empirical	IS strategic alignment, shared understanding, shared language, CIO business knowledge, TMT IS knowledge, CIO education, system of knowing, relational similarity	Preston and Karahanna (2009)
Aligning strategy with information technology	A Process-oriented Perspective on the Alignment of Information Technology and Business Strategy	Empirical	Business strategy <i>process</i> -IT strategy <i>process</i> – strategic alignment <i>process</i> -IT business value <i>process</i>	Tallon, 2007
	Using and Validating the Strategic Alignment Model	Empirical	business strategy, information/communication, IT strategy, core competencies, information resource management, infrastructure architecture, organisational infrastructure and processes, customer oriented thinking and IT infrastructure and processes	Avison et al., (2004)
	IT Alignment and Firm Performance in Small Manufacturing Firms Empirical	Empirical	Nine IT strategy areas: quality service, pricing/cost reduction, production efficiency, quality product, new product, product diversification, product differentiation, intensive marketing and new market.  Nine business strategy items: pricing strategy, quality product strategy, product differentiation strategy, product diversification strategy, new market strategy, quality service strategy, intensive	Cragg et al., (2002)

			marketing strategy and production efficiency strategy.	
	The Leveraging Influence of Strategic Alignment on IT Investment: An Empirical Examination	Empirical	Business strategy, IT strategy, strategic alignment, IT investment and business performance.	Byrd et al.,(2006)
	Enabler and Inhibitors of Business-IT Alignment	Empirical	Business strategy, organization infrastructure and processes, IT strategy and IT infrastructure and processes	Luftman and Brier (1999)
	Factors Affecting IT and Business Alignment: A Comparative study in SMEs and Large Organisations	Empirical	Business strategy, IT strategy, organisational size, IT/business planning integration	Gutierrez et al., (2009)
	Antecedents and Drivers of IT-business Strategic Alignment: Empirical Validation of a Theoretical Model	Empirical	Connection, communication, strategic alignment, IT unit structure, shared domain knowledge, successful IT history, relationship management	Yayla and Hu (2009)
	Alignment of Business Strategy and IT Strategy: A Case Study of a Fortune 50 Financial Services Company	Empirical	Business strategy, IT strategy, tactics, communication, education	Rathnam et al., (2005)
	Ideal Patterns of Strategic Alignment and Business Performance	Empirical	Business strategy, business structure, IT strategy, IT structure, co-alignment, business performance	Bergeron et al.,(2004)
Aligning business strategy with manufacturing strategy	The alignment between manufacturing and business strategies: its influence on business performance	Empirical	Business strategy, manufacturing strategy, business performance, and manufacturing performance	Sun and Hong (2002)

Aligning project management with business strategy	Linking project management with business strategy	Empirical	Business strategy, project management, project management elements	Srivannaboon (2006a)
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According to the previous research, see table 3.1 , the researcher believes that the research constructs, including business strategy, project management in the planning phase, project success, communication between the project managers and the project stakeholders, project manager leadership competence, business executives support, and involving the project manager in the business strategy development and the coloration between the constructs, are valid. Section 3.4 explains in detail the conceptual framework phase one and phase two).

### **3.4 Conceptual framework**

#### **3.4.1 Conceptual framework phase one**

The conceptual framework (phase one) was formulated from the critical review and analysis of the literature (Luftman and Brier, 1999; PMI, 2008) and stakeholder theory (figure 3.4). The researcher started by justifying the need for the framework. The need for the framework was driven by two reasons. Firstly, misalignment between project management and business strategy causes the project to miss the company’s goals and objectives. For example, Srivannaboon (2006a) argues that the business strategies of some companies are lost when they transfer from the business strategy level to project level.

Secondly, the current literature provides few frameworks and most of these address the alignment between business strategy and functional departments such as human resources, IT, and IS or business strategies and functional strategies such as manufacturing strategy, market strategy, and R&D strategy (Sun and Hong, 2002). However, the literature related to the alignment between project management (PM) and business strategy (BS) lacks empirical studies and detail of how to achieve alignment and how the process of such alignment is performed.

The conceptual framework (phase one) consists of five main constructs including project management (planning phase), business strategy (BS), alignment factors (AF),



alignment process and project success (PS) (figure 3.4). Project management and business strategy are the constructs that need to be aligned with each other to ensure a successful project outcome. By managing alignment, business strategy can be implemented in the projects properly. The framework illustrates the relationship between these factors (AF) and the process of alignment and the process of project management. Also, it shows the relationship between such alignment and the project outcome. This framework integrates such constructs into a coherent structured set of relationships that describe the phenomenon (alignment) of the project management and business strategy alignment in different situations.

Project success is considered the consequence and outcome of this alignment. Including the project success in this framework, leads to an investigation of the impact of such alignment on the project outcome (PS). This will answer the second question of this research: how does alignment process between project management and business strategy influence the project's success? (see section 1.8). Assessing the main priorities (goals and objectives) for the business strategy people and the project managers helps to measure the alignment in order to compare the score of the alignment with the project outcome. This research started with important factors that were found in the literature (Table 3.2) to enable the alignment between the business strategy and IT/IS project (Luftman and Brier, 1999) and aims to determine the contextual factors and stakeholders that enable the alignment process between project management and business strategy, specifically in the telecommunications industry. Such factors will be used to answer the first research question: how could the alignment process of PM and BS be achieved and what are the factors included? Considering such factors during the course of the project and specifically during the planning phase is essential for the project management team in order to align the project management with the company's business strategy.

**Table 3.2 Alignment enabler factors and domain of expected cooperation**

Alignment enabler factors	Domain of expected cooperation
Executive support	Senior executives participate in forming the project strategy, support the project with resources, support the planning process, and support the project team with training and incentives.
Project manager involved in business strategy	Project manager participates in creating the

development	organisation strategy. The relationship among the business and project manager.
Project manager leadership competence	Leading criteria. Planning and executing the project in a strategic way.
Communications between the project manager and the project stakeholders	Exchange of ideas, knowledge and information among the project managers and business managers (executives), enabling both to have a clear understanding of the organisation's strategies, business and PM environments.

The main constructs of the conceptual framework (phase one) will be discussed next.

- **Business strategy (BS)**

As mentioned in chapter two, section 2.2, business strategy, if not implemented correctly in the projects, may not support the company's goals and objectives. As indicated in section 1.3 on the literature gap, the main aim of this research is to develop a framework to align the project management actions with the company's business strategy since the company's business strategies are naturally dynamic. Such a situation makes strategies subject to continuous change. This change causes uncertainty for project managers while planning projects. In an attempt to keep the project managers in-line with the company's business strategy this research develops a framework to support project managers in planning their projects in a strategic way.

The literature highlights three generic strategies (see Section 2.2.2 and Figure 2.2) that a company can employ including cost leadership strategy, differentiation strategy, and focus strategy (Porter, 1980). Therefore, the researcher includes Porter's generic strategies in the conceptual framework as they are, the most widely cited and recognised (see Section 2.2.2) in the academic literature over a long period. This will enhance the validity of the study.

However, the actual business strategies for the four telecommunications companies regarding the selected projects will be identified by interviewing the participants (executives in business units and project managers) and comparing their response with the companies' documents and websites. Identifying their business strategies helps the researcher to measure the level of alignment between the business units' executives and project managers. Measuring alignment helps to understand the effect of alignment on project success.

- **Project management (PM)**

According to PMI (2008), a project manager should manage the nine knowledge areas mentioned earlier in section 2.3.9, during the course of the project including initiation, planning, execution, and closure. Adopting the nine knowledge areas leads to a clear understanding of the impact of the alignment factors (AF) on the nine knowledge areas of the project management during the planning phase. Hence, understanding how such factors influence the project management process verifies the importance of considering such factors during the planning phase. As mentioned in chapter two, section 2.3.8, the project manager should manage 42 different processes properly, which are grouped into four life-cycle phases: initiation, planning, execution, and closure. Since the focus of this research is on the project planning phase, this research adopts the PMI (2008) twenty processes which represent the planning phase only (see table 2.3).

- **Alignment factors (AF)**

Alignment is the process which links project management with the company's business strategy which helps the project managers to plan and execute their projects with apparent links to the company's business strategy. Such alignment is supposed to contribute positively to the success of projects, just as misalignment is expected to contribute negatively to project success. The author believes that the project stakeholders may play a major role in the implementation of the company's business strategy and alignment process. Also, managing the internal and external project stakeholders may lead to a successful project. Internal stakeholders include, but are not limited to, people or departments inside the company such as executives, project team, financial department, and IT whereas external stakeholders are people or organisations outside the company including, but not limited to, vendors, contractors, and government agencies.

Therefore, in addition to factors such as communications between the project manager and project stakeholders, executive support, involvement of project managers in the business strategy development, and project manager leadership competence, the interview questions were constructed to discover more alignment factors (AF) such as the project stakeholders that are not mentioned in the literature. The research suggests that such factors are essential for the alignment process and project managers should consider them during the planning phase in order to ensure a proper alignment between

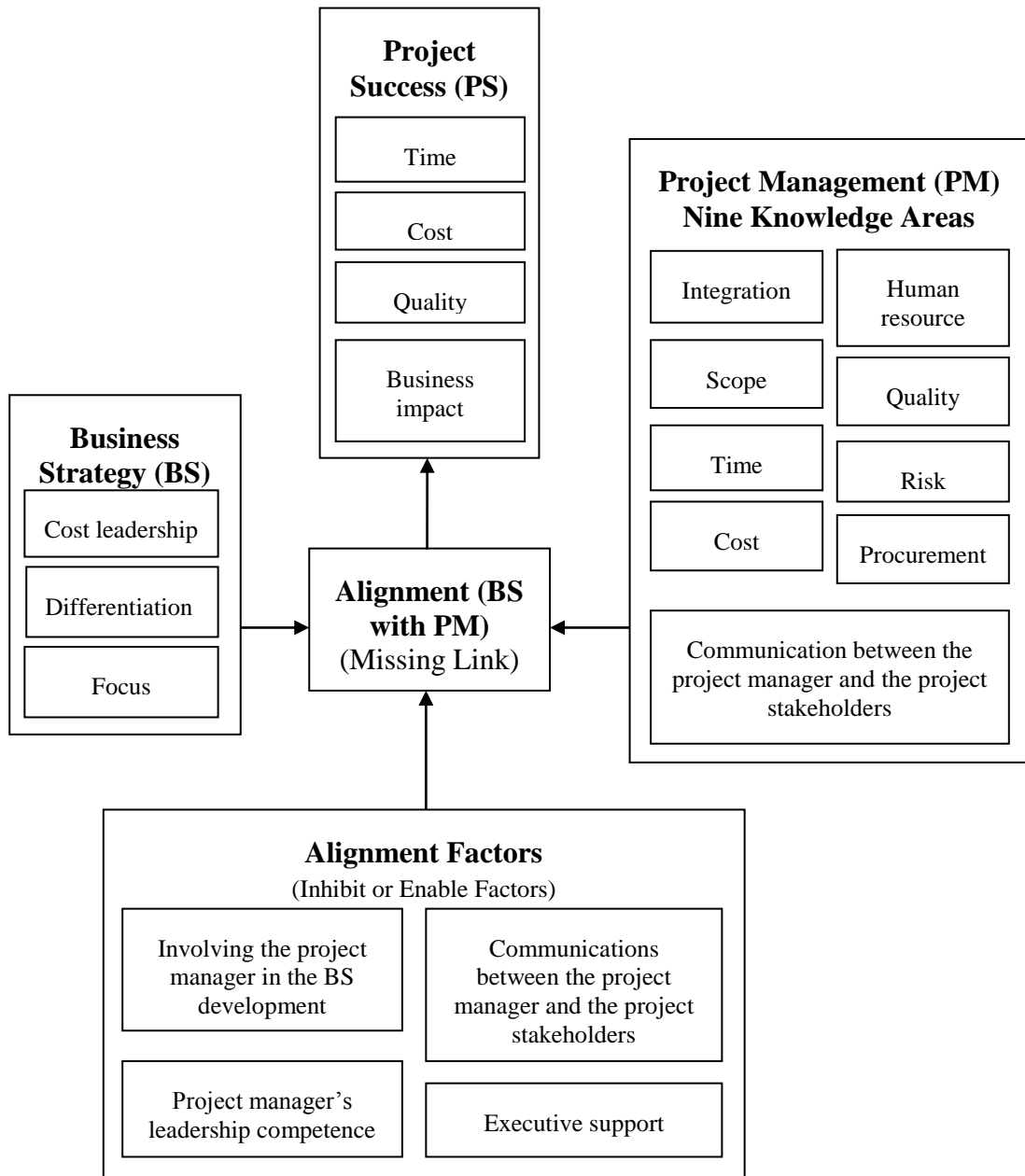
project management and business strategy. Therefore, including such factors in the conceptual framework is essential to investigate their impact on alignment and on the implementation of the company's business strategy also.

- **Project success (PS)**

Project success can be measured by variables including time, cost, quality and business impact (see section 2.3.7). Participants were asked if the project is considered a successful project or not (in terms of time, cost, quality, and business impact) following which the results were compared with the company's documents.

The construct project success is included in the framework to investigate the outcome of the alignment. For example, after measuring alignment, the score of such alignment will be compared with the project outcome. If the project is successful and the alignment score is high, or if the project is not successful and the alignment score is low, it means that a proper alignment can contribute positively to the project success. However, if the project is a successful project and the alignment score is low or the project is not successful but the alignment score is high, the alignment does not affect the outcome of the project.

The above constructs and interactions revealed to the creation of the conceptual framework phase one (please see figure 3.4).



**Figure 3.4 Conceptual framework - phase one**

### 3.5 Operationalising the conceptual framework

To achieve the research aim and objectives, the research investigates the following issues:

- Alignment process between project management and business strategy
- The effect of communication between the project manager and project stakeholders on alignment
- The influence of the executive support on alignment
- The influence of the contribution of the project manager for the formulation of the company's business strategy on alignment
- The impact of project manager leadership competence on alignment
- The effect of alignment on project success

To accomplish the above six issues, many steps are taken. Firstly, investigating the effect of the enabler factors (AF) includes communication, executive support, the involvement of the project manager in the strategy development, and the project manager leadership competence on alignment and on the implementation of the company's business strategy. Secondly, searching for other possible factors that are not mentioned in the literature but affect the alignment and the implementation of the company's business strategy. Thirdly, exploring the impact of the above factors on the nine knowledge areas of project management. Finally, verifying the impact of alignment on project success. This can be done through measuring alignment in each company and comparing the score of alignment with the outcome of the project. Such comparison leads to an understanding of the outcome of alignment.

Measuring alignment can be achieved through calculating the alignment score (Srivannaboon, 2006b). The project management and business strategy alignment score is defined in this study as the degree in which the priorities of the project manager for an examined project are compatible with the priorities of the business strategy executives. This research collected data from participants such as executives and project managers for measuring the alignment score quantitatively without statistical analysis. It then analysed each interview for the selected project and extracted matched pairs of executives and project managers regarding their perceptions about their priorities. Two

sets of modified surveys for such priorities were made and sent to the same executives and project managers.

Executives and project managers were requested to rate their perceptions and priorities regarding the examined project on a five points Likert scale such as 1= not at all important and 5= extremely important. The study employed the matching model in which assuming fit is inversely related to the difference between two elements (Hoffman et al., 1992). In other words, the fit is viewed as the opposite of the level of disagreement.

After that, the disagreement (or misalignment) score was calculated based on the Euclidean distance using a square root of the sum of squared differences between the perceptions (e.g., executives and project managers) (formula 1, see section 2.4.2).

The next step was to convert the disagreement score to an alignment score by subtracting their respective disagreement score from the maximum disagreement score (formula 2, see section 2.4.2).

Maximum disagreement score for size of  $n = 4$  can be calculated by assuming that executives give the maximum value of 5 while project managers provide the minimum value of 1, or vice versa, see section 2.4.2 .

This study adapted the Euclidean distance basis to measure the degree of the project management/business strategy alignment. This represents an additional contribution to the literature. As mentioned earlier, the alignment score is defined as the degree to which the priorities of an examined project are compatible with the priorities of the business strategy. The study uses four matched pairs of the interviewees' perceptions of the priorities because they are broad enough to capture most priority issues in many companies, and they yield an integer for both the minimum misalignment score (0) and the maximum misalignment score (8).

According to Srivannaboon (2006b) if the score of the alignment for an examined project varies from 5.26 to 7.4 between pairs of executive-and-project manager, this range of the score is considered to represent medium to high alignment. Therefore, such a score confirms the solid alignment of the examined projects with their business strategy (please refer to Appendix B for sample calculation of the alignment score).

### **3.6 Conclusions**

This chapter provides an insight on the interaction between the four main topics, i.e. BS, PM, alignment, PS. The framework is developed from the literature review, stakeholder theory, and contextual perspective literature, and also from the findings that emerged from the pilot stage. The rationale of applying the framework stems from the need for considering the alignment and the factors that affect it during the project planning and execution phases that might influence the implementation of the company's business strategy in the telecommunications industry. Other conclusions have emerged from this chapter as follows;

The gap in the literature which mentioned in chapter 1, section 1.4 in identifying the main stakeholders who influence the alignment process and implementation of the company's strategies (who count) in the telecommunications industry have led to the importance of finding those stakeholders which are in the core functions of the framework.

Furthermore, the complexity of projects makes the connections between strategy formulation and strategy implementation more critical (Sauer and Reich, 2009). Therefore, this framework fills the gap which was identified. The literature of project management indicates that the process of alignment needs more empirical investigation regarding the nature of the process and the impact of such processes on the project outcome. The author built a conceptual framework (phase one) from the literature and stakeholder theory and examined this in the pilot stage. The results were encouraging and were found helpful in understanding the nature of the alignment between project management and the business strategy with the expectation of being rigorously refined after the main fieldwork (framework phase two).



# Chapter Four: Research Methodology

## 4.1 Introduction

The purpose of this chapter is to justify and outline the methodology used to empirically validate the proposed conceptual framework, and to provide an answer to the research questions of the study. Important methodological issues and terminologies, the methodological dimension of this research, the philosophical and epistemological underpinnings, explanation of the research method, justifications behind the selection of a qualitative paradigm and case study as an enquiry approach are explained and discussed thoroughly in sections 4.2 to 4.5 and sections 4.6 and 4.7 show the research strategy and design. Subsequently, the data collection protocol, the data collection strategy and procedures, and the data collection methods are discussed in sections 4.8 to 4.10 including interviews, document analysis, and companies' announcements in the Saudi Arabia stock market with a clarification of the rationale for choosing each of them. Moreover, the details of the sampling plan, multiple-case study logic and pilot stage are all presented and discussed. Then, the chapter presents the main criteria, procedures and strategies in section 4.11 to ensure the trustworthiness of the research, which are mainly based on generating credibility, conformability, transferability, and dependability within the research. Also, it includes the development of the interview guide. Finally, the data analysis technique is discussed in detailed in section 4.12.

## 4.2 Research paradigm (philosophies)

The selection of a research methodology needs to be guided by a scientific research paradigm concerning the nature of reality and how knowledge about reality can be understood (Myers, 2013; Bryman and Bell, 2011). A research paradigm is a set of beliefs, philosophies and assumptions about some aspects of the world and the nature of knowledge (Collis and Hussey, 2009; Saunders et al., 2012) and in this instance it is about how scientific research should be undertaken (Myers, 2013). Most research paradigms that guide field research have three major, inter-related beliefs about ontology (Where is the knowledge?), epistemology (How it can be obtained?) and methodology (How should the researcher go about finding out about social reality?) (Bailey, 2007; Saunders et al., 2012). According to Collis and Hussey (2009),

epistemology is concerned with what constitutes acceptable knowledge in a field of study.

The purpose of section 4.2 is not to provide a comprehensive description of the philosophical arguments surrounding the debate about different research paradigms, but rather to set the context of the research and establish the epistemological approach followed in this study. As Myers (2013, p. 35) states “it is important for researchers who intending to use qualitative research methods to understand the grounds of their knowledge, especially with reference to the validity and scope of the knowledge that they obtain”. The following discussion, therefore, highlights the key considerations associated with the different philosophical approaches.

There are three underlying research paradigms namely: positivist, interpretive and critical (Chua, 1986; Orlikowski and Baroud, 1991), as summarised in Table 4.1 and discussed in the sub-sections below.

**Table 4.1 Research paradigms**

Basic Beliefs	Research Paradigms		
	Positivist	Interpretive	Critical
<b>Ontology</b>  (What is the nature of reality?)	A single objective reality exists	Multiple realities, socially constructed	Multiple, contextually situated realities
<b>Epistemology</b>  (Is what is learned independent of the researcher?)	What can be learned about the social world exists independently of the researcher	What is learned in research does not exist independently of the researcher	The researcher is not independent of what is researched
<b>Methodology</b>  (How should the researcher go about finding out about social reality?)	<ul style="list-style-type: none"> <li>• Survey questionnaire</li> <li>• Simulation</li> <li>• Experiment</li> </ul>	<ul style="list-style-type: none"> <li>• Action research</li> <li>• Case study</li> </ul>	<ul style="list-style-type: none"> <li>• Case study</li> <li>• Grounded theory</li> <li>• Ethnography</li> </ul>

Source: Compiled from Collis and Hussey (2009) and Bailey (2007)

### **4.2.1 Positivist paradigm**

According to Myers (2009: p. 37), “positivist researchers generally assume that reality is objectively given and can be described by measurable properties, which are independent of the observer and his or her instruments”. The positivist paradigm argues that inquiry is assumed to be value free, so that the researcher remains detached or independent, neutral and objective from what is being observed (Collis and Hussey, 2009; Robson, 2011; Saunders et al., 2012). Positivists seek facts or causes of social phenomena, with little regard to the subjective state of the individual (Collis and Hussey, 2009). Positivists develop a theory and hypothesis and design a research strategy to test the hypothesis (Saunders et al., 2012). Such an approach involves the development of a theory that is subjected to a rigorous test (Robson, 2011). The positivist research is concerned with the empirical testability of theories in order to discover the general principles or laws which govern the natural and social world, in an attempt to increase the predictive understanding of the phenomenon under investigation (Myers, 2009). Additionally, positivist researchers assume the possibility of generalising and modelling, mathematically in particular, the observed phenomena (Gill and Johnson 2011).

### **4.2.2 Interpretive paradigm**

The interpretive paradigm is based on an ontology in which reality is subjective, a social product constructed and interpreted by humans as social actors according to their beliefs and value systems (Saunders et al., 2012). Interpretivists “assume that access to reality is only through social constructions such as language, consciousness, shared meanings, and instruments” (Myers, 2009, p. 38). They attempt to understand phenomena through analysing meanings people assign to these phenomena. Interpretive researchers are concerned with discovering and interpreting social patterns and behavior (Walsham, 1995). Interpretivists, therefore, reject the status of a researcher as a neutral observer and place the emphasis on human interpretation and understanding as a part of valid knowledge (Saunders et al., 2012).

Interpretive research does not attempt to prove or disprove a hypothesis, as in positivist studies, but tries “to identify, explore and explain how all the factors in a particular social setting are related and inter-dependent” (Oates, 2006, p. 292).

Unlike the positivist who assumes that the facts are neutral and that they speak for themselves (facts are facts), interpretivism assumes that the facts already embody certain meanings (Myers, 2009). Chen and Hirschheim (2004, p. 201) highlight that “interpretivists emphasise the subjective meaning of the reality that is constructed and reconstructed through a human and social interaction process”. Interpretive researchers attempt to gain a deep understanding of the phenomena through accessing the meanings and values that participants assign to them, and focuses on their cultural and historical context (Oates, 2006; Orlikowski and Baroudi, 1991). The interpretive approach is concerned with understanding human behaviour based on their direct interactions and experiences with the phenomenon under study (Collis and Hussey, 2009). The aim of interpretive research is to look for multiple interpretations and gain a deeper understanding of the phenomenon, which can then inform other settings, rather than to generalise (Myers, 2009).

#### **4.2.3 Critical paradigm**

The critical paradigm is the least utilised approach in most business and management disciplines, but it has been gaining much interest in the last few years (Myers, 2009). The main task of critical research is seen as being one of social critique and critical researchers assume that “social reality is historically constituted and that it is produced and reproduced by people” (Myers, 2009: p. 42). Critical research tends to emphasise ‘totality’; that “things can never be treated as isolated elements” (Orlikowski and Baroudi, 1991, p. 19). The goal of critical research is to bring about social change through a critique of existing social conditions (Myers, 2009). Walsham (2006, p. 112) argues that, critical researchers tend “to investigate what is wrong with the world rather than what is right”. Critical researchers embrace the ideological influences on their research by balancing their interest in the people being studied with an awareness of the social, cultural and political forces (Myers, 2009).

#### **4.2.4 Justifications for the adoption of the interpretive paradigm**

After considering the three underlying paradigms in business and management research, this study which investigates the factors that affect the alignment process, adopts an interpretive paradigm as the most appropriate to address the aim of this study. The rationale behind the adoption of an interpretive paradigm is composed of six reasons.

Firstly, this study attempts to investigate and critically analyse the factors that cause misalignment between PM and BS in the telecommunications sector. According to Saunders et al. (2012), the interpretive paradigm is the most appropriate approach for collecting data and developing a theory. Hence, because a framework phase one was developed (see figures 3.4) as a basis for this study, the interpretive paradigm is the proper approach for conducting this research. Moreover, the interpretive paradigm is good for the identification of other factors that cause misalignment that are not included in the conceptual framework and lead to the formulation of a theory which describes the process of the alignment (figure 3.5).

Secondly, this study attempts to understand how a proper alignment can be achieved successfully in the telecommunications industry from the point of view of the executives and the project managers who are expert in formulating and monitoring the company's business strategies and expert in planning and executing the projects. As mentioned earlier, the interpretive paradigm does not detach the researcher from the subject which is under study, so the researcher argues that this paradigm presents the most appropriate foundation on which to develop a more holistic picture of the phenomenon (alignment) through close investigation, observation, face-to-face contact and listening to the participants during their daily work. Furthermore, to explore the alignment, the factors that affect the alignment process, and impact of the alignment on the PS, it is essential to go to the four companies and interview the potential participants. The purpose here would be to get a feel of what is going on in order to understand better the nature of the alignment and analyse it. Thirdly, the interpretive paradigm is suitable for exploring the phenomena from the point of view of the expert and knowledgeable people (Saunders et al., 2012).

Fourthly, unlike the positivist paradigm which has a tendency to construct a rigid methodology that does not allow alternative explanations of the phenomena, the interpretive paradigm is less structured so might reveal alternative explanations of the variable relationships (Saunders et al., 2012).

Fifthly, Creswell (2012) suggests a number of practical criteria for employing one of the positivist or interpretive paradigms. The most important of these criteria depends on the nature of the research topic. For example, where the topic has a wealth of literature from which the researcher can define a theoretical framework and a hypothesis, it lends itself more readily to positivist analysis. On the other hand, if the topic is new or the subject

of intensive debate, or there is little existing literature, it may be more appropriate to adopt the interpretive paradigm. Therefore, since there is little existing literature on the topic of the alignment between project management and business strategy, this study adopts the interpretive paradigm as this paradigm allows for deep exploration, rich description and holistic understanding of the alignment.

Finally, as there is no hypothesis testing, quantifiable measures of variables or formal propositions in this research, the positivist approach cannot be used. Thus, the interpretive paradigm was believed to be the most suitable basis for this study.

After deciding on the most appropriate paradigm for this study, the next section addresses the most suitable research method to answer the research inquiry. As Guba and Lincoln (1994, p. 106) highlight “the selection of a method is secondary to the adoption of a philosophical paradigm”.

### **4.3 Research method**

Research methods are commonly classified into two major categories: quantitative and qualitative (Yin, 2009; Saunders et al., 2012). The terms “quantitative” and “qualitative” are used widely in business and management research to differentiate both data collection techniques and data analysis procedures. Sections 4.3.1 and 4.3.2 discuss these two approaches to enquiry and justify the most appropriate one for this study.

#### **4.3.1 Quantitative method**

The quantitative method is mainly used for any data collection technique such as questionnaires or data analysis procedures, for example, graphs or statistics that generate or use numerical data. Quantitative research methods were originally developed within the natural sciences to study natural phenomena (Saunders et al., 2012). This approach to research mainly emphasises the use of measurement to describe objects and relationships under study (Sarantakos, 2012). Moreover, quantitative research is often independent of the context of study and it aims to generate findings from large numbers of context stripped data, and seeks statistical significance (Myers, 2009).

### **4.3.2 Qualitative method**

Qualitative method is used mostly as a description for data collection techniques such as interview or data analysis procedures, for example, categorising data that generates or uses non-numerical data such as words or pictures (Saunders et al., 2012; Miles and Huberman, 1994). Examples of qualitative methods are case study, action research, ethnography and grounded theory (Myers, 2009). Qualitative data includes data from interviews, documents, and participatory observations (Myers, 2009). Unlike the quantitative researchers, qualitative researchers usually work with small samples of people who are studied in-depth in their natural context (Collis and Hussey, 2009). Walsham (1993) argues that the main benefit of conducting an interpretive qualitative study is an expansion of the understanding of the subject under research, rather than calculating numbers and percentages about the phenomena.

Qualitative research methods are appropriate when little is known about the issue or the problem under study and also the nature of some studies only lend themselves to qualitative investigation. In this case, the qualitative researcher attempts to explore the problem by talking face-to-face to the people whose own experience is relevant to the issue or problem under study (Sarantakos, 2012). Creswell (2012) highlights that qualitative research enables the researcher to explore and understand the meaning individuals ascribe to a social phenomenon. It is worth highlighting that the main advantage of qualitative research is the ability to produce more richness and holism of knowledge of the examined phenomena (Sarantakos, 2012). Similarly, Miles and Huberman (1994, p. 10) state that the qualitative method enables the researcher to provide “thick descriptions that are vivid, nested in a real context and have a ring of truth”.

### **4.4 Ontological and epistemological justifications**

This study investigates and examines the big projects in the private telecommunications sector through applying an interpretative and analytical qualitative framework. To ensure the consistency of the research, the research design aligns the ontological, epistemological and methodological stances. From an ontological perspective, this research adopts a social constructionist ontological stance. Constructionist ontology assumes that social reality is created as a result of the interaction between actors and

their contexts and can only be explored through conversation and discovering the meanings that the actors themselves find in social phenomena (Buchanan and Brymen, 2009). The nature of the research problem is that there is a need to understand the process of the alignment and the interaction between the context and the process. Moreover, the framework assumes that reality is contextually and socially constructed. The framework is validated in this study to understand the alignment phenomena rather than quantifying significance.

Epistemologically, this study adopts the interpretivism stance which has two consequences. Firstly, the perceptions that actors have of their own experiences, their perspectives, and the meaning they attach to events are at the forefront of investigations in qualitative interpretative works (Walsham, 1995; Green and Thorogood, 2008). Secondly, the expected outcome based on this philosophical stance is a large body of analysis. Therefore, adopting the interpretivist stance leads to a holistic, analytical and interpretive framework, rather than a predictive positivist-based conceptualisation.

#### **4.4.1 Methodological justifications**

This research applies qualitative research methods to develop a solid and rigorous consistency between the theoretical and philosophical assumptions. It applies an interpretative framework that can generate understanding of the alignment phenomenon and investigate the contextual factors that affect the alignment process.

Green and Thorogood (2008, p.30) state, “If you want to understand the perspective of participants, explore the meaning they give to phenomena or observe a process in depth, then a qualitative approach is probably appropriate”. This, indeed, matches the ontological perspective of the researcher, who considers social properties and realities as the outcomes of social interaction such as in a phenomenon where the alignment between the project management and the company’s business strategy has developed through the interaction between individuals and their contexts rather than perceiving phenomena as something out there and developed objectively and/or independently.

This stance stresses the importance of people’s interpretations, experiences and the meanings they give to phenomena. Its main target is to “understand and analyse” rather than “measure or quantify” the impact of contextual and processual factors (Bryman and Bell, 2011).



Qualitative methods are more sympathetic than quantitative methods to the context in which phenomena occur (Flick, 2008; Sarantakos, 2012). Accordingly, qualitative research meets the core basis of the alignment framework as it “focuses on contextuality, with an aim of gaining an impression of the context, its logic, its arrangement and its explicit/implicit rules” (Sarantakos, 2005, p.45). Therefore, the suitability of the qualitative paradigm for this study stems from its ability to offer detail with regard to the context and process of the alignment. Bryman and Bell (2011) argue that qualitative research methods are the preferred tool to explore in detail the context and process of the phenomenon under investigation. Similarly, Miles and Huberman (1994, p.1), considered qualitative research as a “source of well grounded, rich descriptions and explanations of process in identifiable local contexts.”

In addition, there are four relevant reasons which led the researcher to select a qualitative method, as follows:

- Reason 1- reliance on existing literature and prior evidence: This research concentrates on an area where the existing literature and prior evidence are inadequate and, therefore, new perspectives are needed. In particular, empirical research on alignment is sparse, which suggests that a qualitative method (case study research) may be suitable.
- Reason 2- the nature of the research objective and the research question: the aim of this research is to develop a conceptual framework which indicates the process of the alignment. It intends to answer “How”, rather than “What” or “How many”, to understand the causal relationships among the important relevant factors such as project stakeholders and contextual factors that affect the alignment. Again, qualitative research (case study research) is indicated.
- Reason 3- rigour and validity and amount of data: the levels of rigour and validity of the qualitative method are the same as those of the quantitative method but do not require as large a sample. In these case studies, the validity and reliability of the results are enhanced through multiple methods, such as employing multiple data sources (construct validity). This research, therefore, employs building theories from case study research as the core methodology to establish a theoretical framework that is intimately associated with the evidence, where little was known and new perspectives were needed.

- Reason 4- interviews: according to Saunders et al. (2012) managers are more likely to agree to be interviewed, rather than complete a questionnaire, especially when the interview topic is interesting and relevant to their current work.

An interview provides managers with an opportunity to reflect on events without needing to write anything down. Participants may be unwilling to spend time providing written descriptive answers especially if the meaning of any question is not entirely clear. The use of personal interviews may achieve a higher response rate than using questionnaires (Saunders et al., 2012).

#### **4.5 Building theories from case study research**

The case study is defined by Yin (2009, p. 18) as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. It is a widely used research strategy in situations where the purpose of research and the objectives are to find answers to questions of how or what (Bryman and Bell, 2011; Yin, 2009). Robson (2002, p. 178) defines case study as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence”. Accordingly, case studies were used because they are an important research method since they enable researchers to study contemporary and complex phenomena in their natural context and develop a new concept (Yin 2009; Walsham 1995).

The case study can involve single or multiple cases or multiple levels of analysis (Yin, 2009) and can be used to accomplish multiple goals such as testing or building theories (Eisenhardt, 1989; Stake, 2006). Using multiple cases helps to establish whether the findings of the first case occur in the other cases and helps to generalise from such findings (Yin, 2009). This research employs the perspectives of Yin (2009) and Walsham (1995 & 2006). Although, Yin’s concept reflects the positivist paradigm (quantitative), his book is well known and an important source for the case study. Yin addresses the importance of having propositions as a method toward answering the research questions. On the other hand, Walsham represents the interpretivism paradigm (qualitative) and does not require having propositions. As a step toward validation, this

research uses Yin as a reference for case studies and Walsham for the interpretivist paradigm.

This research applies an exploratory and interpretative case study technique. Bryman and Bell (2011) recognise that it is a common tendency among researchers to use qualitative methods to generate more rigorous and detailed information from a study. In this study, selecting the case study technique is based on several assumptions and considerations.

Firstly, the case study technique helps to seek an in-depth understanding of the phenomenon (Morris and Wood, 1991). The case study assists in generating an in-depth exploration and understanding about the project stakeholders and contextual factors of the alignment. Because of the ability of case studies to investigate complex issues, Stake (2006) argues that it is the appropriate design to extract detail and intensive information with regard to the research's area of investigation. Therefore, the priority of this research is to conduct a detailed investigation of the case and utilise the rich insights into the project stakeholders and the contextual factors to enhance current understanding of the phenomenon of the alignment between project management and the company's business strategy since case studies can facilitate collecting sufficient information and tackling the study from different angles (Green and Thorogood, 2008).

Secondly, the case study technique is appropriate for meeting the research questions and enquiries. If the research questions are formulated to answer questions starting with 'How' or 'Why' then it is preferable to use a case study (Yin, 2009). It is worth highlighting that for Yin, the main criteria to determine whether the case study is the proper technique are derived chiefly from the research questions. Consequently, exploring the process of the alignment or studying the impact of the alignment on the PS through 'how' is more associated with the use of case studies. Having said that, and based on the research questions, building consistency between research elements has motivated the researcher to design its methodology in a way that considers the data required and its resources. For example, the phenomenon of the alignment is a complex event where understanding its contextual factors and its outcomes requires more real-life and field-based investigation which can be undertaken properly through the case study technique.

Thirdly, the case study technique helps to investigate and develop a mature understanding regarding the contextual aspects of the phenomenon (AF). Context-dependent knowledge and experience are at the heart of expert activity. Such knowledge and expertise also lie at the centre of the case study. Management skills and true expertise are reached only via a person's own experience as practitioner of the relevant skills (Flyvbjerg, 2006). The closeness of the case study to real-life situations and its multiple wealth of details is important for the development of a clear view of reality which includes detailed information about the phenomena (Flyvbjerg, 2006). Case study research allows the capturing of 'reality' and detail by studying a phenomenon in its natural context (Myers, 2009). The case study allows more accurate inferences and holistic first-hand data are obtained from the study of an entirely real situation (Oates, 2006, Sarantakos, 2005).

Unlike other research designs, such as experiments or surveys, using a case study enables the researcher to give more attention to contextual factors and characteristics (Yin, 2009; Green and Thorogood, 2008) and the case study leads to more understanding and analysis of the environment of a social phenomenon and its dynamism and continuity (Stake, 1995). Case study design is, therefore, found to be the appropriate and suitable approach for fulfilling the primary focus of this research and understanding the alignment as social real-life events since: "A case study takes into account the context where social phenomena are constructed and embedded. Such an understanding helps researchers make sense of data without the risk of oversimplifying the social phenomena under investigation" (Huang et al., 2003, p. 91).

In summary, since the case study provides a deeper understanding of the alignment process between PM and BS, this research builds theory from case study research to establish a theoretical framework which was intimately associated with the evidence, where little was known and new perspectives were needed. Multiple sources of data, including 10 interviews per case with executives, project managers, and team members in the telecommunications sector are followed by questionnaires. Annual reports, and documents, were used to analyse and triangulate emerging information from the four cases in a real-life context of the telecommunications companies with a total of four projects. In parallel to the analysis, the existing literature was reviewed and compared with the findings.

To select cases, multiple criteria were defined and cases that fit the criteria were identified (see section 4.8.1). Then, invitations were sent to the four telecommunications companies and interview sessions were conducted. Immediately after each interview, the interview was transcribed and coded, in order to use it for the analysis phase (e.g., within-case and cross-case analyses).

## 4.6 Research strategy and design

This study applies a qualitative paradigm using four case studies from the telecommunications industry in the private sector in Saudi Arabia as the main approach of enquiry. The researcher, therefore, perceives reality as something developed through an interaction between different variables in the context which is consistent with the interpretivist stance of this study. The main area of the research is the alignment between the project management and business strategy. It is found that a comprehensive approach based on a multi-disciplinary review of the literature can help in developing an in-depth understanding of the alignment phenomenon that needs to be researched. The main finding from this review was the need to bridge gaps in knowledge in terms of the alignment and the process of a proper alignment and, therefore, a need to indicate the contextual factors and practice in the field that affects the alignment. To do so, this research introduces a validated framework which includes the main project stakeholders and the contextual factors (AF) that enable the alignment. Other components and the main dimensions of the research strategy are summarised in table 4.2.

**Table 4.2 The research design**

<b>Area of study</b>	Alignment between project management and business strategy
<b>Ontological and epistemological assumptions</b>	Reality is the outcome of the interaction between people and their context which can only be known from the point of view of the actors
<b>Literature review</b>	Multi-disciplinary and comprehensive literature based on reviewing literature in project management, strategies, alignment, and contextual perspective
<b>Theory applied</b>	Stakeholder theory
<b>Empirical inquiry approach</b>	Multiple case studies (Yin, 2009)
<b>Research process</b>	Two stages including piloting and main fieldwork

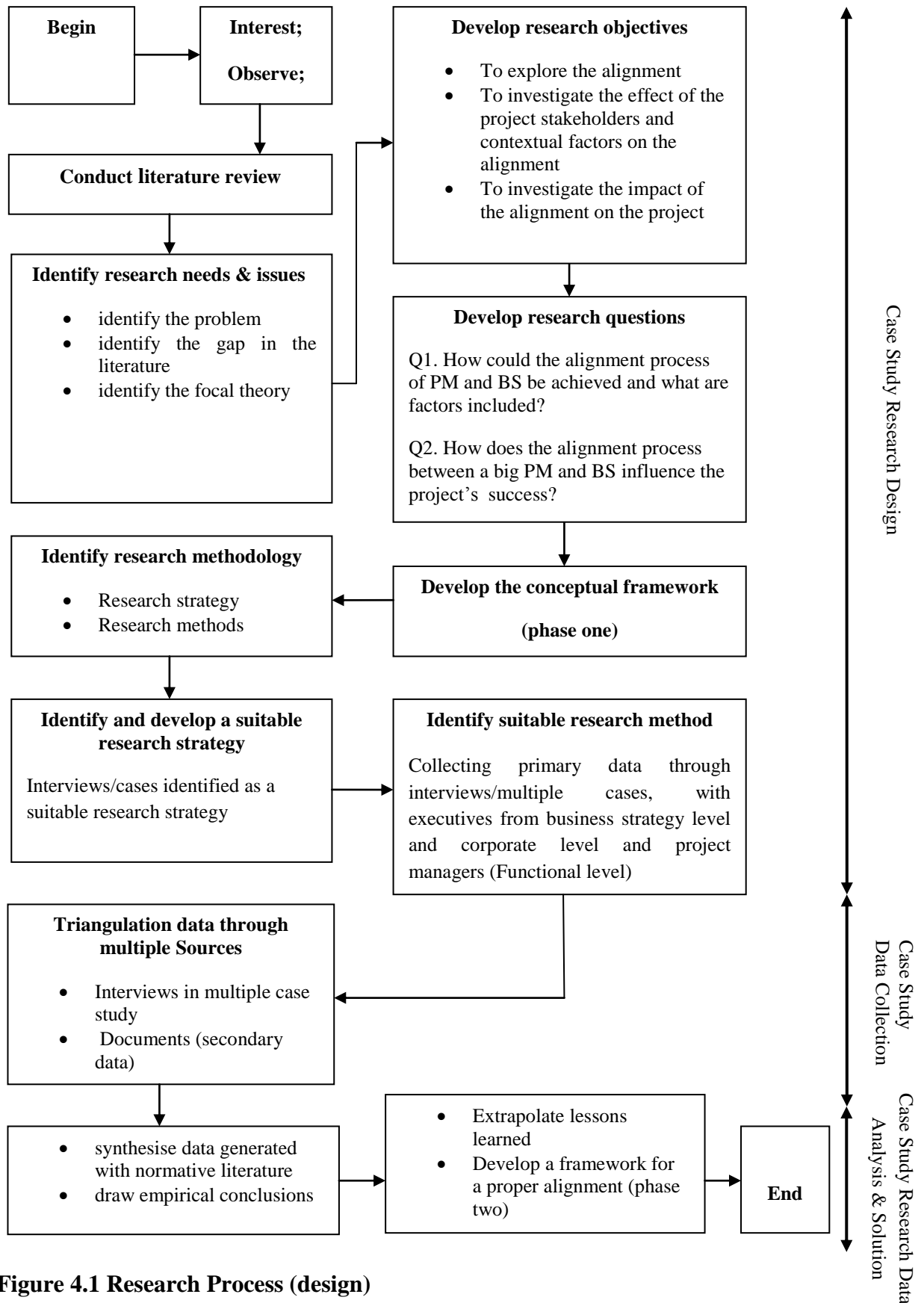
<b>Sample</b>	Purposeful and snowball sampling
<b>Trustworthiness criteria</b>	Credibility (prolonged engagement, triangulation, peer debriefing, member checks and reflexivity), transferability, confirmability and dependability
<b>Data collection</b>	Multiple sources of evidence: semi-structured interviews, documents, and observation.
<b>Data analysis</b>	Based on a content analysis strategy and analytical techniques to analyse case study data.

## 4.7 Research process

According to Saunders et al. (2012), most research studies include multi-stage processes. They usually include formulating and clarifying a topic, reviewing the literature, designing the research, collecting data, analysing data and writing up. The research is divided into three main sections and/or steps as shown in figure 4.1, starting with the main formulation and structuring of the idea and developing the research objectives, questions, conceptual framework, research strategy and the research methods (the ‘what’ part of the study). The second phase is the data collection stage and the ‘how’ part of the study and, finally, the interpretation, explanation and analysis of the collected data, or the ‘why’ side of the phenomenon. The research begins with a literature review of the project management, business strategy, and alignment in the private sector including the following eight steps:

1. Reviewing the existing literature which led to the identification of the relevant gap.
2. Creating a conceptual framework (phase one)
3. Designing the research with the goal of filling these gaps by defining the research objectives, the research questions, and the research methodology (case study research).
4. Collecting data by conducting a field study in the telecommunications sector.
5. Analysing the data.
6. Summarising the essential findings.
7. Comparing the findings with the existing literature.
8. Creating an empirical framework (phase two) for aligning project management with the business strategy.

It is aimed to study this phenomenon in depth in order to understand and identify the stakeholders and contextual factors (AF) that affect the alignment process. Consequently, a data collection strategy built on a qualitative paradigm was developed, based on the objectives of the research, which is focused on understanding and analysing the phenomenon. The data collection strategy was divided into a pilot stage and the main fieldwork. Data analysis and interpretation were conducted as a final stage through applying content analysis strategy.



**Figure 4.1 Research Process (design)**



## **4.8 Data collection protocol**

Prior to data collection, the researcher developed a data collection protocol containing an overview of the research, field procedure, case study questions and a guide for the case study report to enhance reliability of the research by demonstrating the methods and tools used. Moreover, this study includes major elements of data collection protocol, consisting of an overview of the research (research aim, objectives, research questions, etc.), field procedures (case selection criteria, interview guides, coding system, etc.), and a guide for the case study report (see appendix C).

### **4.8.1 Case selection criteria**

This research treats each of the telecommunications companies as a case study. To select cases, multiple criteria are defined and explained as follows.

- Cases should be theoretically relevant for the development of the conceptual framework
- The industry should represent a large cross section of project management
- Cases should be large and employ the concept of the project management properly with respect to the PMI.
- Cases should include only projects that are completed no longer than one year from the time participants are being interviewed to help reveal the most current phenomena of the alignment (e.g., feedback on project success)
- Participants should have strong backgrounds in managing projects. This study required four years of project management experience in the company.
- Participants should be willing to provide in-depth information and commit to this research.

### **4.8.2 Data sources**

Multiple sources of data are used for this study to triangulate emerging information and ensure construct validity including the interview, reviewing the related documents, and the observation.

Semi-structured and in-depth interviews are used in this study because they help to obtain answers and explanations from the interviewees or build on their responses

(Saunders et al., 2012). The interview is the most advantageous approach to obtain data if there are large numbers of questions to be answered or the questions are complex or open-ended. Moreover, the flexibility offered by semi-structured interviews enables the researcher to modify the questions. In addition, if the participant does not provide an answer to a particular question in a semi-structured interview, the researcher will be able to form some idea of why a response could not be provided. This may even lead the researcher to modify the question or to create another where this would be appropriate (Easterby-Smith et al., 2008; Jankowicz, 2005)

Prior to the field investigation, the researcher prepares a list of themes and questions to be covered. In addition, the interviews are conducted on a one-to-one basis between the researcher and a single participant and on a group basis (group focus) where the researcher meets with a small number of participants to explore an aspect of the research through a group discussion that the researcher facilitates. Different groups of participants including executives, project management officers, project managers, assistant project managers, and team members are interviewed from multiple levels of the organisational hierarchy in the telecommunications companies to obtain information from different perspectives. Observation, reviewing related documents, and comparing the participants' answers are used in this study to ensure validity and reliability.

None of confidential documents related to the examined projects are provided by the interviewees. Such documents are used to neutralise bias from interviews, increase the confidence level in the ensuring findings, and enhance construct validity. In addition, digital voice recording and note taking were used during the course of the interviews. Each interview was recorded on a digital voice recorder and immediately transcribed in order to remember the conversation and to write down the impressions of the interviews. Each interview took approximately 40 to 60 minutes. Table 4.3 shows the interview focuses.

**Table 4.3 Interview focus**

<b>Interviewee</b>	<b>Interview Focus</b>
Executive (vice president, CIO)	<ul style="list-style-type: none"><li>• Business strategies</li><li>• Variables that differentiate successful and unsuccessful alignment efforts</li><li>• Factors that affect the implementation of the company business strategies</li></ul>
Project manager/ assistance project manager	<ul style="list-style-type: none"><li>• The way the project was planned</li><li>• The way the project was managed</li><li>• Variables that differentiate successful and unsuccessful alignment efforts</li><li>• Factors that affect the implementation of the project</li></ul>
Team member	<ul style="list-style-type: none"><li>• The way the project was planned</li><li>• The way projects was executed</li></ul>

- **Formulating interview guide**

An interview guide was sent to the participant at least one day before the interview to allow the emergence of dimensions and constructs within the natural environment while maintaining a sense of focus on the issue. Appendix C shows an example of the interview guides. Although, this research relies on the participants' interpretations, it uses a set of questions (semi-structured) linked with the aim and objectives of the research in order to keep the research focused on issues relevant to the research topic while offering space for issues to emerge during the data collection phase (Miles and Huberman, 1994; Easterby-Smith et al., 2008).

The interview guide contains open, specific and closed questions and is flexible for probing questions to seek an explanation when the researcher does not understand the participant's meaning. The open question is designed to encourage the interviewee to provide an extensive answer and obtain facts (Grummitt, 1980). It encourages the interviewee to reply as they wish. However, specific and closed questions are used to obtain specific information or to confirm a fact or opinion (Saunders et al., 2012). This research avoided using leading or proposing types of questions in order to control any bias that may result from their use. Moreover, the interview guide was designed to answer the following research questions:

- How could the alignment process of PM and BS be achieved and what are the factors included?

- How does alignment process between project management and business strategy influence the project' success?

To answer the two research questions, the interview guide is structured in a way that guides the creation of the interview questions to be focussed on the research goal and objectives to consistently ensure validity and reliability. For example, the interview guide contains questions for participants from the three levels of the organisation including corporate, business, and functional levels to obtain quality views from different management perceptions. Moreover, the interview questions are designed to generate valid and reliable information by using three types of interview questions including open, probing, and specific and closed questions. In addition, the interview questions are designed to investigate the contextual factors that affect the implementation of the company business strategy, the impact of such factors on the nine knowledge areas of the project management (PMI, 2008), and verify the impact of the alignment on the PS. Therefore, the interview questions include four categories (see appendix C). These categories are shown below.

The first category includes questions that measure the alignment between the project management and the business strategy. These questions target the executives' managers at the business level and the project managers at the functional level. These questions help to identify the compatibility of their priorities. Some questions explore the company's business strategy and the priorities of the business executives which target the executives who work in the business level as they are responsible for formulating the company's business strategy and selecting competitive advantages. The other questions explore the priorities of the project managers which target the project managers who work at the functional level and they are responsible for implementing the business strategy during the course of the project.

The second category includes questions that explore the impact of the factors that are highlighted in the literature (enabler factors) including communications between the project manager and the project stakeholders, project manager's leadership competency, executive support, and the involvement of the project manager in business strategy development on the implementation of the company's business strategy and on the project management process. These questions target all the participants from the three levels of the company.

The third category includes questions that explore the project stakeholders and the contextual factors that may affect the implementation of the company's business strategy and the project management process as well but are not highlighted in the literature. These questions target all participants from the three levels of the company. The fourth category includes questions that explore the impact of the alignment on the project's success (please see appendix C).

The questions are then evaluated by a panel of experts to explore any recommended modifications or revisions, and then it is evaluated through the pilot stage to examine its ability to collect data and to explore and forecast participants' reactions, acceptance and responses towards the interview questions. An example of the interview questions that identifies the company's business strategy related to examine a project is presented below:

*What is the company's business strategy and competitive advantages in relation to the above project?*

Whereas, an example of the questions that serve to identify the priorities of the executives and the project managers is:

*As an executive director, what is the main aim you would like to get out of the above project?*

The questions that help the researcher to explore the project management processes and help to identify the contextual factors and the project stakeholders that affect such process can be seen next:

*How did you manage the project? Briefly explain about your experience in managing the above project? What worked, what didn't work in this project?*

*Have you experienced any problems that affect the implementation of the company business strategy in relation to the project? What were they?*

While, the example of the questions that explore the alignment and the contextual factors that affect the alignment are:

*How did you align your project with the company business strategy?*

*Have you experienced any problems that cause misalignment between the business strategy and the project management? Please state?*

*How does the communication between the project manager and the executive contribute to the alignment process and to what extent?*

Finally, a question to help identify the impact of the alignment on the project outcome:

*From your experience, what is the impact of the alignment on the success of a project and the company performance?*

Tables 4.4 to 4.7, summarise the data collection strategy for the four cases including the number of interviewees per case, average length of interview and types of related documents.

**Table 4.4 Data collection strategy for case M**

Data Sources	Company M			
	E	PM	PMA	T
<b>Interview</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>1</b>
<b>Average length of interview (minutes)</b>	<b>40</b>	<b>60</b>	<b>50</b>	<b>60</b>
<b>Related documents</b>	Project reports, risk logs, meeting minutes, company website, company statement of philosophy, project scope management, project milestones, project risk assessment document, organisational chart, project management guideline, project charter, project plan, project structure, etc.			

**Table 4.5 Data collection strategy for case Z**

Data Sources	Company Z			
	E	PM	PMA	T
Interview	4	3	2	1
Average length of interview (minutes)	40	60	60	50
Related documents	Project reports, company website, project scope management, project milestones, project risk assessment document, project management guideline, project charter, project plan, key measures of success, risk worksheet, etc.			

**Table 4.6 Data collection strategy for case A**

Data Sources	Company A			
	E	PM	PMA	T
Interview	5	4	0	0
Average length of interview (minutes)	45	50	45	50
Related documents	Process flow document, project reports, risk logs, meeting minutes, company website, project scope management, project milestones, project risk assessment document, organisational chart, project management guideline, project charter, project plan, risk worksheet, etc.			

**Table 4.7 Data collection strategy for case S**

Data Sources	Company S			
	E	PM	PMA	T
Interview	4	4	1	1
Average length of interview (minutes)	40	60	45	60
Related documents	Project reports, risk logs, meeting minutes, company website, company statement of philosophy, project scope management, project milestones, project risk assessment document, organisational chart, project management guideline, project charter, project plan, project structure, risk worksheet, etc.			

Legend: E = Executive, PM = Project manager, PMA = Assistance project manager, T = team member

There are many reasons for the selection of the private telecommunications companies in Saudi Arabia. The main seven reasons are as follows:

1. The telecommunications companies value project management and consider it as an important method for the success of their projects
2. Companies that are in a hyper-market competition so that they have to provide effective business strategies in order to survive in such conditions
3. Companies that are in a dynamic market so that they need to release new products continuously in order to satisfy the market needs
4. The telecommunications industry contributes deeply to the economy of Saudi Arabia (see section 2.3.14)
5. The high rate of big projects failure in meeting the company's business strategy



## **4.9 Data collection strategies and procedures**

### **4.9.1 Multiple case study strategy**

According to Flyvbjerg (2006, p. 228), “one can often generalise on the basis of a single case”. However, this research uses four cases in the telecommunications private sector in Saudi Arabia, where the research is conducted. In this regard, the study follows the suggested number of cases recommended by Stuart et al. (2002) who argue that one to three cases are appropriate. The researcher collected data from four private telecommunications companies to enrich the field of project management. A multiple case study design was chosen for this research as this technique has many advantages for the research findings and conclusions. The motivation for selecting a multiple case study is based on the concept that “the evidence from multiple-cases is often considered more compelling, and the overall study is therefore regarded as being more robust” (Yin, 2009, p.53).

### **4.9.2 Purposive sampling for sites**

The rationale for selecting purposive sampling and for studying and selecting specific individuals or sources for data was to keep the research focused on the main unit of analysis (Lincoln and Guba, 1985). The selection of the projects and cases was a purpose-based selection as the research aim was to study the contextual factors that affect the implementation of the company’s business strategy in the project with the characteristic of being large projects that involve the nine knowledge areas of the project management processes in the planning implementation phase. Purposive sampling as a non-probability sample was used based on the idea that this type of sampling is the most appropriate method when undertaking case studies (Saunders et al., 2012). As the research investigates only the alignment between the project management and business strategy in the private sector, the population is, therefore, small and when the population sample is small or to ensure a high representation of sampling, a purposive strategy is preferable (Maxwell, 2013).

### **4.9.3 Purposive sampling for participants**

Since the main data sources are interviews, identifying who will be interviewed and justifying the selection of the interviews are critical steps and an essential part of the

case study protocol. Because the unit of analysis in this study is a project the focal point is the process of the project management and its contextual factors (enablers, constraints, and forces). Accordingly, priority was given to the “core people” involved in planning and executing the project, formulating the company’s business strategy, controlling and supporting the implementation of the company’s business strategy, and finding who will contribute to enhancing understanding of the alignment process mainly in the pilot stage and prior private contact with the four companies. Access to the data was through contacting the primary participants in the cases, from the three levels of the organisation including corporate, business and functional levels. Accessibility to the data, initially, was based on a purposive sampling and selection of the participants. Accessibility then gradually extended to be collected from both the primary participants and through additional recommended relevant participants.

Based on the pilot and the main stage findings, the core people and main participants were found to be from: corporate, business, and functional levels. Corporate and business levels such as vice president, director, corporate performance manager, chief operating officer (COO), executive assistant to the chief operating officer (COO), chief business support, office executive manager, senior vice president, head of the project management office (PMO), chief executive officer (CEO), and head of corporate performance measurement. Functional levels such as heads of departments, heads of sections, reporting managers, project managers, project team, project support managers and, in general, people recommended by the interviewees. From the pilot stage, it was found that the key informants were the executives responsible for formulating the company’s business strategy and the project managers responsible for implementing the company’s business strategy in the project. This group of informants were the initial source for data of the research.

#### **4.9.4 Snowball sampling**

Snowball sampling “is commonly used when it is difficult to identify members of the desired population” (Saunders et al., 2012, p.147). Although purposive sampling is directed towards those participants most directly involved, it might ignore some key informants by only recognising a limited number of individuals. To overcome this omission, this study utilises purposive sampling with snowball sampling. Snowball sampling in this study is used to cover all participants that are involved directly in the

case but were not recognised by the researcher, however, they were recommended by the main participants. Snowball technique is operationalised through asking the participants to identify further new participants, and then asking these new participants to recommend or identify other participants who can enrich the investigation or give useful information on the alignment and on the project management topics.

#### **4.9.5 Panel of experts and pilot test**

After developing the conceptual framework phase one and the data collection methodology and developing interview questions, a panel of experts was used to evaluate these questions. The pilot test was a helpful tool to refine the conceptual framework and key literature themes which guide the research. In addition, the interview questions were reduced and improved as a result of the pilot stage, as some questions might be perceived as inappropriate which make respondents uncomfortable during the interview. In this study, piloting helped in strengthening the research process and inspired the researcher to devise a new set of questions that emerged during this stage which proved to be helpful in collecting data.

### **4.10 Data collection methods**

#### **4.10.1 Documents review**

Different types of company documents were found to be relevant and interesting for this study and added value to its data collection phase including annual reports, Gant charts, project charters, Excel spreadsheet, key performance indicators report (KPIs report), project metrics and weakly status reports, risk management reports, dashboards, and pre-job meetings. The researcher was aware of the benefit of reviewing such documents in order to avoid collecting and relying on irrelevant data (Yin, 2009). According to Yin (2009, p. 103), “because of their overall value, documents play an explicit role in any data collection in doing case studies. Systematic searches for relevant documents are important in any data collection plan”.

#### **4.10.2 Semi-structured interviews**

A total of 39 semi-structured interviews were conducted with the participants from the three levels of the organisation including corporate, business, and functional levels. Each interview, lasting on average 50 minutes, was digitally recorded, and participants’

validations after each interview were applied to ensure the confirmability of the findings (Lincoln and Guba, 1986). For this research, collecting data through interviews represents the ontological and epistemological stance of the researcher. From an ontological stance, the experience and interpretation of the project managers in planning and executing the projects and the experience and the interpretation of the executives in managing and formulating the company's strategies are the components of social reality, therefore, exploring and describing such dimensions is the proper way to understand social reality. Moreover, the interview technique matches the epistemological perspective of the researcher where generating data from the participant's experience can be developed through interactive approaches that allow sufficient space for the flow of participants' expressions and interpretations.

To analyse the contextual factors that affect the implementation of the company's business strategy as well as the alignment process, this study involves selecting methods that have the capacity to extract the complexity of the alignment phenomenon. This capacity can be seen in selecting the interview method. The flexibility of the semi-structured interview in embracing emergent issues while keeping the research focused is one of the main reasons behind selecting this technique.

#### **4.10.3 Observation**

The author applied observation technique as a method to collect data to consistently improve the data collected by the interview. Observing, the working environment and the atmosphere of communication between the project manager and the project stakeholders helps the researcher to explain and interpret the complexity of the phenomena. Visits took place to the four companies to describe accurately the working environment. Observation was unstructured (Bryman and Bell, 2011) to cover many emerged actions and to take notes on the way of managing and communicating the project. The observation of participants was found to be a useful means of collecting data about the interaction and the communication between the project managers and the project stakeholders. For example, some project managers used their telephone directly with the project stakeholders to facilitate accessibility and arrange meetings with the researcher.

Another example was the location of the offices and departments in one of the cases; they were located in one building which helped the project managers and the internal stakeholders to talk informally in many places such as the hall ways, elevators, and in the cafeteria during lunch time. Such an environment helps the project managers to discuss some management issues freely with executives and the heads of the departments. However, one of the cases locates its departments and units remotely from each other which results in limited informal meetings between the project managers and the internal stakeholders. One of the cases placed logos in each office of the executives and the project managers. One project manager mentioned to the author that “the logo has to be in each office to keep us focusing and remembering our objectives and goals whenever we meet with the project stakeholders”.

Eventually, the observation technique was applied in this research to maximise its triangulation strategy which results, eventually, in enriching the collected data and enhancing the research reliability and validity.

#### **4.11 Trustworthiness criteria**

According to Lincoln and Guba (1985, p. 218-219) “the conventional criteria for trustworthiness are internal validity, external validity, reliability and objectivity”. However, when it comes to a naturalistic enquiry, these criteria are replaced with credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity). In this research, trustworthiness stems from considering specific techniques and practices as explained in detail in the following sections.

##### **4.11.1 Credibility**

According to Padgett (2008), to achieve credibility, qualitative research must manage the risk of research reactivity and bias. Research reactivity refers to the potential for the researcher or the study procedures to influence the participants, consequently changing the findings of the study. Credibility ensures the accuracy of the research findings and explanations by following valid methods. To ensure the credibility of this research, several techniques were used including prolonged engagement, multiple triangulations, peer debriefing, member checks and reflexivity.

Prolonged engagement promotes mutual trust and understanding between the researcher and the participants which facilitates a prolonged engagement with the participants. Prolonged engagement was achieved in this research because the data collection stage was carried out for almost three months to understand the alignment and to find the contextual factors (AF) that affect the implementation of the company's business strategy in real life and carefully and precisely explain its main characteristics.

Triangulation can be achieved by using a combination of methodologies or methods in order to prompt quality in research that cannot be ensured by using only a single practice or method (Flick, 2008; Bryman and Bell, 2011). The most commonly used types of triangulation combine qualitative and quantitative methods, or use more than one source of data such as interviews, focus groups and content analysis. According to Yin (2009, p. 199), "any case study finding or conclusion is likely to be more convincing and accurate if it is based on several different sources of information".

Multiple triangulations are the chosen strategy of this study in which many types are applied, including: generating data through semi-structured interviews, observation, documentation, and historical record review. Moreover, the research uses sampling triangulation through purposive sampling and snowball sampling; and the research uses theory triangulation which cultivates the theoretical foundation of the research based on an integrative conceptualisation of different domains of literature including project management, business strategy, alignment, and PS factors. Such a multi-disciplinary approach to the idea strengthens the argument of the research and clarifies its significance for many areas and fields.

One of the main reasons for triangulating is to test and develop the validity of the research (Sarantakos, 2005). Therefore, this study applies many techniques and procedures to ensure the validity and credibility of the research. These techniques are peer debriefing, member checks and reflexivity. Peer debriefing is the process of involving colleagues in the research as external reviewers (Lincoln and Guba, 1985). After each stage of the research, the researcher involved colleagues to make apparent alternative explanations and perspectives from others.

Considering the research participants' comments (member checks) is another way to achieve credibility in the research since the members' validation is a helpful tool to refine and confirm the collected data before moving further in the research (Bryman and

Bell, 2011). This technique gives the researcher the ability to revise, clarify, and expand the understanding of the collected data. In this research, this technique was applied after each interview through sending a full transcript of the interview for final confirmation.

The core concept of reflexivity is the idea of awareness that researchers are reflexive when they are aware of the multiple influences they have on research processes and on how research processes affect them. Understanding that the researcher is a source of a biased intervention in the process of the research implies a strategy to track such reactivity as it damages the credibility of the research (Maxwell, 2013). The researcher was aware that a researcher's background and position affects the investigation. Therefore, the researcher was aware of avoiding this as much as possible, locating and tracking any interventions and responses during the data collection phase. The researcher separated the participant responses from the researcher responses so that data represents real life and participants' experience accurately.

#### **4.11.2 Transferability**

Transferability refers to the degree to which the results of qualitative research can be generalised or transferred to other contexts or settings (Lincoln and Guba, 1985). While Yin recognises the difficulty of generalising from a case study, he states that it is possible to generalise a particular set of findings to a broader theory or circumstance (Yin, 2009). Although it is sometimes argued that the results from qualitative research cannot be transferred (Lincoln and Guba, 1985), others argue that the conclusions of the research can offer transferable explanations, themes and meanings that can facilitate the understanding of similar settings (Marshall and Rossman, 2011), and transferability can be seen in the development of concepts, theory development and the drawing of specific implications and contributions to enrich insight (Walsham, 1995, p. 79). In this research, while there are context-specific characteristics, the researcher believes that the findings of this study can be applied in the GCC countries, due to the similarity of its structure, organisation, and cultural issues.

#### **4.11.3 Confirmability**

Confirmability refers to the ability of others to confirm or corroborate the findings (Lincoln and Guba, 1985). Confirmability is concerned with ensuring that the researcher is aware of maximising the objectivity of the research, and presenting findings that are

generated from the data collected and not influenced by the researcher's "personal values and theoretical inclination" (Bryman and Bell, 2011, p. 398). Therefore, the research, through trustworthiness procedures, offers a rigorous flow to enable auditors and any external inspection to track the development of the idea through a chain of evidence (Yin, 2009). The chain of evidence allows the reader of the case study to follow the derivation of any evidence from the research questions to the ultimate case study conclusions and to increase the reliability of the information in a case study (Yin, 2009). As a result, the research maintains a chain of evidence by moving from case study questions, case study protocol (linking questions to protocol topics), citations to specific evidentiary sources (e.g. citing specific documents, interviews, or observations), case study database (the research reveals the actual evidence and also indicates the circumstances under which the evidence was collected such as the time and place of an interview), and finally reaching the case study report.

#### **4.11.4 Dependability**

Guba and Lincoln (1985) propose that the dependability criterion relates to the consistency of findings. Dependability can be enhanced through triangulation to ensure that the weaknesses of one method of data collection are supported by the use of alternative data-gathering methods as this research has employed. The use of colleagues and methodological experts (peer examination) to check the research plan and implementation is another means of ensuring dependability (Lincoln and Guba, 1985). Dependability entails ensuring that trustworthiness criteria, justifications behind the theoretical and philosophical foundations, and the process of the research are all consistent, accessible for auditing and can demonstrate the reliability of the research (Guba and Lincoln, 1985; Bryman and Bell, 2011).

All the procedures and phases of the research should be documented to ensure that the research is reliable and, if repeated, by imitating the same procedures will lead to the same results. To achieve that, this research has complete records for the process of data collection and analysis. Such records are accessible and available in digital format for further review. A summary of the above research strategies for increasing trustworthiness is provided in table 4.8.



**Table 4.8 Research strategies for increasing trustworthiness of this research**

<b>Strategies</b>	<b>Criteria</b>	<b>Processes and procedures completed to achieve trustworthiness</b>
<b>Credibility</b>	Reflexivity	A thoughtful consideration of how the researcher's standpoint can influence the research.
	Data Triangulation	Collecting data from multiple sources such as interviews, focus groups, review documents, and company's website.
	Prolonged Engagement	Conducting multiple interviews and spending extended time with participants to achieve an exhaustive look at the experience.
	Member Checking	Including participants in analysis or returning to a sample of participants to corroborate the findings. This technique was applied after each interview through sending a full transcript of the interview for final confirmation.
	Peer Debriefing	Meeting with advisers and researchers engaged in qualitative research to dialogue regarding research decisions. Involving colleagues in the research as external reviewers
<b>Transferability</b>	Dense description	The conclusions of the research can offer transferable understanding, themes and meanings that can facilitate the understanding of similar settings
<b>Confirmability</b>	Confirmability audit Reflexivity Triangulation	The research, through the trustworthiness procedures, offers a rigorous flow to enable auditors and any external inspection to track the development of the idea through a chain of evidence
<b>Dependability</b>	Dependability audit Dense description of research method Triangulation Peer examination	The research enhanced dependability through triangulation. The research used colleagues and methodological experts (peer examination). The research has complete records for the process of data collection and analysis. Such records are accessible and available in digital format for any further review.

## **4.12 Data analysis**

Data analysis is defined as a systematic process of searching and arranging the data in order to gain understanding and find useful meaning (Boeije, 2010). As Boeije highlights, qualitative analysis consists of cutting data up in order to put it together again in a manner that seems relevant and meaningful. Therefore, qualitative data analysis is working with qualitative data (interview transcripts, field notes, related documents, and other materials), organising them, cutting them into manageable units,

putting them together, searching for patterns, discovering what is important and what is to be learned, and deciding findings (Bogdan and Biklen, 2006). Miles and Huberman (1994) suggest that qualitative analysis is not a sequential process, but rather an interactive one that involves three concurrent activities: data reduction, data display and conclusions drawing/verification. Data reduction refers to the process of choosing, simplifying, abstracting and transforming the raw case data. Data display refers to the organised assembly of information to enable the drawing of conclusions. Data display includes narratives, matrices, graphs, tables and various charts. Conclusions drawing and verification involves drawing meaning from data and building a logical chain of evidence. It is worth highlighting that there is no single 'right way' to analyse qualitative data (Myers, 2009). For example, research methodology books and articles provide various general analytical approaches for analysing qualitative data such as content analysis, grounded theory, narrative analysis, conversational analysis, discourse analysis, hermeneutics and semiotics (Myers, 2009; Easterby-Smith et al., 2008; Gray, 2013). The next section discusses and justifies the suitability of qualitative content analysis technique, which was found to be the most appropriate methods for this research.

#### **4.12.1 Qualitative content analysis**

Content analysis is one of the widely used techniques in analysing qualitative data (Gray, 2013; Hsieh and Shannon, 2005). Qualitative content analysis allows the researcher to understand the social reality in a subjective but scientific manner and organise the examination of the topic and themes, as well as the inferences drawn from them, in the data.

In this study, the qualitative content analysis technique was employed in order to understand the nature of the phenomenon under study and interpret the meanings and significance of the beliefs and behaviours of the participants. A qualitative content analysis technique was believed more desirable for this study as it preserves as much as possible the deep meaning of the qualitative data. Furthermore, it enabled the interpretation of all transcribed interviews, documents and notes of observation and relating each one to the whole in order to gain a holistic picture of the phenomenon. Miles and Huberman (1994) recommend that codes should be related to the conceptual framework developed from previous theory, rather than being a random collection of

categories. This approach helped to guide the analysis and interpretation, but still allowed for identifying those aspects that emerged from the empirical data, that differ from what is in the conceptual framework. During data analysis, the researcher uses the data to emerge from it in order to validate and extend the conceptual framework. The process of qualitative content analysis in this study begins with preparing the data and proceeding through writing up the findings in a report. The researcher was shifting back and forth between data collection and data analysis in order to learn about the unique and untold aspects of the phenomenon. Moreover, important quotes from the transcripts that were emphasised with intensity were noted and used where appropriate in the analysis process. A content analysis method was employed to compare cases and identify patterns. The analysis considers and recognises the importance of within-case analysis and cross-case analysis as a strategy to define the most emphasised patterns (Eisenhardt, 1989). The process of the content analysis in this research is accomplished through the following steps:

- **Preparing the data**

In this section, the focus is upon the conversion of qualitative data to word processed text, as this is the form that the researcher uses in the analysis. Content analysis in this study is used to analyse the data which needs to be transformed into written text before starting the analysis and used to analyse interview transcripts in order to reveal important information from the participants about the process of the alignment. The first step of the process of content analysis starts with transcribing the interviews.

The transcript is a tool that helps qualitative researchers make sense of and understand interviewees' experiences and perceptions (McLellan et al., 2003). Based on the research questions, all the questions of the interviewer from the interview guide are transcribed. The verbalisations are transcribed literally and the observations during the interview are considered during the analysis (Schilling, 2006).

The interviews with all the participants were transcribed in its entirety and provided a verbatim account of the interview. To ensure that all transcripts are generated systematically, the transcripts include "elisions, mispronunciations, slang, grammatical errors, nonverbal sounds (e.g., laughs, sighs), and background noises. In multisite studies, this level of detail is very important" (McLellan et al., 2003). The time required

to create the transcription for each interview is approximately between eight to ten hours to transcribe every hour of the digital recording.

- **Defining the unit of analysis**

Selecting data collection strategies is conditional upon the unit of analysis of the case, and defining the unit of analysis is linked to the nature of the case study. Therefore, the unit might be a project, an individual, an organisation, a process, a programme or an event in which the unit represents the main concern of the case study (Yin, 2009). Keeping the research within feasible limits and in a focused structure requires definition of the main and embedded units of analysis, whereby the main unit describes the initial case study concern and the focal investigated point, while the embedded unit represents the descriptive example that is used to understand the focal area of the research (Yin, 2009). The main unit of analysis in this research is a project in the telecommunications sector. On the other hand, the embedded unit is the processes of the project management and alignment of the telecommunications companies in Saudi Arabia.

- **Developing categories and a coding scheme**

Codes are defined as “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Miles and Huberman, 1994:p. 56), and their development is the initial step in analysing interview data. Coding is the assigning of codes (that have been previously defined or operationalized in a codebook) to raw data. Such a step allows engaging in data reduction and simplification (DeCuir-Gunby et al., 2011). Applying codes to raw data enables the researcher to begin understanding how the data supports or contradicts the theory that is guiding the research as well as enhances the current research literature (DeCuir-Gunby et al., 2011). It is worth highlighting that codes are generated from the conceptual framework that guides the research.

Categorisation involves the fragmentation of the data to further the process of analysis. Categorising data in this study is achieved through developing categories and then attaching these categories to meaningful segments of data. Categories and codes are derived from the conceptual framework and are, in effect, codes to group the data to organise and analyse the data further. Data was coded (see Appendix C) based on the conceptual framework because “conceptual frameworks and research questions are the

best defence against overload” (Miles and Huberman, 1994, p. 55). Moreover, they are derived from the emergent data as a new set of themes (code) was recognised. The identification of categories is guided by the purpose of the research as expressed through the research questions and objectives. Three main sources are used to derive names for these categories including terms that emerge from the data, terms are used by the participants, and derived from terms that are used in existing theory and the literature (Strauss and Corbin, 2008). The next activity of the analytical process is unitising data. The purpose of this step was to attach relevant data to the appropriate category or categories. A unit of data in this research includes a number of words, a line of transcript, a sentence, and a complete paragraph, that fits the category. The content analysis helps the researcher to assign a unit of data to more than one category (Tesch, 1990). The categories in the coding scheme are defined (Lincoln and Guba, 1985). To ensure the consistency of coding, the researcher develops a coding manual which consists of category names, definitions and examples (Weber, 1990), see appendix C, tables C1- C4. The coding scheme makes it easier for future researchers to judge the transferability of the criteria to other user populations or other situational contexts. Furthermore, a peer debriefing process was involved in the coding development process, which ensures the credibility of the research by reducing the bias of a single researcher.

The researcher was interested in identifying patterns and salient themes and demonstrating variations in how the phenomena (alignment) is framed, articulated, and experienced as well as the relationships within and between particular elements of such phenomena (McClellan et al., 2003). A group of up to four people, mostly participants from the four companies and colleagues contribute to the criterion categories and test the coding scheme. The categories are mutually exclusive (different from each other) and the coding process resulted in a coding scheme with four main categories, see appendix D. The study replaced the real names of the individuals and the name of the four companies to provide confidentiality.

- **Using NVivo (a computer software)**

Flick (2009) identifies three main benefits for using computer software for analysing qualitative data. These benefits are:

- Speed: managing and searching data in a shorter time in comparison to a manual process
- Increase of research quality: software allows the researcher to be consistent in the analytical procedures which improves the validity of the research
- Improvement of data representation: qualitative software enables the researcher to display the data clearly which facilitates better interpretation and discussion from different perspectives

NVivo 2009 version 9.2 was used (see appendix D) in processing and analysing the qualitative data (Bryman and Bell, 2011). Such computer-based qualitative data analysis tools have been considered to produce more accurate, transparent and rigorous results (Eriksson and Kovalainen, 2008). This programme was used as a preparation method for data analysis and helps to ensure the validity and reliability of data analysis and to contribute to the research methodology. This programme assists the researcher in organising, managing, and coding qualitative data in a more efficient manner. In this study, NVivo 9 was used to help in facilitating the qualitative content analysis of the transcripts produced from the semi-structured interviews as well as the observation notes and the documents. This tool enabled the development of themes while at the same time allowing for a more systematic analysis of data, allowing transparency and an opportunity to re-visit the data more easily. NVivo 9 provided an efficient and transparent approach to code, and in searching for and locating relevant segments of text within and between cases. It is worth highlighting that such work would be very difficult and time-consuming manually.

- **Drawing conclusions**

At this stage, a researcher might make conclusions and reconstructs which derive from the data whilst also exploring the properties and dimensions of categories and identifying relationships between categories. For the study to be repeatable, the researcher reports the analytical procedures and processes completely and truthfully (Patton, 2002) and reports the methods that are used to establish the trustworthiness of the study. During the analysis, the researcher balances between description and interpretation as the description provides background and context and consequently needs to be rich (Denzin, 1989) since qualitative research is interpretive, and

interpretation represents the researcher's personal and theoretical understanding of the phenomenon under study.

#### **4.12.2 Within- and cross-case analysis**

The analysis of this research recognises the importance of within-case analysis and cross-case analysis to define the most emphasised patterns (Eisenhardt, 1989). Within-case analysis refers to the analysis of the individual case with a comparison with the research theory and frame of reference (Yin, 2009). According to Eisenhardt (1989), the use of within-case analysis helps the researcher to overcome the problem of coping with massive amounts of data by putting more focus on each case for which a detailed write-up is produced. Eisenhardt (1989, p. 540) further states that within-case analysis "allows the unique patterns of each case to emerge before investigators push to generalise patterns across cases". Within-case analysis involves the detailed case study write-up for each site in order to become intimately familiar with the contextual factors of each case as a stand-alone entity (Miles and Huberman, 1994).

In this research, within-case analysis is operationalised through seeking answers to the questions that aim to investigate the alignment process as such questions are concerned with the analysis of the individual case. Cross-case analysis refers to a cross-case synthesis to find similarities and enhance understanding through such cross-case comparisons (Yin, 2009; Miles and Huberman, 1994). Hence, cross-case patterns are required for generalising the pattern, discovered from within-case analysis, across all cases (Cresswell, 2009). The cross-case analysis is operationalised through seeking answers to the questions that aim to understand the impact of the alignment on the PS and explore the methods that the four companies use to align their projects to their business strategies as these questions investigate cross-case findings.

#### **4.13 Ethical considerations**

To overcome any problem ethically, the researcher follows these practices and procedures:

1. This process starts with submitting ethical form to the ethical committee in order to receive confirmation of meeting Brunel Business School and Brunel University ethical requirements.

2. The researcher receives confirmation prior to meeting the four telecommunications companies and therefore gaining access to their representatives.
3. Explaining as fully as possible to the participants the aim, the nature of the research, who is undertaking it, why it is being carried out, the possible consequences, and finally how and where it will be disseminated.
4. Participants are informed that participation is not compulsory so they can refuse to continue whenever they want.
5. Utilising previous relationships between the researcher and key participants to clearly explain the aim of the research to other participants and their rights before, during and after participation.
6. To ensure privacy and confidentiality, the participants are informed that the digital-recording will be destroyed after they check and review their transcripts.
7. To ensure confidentiality, the companies are informed that their names will not be included in the research document.

#### **4.14 Conclusions**

In this chapter, the philosophical underpinnings of the research and the justification for its selection have been explained and discussed in detail to identify the relevant research methodology for this study. The qualitative paradigm was found the most appropriate because it matches the researcher's ontological and epistemological stances. The qualitative paradigm embraces emergent issues, and it is perceived as a sensitive paradigm when analysing the contextual factors. Several conclusions also can be drawn from the chapter as follows:

- It can be recognised that qualitative paradigms are preferred tools to explore in detail the context and the phenomenon under investigation because qualitative design is more sensitive to context, flexible to embracing emerging new themes, and able to track and describe the alignment process and contextual forces. Also, it enabled the researcher to interact more closely with the participants, and to explore issues of meaning and interpretation that they apply in their companies.
- Adopting an interpretive stance allows the researcher to take a more holistic and comprehensive view of the phenomenon and the complex relationships within it.



Moreover, it enables the researcher to interpret and make sense of the meaning the participants attach to their experiences in managing the big projects. Also, it was decided that multiple case study design was the most appropriate strategy for this research.

- The data collection methods that were employed included semi-structured interviews, observation and documents analysis including companies' reports. It helps to appropriately capture the views, values, opinions, experiences, thoughts, attitudes, beliefs and knowledge of the participants. The qualitative content analysis was considered to be the appropriate technique for analysing the data.
- The trustworthiness strategies, criteria, and the operationalisation procedures and techniques which were explained in section 4.11 are found to be interlinked and foster solidity, coherence, reliability and validity of the research. Ethical considerations are taken into account as they were found to be essential, especially if the researcher is interviewing executives and project managers of security sensitive companies such as the telecommunications as is the case in this study where the researcher applied for and received several official ethical consideration approvals.

This chapter presents and justifies the interpretive, qualitative multiple case study as the approach adopted for this study. The next chapter will provide a discussion of the fieldwork findings from the four cases and different sources and methods, where the data is presented and organised based on the data analysis and the techniques that are discussed in this chapter.

# Chapter Five: Analysis of Case Studies

## 5.1 Introduction

This chapter is divided into eight sections, section 5.1 provides an introduction to this chapter, sections 5.2 to 5.5 describe and analyse the four case studies, section 5.6 provides cross-case comparison between the four case studies, section 5.7 shows the impact of the project stakeholders and the contextual factors (AF) on the nine knowledge areas of the planning phase, and section 5.8 draws conclusions of this chapter.

This chapter describes the findings and offers a preliminary analysis of the empirical research data that are used to validate and examine the framework. In this chapter, the findings are derived from the interviews, document review, and observations. The fieldwork findings are categorised based on the framework main constructs. Findings are also coded in accordance with the sub-constructs (variables) and themes that are linked and found relevant to the key concepts. The sub-constructs and themes cover the following four key concepts:

- Business strategy (BS): including customer reach segment, customer experience, and competitive advantage such as time to market, cost, and quality.
- Project management (PM): including integration, scope, time, cost, quality, human resource, communications, risk, and procurement management (the nine knowledge areas of the project management of the planning phase).
- Alignment factors (AF) of the PM and BS: including internal stakeholders and factors such as communication between the project manager and internal stakeholders, executive support, the involvement of the project manager in the strategy development, project manager leadership competency, departments and unit support, project team, project resources, and PM tools. External stakeholders and contextual factors including communication between the project manager and external stakeholders, vendors and contractors, government agencies, market condition, and site acquisition.
- Project success (PS): including time, cost, quality, and business impact.

To offer a rigorous examination of the findings, a cross-case comparison and analysis is also presented to extract more emphasised patterns, key themes, and concepts. Each case is presented with an introduction that gives an overview and background about the case, the main goals and objectives, business strategy, and a selected project. Data (findings) also suggests adding new emerged sub-constructs (e.g. customer reach segment, customer experience) and factors (e.g. departments support, project team, project resources, PM tools, vendors, government agencies, market condition, site acquisition). The outcome of the initial and preliminary analysis of the cases suggests some modifications to the framework phase one and such changes are presented and discussed comprehensively below. Four Saudi companies have been used to verify the conceptual framework which is mentioned in chapter 3 (see figure 3.5)

## **5.2 Case study 1: Company M**

Company M is a new company which was established ten years ago. However, it covers most of the Kingdom and provides services for twenty million customers and its expansion over the previous years has been exponential. Company M has 5000 employees, 7 billion Saudi Riyal (£1.2 billion) in capital, and market capacity of 46 billion Saudi Riyal (£7.9 billion). Throughout this thesis, company 1 is coded as “M”. Company M provides the following services:

- Mobile services in Saudi Arabia
- Establishment of fibre optic networks and any extension thereof;
- Management, installation and operation of telephone networks, terminals and communication unit systems; and
- Selling, maintaining mobile phones and communication unit systems

### **5.2.1 Business strategy (BS)**

The business unit of interest in case M classifies its business strategy as differentiation (customer experience and time-to-market). Company M can be classified as a prospector (see section 2.2.2) since they see the environment as uncertain and dynamic (the entrepreneurial problem). Thus, they need to adjust their technologies or methods of operation (the engineering problem) (Miles and Snow, 1978). Also, they pursue a

differentiation strategy (customer experience and time-to-market) as one of the Porter's Generic Strategies (Porter, 1980).

### **5.2.2 Project (MP)**

The examined project was coded as project MP (the project was successful as it met the four project success criteria, see the framework). Project MP (3G) was initiated to satisfy customer needs by providing data services in a large, high speed domain to help them use the internet anywhere (by cell phones). This project was planned to be finished in 12 months in order to integrate about 1,700 sites (from 2G to 3G). However, such integration was associated with risks such as the equipment for the 3G that were installed in this project did not match the capability and the specifications of the existing infrastructure of 2G (this change was forced by the market conditions). The planning team did not consider such differences between 2G and 3G requirements during the planning phase. The planning team did not identify all the aspects of the 3G network; they considered it as a standalone network. In other words, 3G technology had to be utilised with the existing infrastructure (2G) instead of deploying additional investment in a new infrastructure. After installing the 3G equipment it was found that the 3G network was not compatible with the 2G infrastructure. To solve this problem, the top management replaced the project manager with a project manager who owns a leadership competency. This replacement led the project to overcome the integration problem and, as a result, the project was successful as assessed by the company's executives and the project management team. The total budget was 1.5 billion SR (£310 million) (within budget) and total project duration was 18 months (six months late). If company M had started the 3G project as a standalone project with new infrastructure, they would have spent at least 400 million SR (£69 million) for the new infrastructure since they would need to hire a new vendor and the project will take extra two years.

- **Case analysis (within - case)**

Case study one revealed many internal and external project stakeholders and contextual factors that affected the alignment process between the PM and the company's business strategy and also affected the implementation of the company business strategy in the project. The internal stakeholders and contextual factors include communication between the PM and the project stakeholders, executive support, the involvement of the project manager in the strategy development, departments and units' support, and

project manager leadership competency. External stakeholders and contextual factors include government agencies and services providers, vendors and contractors, site acquisition, and dynamic market. The study suggests that all the above factors should be considered by the company's executives and the PM team during the planning phase. Some of these factors are highlighted in the literature and some appeared only during the investigation. Such factors will be discussed in sections 5.2.3 and 5.2.4.

### **5.2.3 Alignment factors (AF) - Internal stakeholders and contextual factors**

- **Effective communications**

This attribute has a visible impact on strategy implementation in the sense that it was identified as a constant by most of the participants. They agreed that the lack of effective communication between the project managers and the project stakeholders such as executives influences the projects and the implementation of the business strategies. This attribute is crucial for the business strategy and the PM as it influences the project outcome. Participants from the three levels of the organisation such as corporate, business, and function level (PM) indicate the significant impact of proper communication between the project manager and the project stakeholders on the alignment process. The significance of the effective communication can be clearly seen from the information that the interviewees provided during the interview. For example, participants provided information about the role of communication in the strategy implementation, the problems that are generated by the lack of communication, and the role of effective communication in overcoming such problems. The role of communication in the strategy implementation is clear in this company since most of the participants including executives and project managers recognise the need for effective communication between the project manager and the project stakeholders as effective communication is a key player in successful alignment. For instance, one of the executives in the corporate strategic projects department (corporate level) explained:

*“The lack of communications between our departments makes them do their work separately without considering dependencies and priorities between the projects.”* TM-M-EX

Similarly, the director of the site and power department said:

*“An effective communication between the project manager and the project stakeholders is a key to close any gap. For example, each department in our company worked separately and did not coordinate or consult with the other departments especially*

*when there were dependencies and priorities between the projects (e.g. the outcome of a project depends on several departments or stakeholders).” (SM-M-EX)*

Such lack is considered as one of the main sources for misalignment between the projects and the company’s business strategy. However, the director of the site and power department said: *“Having regular meetings and workshops between our departments helped to improve the project outcome and performance.” SM-M-EX*

A project manager expressed the opinion:

*“Effective communication between the project managers and their executives help the projects to meet the company’s goal and objectives. If there is direct contact and trust between them, it will enforce the alignment”.* NE-M-PM

However, according to another project manager:

*“If the company’s business strategy is not linked to the project management actions, the project management team will implement a small percentage of the company’s business strategy in the project.”* AM-M-PM

It is not surprising that appropriate communication with the project stakeholders is vital for the alignment process and implementation of the company’s business strategy. For example, the PM team should communicate the project goal and objectives to all the project stakeholders effectively as such communication and coordination help to achieve these objectives. Several participants from different levels recognised the need for such alignment but most of them assumed that the alignment between the PM and the business strategy can be achieved through proper communication. For example, a network capacity control chief stressed that:

*“We tried to align our project management to the company’s business strategies through scheduled meetings, commitment and general discussion.”* AF-M-PM

In addition, having a good business strategy and clear scope do not ensure successful implementation. According to the executive manager for the wholesale planning and design:

*“If the company’s executives develop the company’s business strategy and the scope in a proper way, but do not communicate them to the project management team, or the project manager does not communicate the strategy to the project stakeholders or does not update the status of the scope to them, they will affect the project implementation negatively.”* MD-M-EX

For example, if the project manager does not communicate the project's milestones to the vendors and contractors in a proper time they will not be able to provide the orders on time since some of the communications' equipment and materials are not available locally. Therefore, vendors and contractors need to be informed about the orders in good time. Moreover, the impact of communications on the alignment as well as on the project can be extracted from the interviews. For example, some participants highlighted some issues during the execution phase which were caused by the lack of communication between the project manager and the project stakeholders. These issues are discussed next.

Issues that are associated with the lack of communication are found to be affecting the implementation of the company's business strategy. Although the significance of communication between the project manager and the project stakeholders is recognised in this company, several participants highlighted some incidents that occur as a result of the lack of communications. For example, according to the participants, there are some misunderstandings between the PM team and the project stakeholders which, therefore, affect the implementation of the business strategy. Several participants raised the phrase:

*"We are not speaking a common language with the other stakeholders."*

The effect of such a problem can be ensured by a project manager who said:

*"I ordered some equipment for my project but our vendor brought equipment which was not what we wanted. Such misunderstanding delayed the project one month."* AM-M-PM

Planning and managing the nine knowledge areas of the PM during the project lifecycle needs proper communications between the PM team and the project stakeholders. If the PM team cannot communicate such knowledge or receive clear and complete information at the right time, they may possibly not be able to plan and coordinate the project tasks correctly. Some of the project managers emphasised the importance of obtaining information quickly because sending unclear messages or sending them late will delay the PM work. This issue can be inferred from the interview with a project manager from the construction and power department who stated:

*“Sometimes important information comes to us late or incomplete. The delay in getting this information forces us to take the risk of starting the project or some tasks without having clear information. Taking such risks consequently impacted the execution of the business strategy.” AG-M-PM*

The participants experienced a lack of effective communications with most of the project stakeholders during the month of Ramadan (religious event). According to them, in Ramadan, the PM team usually encounters lack of communications with executives and with the government agencies. This problem occurs because in this month several executives and government employees take their annual vacation. In addition, the government agencies reduce work hours and take longer vacations than the companies which therefore affect the speed of obtaining permits. It is worth mentioning that the above problems impacted the outcome of the projects and affected the company’s competitive advantages such as time to market, quality and cost. Effective communication is found to be a proper mechanism for solving several problems. Although projects are planned for integration, scope, time, cost, quality, human resources, communication, risk and procurement, the PM faces internal or external obstacles when executing such a plan. However, some of the obstacles can be managed if the project managers communicate effectively with the project stakeholders since effective communications help the project managers to coordinate with the project stakeholders, control project milestones and tasks, and clarify any uncertainty. The observation shows that some of the company’s departments do not share the same interest or priorities with the PM team since their main focuses are on their departments’ work but the PM is given less priority. Therefore, they did not contribute to the project effectively. Also, in terms of dependency, they did not realise the impact of a project on the other projects. To overcome such a problem, a project manager said:

*“I requested an urgent meeting with the relative departments to explain the goal and objectives of my project. After this meeting, they supported me and replied to my queries immediately.” MB-M-PM*

For proper strategy implementation, project managers in this company arrange several meetings with vendors and contractors during the course of the projects to ensure that they follow quality and standards and do not violate the company’s business strategies; moreover, some of the problems that are out of the PM’s control such as arrival of new technology to the market during the course of the project. According to the participants



such problems can be solved by involving the company's executives in the project. For example, a project manager stated that:

*"If a new technology is launched, we call for an urgent meeting with our executives to obtain their approval and advice for some modifications."* NE-M-PM

The significance of having proper communications to overcome the project management difficulties can be recognised by some of the company's activities. For example, an executive said:

*"A team from the upper management visits each region in the kingdom every three months. The purpose of such a visit is to help the project management team in that region to solve any problems that are out of the project management's control such as issuing permits."* SM-M-EX

The above indicates that good communication between the project manager and the project stakeholders is essential for linking the project management and the company business strategy as such communications help the project management team to implement the company's business strategy correctly.

- **Executive support**

This attribute was rated high after communication by the participants. According to them executives affect the implementation of the company's business strategy since they have power to overcome the problems encountered by the PM team during the execution phase. Various project managers complement the company's executives for the effective contribution to their projects during the execution phase. However, they perceive that their contribution is limited in the planning phase. All the participants, especially the project managers, invariably reacted strongly when they were asked about this attribute, since they recognised the power that the executives have to support the project team to remove barriers that influence the project management process. Executives can promote the PM process by monitoring the implementation of the company's business strategy in the projects and helping the project managers to overcome any difficulties during the execution phase.

For example, project managers share the project progress with the executive's managers weekly. If they find the projects are deviating from their original plan, immediately they support the project managers to bring the project back to the plan. Moreover, when

project managers encounter unexpected internal or external problems (e.g. shortage in resources or being ignored by vendors or departments), executives always provide suitable solutions for these problems. Hence, such problems, if not treated perfectly, will affect the implementation of the company business strategy in the projects. Some of the problems cannot be controlled by the PM team, therefore, they need the executives' power to solve them or they need the executives' authority and approval for the recommended solutions. Furthermore, under some circumstances, the PM team has to prioritise one competitive advantage over another (cost or time) in order to meet the company's business strategy. For example, a project manager stated that:

*“In order to meet the project time constraint, we jeopardised some of the quality within acceptable ranges. However, the operation and maintenance department stopped the project. We could not solve this problem, so we escalated it to my executive who solved this problem immediately.”* AF-M-PM

Also, on some occasions such as Ramadan or Al Hajj where millions of people visit the Holy mosques in Mecca and Medina, the telecommunication companies conduct urgent projects and services in order to upgrade their infrastructures. Because these projects are urgent, the project managers are forced to violate several processes such as issuing the projects' permits in order to finish before these occasions. Violating such processes is too risky. However, involving the project sponsor in such risky decision helps the PM team to mitigate such risk. According to a project manager:

*“I have to get the project documents and permits from the municipality before starting the project. Since the project was urgent, I received a green light from my executive to skip such processes and start the project immediately.”* NE-M-PM

It is important to highlight that taking such risks may increase the project cost or cause the company to be subject to government penalties. On the other hand, if the executives are not sharing such risks with the project team, they may cause the company to lose competitions with the other operators. In addition, executive support is not limited to solving internal problems (inside the company's boundary such as the problems that resulted from the other departments). Their support covers external problems that occur because of vendors and contractors, government agencies, the telecommunications market and the site acquisition. Similarly, such problems, if not treated immediately, will force the project team to execute the project without apparent link to the company's business strategies. Some of the project managers suffer from the company's vendors

and contractors as they do not respect the project plan. A project manager said:

*“In some incidents, our vendors do not reply to our request, we immediately escalate this problem to our executive.”* AM-M-PM

Therefore, the executive manager for the wholesales planning and design said:

*“Our executives understand the risks associated with the external stakeholders, so they encourage the project managers to escalate such problems without delay to them if they could not manage it at their level.”* MD-M-EX

It was recognised during the observation that the upper management in this company visits each region in Saudi Arabia every three months in order to help the project managers to overcome problems. For example, when the project faces new technology during implementation, the PM team may call for additional resources or upgrade to the existing infrastructure in order to match the new technology. Such additional work may affect the project plan (e.g. time to market and the project cost). In fact, not all the executives contribute to the project positively. Some influence the PM work and the implementation of the strategies negatively. For example, some of the company’s executives change the project scope without consulting the project manager and the other project stakeholders. Others are not interested in some details even though they affect the company’s competitive advantages.

- **Involving the project manager in BS development**

The importance of this attribute was recognised as the participants highlighted several advantages for such involvement. Firstly, help to understand the company’s business which, therefore, affects the implementation of such strategies (up down influence). Secondly, help to add practical inputs and feedback on the strategy which, therefore, influences the company’s business strategy positively (down up influence). Lastly, leads to build an effective work environment. These advantages are explained below.

- **Up down influence**

The first advantage for the involvement is to make the strategy clear for the implementing team since some of the participants were not satisfied about the level of understanding of the company’s business strategies and the level of the awareness about the dependencies between the projects. For example, several

projects depend on the completion of other projects. Therefore, any delay in one project will adversely affect the start of the other and as a result it will affect the company's business strategy.

A project manager explained: *“Actually, we have experienced some difficulties regarding the goal and objectives of the company”*. AG-M-PM

Therefore, if the project managers and their teams are close to the strategy people, they will discuss any matter related to the business strategy. Also, being close to the strategy developers helps the project managers to understand the company's business strategy since the projects in this company are aimed at supporting several strategies. So, the project managers should know these strategies and be aware of the impact of their projects on the company's strategies and on the other projects.

Similarly, one of the executives explained: *“If the project manager shares with the strategy people the formulation of the business strategy, they will own that strategy which leads to enhance the project plan as well as the execution”*. SM-M-EX

However, an executive stated that: *“In this company, the project managers have never been asked to contribute to the strategy plan. They are invited only to execute the projects.”* MD-M-EX

Several executives find ignoring the project managers during the strategy development is one of the main weak points that affect the strategy implementation. For example, an executive manager in the corporate strategic projects/corporate performance measurement explained:

*“The project manager, who does not have a chance to participate in the business strategy development or attend the business strategy workshops, will struggle to align the project to the business strategy.”* SH-M-EX

According to the above statements, it can be recognised that involving project managers during the company's business strategy development will lead to a clear understanding of the company's goal and objectives which will therefore help the project managers to manage their projects in a strategic way.

- **Down up influence**

The second advantage for the involvement is to enhance the strategy and make it applicable for implementation since the project managers will provide practical inputs to the strategy as they are experienced in managing and executing the projects. It is worth highlighting that several project managers guarantee to provide an efficient feedback and inputs on the strategy if they are invited to participate in the strategy development. However, some of the company's executives do not see the importance of such involvement. For example, a project manager explained:

*“Our executives believe that the project managers are not necessary during the strategy formulation and their contributions are not mandatory. However, if we attend, we will tell them if the BS can or cannot be implemented.”* AF-M-PM

The involvement of the project managers in the strategy development helps to build an effective work environment since they share with their executives the development of the company's business strategies. Such involvement enhances their collaboration during the course of the project. The only project manager who participated in the strategy development explained:

*“This participation breaks the ice between us. It helps to simplify most of the complicated process, helps to have informal dissection and communication, and helps to get extra support.”* NE-M-PM

Several executives participated in the strategy development. However, one project manager was asked to participate in the strategy development directly. Instead of involving the project managers directly in the strategy development, company M distributes forms to the project managers in order to obtain their

input and feedback on the strategy and provides workshops to explain the strategy to the project stakeholders.

- **Departments and units' support**

Project managers need to coordinate with the internal stakeholders such as the company's departments (e.g. marketing and sales, IT, finance, human resource, networking, operation, and planning). According to several participants, such departments affect the PM process. Therefore, several project managers consider some of the company's departments as a risk that needs to be mitigated. As an example of the influence of the departments, one of the executives stated:

*"The financial department reduced the project budget, we have one billion SR (£ 173 million) but suddenly this department reduced the budget to 800 million (£ 138 million). This change affected the project and the implementation of the BS negatively."* MD-M-EX

A project manager explained:

*"Because the product was not available in the kingdom, we had to order it from the manufacturer directly. This process took at least four months because we have to get approval and consultancy from several departments."* AF-M-PM

Having conflict in the interest between the company's departments may lead the projects to deviate from their original plan. On one of the company's projects, the civil and infrastructure department wanted to construct the cell phone towers in the right places but the telecom department wanted to put the site on air regardless of whether the towers were located in the right places. Several project managers highlighted the necessity of cooperation from all the company's departments during the planning and execution phases. According to the project managers such contribution helped them to meet the company's goal and objectives. Sometimes big projects can be divided into many stages. Each stage might be executed by one of the company's departments. Also, starting one stage may depend on the completion of another stage. Therefore, the project manager needs all the departments to participate in the project effectively because any delay from one department will delay the project as a whole. This company recognises the importance of having effective cooperation between the PM team and the company's departments. Therefore, company M encourages the departments that have a stake in the project by providing bonuses if the project achieves its objectives. For

example, the executive manager for the wholesale planning and design stated:

*“All the chiefs of the departments who have stakes in the project get a bonus and points in their KPI if the project finishes successfully.” MD-M-EX*

The company’s documents show that two years’ prior, the chief of the PM department gained the bonus and points in his KPI. This possibly affected the cooperation between the departments.

- **Leadership competency**

Realising the significance of the leadership competency, company M provides a leadership programme for the project managers. An executive proudly explained:

*“We believe in leadership skill so we provide leadership courses and workshops for our project managers.” SM-M-EX*

Many project managers have attended this programme. Some appreciate their company as such programmes improve their management skills which, therefore, help to manage the project strategically. For example, one of the project managers (PM) said:

*“We started in 2011 the leadership programme (training programme) I learned how to manage the team, how to resolve conflicts, and how to communicate properly. The leadership competency assists the project manager to drive the project and the project team to the company’s business strategy.” NE-M-PM*

Moreover, the company uses project manager leadership competency as one of the criteria for KPI evaluation. According to many participants, such competency plays a major role on the alignment. For example, if the project managers do not demonstrate leadership skill, their contribution to the company’s business strategy will be little as their focus will be on getting the job done rather than achieving the company’s goal and objectives or opening a new market for the company. In addition, the project managers who show leadership competency will be able to manage the problems and risks that are associated with the project at their level. For example, they will be able to change (e.g. overlap some processes) and enhance the PM processes in order to meet the company’s business strategies. An executive explained:

*“The leadership competence is one of the key things that the project manager should own. Otherwise, he or she will not be able to compete with the other project managers*

*for resources. Such competency helps the project managers to convince their executives if they need additional resources or get approval on tasks such as violating some processes.” SH-M-EX*

The above quotes show that project managers should own the leadership skill since such skill help them to manage their project properly, lead their management team to the goal and objectives of the company, negotiate and convince, manage the project stakeholders appropriately, and solve most of the problems that associated with the projects in their level and safe their executives’ times.

Similarly, a project manager stated that:

*“According to the planning department, I have to construct 200 cell phone towers to cover a specific area. However, I found that we can cover this area with only 180 towers without violating the quality of the coverage. Reducing 20 towers resulted in saving money and time.” NE-M-PM*

In order to meet the company’s business strategy, sometimes critical decisions should be made quickly and wisely; also, many problems should be solved innovatively. The importance of having leadership competency as one of the factors that align the PM to the BS is recognised from many participants. As an example of making critical decisions, a project manager violated some processes such as starting the project before receiving the permits from the government agencies and the project documentation from the planning department since the project was urgent. As examples for solving the problems, a project manager said:

*“The planning department completed only 60% of the project scope. As a project manager, I had to carry out the work and take the risk even though the scope was not completed yet. If I waited for the project scope of work to be completed, the project will not meet time. Therefore, the other operators will launch their products and services before us. We had to deploy this technology soon.” AF-M-PM*

Another participant stated that: *“We faced a shortage in human resources but we overcome it by increasing the efficiency and productivity of my team. I encouraged them by providing incentives.” MB-M-PM*

The above quotations show that the project manager assignment is not only getting the job done but getting the job done and meet the company’s goal and objectives. However, managing the project and leading the project team toward the company’s business strategy required a skill such as leadership competency. Such competency



gives the project manager confidence to search for an innovative solution for any problem that meets the project. Therefore, such skill seems one of the enabling factors that should be included in the framework for aligning the project management with business strategy. Another example that shows the importance of owning the leadership competency for the project manager is illustrated in the next quote. For example, a project manager explained:

*“The planning and design department located the cell phone towers in bad locations such as a valley as they do not visit the site. If I construct the towers in such location, during the raining season, these towers will be flushed away and it will cost the company extra for building another.”* NE-M-PM

The project manager who utilises the available resources such as humans, materials, and tools will be able to maintain the company’s business strategies. However, such utilisation needs a leader who reduces the project cost, maintains the quality, and increases team productivity rather than increasing the number of the team members. In reality, the project managers consist of two types. One is called a dominator who prefers to increase the number of their project team. However, the other type is called a multiplier who prefers to multiply the productivity of their staff and equipment rather than increasing the staff or the equipment.

Many team members indicated some skills that their project managers should have in order to achieve the project goal. These skills include building a healthy working relationship with the project stakeholders, employing effective communications methods, solving team conflict and delegating responsibilities. These skills can be fulfilled if the project manager owns leadership competency. Hence, owning leadership competency helps the project manager to plan and execute the project with apparent links to the company’s business strategies.

#### **5.2.4 Alignment factors (AF)- External stakeholders and contextual factors**

External stakeholders and contextual factors, such as government agencies, vendors and contractors, site acquisition and market conditions, are very risky. Most of the interviewees highlight the need to consider these factors properly since they affect the project outcome and the implementation of the business strategies in the projects. The above external factors will be discussed in the next sections.

- **Government agencies**

According to the participants, government agencies and the main services providers such as municipalities, the communications and information technology commission (CITC) (the regulator), customs, and the electric company (SCECO) play a major role in the success of the telecommunications companies for meeting their goals and objectives. Many project managers speak excruciatingly about their experience when conducting the processes of issuing the government permits. According to them, some of their projects are affected negatively by such processes. They also blamed regulations for stopping or terminating some of their innovative projects. Many participants pointed to the importance of considering this attribute during the project planning phase in order to reinforce the alignment. Many participants explained their experience with this attribute.

According to them, if projects finish at the end of the year, they have to wait until the next year (lack of budget) to obtain mains electricity. Company M could not put their sites on air because they did not have the electric power from SCECO. SCECO influences the project constraint including time, cost and quality. If the projects (sites) are ready but SCECO does not supply the electrical power, the PM team has to use temporary generators (substitution) until they obtain mains power. Therefore, they affect the quality of the projects since these generators release sound and smoke. Also, they are not trusted since they might stop at any time and the current and voltage might change during the work. The effect of SCICO on the implementation of the company's business is explained by a project manager who stated:

*“SCICO electrical company changed the voltage from 110 to 220 without informing us. Such change forced us to change some parts of our projects during the execution causing the project management team to exceed the budget.” AM-M-PM*

This means that a lack of communications between the project manager and SCICO (external stakeholder) forced the project team to be shifted from the original plan. Lack of communications between the project manager and the project stakeholders affects the project management process resulting in increasing the project cost. Increasing the project cost leads to violating the company's business strategy.

In addition, due to the regulations, company M could not locate their cell phone towers properly. For example, some areas, such as Al-Jazirah district, do not have 30 metre

wide streets. SCECO does not connect the power if the site is not located on a 30 metre wide street. So the PM team was forced to construct these towers remotely from this district which, therefore, affected the quality of the signal. The impact of the municipalities on the project outcome and the alignment can be recognised from the reaction of the next participants. A project manager explained:

*“Due to the municipality’s rules and regulations, we cannot guarantee the quality of our signal in some districts.”* AM-M-PM

According to an executive, one of the company’s projects did not meet the company’s business strategy (time to market) because the process of issuing the municipality’s permits took a long time. In order to lay the fibre optics in the streets, the project manager had to issue the permits for the whole project. However, he did this for some parts of the project and ignored others which forced him to repeat this process many times for the other parts. One of the participants complained:

*“Each single task needs many permits and permits mean delay and loss”.* SH-M-EX

Similarly, a project manager protested: *“I do not think my project met its objectives totally because of the municipality regulation and permits.”* NE-M-PM

Additionally, the impact of customs on the project outcome and the alignment can be recognised from the reaction of many participants. For example, one of the project managers explained:

*“We relied on our vendor to order some of the telecommunications equipment for the project from outside the kingdom. However, we did not take into account the time that the equipment takes to be cleared by customs. This equipment took two months to be cleared which forced the project team to work day and night to cover this delay.”* AM-M-PM

Ordering such materials could take longer than was scheduled. Some of the telecommunications equipment arrived at the sites very late. Such delay is mostly caused by the process of customs clearance. According to the participants clearing the project’s equipment and materials from customs is too risky. The communications regulator has another impact on the strategy implementation as well as the alignment as explained by the participants. For example, one of the executives stated:

*“The telecommunications regulator (CITC) sometimes rejects or slows down some of our initiatives and stops our projects if they do not meet their regulations or terminates the projects if they find launching them will affect the other operators.” SH-M-EX*

- **Vendors and contractors**

Vendors and contractors are found to be one of the attributes rated highly risky by the participants. According to the participants this attribute is hard to manage. If the project managers are not managing the vendors and contractors properly, they will damage the company’s reputation and affect their standards which leads to project failure since they provide and install the telecommunications equipment and construct the infrastructure. The study finds the main problem is that there are limited qualified contractors in the telecommunications industry in Saudi Arabia. Most cannot provide complete solutions for the projects. Therefore, the telecommunications companies have to hire many contractors for one project which forces the PM team to struggle to communicate with them. A project manager stated:

*“I remember one quarter of Riyadh was out of service completely because of the contractor’s mistake.” AF-M-PM*

Many project managers complained that:

*“Some of the vendors do not follow the project team’s orders or keep their promises to finish the project on time.”*

Although, managing conflicts is one of the project manager’s responsibilities, a project manager stated that:

*“It is easier to manage the conflict that comes from inside the company than the conflict that comes from outside the company.” AG-M-PM*

From the above quotes, it can be recognised that vendors and contractors were another inhibiting factor which most the participants echoed during the interviews. It was revealed that vendors and contractors affect the implementation of the company business strategy since some do not have sufficient staff, tools and resources.

Another example that shows the difficulty of managing the vendors can be recognised from the next quote of one of the project team.

*“One of our contractors brought a bottle of water to check if the foundation is levelled or not. He did not use the right tools usually used in such situations. This kind of work affects the quality of the project.”* NE-M-PM

To overcome such problems, this company monitors the project’s progress at frequent intervals. Executives in company M conducted weekly meetings with the PM team and the vendors, and visited the site to check the work closely to observe the contractor’s progress. If the vendors and contractors faced difficulties that were out of their control, such as issuing the government permits, delay from customs or problems from residents of the area, the company’s management helped provide solutions. However, if the vendors did not support the company’s business strategies, they were be subjected to penalty. The impact of the vendors and the contractors on the alignment was noticeable since they contributed to the project heavily. For example, they provided and installed the telecommunications equipment and materials. However, using many vendors and equipment for the telecommunications projects may lead to integration problems. Such problems may affect the company’s business strategies. For example, according to an executive who was the sponsor for the 3G project (integration of approximately 1700 sites) the project team faced severe problems resulting from the integration between the 3G technology and the connectivity with the existing infrastructure (2G). The company paid more than 100 million SR (17.2 million £) as an extra cost to solve the problem.

Sometimes vendors are responsible for procurement. However, they cannot always manage it properly. For example, a manager complained:

*“We ordered specific equipment from the vendor but he brought equipment which was not what we wanted.”* AM-M-PM

In some situations, vendors plan and design some of the company’s sites (the location of the cell phone towers) and provide the implementation plan for the project team. The PM team is responsible for approving such plans or changing some parts of the plan such as the project milestones. In addition, vendors are responsible for hiring and managing the contractors and sub-contractors. If the vendors are qualified and financially strong, they will hire qualified contractors. A project manager said:

*“Our vendor distributed some of the project’s work to many contractors but those contractors did not understand the company’s rules and standards. As a result, they provide less quality work.”* AF-M-PM

Some of the vendors minimise resources or hire unqualified staff in order to reduce expenses. If they do not provide sufficient human resources, they will jeopardise the company's business strategy. A project manager stated that:

*"We discovered that some of the vendor staff was not qualified."* AG-M-PM

Another example that was mentioned by the project team:

*"During the world economy recession, some of our main vendors somehow reduced some of their people so we could not manage the project with that small number of workers."* SJ-M-PM

The differences in priorities between the PM team and the vendors are one of the sources that affect BS implementation. For example, vendors and contractors focus heavily on their payments whereas the PM team focuses on the outcome of the project.

- **Site acquisition**

Site acquisition is another external factor mentioned by the participants which affected the alignment. The telecommunications companies, including this company, face difficulties from acquisition of the sites locating their telecommunications equipment which is either the roof type which is constructed on the roof of buildings or the green field type which is constructed on the ground (cell phone towers). Difficulties arise from finding and owning these sites. Some sites belong to the government and some sites belong to individuals. According to the participants, owning these sites affects their projects as well as the alignment effort since they delay the project and affect the quality of the services.

Site acquisition needs a negotiator who reduces the prices of owning these sites, a convincer who persuades the individual that the telecommunications equipment is safe for the environment and does not have side effects (health issues), and a person who knows the law and the government rules. If the PM team or the department of the site acquisition succeeds in acquiring such sites, the company will sign a lease agreement which, therefore, allows the company to construct their equipment and towers on such properties. Some projects have started late and deviated from the original plan because the PM team or department of the site acquisition could not own or lease these sites or the process of owning such sites was protracted. Many participants highlighted their experience in such attributes. For example, a project manager highlighted:

*“Owning such sites requires getting permits from the municipalities, coordinating with the electrical company (SCECO), and negotiating with the owner of the property.” AM-M-PM*

According to an executive, the roof type requires generators for electric power since the electric power can be taken from the building itself after upgrading its meters from SCECO. However, in many cases, the owner of the buildings did not pay the previous electric bills so company M has to pay the owner’s bills in order to obtain the power. The green field type often faces resistance and rejection from the neighbourhood. The complication of this process affects the project start time and sometimes causes severe delays. An executive said:

*“The owners of the properties and the residents nearby the sites affect the implementation of our business strategies. For example, after starting one of our projects, the neighbour complained to the government. They claimed that our towers affect their health and reduce the price of their properties. We had to remove some of the towers to other locations in order to solve such problems but we had to sacrifice the quality of the signal.” TM-M-EX*

- **Market condition (dynamic market)**

The last attribute that was mentioned by the participants is market volatility and the acceleration of telecommunications technology. Many project managers highlighted the influence of the market conditions and the acceleration of the development of the technology on their projects. According to them, during the course of the projects, their projects or the infrastructure of the sites should be upgraded in order to be compatible with the new technology. Sometimes when new technology enters the telecommunications market (4G), projects are forced to be terminated since they become obsolete (3G). Executives update the PM team regarding market trends and new telecommunications technologies in order for the projects to survive during such entry. If the project managers do not consider the possible changes during the planning phase, they will affect the implementation of the company business. According to a project manager:

*“Our executives track the new technologies and update the project management team and share with us the risks associated with such changes.” AF-M-PM*

After the entry of 3G technology, company M had to improve their coverage and services by replacing the 2G technology with 3G. They realised that their customers were suffering either from poor coverage or poor internet speed. An executive said:

*“If we do not enhance the coverage, our customers will go to the other operators.”*

Rapid movement from one technology to another confuses the work of the PM team; as a result it will affect the project outcomes and the implementation of the strategies in the projects. If the PM team does not link the company’s business strategies such as customer experience with their project, the projects will not support the company’s goal and objectives. The impact of the acceleration on the telecommunications technology was explained by an executive:

*“The arrival of 4G technology forced us to launch many projects and improve the projects (network) that were under construction. Our customers will buy cell phones that use such technology. We have to provide these kinds of phones and services in our shops and make it ready for them and provide the 4G SIM as well.”* SH-M-EX

In addition to the entry of new technology, high demand for the company’s products and services and high competition between the four telecommunications companies is another factor that affects the implementation of business strategy. The market demand forces the company to accelerate their projects in order to satisfy the customers’ needs and expectations which, as a result, influence the project outcome and alignment. One of the company’s executives explained:

*“Being in a dynamic market and in hyper competition pressures us to expedite the implementation of our projects which therefore affect the project management process.”*  
SM-M-EX

### **5.2.5 Measuring alignment**

In chapter 3, section 3.5, please see formulation how to measure the alignment and how to calculate the alignment score. Appendix (B) shows the executive priorities at the business unit regarding the 3G project. According to formula (1) in section 3.5, the four priorities (see appendix B) for the executive are:

Dimension 1:  $5+5+3+3= 16$  the average value is  $16/4 = 4$

Dimension 2:  $4+4= 8$  the average value is  $8/2 = 4$



Dimension 3:  $4+4+4=12$  the average value is  $12/3=4$

Dimension 4:  $5+5+5=15$  the average value is  $15/3=5$

The project manager, however, rated the four priorities (see appendix B) of the same project as follows:

Dimension 1:  $5+5+3+5+4=23$  the average value is  $23/5=4.6$

Dimension 2:  $3+4=7$  the average value is  $7/2=3.5$

Dimension 3:  $4+4+5=13$  the average value is  $13/3=4.3$

Dimension 4:  $5+5+3=13$  the average value is  $13/3=4.3$

Based on the above scores, misalignment (as Euclidean distance as Srivannaboon, 2006b) between the BS and the project is calculated as:

$$= \sqrt{\{(4-4.6)^2 + (4-3.5)^2 + (4-4.3)^2 + (5-4.3)^2\}} = 1.09$$

Theoretically, the maximum misalignment score would be 8 if all items were ranked by the executive at 5 and all items were ranked by the project managers at 1, or vice versa. The misalignment score was then converted into an alignment score as follows:

Alignment score for the given pair = Maximum misalignment score – Misalignment score of the responding pair (see section 3.6, formula 2) =  $8 - 1.09 = 6.9$

## 5.2.6 Methods for alignment

Company M seeks alignment through many methods and actions. Some of the methods are applied at the strategic level and the others are applied at the functional level. Such methods are explained next.

- **Strategic level (corporate level)**

Company M has departments including corporate affairs, project management office (PMO), and auditing which monitor the company's projects and make sure that they are aligned with the company's nine strategies. The other departments are responsible for prioritising and selecting the company's projects; after selecting the projects, they send them to the corporate affairs department to approve them. If the projects are not

supporting any of the nine business strategies, they are rejected. After approving the projects, the auditing department is responsible for monitoring the progress and the project status.

At the strategic level, company M provides workshops in order to explain the strategy to the project stakeholders including the project managers and employs KPIs (Key Performance Indicators) to help the company check their performance in relation to the strategic goals and objectives. Balanced scorecard is another method that the company uses to ensure alignment. SWOT analysis is one of the methods that the company employs to evaluate and assess the impact of the strengths, weaknesses, opportunities, and threats on the success of the project as well as the company's business strategies.

- **Functional level (PM)**

The project managers in this company use MS-Project (a project management software program) to assist the project managers to develop the plan, assign resources to tasks, track progress (critical path method), manage the budget, analyse workloads, and generate reports. Moreover, clarity portfolio management software (CA) is employed to monitor the projects and resources. Project managers also arrange many meetings with the project stakeholders before starting the project to discuss the project scope, the project plan including communication, targets, milestones, and the availability of the resources.

### **5.3 Case study 2: Company Z**

Case study 2 (coded as Z) was conducted in a large telecommunications company. This company is the newest company (established in 2007) providing telecommunications services in Saudi Arabia. Company Z entered the Saudi market at strength, bringing with it the benefits of its operations with a global network which includes extraordinary knowledge and operational synergies. They strive to become the preferred choice for voice, messaging, multimedia, call management, data and other services in the Kingdom building on the expertise of the company group and the insights of their local team. Company Z covered 93% of Saudi Arabia, 43 cities and 67 highways. More than USD 1.3 billion investment is committed to the network build-up and more than 4,200 staff. At six years old the company is relatively new. However, it covers about 93% of the

Kingdom, provides services for 15 million of its customers and its expansion over the previous years has been exponential.

### **5.3.1 Company Z business strategies**

The business unit of interest in Case Z classified its business strategies as customer segment reach, customer experience, cost reduction, and time-to-market. Company Z can be classified as a prospector (see section 2.2.2) since they see the environment as uncertain and dynamic (the entrepreneurial problem) and search for market opportunities with fairly broad product lines that focus on product innovation and market opportunities. Thus, they need to adjust their technologies or methods of operation (the engineering problem) (Miles and Snow, 1978). Also, they pursue a differentiation strategy (customer segment reach, customer experience, cost reduction, and time-to-market) which is one of Porter's Generic Strategies (Porter, 1980).

Their second strategy is customer segment reach and experience. Company Z is working to change the negative perception that their customers have about the quality of its services by improving and expanding their network coverage for the areas that have a weak signal by constructing more cell phone towers. Such expansion will improve the quality of the signal and reduce some of the operational cost experienced by their competitors. The second BS is to be the first operator to launch the new technology LTE (4G). Their target is that by the end of the third quarter of 2012, the kingdom will be covered completely by this technology (time to market strategy).

The third strategy is cost reduction strategy. Company Z focuses heavily on its cost reduction strategy. The company tried to reduce its expenses by considering three strategic projects. The first is called the assets management system. The aim of this project is to manage the company's assets such as the sites, civil towers, telecoms equipment, offices, and all the assets that they own. The second strategic project is the natural roaming reduction. Since 20% of the areas are not covered by the company's network, company Z aims, by June 2012, to complete construction of own their sites in order to rely on their network and not use the natural roaming from other operators. The third strategic project is the connectivity fibre project in order to connect the cities with fibre cables instead of using the other operators' cables. This strategy helps the company to reduce the operational costs and breaks dependency on other operators. This research

selected the connectivity fibre project in order to investigate and measure the alignment. This project is coded as project ZP (successful project).

### **5.3.2 Project (Z P)**

The connectivity fibre project between the main cities is aimed to support the cost reduction strategy and reduce the dependency on competitors' networks. This project helped the company to reduce operation costs and improve network capability and quality. Connectivity lease is extremely high; company Z was paying huge fees every year to its competitors. Company Z can use such money for expanding its network rather than helping competitors to achieve their plans which may affect company Z's future. So far, the company executed 200 km of fibre cables in Riyadh in 18 months with a cost of 400 million SR (£69 million).

- **Case analysis (within - case)**

Case study Z revealed many internal and external project stakeholders and contextual factors that affect the alignment process and the implementation of the company business strategy. The internal stakeholders and contextual factors include communication between the PM and project stakeholders, executive support, involvement of the project manager in the strategy development, departments and units' support, project manager leadership competency, PM team, and project resources. External stakeholders and contextual factors include government agencies and services providers, vendors and contractors, site acquisition, and dynamic market. Some of these factors are suggested in the literature but some of them appeared only during investigation and will be discussed in sections 5.3.3 and 5.3.4.

### **5.3.3 Alignment factors (AF)- Internal stakeholders and contextual factors**

- **Effective communication**

This attribute has a noticeable impact on the strategy implementation in the sense that it was identified as a constant by most of the participants. They agreed that the lack of communication between the project managers and the project stakeholders influences the project outcome and the implementation of the business strategies negatively. The importance of having proper communications can be recognised in company Z. For example, a participant explained:

*“Internal meetings with the company’s executives and the project team are critical for the success of the company’s strategy implementation.”* AK-Z-EX

Since proper communications provide a healthy environment for the PM team in order to manage and link the project stakeholders with the company business strategy the project manager cannot do the project work by himself. Many project stakeholders contribute to the project implementation. If there is a lack of communication between the project manager and the project stakeholders, the project will not meet its goals and objectives since, according to an executive:

*“About 90% of the project manager’s work is done through communication.”* MS-Z-EX

Highlighting the above percentage from one of the project managers seems to be logical for two reasons. Firstly, the project manager daily communicates with the internal project stakeholders such as the head of the other departments or the CEO seeking for resources, permissions, related documents, and explanations. Secondly, the project manager is responsible for managing the external stakeholders including vendors, government agencies, suppliers, and other related organisations. Such management work can be done through proper communications between the project management team and the project stakeholders.

In addition, proper communication allows the information to reach the project stakeholders correctly and on time. Supporting the above view, a participant stated:

*“If we have good transparency to feed the project stakeholders with proper information, the projects will meet their goals.”* FB-Z-EX

According to many participants, the most important factor that affects the implementation of the company's business strategy is the lack of communication between the PM team and the project stakeholders. For example, a project manager explained:

*“My manager gave an order to start the project. However I was not aware of such an order. As a project manager, I should know before anyone else since I report to him directly.”* HS-Z-PM

According to a project manager, the project managers should be told to whom they report. Otherwise they will waste much time in seeking approval. A project manager explained:

*“My project includes interfaces A, B, C and D. When I call interface A they said call interface B and when I call interface C they said call interface A and so on. To answer my concern, I have to spend much time and effort.”* TG-Z-PM

The statement explains that effective communications between the project manager and the companies’ departments plays a major role in the success of the project. Supporting the project manager with clear information in a proper time leads to managing the project properly.

Another participant said:

*“Many changes happened during the planning and the execution phase. Such change, if not communicated well to the project stakeholders, will not meet the company business strategy.”* AJ-Z-EX

In addition, effective communication between the project manager and the executives through proper channels is very important for bringing back the project to its original plan since effective communication can accelerate the PM processes. For example, according to a project manager, calling the main supplier directly helped him to reduce the equipment delivery time from 40 days to 25 days. This reduction of the delivery time is accomplished as the project manager explained to the main supplier that the project would not meet its objectives in the required time frame if he cannot get the procurement in 25 days. Therefore, the project manager through a proper communication method persuaded the main supplier to reduce the delivery time.

In addition, and according to the participants, it is hard to communicate with the other departments especially if the project is large. So, company Z decided to build a storyboard. The storyboard communicates the messages to the project stakeholders in a simple and easy way. The most information that the project managers communicate with the project stakeholders is the sequence of activities. Every week they have meetings to discuss the project sequence and production. Project managers conduct the meetings with their executives weekly to provide updated progress, scope, completion, and major milestones. Moreover, the meeting is not limited to discussing internal issues

in the project such as the project tasks; it exceeds the project boundary to cover issues such as communication with government agencies. One of the project managers explained:

*“The most important information that I communicate with my executive is about the site acquisition. We always discuss the issue because it is one of the factors that delay the implementing of our projects.”* TG-Z-PM

- **Executive support**

This attribute was ranked high by most participants. Most of the project managers highlighted the importance of support from the project sponsor as they solve most of the problems encountered on the project (the sponsor is one of the company's executive) since they believe in their projects. The importance of the sponsor's (executive) support is highly recognised for most participants in company Z since the project sponsor is one of the owners of the company's business strategies (each strategy has one owner). For example, if the strategy belongs to the marketing and sales department, the projects that support this strategy are sponsored by the chief (executive) of the marketing and sales department. The importance of gaining executive support comes from the fact that the executive is the BS owner and the facilitator, therefore, his support leads to ease the implementation of the company's business strategies. Such support is explained by a project manager:

*“Our executives empower and maintain the alignment throughout the phases of the project. Sometimes our vendors and the regional team do not assist the project team to manage the project accurately. The project sponsor (executive) plays a major role for executing the project with respect to the company's business strategy.”* AK-Z-EX

Another participant said:

*“Our executives are the champion of our projects. They stand behind the project manager. The project definitely fails without their support.”* AS-Z-EX

On the other hand, the PM team should support their executives with complete visibility, transparency, and holistically on their entire projects. Executives do not have to go to the micro level to understand how things are planned and executed. In addition, executives are not interested in daily work or in small aspects of the project; their interest is in the final outcome of the project which affects the company's performance.

The benefit of the executive support was recognised by one of the project managers:

*“From day one, I raised the red flag. I asked my executive for help because I could not get the municipality’s permits. I escalated this problem to him, so he solved it immediately.” HS-Z-PM*

Many project managers appreciated the contribution of their executives since many problems associated with their projects were solved by them. Many project managers used the executives’ power to push the vendors to support the project managers in order to complete the work and to draw the attention of the other departments to the PM team.

For example, a project manager explained:

*“If the other departments did not reply to my request, I escalate this to my executive immediately. The executives have more power than the project manager to remove the obstacle.” SD-Z-PM*

Many executives encouraged the project managers to raise the red flag when they could not manage the risks at their level and escalate to them immediately. Many project managers linked the contribution of their executive directly with the PS. However, if the project managers and the project sponsors could not solve the problems at their own levels, the SPMO team (strategic project management office) sat with them to find solutions; and if they could not, the SPMO team escalated this problem to the CEO to increase the budget or contact the municipalities.

An incident was mentioned by one of the project managers which shows the importance of executive support and also shows how such support was important for the alignment process. For example, part of the project (USFZ) was to connect the cell phone towers by fibre cables. Using fibre cables provides excellent signal quality. They arranged to lease four fibre cables from their competitors (two cables for each operator). One provided the fibre quickly but the other did not and they had to finish the project within the timeframe. To solve this problem the project manager used his backup plan. They connected some of the towers by satellite (v-sat) instead of fibre cables. This connectivity costs a little bit more than fibre but is easy for installation (satellite connectivity provides less quality because the transmission can be cut during harsh weather). If the project did not finish within the time frame, the company would be subjected to a late penalty from CITC, which is more than the extra cost that was paid by using the satellite connectivity. According to the project manager:



*“Changing the connectivity from fibre to satellite increased the project cost. Without the executive's approval, I could not have finished the project within the timeframe since I would have exceeded the budget and reduced the signal quality (within an accepted range).”* TG-Z-PM

The project manager could not use the v- sat satellite instead of fibre without the support and approval of the executives. It is not surprising that the executives' support is important in order to ensure a proper implementation of the company's business strategies in the projects since the executives have full vision of the company's business strategies.

- **Involving the project manager in BS development**

The strategies in company Z are formulated at the corporate level and cascaded to the business level without involving the functional level. Sometimes they hire consultants to develop their strategies. Strategies have different layers and could be achieved at different levels. The development of the company strategy tends to select the projects and then assigns the project managers. Although the project managers are the most important project stakeholders who implement the strategies, they are not invited to prioritise the project or to participate directly in the strategy development. Accordingly, this attribute was ranked high and appreciated by most of the participants as most of them find this attribute vital for the process of the alignment.

According to the participants, many advantages can be achieved by having the project managers participate in the development of the company's business strategy. Firstly, the PM team can synchronise and give beneficial feedback and input to the company's business strategy. For example, if the BS is not realistic or sustainable or if there are barriers that prevent the implementation of the BS in the projects, their contributions to the strategy development will improve such strategies. For example, an executive said:

*“We need to know their perceptions on the strategy and the project. Their experience will enhance our strategies and make them realistic and durable.”* HA-Z-EX

Many project managers found some of the project requirements were difficult to implement. Therefore, such difficulties forced them to work around for solutions. According to the project managers, if such problems and solutions were provided in the early stage of the strategy development, there would be less cost, shorter timescales, and simplicity. An example of a proper contribution is stated by one BS executive:

*“We changed the project timeframe as suggested by the project manager. The project manager has more experience in the technical issues more than the strategy planner.”*  
AJ-Z-EX

Similarly, a project manager stated that:

*“Some of the technical issues are critical which needs to be taken on consideration during the strategy planning.”* MA-Z-PM

Secondly, the PM team needs to understand the strategy. Many project managers were eager to participate with their executives during strategy development. A project manager explained:

*“If I participated, I would understand the dependencies between our projects. For example, the home connectivity fibre project depends on the fibre circuit between the cities. The question is can we use the infrastructure of the fibre between the cities or do we have to construct a new infrastructure for my project. If I get answers for my questions from the beginning, I would make an appropriate plan.”* HS-Z-PM

From the above quotation, it shows that involving the project manager during the strategy development will enhance the planning phase process. For example, the project manager will understand in detail the home connectivity fibre project requirement. Therefore, the project manager and the project team will plan the project accurately.

It is important to involve the project managers in the early stage of the strategy formulation because the project managers need to make critical decisions during the course of the project. If they understand their company’s business strategies and the goals and objectives of their projects clearly, they will make decisions that are compatible with the company’s goals and objectives. Although the importance of such an attribute was commonly accepted by most of the participants, one of the executives said:

*“This is one of the things that we do not do in our company”* AK-Z-EX

To overcome such a deficiency, company Z through the PMO, requires all the regions’ offices to do SWOT analysis in order to understand the strengths, weaknesses, opportunity, and threats that face the company and the project overall. Company Z

employs SWOT analysis to obtain feedback and input on the strategy from the project managers and the project team.

- **Department and units' support**

This attribute was seen as important for the alignment process from most of the participants. Company Z recognises the impact of such attributes on the project outcome. Therefore, they set a strategic goal to align the company's units and departments such as operations, marketing, sales and finance with each other and, consequently, with the company's business strategies. Many project managers considered the other departments as one of the factors that affect the implementation of the company's business strategies since they do not cooperate with the PM team effectively. Most of the participants suggest considering the cooperation and the dependencies between the company's departments during the planning phase. One of the participants declared:

*“One of the marketing department projects was depending upon the product of the IT department. Because the IT department did not realise this dependency, the project could not finish on time.” MS-Z-EX*

The challenge is that the project managers need to have some input from other departments. However, every department has its own priority and objectives; therefore, the challenge is how to unify the efforts and bring the related departments to support the PM processes including the nine knowledge areas. According to a project manager, one of the key success factors for his project was constructing a proper working relationship with the commercial team.

There were many incidents in this company as a result of the lack of cooperation between the company's departments. For example, the planning department is responsible for designing the sites (locating the cell phone towers). The PM team is responsible for constructing these towers. The lack of cooperation between these departments leads to many changes during the execution. For example, a project manager said:

*“After launching the project, we discovered a major problem as the IT department mistake. For that reason, the project management team has to provide a solution for such a problem but this correction affected the project timeframe and price.” MA-Z-PM*

And

*“The project team could not construct the towers because the planning department located most of them in the valley or in a hard topography. The planner did not visit the sites while they planed the project.” MA-Z-PM*

Having a good RF planner (radio frequency planner) helps to design these towers with an optimum coverage (to gain the best coverage with least number of towers) and as a result it will reduce the number of towers. Reducing the number of towers leads to reduce the project cost, the execution time, and the operation and maintenance cost (the cost of one tower is approximately 380,000-400,000 SR or £66,000-67,000). The proper contribution from the department helps the PM team to meet the company’s business strategies.

Some of the company’s departments have a big stake in the project. Therefore, insufficient cooperation with the project team will affect the project plan and the project outcome. As mentioned in section 5.3.1, company Z employs the story board in order to obtain healthy cooperation between the departments. Company Z built the story board for the large projects because, according to many project managers, the story board helps to improve the communication between the PM team and the other departments.

- **Leadership competency**

This attribute was given some attention from the participants. Many executives stressed that when the project managers own leadership competency, they are most likely to plan in a strategic way. Company Z recognises the positive relationship between this skill and the project outcome. So, they provide leadership workshops, reengineering, and value engineering programmes regularly. According to the participants, the project manager should be someone who imposes himself on the vendors, make decisions, and takes risks. An executive stated:

*“We do not want a project manager who copies and pastes inputs.” AS-Z-EX*

Similarly, a project sponsor said:

*“We need a project manager who owns technical and leadership skills. Without these skills, vendors and contractors can shift the focus of any meeting to their side and blame the project management team for their faults.” AK-Z-EX*

As discussed earlier, some of the project requirements are difficult to implement. However, the project manager who owns such skills will be able to work around to find solutions for the problems. For example, due to the rapid acceleration of the development of the telecommunication technology, company Z could not find a frequency for the 4G technology. Instead of waiting a long time (delay launching the 4G project) to obtain an available frequency, the project manager provided creative ideas to solve the problem. Technically, they separated the existing frequency (3G frequency) into two parts; one part for the data and the other part for the voice (they use specific frequency for the voice and another for the data). This idea helped the PM team to launch the 4G technology before the other operators. This project shows the importance of having the project manager leadership competency for solving the problems that affect the implementation of the company’s business strategy in the project.

In addition, the project mentioned earlier to construct the towers usually takes from 45 to 60 days. Using a fast track solution according to a project manager is a perfect solution for reducing the implementation time. Instead of excavating 226 foundations (to support the towers) and wait until the concrete reached full strength (about 28 days in case of cast-in-place) the project manager recommended pre-cast concrete foundations (two days for the installation) instead of the cast in place type. This alternative helped the project manager to reduce the implementation time and the cost of dismantling these towers if the project team needs to relocate them for quality purposes. The process of installing the pre-cast foundations takes two days for installation; however, using the precast footing increases the tower cost to 410,000 SR (£71,000) compared with the cast in place concrete which costs approximately 380,000 SR (£66,000). An executive commented:

*“The project manager was practising his leadership competency”. While the project manager stated: “this achievement could not have been done without the chief network officer’s support.” AD-Z-EX*

Reengineering some of the execution processes or using the concept of value engineering distinguishes the project manager from others. Such knowledge helps the

project manager to reduce the project timeframe, the project cost and improve the quality (the above examples illustrate such efforts).

- **Project management team**

This attribute was mentioned by the participants as an important factor for the process of the alignment. Some of the participants highlighted the importance of forming a cross-sectional team in order to have different knowledge and experience that would help the project manager to implement the company's business strategies. It is natural that the project team (one of the project stakeholders) plays a major role in the PS. Due to severe competition, company Z in some cases assigns one team to manage many projects or assigns some of the team members to participate in many projects. However, an executive explained:

*“The performance of the team work decreases particularly when they conduct multiple tasks. Therefore, involving them in many projects reduces the focus of the team toward the strategy.”* HA-Z-EX

Homogeneity among the team members affects the consistency of the team work. Many participants consider this issue as one of the criteria for selecting a proper team. According to a project manager, his team was formed from the vendor team (from outside the company). As a result, they did not help him to manage the project effectively since they did not understand the purpose of conducting the project; nor did they understand the company BS. Forming a proper team helps the project manager to achieve the company's goal and objectives. For example, some problems and difficulties that prevent the implementation of the company's business strategy can be overcome by the expert team. A project manager explained:

*“The planning department located the cell phone towers in hard topography so my team reduced the towers and relocated them in better places.”* MA-Z-PM

Conversely, many project managers blamed their team as they affected the outcome of their projects negatively. For example, according to a project manager, the project team was not supervising the project effectively. Therefore, a certain trench specification was not met in the project which affected the quality. Since the project team is the real executor in every project, company Z evaluates the project team every two weeks. If they are not supporting the project, they are replaced.

- **Project resources**

This attribute appeared and was seen in company Z as an important factor for the alignment since the company had lost approximately 65% of its capital due to many reasons including lack of strategic management, lack of management leadership, market conditions, and inappropriate resource management. Company Z realised the importance of this attribute for meeting the company's goals and objectives. As mentioned in section 5.3.1 company Z recently conducted a strategic project which was an assets management system. Executives, as well as project managers, considered managing the company's assets properly as one of the factors that helped to achieve the company's strategic goals and objectives. Two types of resources mentioned by the participants as important for the success of the project included the company's resources and vendor resources. Company resources were reduced in order to reduce expenses. Many employees were laid off which affected the speed and quality of the work. For example, a project manager commented:

*“The reduction that was made in my team affected the supervision and the quality of the project outcome. It was impossible to manage this project after such reduction.”* HS-Z-PM

Most of the participants linked PS with the company's resources and considered the availability of project resources as one of the risks that affected the project and drew attention to the risk that resulted from ordering the telecommunications equipment and materials such as the towers, shelters, and generators from outside the country since 90% of the materials were delivered to the company late. Company Z employed a risk register to identify the major risks associated with their projects. However, some of these risks could not be managed or mitigated, such as the availability of certain resources in a certain time, for example, ordering equipment from Europe during the Christmas period.

#### **5.3.4 Alignment factors (AF)- External stakeholders and contextual factors**

External stakeholders and contextual factors such as government agencies, vendors and contractors, site acquisition and the market conditions are considered risky by most of the participants. These external factors will be discussed in the next sections.

- **Government agencies and services providers**

This attribute was evaluated from most of the employees as one of the severe risks encountered in the strategy implementation in the project. According to the participants, many risks are associated with this attribute. Firstly, the risk associated with issuing the permits from the government municipalities included delay or rejection. For instance, to support the company's business strategy (customer segment reach), company Z planned to construct 1000 towers in eight months. However, the process of issuing such permits took a long time so the PM team could not meet the project timeframe. The process of issuing the permits becomes more complicated when the project is located in a critical area or on government property. For example, one of the company's projects aimed to improve the signal quality in one of the large universities in the kingdom, but the project manager could not gain approval from the university to construct the cell phone towers on their property.

Secondly, there was risk which resulted from the availability of frequency. One of the company's strategic projects was to support the company's business strategy to be the first operator who launches the new technology 4G. The 4G project demanded a specific frequency for such technology which was not available at that time. The PM team struggled to meet the company's business strategy.

Thirdly, the risk which resulted from other service providers. Company Z, as well as the other telecommunication operators, depended heavily on the electrical company SCECO to run their projects. Many project managers linked the quality and performance of their projects with the quality and performance of the electrical company. In reference to the cost reduction business strategy, company Z assigned many contracts to the other telecommunications operators to lease their towers and fibre optic cables. However, project managers in company Z found the quality of the provided services from such operators was less than their expectation.

Next, was the risk that came from the telecommunications regulator. Relatively, the telecommunications regulator CITC (Communication and Information Technology Commission) in Saudi Arabia is new and not contributing to the telecommunications market effectively. Sometimes the regulator releases new regulations which force the company to change or adjust their business strategies to meet such regulations. Some of



the projects, initiatives, and offers were cancelled because they were not meeting the new regulations. For example, one of the participants explained:

*“Changing the rules and regulations affects our company’s business strategies. Some of our business strategies and offers have to be cancelled or modified in order to meet the new regulation. For example, changing the international call prices affected the customer reach segment business strategy negatively.”* FB-Z-EX

Finally, there was risk resulting from clearing the telecommunications equipment from customs, many participants claim that some of the project materials which were ordered from outside the kingdom took a long time to clear customs. A project manager explained:

*“It is hard to forecast or estimate the time needed to clear the equipment from customs.”* SD-Z-PM

- **Vendors and contractors**

Vendors (usually international companies) are responsible for providing and installing the telecommunications equipment whereas the contractors are responsible for constructing the infrastructure such as the civil work (usually local contractors). According to the participants, vendors and contractors play a major role in the strategy implementation. For example, some of the company’s projects (to construct the towers) are executed by the vendors and out sourcing contractors. The role of the PM team is to manage the vendors and the contractors (if the contractors are hired by the company planning department). This attribute was highlighted as the second factor, after the government agencies, which influences the PM process. The participants stated many reasons that make vendors and contractors contribute to the company’s strategies negatively. The first reason is selecting unqualified vendors. A project manager explained:

*“The vendor’s lack of expertise in such projects caused the project team to meet only 80% of the business requirement.”* SD-Z-PM

The second reason is that vendor, contractors, and the project team do not share the same interest. According to many executives, there is always conflict and disagreement between the vendors and the company. An executive commented:

*“A good vendor sees the things from the eye of company.”* AD-Z-EX

Thirdly, vendors and contractors are overloaded. Some participants criticised giving most of the company's work to a few contractors or vendors which led some of them to fail to manage the projects. Many project managers preferred to distribute the project work between many vendors and contractors. Focusing on specific vendors was seen as one of the problems that affected the implementation of the company's business strategy. Next, selecting unqualified contractors is one of the factors that affected the PM process. Many project managers criticised the quality of some of their contractors. According to them, some of the contractors did not understand the project implementation plan, did not use the right management tools, and were unaware of the regulations. Finally, vendors did not supervise their contractors. Lack of supervision was seen as one of the problems affecting the project outcome and many participants condemned the method of supervising the contractors. One of the project managers explained:

*“When I visited the site, I found the fibre optic cables were placed 2 cm deep instead of 50 cm. If such a problem is not corrected, it will affect the quality of the fibre connectivity because the fibre cables will be exposed and easy to cut.”* HS-Z-PM

- **Market conditions**

Many participants find the telecommunications market to be an inhibitor of the alignment. Being in such a market forces the company to study some initiatives, reduce the implementation plan, adjust or even change the strategies and sometimes terminate the projects. The dynamic changes in telecommunications technology or in the market required that new requirements were considered as one of the major threats that affected strategy implementation. Such threat was explained by an executive:

*“One of our competitors launched the new technology ahead of us (3G) which forced our team to change the implementation plan.”* AK-Z-EX

Furthermore, the acceleration in the development of the telecommunications technology, for example, changing from 2G to 3G and then to 4G (LTE) in a short time, placed the PM team under pressure as they could not find an available frequency for the new technology. Such a market forces the company to swap materials from one project to another and forces the project team to provide creative solutions in order to keep the projects aligned with company business strategies. In addition, company Z had to adopt

some strategies (e.g. a stealth strategy: to not enter into strong competition with the others) in order to survive in such a market especially when the telecommunications market in Saudi Arabia reached saturation so the company was forced to differentiate its products and services through many competitive advantages. Many changes in the company's strategies and in the management were made during the course of the projects as necessary for winning in the market. However, such changes created a gap between the company's business strategy and the current projects. These conditions affected the running projects and the implementation of the strategies since the company lost most of its capital which put unhealthy pressure on the PM team to run the project with less resources.

- **Site acquisition**

Site acquisition was seen as one of the factors to be considered since such attributes affected the PM process harmfully. In reference to the company BS that aims to improve the coverage and expand the customer segment reach, company Z conducted many strategic projects, among them a project that aimed to serve the customers who live in rural areas. The project manager highlighted the difficulty of owning the sites since most of the owners do not have official papers for their properties. This problem was out of the project manager's control. Consequently, it led the PM team to implement a small percentage of their company's business strategy. Site acquisition was recognised as one of the uncontrollable factors that affect the company strategic plan. Therefore, according to a project manager, "*The site acquisition was dominating our meetings.*" TG-Z-PM

### **5.3.5 Measuring the alignment**

In chapter 3, section 3.5 see formulation of how to measure the alignment and how to calculate the alignment score. Appendix (B) shows the executive's priorities at the business unit regarding the project the connectivity fibre optic. According to formula (1) in section 3.5, the four priorities (see appendix B) for the executive are:

Dimension 1:  $4+2+3+5= 14$  the average value is  $14/4 = 3.5$

Dimension 2:  $5+5= 10$  the average value is  $10/2 = 5$

Dimension 3:  $4+4+5= 13$  the average value is  $13/3= 4.3$

Dimension 4:  $4+5+3= 12$  the average value is  $12/3= 4$

The project manager, however, rated the four priorities of the same project as follows:

Dimension 1:  $5+4+3+3=15$  the average value is  $15/4=3.75$

Dimension 2:  $4+5=9$  the average value is  $9/2=4.5$

Dimension 3:  $5+5+5=15$  the average value is  $15/3=5$

Dimension 4:  $4+5+5=14$  the average value is  $14/3=4.66$

Based on the above scores, misalignment (as Euclidean distance) between the business strategy and the project is calculated as:

$$= \sqrt{\{(3.5-3.75)^2 + (5-4.5)^2 + (4.3-5)^2 + (4-4.66)^2\}} = 1.23$$

Theoretically, the maximum misalignment score would be 8 if all items were emphasised by the executive at 5 and all items were emphasised by the project managers at 1, or vice versa. The misalignment score was then converted into an alignment score as follows:

Alignment score for the given pair = Maximum misalignment score – Misalignment score of the responding pair (see section 3.6, formula 2) =  $8 - 1.23 = 6.77$

### **5.3.6 Methods for alignment**

Company Z seeks alignment through many methods and actions. Some of the methods are applied at the strategic level and others are applied at the functional level. Such methods are explained next.

- **Strategic level (corporate level)**

Company Z has a project management office (PMO) to control (check performance and milestones), link their projects together, highlight the priorities and dependencies between the projects (e.g. some projects share resources and some depend on others), report to the upper management. Project portfolio management helps the company to prioritise a set of related or non-related projects or programmes that help to achieve its goals and objectives. Also, it has a business development department which ensures that the company's goals and objectives are aligned with the actions of the other departments.

- **Functional level (PM level)**

The project managers in this company consider the implementation plan (PIP) as a method for achieving proper alignment. They use forms to ensure the project is meeting its milestones. Many tools are employed by the PM team including a pre-job meeting, MS Project, Excel spreadsheets, KPIs, Google Maps, and weekly or monthly follow-up meetings to track the projects.

## **5.4 Case study 3: Company A**

Case Study 3 coded as A was conducted in a telecommunications company. The company is one of the leading cloud telecommunications operators in the Middle East. With more than 200,000 customers, the company covers voice services and broadband internet services in 12 cities in Saudi Arabia. The object of the company is the carrying out of a telecommunications business in the Kingdom. Relatively, the company is new (five years). However, it covers approximately 80% of the Kingdom.

### **5.4.1 Company business strategy**

The business unit of interest in case A classified its BS as expanding the coverage and customer segment reach. Company A differentiates its project by selecting a competitive advantage, time-to-market. Company A can be classified as a prospector since they see the environment as uncertain and dynamic (the entrepreneurial problem). Thus, they need to adjust their technologies or methods of operation (the engineering problem) (Miles and Snow, 1978). Also, they pursue a differentiation strategy (expanding the coverage, customer segment reach, time-to-market) as one of Porter's Generic Strategies (Porter, 1980).

### **5.4.2 Project (A P)**

The examined project was coded as project AP (successful project). The project is building a network that provides data, voice, and high speed broadband for their customers by WiMAX technology (a part of 4G) in 2009. This project helped the company to increase their customers by covering the main cities. This project was selected in order to support the company's BS of expanding customer segment reach.

According to the project manager, the project timeframe was eighteen months and the project team finished the project on time. Although not all the sites were constructed as planned, the missing sites did not affect the completion of this project. According to an executive:

*“The contribution of this project to the company’s goal was remarkable. We have 115,000 customers so far today; 80% of them are brought by this project; it was a major project for the company.”* MG-A-EX

From the above it can be inferred that the project manager was able to align his project with the company’s business strategy which aimed to expand their customers. Also, such alignment helped the project management team to implement the company’s business strategy in the project which therefore resulted in increasing their customer base.

- **Case analysis (within - case)**

Case study A revealed many internal and external project stakeholders and factors that affect the alignment process and the implementation of the company BS. The internal stakeholders and factors included communication between the PM and the project stakeholders, executive support, the involvement of the project manager in the strategy development, departments and units’ support, project manager leadership competency, PM team, and PM tools. External stakeholders and factors included government agencies and service providers, vendors and contractors, site acquisition, and a dynamic market. Some of these factors are suggested in the literature and some appeared only during the investigation. The factors will be discussed below.

#### **5.4.3 Alignment factors (AF)- Internal stakeholders and contextual factors**

- **Effective communication**

This attribute impacts the strategy implementation in the projects strongly as it was identified as a constant by most of the participants. They agreed that the lack of communication between the project managers and the project stakeholders influences the projects and the implementation of the business strategies. This variable was considered by all the participants as one of the factors that differentiate between successful and unsuccessful alignment. Some participants highlighted the role of culture on communication between the PM team and the project stakeholders. Most of the

participants, when asked about how to align their projects with the company's business strategies, answered that it should be by effective communication between the PM and the project stakeholders. An executive explained:

*"The alignment process should include proper communication between the project managers and the other departments."* MG-A-EX

Many project managers met with their vendors to discuss the project's communications plan and how and what to communicate. They documented this plan and obtained approval from both the project managers and the vendors before starting the project. According to the project managers, one of the important issues in their communication plan was to communicate the project Gant chart and the project milestones. The Gant chart includes the project tasks, the start and end date of each task, and the relationship between these tasks. The project Gant, as well as the project milestones, should be communicated to all the project stakeholders to ensure a successful project.

Some of the project managers highlighted many factors that affected the communications plan and therefore affected the project's outcome. These factors included insufficient reporting methods, inadequate communications plan, overload on the project team and an improper vacation plan. A project manager commented:

*"During the schools' vacation, the C-level managers take their vacation. Even though they delegate responsibility, the support from them is different from the acting one."* HZ-A-PM

Considering the above issues during the planning phase will ensure proper communication as communication was considered as one of the important factors that affected the alignment and the implementation of the company's business strategy. One of the project managers stated:

*"You can be an excellent pilot but without radar you cannot fly. The radar is your communication plan."* MH-A-PM

It was recognised during the observation that the project managers communicated informally with the project stakeholders. For example, participants used phones many times to call their executives to discuss issues related to the project or to set interview meetings for the researcher.

- **Executive support**

The contribution of the project sponsor to the PM team was seen as vital for the alignment which, therefore, made this attribute rated highly by both executives at the business level and the project managers at the functional level. Leadership and top management support is considered as a vital factor that helps the project managers to implement the project agenda. So, a project manager stated:

*“Being close to the top management is fundamental to get the project done. For example, the unlimited support from the project sponsor was essential in moving forward stage by stage until we finished the project.”* TF-A-PM

Executive support was recognised as an important factor that enabled alignment since many problems could not be solved at the PM level. Therefore, executives recommended escalating the problems that affected the implementation of the company’s business strategy to them immediately. However, according to the participants, the company’s executives needed to understand the difficulties encountered by the PM team during implementation. If they are not aware of such difficulties, they cannot support the project properly.

To ensure proper support, the project sponsors in this company (executives) signed an agreement with the project managers. This agreement included the project charter which included the statement of the scope of work, a list of suppliers and vendors, and the competitive advantage (time to market, cost, or quality). This agreement helped the PM team to have a clear picture about the project and company business strategy. Some project managers linked the success of the PM process with the support that they received from their executives. For example, a project manager said:

*“The project sponsor supported my request for additional resources immediately. Also, sometimes I reached a point that I needed him to interfere urgently in order to get support from the project stakeholders.”* HZ-A-PM

The manager of the PMO explained:

*“In order to take a fast track (accelerate the work), the project manager needs to involve the executives because he will take a little risk in cutting some corners.”* S-A-EX



On the other hand, some project managers stated that some of their executives were not willing to share and explain the strategy with them because they wanted to keep the strategy at the executive level because of the competition in the telecoms market.

- **Involving the project manager in BS development**

In terms of creating a healthy work atmosphere, interviewees from company A mentioned the importance of involving the project managers in the strategy development which facilitated the collaboration with the business strategy people. According to the company's employees, such involvement is a key success factor for the alignment process. Understanding the strategy was perceived as a critical factor facilitating the strategy implementation in the projects. Therefore, understanding the BS is the key component during the implementation stage to increase commitment to corporate initiatives. For example, an executive commented:

*“The awareness of the importance of the BS among the employees is vital for proper implementation. However, most of the employees in the companies do not know about the strategies.”* AM-A-EX

Feedback and comments on the strategy was seen as another key component during the strategy development stage to increase commitment to the company's goals and objectives as explained by an executive:

*“The strategy people think theoretically but the project management people think practically so they change the theory to fact.”* AM-A-EX

The participants pointed to the wide expertise that the project managers had for managing the project constraints (cost, time, and quality) and predicting the project outcome. On the other hand, executives at the strategy level are expert in planning and forming the company's strategies. Merging such expertise will create a major difference at the execution level.

- **Departments and units' support**

According to the participants, the beliefs between the project managers in the importance of the arrangement between the departments which were fostered by a series of meetings have resulted in, eventually, unifying the support and enthusiasm to implement the company's strategy in the projects. All participants drew attention to

unifying the efforts from all the units and departments of the company toward the project. Multiple departments have stakes in the project which make their contribution important for the implementation of the strategy, also to the success of the PM team. Many project managers found managing a project which depends on the contribution of the other departments risky since some do not report directly to the project manager. For example, the procurement department is not under the control of the PM team and does not report to them. The project manager coordinates with this department to ensure that all the requested equipment is available. However, the project manager does not have full authority in this department. In addition, most of the participants raised the point that the chief financial officer (CFO) (finance department) is reluctant to make payment to the vendors or sign a purchase order. These issues are important and should be understood. If the CFO does not accelerate the work and inject money at the right time, this will cause delay and affect the implementation of the company's business strategy in the project.

The dependencies between the company's projects ensure the importance of having proper coordination and collaboration between the project managers and it is important that when managing projects, the project managers know the projects that are parallel to their projects. The PMO commented:

*"The project manager or the head of the PMO should be capable enough to know some of the basic project management and should not let any project ever impact on another."* S-A-EX

- **Leadership competency**

Recognising the importance of having qualified project managers, company A hires only project managers who are PMP certified (project management professional). In parallel with managing the internal stakeholders, managing the external stakeholders such as site acquisition, municipalities, SCECO, vendors, and customs properly differentiates one project manager who owns the leadership competence from another. Dealing with such stakeholders is one of the major risks that affect the implementation of the strategy so mitigating such risk distinguishes the leader from the manager. Project managers need to take some risks and make decisions when they have 80-90 % of the data (input) and face the risks associated with such situations. They need to have a contingency plan in place but they have to assess these risks. The project managers

should be pragmatic. They should look at the goal and the plan. The PM is not about tasks, certain KPIs, and deliverables; it includes complicated processes such as managing the stakeholders. Therefore, the project manager leadership competency is important for managing the stakeholders. For example, one of the company's projects was to build 1200 towers. However, the manufacturer could not provide such quantities. The project was about to stop so the project manager met with one of the vendors and convinced him to sell some of his towers to the company.

- **Project management team**

The PM team was seen in this company as one of the factors that affected alignment. Participants who supported this view argued that the project team is one of the project stakeholders and a risk that affects the PM process since they do most of the work. If they are not qualified and supportive, the project will not meet its objectives. Forming the project team from different skills and expertise is considered one of the factors that helps the project manager to manage the project properly. For example, in reference to the WiMAX project, the project manager selected his team for their experience in delivering such a project. Some have experience in technical issues such as broadband technology, WiMAX technology and RF technology while other members were selected for their management expertise. According to the project manager, such diversity helped the project to meet its objectives.

- **Project management tools**

PM tools such as Microsoft Project Management, Excel spreadsheets, Gant charts, project charters, and Primavera are used by the PM team in this company. Some of the project managers used and appreciated these tools for linking their projects with the company's strategies. For example, a project manager stated:

*"We align our projects to our business strategies by the project charter."* HZ-A-PM

One of the project managers explained:

*"If the project manager does not have the right tools, the project team will have difficulty to monitor and control the project processes."* HZ-A-PM

Such tools help the project managers to solve or mitigate the conflicts between the PM team and the other project stakeholders, such as the vendors, and unify the language between them.

#### **5.4.4 Alignment factors (AF)- External stakeholders and contextual factors**

- **Government agencies and services providers**

This factor was one of the factors that dominated the interviews. All participants reacted stressfully when talking about it. All the participants agreed that this factor is not controllable and most project managers failed to manage this variable. According to the participants most of the project implementation plans are designed on the fact that the project team has control only of the project internal stakeholders. For example, the dependency on the external stakeholders such as the government agencies, municipalities, customs, and CITC in the WiMAX project was high. Such dependencies affected the PM processes since most of the plans did not consider the complication of going through the processes of obtaining permits, clearing equipment through customs, and CITC regulation. Even though the project managers applied the best practice of the PM such as planning and controlling, such dependencies on the external stakeholders forced the projects to be shifted from their original plans. For example, the project manager of the WiMAX, without hesitation, commented:

*“I would say the processes of managing the permits take at least 3 to 4 months and such complications can shut down the project, as simple as that.” RB-A-PM*

The effect of the telecommunications regulator (CITC) can be seen from the next example. To improve the telecoms performance, the four telecommunications companies in Saudi Arabia should have interconnect between each other in order to exchange data and voice. According to the participants, it is not logical that customers, when calling from one of the telecommunications companies, have their call go to America and back to their companies again. It has to be direct interconnection. To solve this problem, the four companies agreed to build interconnection. However, the deployment of such services was six months late because the CITC did not cooperate with the four companies properly. Similarly, one of the company's projects was to deploy certain services to cover an area of 5 km<sup>2</sup>. If the project covers 5 km<sup>2</sup>, the project would support the company business strategy that aimed to increase the company's revenue. However, the municipality gave the company a permit for two km<sup>2</sup> only. After

closing this project, they gave the company the second permit for the rest of the area. This process took an extra 6-8 weeks to implement because they had already moved their team and tools from that area. According to the participants, the 2 km<sup>2</sup> coverage would not meet the company's goal. Spending 12 weeks to issue the permits forced the PM team to modify the schedule and therefore caused the company to lose money.

Another example was the ISDN technology. A company signed a contract to deliver 500,000 ISDN lines needed to integrate the switches with the different cards and undertake the civil work beside it. This project needed 36 months for completion. However, because of the government permits, the project took more than what was planned. Before the completion of this project, the DSL technology was launched at a cheaper price. Therefore, the project was terminated before completion as the technology was obsolete. One of the executives complained:

*"We can have the best strategy, the best network, the best sales and marketing strategy, and we can have the best IT ever, but we may fail because of external stakeholders. We have our agenda and they have their agenda."* SB-A-EX

The head of the PMO explained:

*"We simply need to put such things into consideration early enough and plan around it because it is frustrating and hard."* S-A-EX

- **Vendors and contractors**

According to the participants vendors and contractors are one of the biggest barriers preventing the implementation of the company's business strategies in the projects. The effect of the vendors on the project outcome depends on the company itself. For example, the company that relies heavily on outsourcing will be affected by the vendor greatly. Hence, selecting the right vendor is very critical for successful implementation. In an attempt to reduce the risk that comes from the vendors' company A requires the vendor to provide a "mob", a plan, for the implementation in order to ensure that the vendor understands the scope of work and has enough resources. Most of the project managers consider the vendor as one of the main risks encountered in their projects since they focus on their payments rather than the outcome of the project. To overcome such problems, company (A) links the vendor's payments to specific milestones and requirements. Defining the payment method from the beginning helps to resolve many

disputes and ensure meeting the project's competitive advantages. Moreover, clear definition, description, and documentation are important for resolving any issues especially with the vendors.

- **Site acquisition**

All the participants, especially project managers invariably reacted with a laugh when they were talking about this attribute, since they had already experienced resistance from the owners of many locations based on their understanding of some issues such as financial (the reduction of their property prices) and health. Most of the participants placed emphasis on the difficulty of having the permits and the connectivity of electric power for their sites. Owning the sites for locating the cell phone towers is critical since they need approval from many organisations, agreement with the owners, and a long negotiation process because of resistance of those living around these towers.

- **Market conditions**

A dynamic market was seen from the participants as a major threat for the implementation of the company business strategies. Being in a dynamic market forces the company to change its business plan. Moreover, deploying cutting edge technology means that they are deploying something which has not been tested which, therefore, affects the outcome of the project. Also, facing aggressive competition from the other operators (e.g. companies M, Z, S) forces the company to change some of its strategies to move away from such competition. In order to survive, the business unit in company (A) selected another segment. Instead of focusing on the individuals, they selected the enterprise segment (serving the companies instead of private individuals since the other operators are very aggressive in the individual's segment). Changing the business strategies during the execution affected the implementation of the company's business strategy in the projects since such change forced the PM team to make some adjustment to the project to match the new segment. However, changing from the customer segment to the enterprise segment requires more effort to meet the enterprise expectation such as improving the quality of the services.

Currently, the main shift in the market is from voice to data. The growth of data is exponential but does not necessarily lead to improvement in the company's revenue because customers are looking for better broadband at a low price, meaning that if the

price is the same or less but the expectation is high, customer expectation forces the company to invest in the broadband infrastructure in order to meet such expectations and market requirements. Such growth in the data does not translate into positive revenue but to more spending which affects the implementation of the company's business strategies. According to the PMO:

*“30-40% of the projects that did not meet the business case (BS) is not due to lack of managing the business case but it is due to all these external events (external factors) that may come up.” S-A-EX*

#### **5.4.5 Measuring the alignment**

In chapter 3, section 3.5 see formulation how to measure the alignment and how to calculate the alignment score. Appendix (B) shows the executive's priorities at the business unit regarding the project WiMAX. According to formula (1) in section 3.5, the four priorities (see appendix B) for the executive are:

Consider, for example, the executive's emphasis (priorities) in a business unit regarding the project management of the WiMAX project (building a network that provides data, voice, and high speed broad band to their customers). The four priorities were as follows:

Dimension 1:  $5+5+3+2= 15$  the average value is  $15/4 = 3.75$

Dimension 2:  $5+5= 10$  the average value is  $10/2 = 5$

Dimension 3:  $4+4+3= 11$  the average value is  $11/3= 3.66$

Dimension 4:  $4+4= 8$  the average value is  $8/2= 4$

The project manager, however, rated the four priorities of the same project as follows:

Dimension 1:  $3+3+4+2= 12$  the average value is  $12/4= 3$

Dimension 2:  $3+4= 7$  the average value is  $7/2= 3.5$

Dimension 3:  $5+5+5= 15$  the average value is  $15/3= 5$

Dimension 4:  $4+3= 7$  the average value is  $7/2= 3.5$

Based on the above scores, misalignment (as Euclidean distance) between the business strategy and the project is calculated as:

$$= \sqrt{\{(3.75-3)^2 + (5-3.5)^2 + (3.66-5)^2 + (4-3.5)^2\}} = 2.2$$

Theoretically, the maximum misalignment score would be 8 if all items were emphasised by the executive at 5 and all items were emphasised by the project managers at 1, or vice versa. The misalignment score was then converted into an alignment score as follows.

Alignment score for the given pair = Maximum misalignment score – Misalignment score of the responding pair = 8 - 2.2 = 5.8

### **5.5.6 Methods for alignment**

Company A seeks alignment through many methods and actions. Some of the methods are applied at the strategic level and the others are applied at the functional level. Such methods are explained next.

- **Strategic level (corporate level)**

The project management office (PMO) is one of the methods used in this company for seeking a proper BS implementation in the projects. To ensure the project is supporting the company's business strategy, company A involves the project management office in the project (PMO) from the beginning. The role of the project management office is to support the project team, evaluate the project progress, and report to the CEO.

- **Functional level (PM)**

Dashboards (tells the status of the project), KPIs (certain criteria to show performance), MS Project, forms, meetings, risk management tools (to identify risks and possible mitigation) are used by the PM team tools to manage their projects and view the status of their projects. They can see whether their projects are on time, on budget and have an acceptable level of risk.

## **5.5 Case study 4: Company S**

Case study 4 (coded as S) was conducted in the largest company in the Middle East with 25,000 employees serving approximately 160,000,000 customers around the world with a huge capital (£3.44 billion) and annual revenue of 12 billion SR (£2 billion).



### **5.5.1 Company S business strategies**

Company S's new strategy (LEAD) was developed to focus their collective energy and efforts in capturing the emerging opportunities while managing overall challenges over the coming years. LEAD covers six key dimensions that are critical for them:

- Lead in next generation broadband
- Differentiate through integrated customer experience
- Consolidate international leadership
- Invest in people capital
- Drive financial performance and agility
- Promote leading brand and reputation

Each strategy has a specific goal and objective and these goals and objectives will be met through certain projects. Company S can be classified as a prospector since they see the environment as uncertain and dynamic (the entrepreneurial problem). Thus, they need to adjust their technologies or methods of operation (the engineering problem) (Miles and Snow, 1978). Also, they pursue the differentiation strategy (differentiate through integrated customer experience) as one of Porter's Generic Strategies (Porter, 1980).

### **5.5.2 Project (SP)**

The examined project was coded as project SP (successful project). This research selected the project business to business and business to individual customers (B to B to C) because it was one of the strategic projects supporting the company's business strategy, differentiated through integrated customer experience, in order to measure the alignment between the PM and the company business strategy people by comparing their priorities. The motivation behind this project was retention (maintaining customer loyalty). Retention is very important for any business. In other words, how to retain customers is a strategic goal for most companies. Customers obtain some kind of experience ranging from positive to negative during the course of the projects or services. The company's ability to deliver an experience that sets it apart in the eyes of its customers serves to increase their spending with the company and inspire loyalty to the company. The large size of the company forced the company to launch a strategic

project in order to align the company's departments. It is uncommon that the project manager contributes from the strategy development to the project implementation.

Project SP aimed to integrate and align the four business units including individual unit (mobile phone and broad band), home unit (land phone and DSL), enterprise unit, and wholesale unit. This project was selected to solve a major problem in the company. For example, each unit works individually and has its own sales showroom. When customers went to the home unit show room they received assistance for land phones and home broadband only; they did not find services for mobile phones because the mobile phones belonged to another individual unit. This project helped the company to provide complete services for their customers in one showroom. This project was planned to be completed in eight months but took one year. According to the project manager, this project had a positive impact on company performance since it contributed to expanding the company's customer base and inspired loyalty.

- **Case analysis (within - case)**

Case study S revealed many internal and external project stakeholders and factors that affect the alignment process and the implementation of the company business strategy. The internal stakeholders and factors include communication between the PM and the project stakeholders, executive support, the involvement of the project manager in the strategy development, departments' and units' support, project manager leadership competency, PM team, PM tools, and project resources. External stakeholders and factors include government agencies and services providers, vendors and contractors, site acquisition, and dynamic market. Similar to the other cases, some of the factors are suggested in the literature and some appeared only during investigation. These factors will be discussed below.

### **5.5.3 Alignment factors (AF)- Internal stakeholders and contextual factors**

- **Effective communication**

The very large size of the company makes communication between the company's units and departments challenging. The company's employees emphasise the effect of communication on the alignment process as well as the implementation of the company's business strategy. Since the company is very large, it is hard to have a proper communications plan. Therefore, the project managers have to invite the project

stakeholders to participate in the detailed plan. Many participants claimed that the communications between the sales units (in every region) and the company was weak because the sales units are far from the company headquarters. To overcome such problems, company S conducted many sessions where the sales units' representatives were invited to the company's headquarters. During the meetings, the CEO explained the company's strategy and the company's goal in 2009 and discussed the problems that the sales regions encountered. Such meetings helped the company to reach remarkable improvements in sales which, therefore, led to an increase in revenue at the end of 2009.

In addition, company S launched a strategic project (SP) to improve alignment and synergy between the company's four units (revenue generator units). They produced a solution for the misalignment and communications problems between the four units. They allow the enterprise unit to provide solutions for the other companies (business to business) and allow the mobile and home units to deal with the individual customers. To improve the strategy implementation company S employs an execution management office (EMO) as a reporting process. According to the participants, reporting improves the communications between the executives and the project managers since a group of CEOs in the management committee read these reports monthly in order to check the progress of the projects. Although company S employs the EMO, the project plan is difficult for implementation because it consists of many themes and encounters many problems such as the communications between the project team and the project stakeholders. According to one of the executives:

*“We have an issue in communication. People do not understand the whole strategic concept of the company. We are not happy about it.” AA-S-EX*

For example, in reference to project SP, the internal system for the four units affected the project negatively. In order to customise products, the company needs unique systems such as a billing system, CRM, customer services system which connect these units together (communication method). However, the lack of an integrated system between the units affected the implementation of the company business strategy (differentiate through integrated customer experience). The vertical communication between the BS and the project managers was seen as one of the major problems that affects the company's strategy implementation. If the project managers do not obtain

the information they need and if the problems they face do not reach the executives properly and immediately, the project managers will be isolated.

- **Executive support**

The significance of this variable can be recognised by summarising the participant's interviews. Most of the project managers in this company agreed the executives provided effort and support to drive their projects to the company's goal and objectives. For example, in reference to the incident that was claimed by the participants about the lack of communication between the sales units and the company (see section 5.5.1 subsection communication), this problem could not have been solved without the contribution of the executives. Even though the project managers tried to consider the risks associated with their projects during planning, some risks appeared during the execution and most of them could not be managed at their level. Therefore, the project managers escalated such risks to their executives. Most of the project managers complimented their executives for pushing some of the company's departments such as the IT department to support their projects. If the executives are involved heavily in the projects during the planning and execution phases, the projects will meet the company's strategic goals. For example, during the course of the projects many decisions have to be made. However, the project managers on specific occasions are not authorised to make some decisions especially when these decisions affect the project cost. Therefore, the executive's support on such occasions helps the project managers to meet their targets. Many participants believe that executive support contributes to 50% of the success of the strategy implementation.

- **Involving the project manager in BS development**

Although the contribution of the project managers to strategy development was seen as limited, many project managers blamed the company's structure for preventing them from participating in the strategy directly. Many executives explained their opinions about involving project managers during strategy formulation. According to them, the development of the corporate strategy should be limited to the board of directors and some of the chiefs of the units. Involving the project managers at this stage was not important because the project managers do not have a full picture on the telecommunications business. However, the project managers see their contributions as benefiting the company's strategies. For example, such involvement helps to formulate

an applicable strategy, determine the requirements, and highlights the risks associated with project implementation. Moreover, understanding the strategy from all the employees, especially the project managers, was seen as one of the factors that affect the strategy implementation and the alignment process. One of the executives stated that:

*“We bumped into a big problem from the employees who did not understand the strategy. We tried to communicate the strategy properly to all the organisational levels and increase the level of the awareness of the strategy. We tried to simplify the phraseology (words) that we use to write the strategy in order to make it easy for understanding.”* TK- S-EX

- **Departments and units’ support**

The participants highlighted a strong relationship between the project outcome and the support from the company’s units to the PM team. For example, the business units (each unit has its own projects and PM team) need support from the network unit otherwise they cannot sell their products. Company S has eight units including business units (B use) and functional units (F use). B use is the units that generate income, including individual units, home units, enterprise units, and the wholesale units. On the other hand, functional units include network units, IT unit, service unit, and regulation. These units are called the “support units” because they support the B use units. If the business units do not have full support from the functional units, the project managers who manage the business units’ projects will fail to meet the company’s goals and objectives. For example, one of the company’s projects was to provide broadband for customers. The network department promised to prepare 80,000 broadband lines for the sales department. However, the home unit which was responsible for selling these lines received only 30,000 lines. According to one of the project managers, the lack of support and coordination between the units and departments affected business strategies negatively (e.g. lead in next generation broadband and the differentiation through integrated customer experience) so these business strategies were not fully implemented in this project. Many participants blamed the PMO (project management office) since they could not coordinate between the home and network units in order to define the deliverables. This problem occurred because the definition of the deliverables (preparing 80,000 lines) was not clear to the two units; also they could not identify the scope of the work.

In addition, one of the company's projects which aimed to support the company's business strategy differentiation through integrated customer experience (inspire customers loyalty) started after this project in order to provide services for the largest enterprises (ARAMCO and SABIC) in Saudi Arabia (business to business) and for their employees by providing DSL and phones for the homes. The PM team did not want to repeat this mistake so they involved the business department which is responsible for providing the services to the enterprises and the home and individual departments responsible for providing services for their employees during the planning phase in order to gain feedback on the project scope, and agree on the major milestones.

- **Project manager leadership competency**

According to the participants, the chance for meeting the company's goal and objectives is high when the project managers own leadership competency since such skills give project managers exposure to the corporate level and BS level which, therefore, improve the PM processes for achieving the company business strategies. Many incidents were stated by the participants that differentiate the leaders from others. For example, the above project which was aimed to provide services for the largest enterprises in Saudi Arabia (business to business) and provide services for the enterprises' employees by providing DSL and phones for homes (the business department provides services to the enterprise such as ARAMCO). The home and individuals' department provide services for the employees of ARAMCO and SABIC. As a leader, the project manager called for integration between the business department and home and individual departments. Such integration led the two units to participate positively during the course of the project.

- **Project team**

The interview with the project managers led to strong debate. Some of them argued that forming a cross functional team is unconstructive for the project since each member of the cross functional team was assigned to too much work from his own department. Therefore, his interest and priority was for his department. One of the project managers explained:

*“Forming the project team from cross-functional units such as the enterprise unit, home, sales, and the individual unit is a big issue in our company. Each member of the project team comes with his unit’s culture and priorities.” AA-S-PM*

On the other hand, according to the some of the project managers, forming a cross functional team is healthy for the project since they bring with them different skills, expertise, and knowledge. Moreover, if the PM team has a representative from the different units and departments, the project manager will gain effective support from the company’s units through their representatives.

- **Project management tools**

The above argument between the project managers about the advantage or disadvantage of forming a cross-functional team led to an agreement that both types of teams - those formed from cross-functional or from one department - need to have the right PM tools in order to help the PM team to manage the project with apparent links with the company’s business strategy. For example, tools such as Microsoft Enterprise Project Management, KPIs and SLAs, reporting tool, Gama software (roll out software), and Google Map are used by the project managers in company S. Such tools help the PM team to forecast problems, update the work automatically, ensure that the company’s business strategy is implemented in the projects, and help the project manager and the executives to track the process and give an alert if something goes wrong.

Recognising the effect of the PM tools on the project outcome and on the strategy implementation process led the company to employ a tool called the “corporate strategy management system” (CSMD). This system includes the corporate strategies, business strategies, initiatives (projects), milestones, dates, planes, lessons learned, problems, risks, authority matrix, the progress, and performance. Every authorised member in the company can access this system and use it. The project managers can use this system to obtain information and escalate reports. Similarly, executives can access to check the project progress and read the reports. A project manager stated:

*“Such tools keep us ahead of the game since they alert us when we do not follow the plan.” RA-S-PM*

- **Project resources**

Resources such as materials, human, and PM tools are found important for the project and the implementation of the company's business strategies. If the project resources are not enough, the scope of the project will be shifted away from its original plan. For example, in reference to one of the company's projects, the project was aimed to construct 600 cell phone towers, but due to shortage in the project materials, the PM team was able to construct only 420 towers. This project failed to support the company's business strategy (lead in the next generation broadband) since such resources affect the outcome of the project and the projects that depended on the completion of the project.

#### **5.5.4 Alignment factors (AF)- External stakeholders and contextual factors**

- **Vendors and contractors**

This attribute was seen as the biggest barrier affecting the PM process and implementations of the company's business strategies. Company S hires vendors who assist the company to meet its goal and objectives even though they suffer from late delivery of goods and services. On one of the company's projects, the PM team suffers from the vendors. A project manager explains:

*"I was relying on Apple Company for providing iPhone 4 for my project. We announced to provide iPhone for our customers, but Apple did not provide these phones as they promised. We apologised to our customers but this delay affected our business strategy differentiation through integrated customer experience."* A-S-PM

An executive complained:

*"Some vendors affect our supply chain and create problems."* FA-S-EX

In a step to solve such problems, company S bought some of the vendors' companies (acquisition) as a step to unify the interest and priorities in order to achieve the company's overall plans and objectives. According to the participants, they do not manage such companies but they participate especially in the main decisions.

- **Government agencies and services providers**

This attribute was considered as one of the uncontrollable variables to the PM process. Issuing permits and clearing shipments from the government agencies such as



municipalities and customs are big issues for the participants. Many participants gave many examples regarding the difficulties that the project managers faced during the course of the project. For example, according to a project manager, the municipality prevented the company from executing the excavation in certain areas without clear maps for the infrastructure of those areas. However, to have a clear map, the company needs to obtain infrastructure maps for the other companies in order to know the locations of their cables and pipes.

- **Market conditions**

The harsh competition between the telecommunications companies forces the PM team to make changes in the project even though the project passes 50% of the execution. Changes in the market requirement or release of a new technology forces the company to adopt it sooner and adjust their strategies and their projects to match them. However, on some occasions, such as rapid changes in the market, the project becomes obsolete and therefore the company has to terminate it. The high competition between the four telecommunications companies in Saudi Arabia affects the implementation of their business strategies. A project manager explained:

*“We planned to launch our product in October 2010, but we discovered that one of our competitors was going to launch a similar product before us, therefore, we were forced to change our plan during the execution phase.”* AM-S-PM

Another project manager explained:

*“Sometimes we have to change the plan completely or partially in order to expedite the project and catch up with the other competitors. However, squeezing the project life cycle will increase the project’s cost and reduce the quality.”* AD-S-PM

- **Site acquisition**

Often overlooked, but essential, site acquisition plays a key role in the planning, design, and deployment of any telecommunications network. To ensure the company obtains the best locations for installing its antennas and towers, the company provides training programmes for the team that is responsible for managing sites for their wireless antennas and other pieces of equipment. Company S recognised the risk that is associated with such issues. Therefore, to acquire and manage their cell phone towers, boxes, and antennas, they hired specialists who are able to negotiate deals with property

owners to rent or purchase spaces. Moreover, in order to meet urgent telecommunications needs and solve temporary site acquisition problems, the company uses portable towers as a perfect solution for non-permanent communication systems.

### 5.5.5 Measuring the alignment

In chapter 3, section 3.5 see formulation for how to measure alignment and how to calculate the alignment score. Appendix (B) shows the executive's priorities at the business unit regarding project B to B to C. According to formula (1) in section 3.5, there are four priorities (see appendix B) for the executive.

Consider, for example, the executive's priorities in a business unit regarding the PM for the project business to business and business to individual customers (B to B to C). The four priorities were as follows:

Dimension 1:  $4+3+3+4= 14$  the average value is  $14/4 = 3.5$

Dimension 2:  $4+5= 9$  the average value is  $9/2 = 4.5$

Dimension 3:  $4+3= 7$  the average value is  $7/2= 3.5$

Dimension 4:  $3+4= 7$  the average value is  $7/2= 3.5$

The project manager, however, rated the four priorities of the same project as follows:

Dimension 1:  $4+3+4= 11$  the average value is  $11/3= 3.66$

Dimension 2:  $5+5= 10$  the average value is  $10/2= 5$

Dimension 3:  $3+3+3= 9$  the average value is  $9/3= 3$

Dimension 4:  $4+4= 8$  the average value is  $8/2= 4$

Based on the above scores, misalignment (as Euclidean distance) between the BS and the project is calculated as:

$$= \sqrt{\{(3.5-3.66)^2 + (4.5-5)^2 + (3.5-3)^2 + (3.5-4)^2\}} = 0.88$$

Theoretically, the maximum misalignment score would be 8 if all items were emphasised by the executive at 5 and all items were emphasised by the project managers at 1, or vice versa. The misalignment score was then converted into an alignment score as follows:

Alignment score for the given pair = Maximum misalignment score – Misalignment score of the responding pair = 8- 0.88 = 7.12

### **5.5.6 Method for alignment**

Company S seeks alignment through many methods and actions. Some of the methods are applied at the strategic level and others are applied at the functional level. Such methods are explained below.

- **Strategic level (corporate level)**

Company S applied the concept of EMO (execution management office). The EMO team contributes to the strategy development and prioritises the projects by selecting the projects that support the company's business strategies. Each member of the EMO team is responsible for the execution of one of the company's strategies. The corporate level in this company provides the strategic plan and policies (corporate strategy) for the company and cascades it to the company's four business units. The four units break the corporate strategy into business strategies (develops the business strategies and report back to the corporate level the results of such strategies) and select the competitive advantages and then cascade them to all the company's departments which, therefore, select the project managers. At the beginning of each year, the corporate level studies the telecoms market, highlights the overall strategies, evaluates the previous strategies and the implementation through workshops where the CEO, CFO, chief executives of all departments, the head of the business units, and the board of directors discuss these strategies.

The PMO or (SPMO) is located at the corporate level in order to monitor the implementation of the company's six strategies, supports the PM teams, highlights the dependencies between the projects, and reports to the CEO. Each unit forms its own PM team and has a programme management team which coordinates with the project managers in order to escalate their requirements and problems to the head of the PMO. To ensure the link between the business strategies and the projects, the PMO evaluates the company's business strategies, the projects, and the value that the projects are expected to provide and monitors the project performance. One of the PMO team explained:

*“The PMO is the eye of the CEO. We report and update to him the situation of our project.” TK-S-EX*

The project manager updates the status of his project and the PMO checks the project execution plan and tracks the project performance. Also, it helps the PM team to anticipate the risks that are associated with the project. Moreover, company S has a strategic department which includes four departments including strategic planning, risk management, management office, and corporate intelligence who provides external information for the company and internal information about the performance of the company’s units and departments. Although, the company has a strategic department and has adopted Kaplan and Norton’s balanced score card, the alignment effort is heavily focused at the strategic level only with little effort at the PM level. The situation was explained by one of the participants:

*“All that has been said is just in theory but the actual is completely different”.*

Also, an executive explained:

*“We are in a great exposure of the execution premium (framework) and we are trying to adopt the methodology of this framework (balanced score card) to execute our strategic plan properly.” AA-S-EX*

Company S employs KPIs at the level of VP (vice president) to monitor their strategies and measure the outcome of such strategies. For example, the customer experience strategy has a certain KPI which measures its performance by using a certain index to measure certain levels of the customer’s experience and the customer’s satisfaction. One of the EMO team commented:

*“We monitor the implementation of the strategy by checking its KPI and we monitor the outcome of our projects through their effect on the KPIs.” FA-S-EX*

- **Functional level (PM)**

The PM team in company S uses some tools to help them to meet the company’s objectives including dashboards, MS Project, meetings, risk management and brainstorming for possible risk mitigation, and KPIs.

## **5.6 Comparison analysis of cross-case**

Understanding the similarities and differences between the four cases helps in drawing patterns and the most emphasised aspects in the alignment in the telecommunications sector. This section follows techniques proposed by scholars in case study analysis (Eisenhardt, 1989; Miles and Huberman, 1994; Yin, 2009) as discussed in chapter 4, where data are analysed using a particular lens to develop a structured analysis. To do so, the comparison is based on the framework components, in particular, its main constructs: BS, PM, and alignment. The emergent concepts, themes, and factors are also considered in this section. The aim of this comparative analysis is to explain and highlight the key dominant contextual factors that affect the implementation of the company's business strategies in the projects as well as the alignment process at the functional level (PM level). While there are many similarities and shared denominators between the four cases, there are also some case-specific factors presented with justifications and reasoning to find the logic behind such differences.

### **5.6.1 Main features**

The four cases represent all the telecommunications companies in Saudi Arabia. As explained in Table 5.1, all the cases have a large number of stakeholders which means that the PM teams have difficulty in managing such stakeholders. It appears from the data that the cases rely heavily on some methods in order to align their projects with their business strategies. However, most of their efforts toward the alignment are done at the strategic level with a small amount of work at the PM level, which this research aims to fulfil. The data shows that the four companies differ in their alignment score and, as a result, the alignment status affects the project outcome and the implementation of the company's business strategy in the projects. The differences in the alignment scores between the telecommunications companies can be explained as the four companies differ in size and internal management structures.

### **5.6.2 Comparison against the framework components**

- **Alignment factors (AF)- Internal stakeholders and contextual factors**

In this section the internal stakeholders and contextual factors are presented and discussed as table 5-1 shows. The four cases, the internal stakeholders and contextual

factors and in particular communications between the project managers and the project stakeholders, executives support, the involvement of the project managers in the strategy development, units and department's support, and the project manager leadership competency are found to be important factors that affect the implementation of the company's business strategies, and have been considered as a trigger for the alignment process. Factors such as communications between the project managers and the project stakeholders, executive's support, the involvement of the project managers in the strategy development, and the project manager leadership competency are considered important that affect the alignment process since they are found to be significant enabling factors influencing the alignment between BS and IT (Luftman and Brier, 1999). However, although the other factors including PM team, project resources, and PM tools are seen as important by some of the participants, they are not in full agreement with them. This can be explained as the companies differ in their capital which helps the company to provide training programmes for their PM teams, provide the required management tools, and project resources.

- **Alignment factors (AF)- External stakeholders and contextual factors**

External stakeholders and contextual factors including government agencies, vendors and contractors, market condition, and site acquisition are found to be critical factors in the four cases. Such a result is not surprising since those factors are not controllable as they are out of the influence of the project managers. Therefore, managing the external stakeholders and factors such as the market conditions and site acquisition are considered difficult from both the project managers' and executives' perspectives. Many examples mentioned by participants can be used as evidence of how such factors affect the implementation of the company's business strategies. Accordingly, project managers need to analyse and consider the stakeholders (SH) and the contextual factors (AF) during the planning and execution phases.

**Table 5.1 Comparison between the four cases**

Comparison between the four cases					
Influence of internal project stakeholders and the contextual factors (AF) on alignment	Alignment Factors (AF)	Case M	Case Z	Case A	Case S
	Communication	√	√	√	√
	Executive support	√	√	√	√
	Involving PM in BS development	√	√	√	√
	Units' and Departments' support	√	√	√	√
	Leadership competency	√	√	√	√
	PM team	×	√	√	√
	Project resources	×	√	×	√
	PM tools	×	×	√	√
Influence of external project stakeholders and contextual factors (AF) on alignment	Government agencies	√	√	√	√
	Vendors and contractors	√	√	√	√
	Market condition	√	√	√	√
	Site acquisition	√	√	√	√
Methods are used for alignment	Strategic level	Three years strategic plan (e.g. business model)  Corporate affairs department  Project portfolio management	Three years strategic plan  Strategic table  Informal project portfolio  Informal strategic plan  PMO	Three years strategic plan  Informal project portfolio  PMO  KPI's  Hire consultant offices	Five years strategic plan  Alignment charts  PMO  EMO  KPIs  Strategic department

		PMO  Alignment charts  KPIs  Auditing department	A business development department  Hire consultant offices		Formal project portfolio management
	Functional level (PM level)	MS-project (clarity tools)  Project metrics and weekly status reports (CPM)  PLC phases  KPIs  Pre-job meetings  Risk management tools  PMO involvement	A pre-job conference and meetings  Project list and forms  Project metrics and monthly status report  PLC phases  Risk management tools  PMO involvement	KPI's  Pre- job meetings  Project metrics and monthly status report  Project list and forms  Dash board  MS project  Risk management tools  PMO involvement	KPI's  Pre-job meetings  Project metrics and monthly status report  MS project  Risk management  Dash board  PMO and EMO involvement
Alignment score		7.12	5.8	5.42	6.9
The project contribution to the company		3G contributed heavily (excellent)	The connectivity fibre project contributed average	The WiMAX project contributed poor	The B to B to C project contributed very good
The impact of alignment on the project outcome		High impact	Appreciated	Appreciated	High impact



## **5.7 The impact of the SH and CF on the nine knowledge areas of PPH**

As discussed in chapter 2, sections 2.3.8 and 2.3.9, there are nine knowledge areas including integration, scope, time, cost, risk, quality, human resources, communications, and procurement. The above knowledge areas consist of 20 planning processes that the project managers should manage properly during the execution phase (PMI, 2008). The impact of the alignment factors (project stakeholders and contextual factors) on the knowledge areas will be discussed in sections 5.7.1 and 5.7.2.

### **5.7.1 The impact of ISH and CF (AF) on the nine knowledge areas of PPH**

The internal stakeholders and the contextual factors affect the major product of the nine knowledge areas of the planning phase during the execution phase. See section 2.3.9 and table 2.3. This impact will be discussed below.

- **Effective communication**

It can be interpreted from the participants' experience in managing the projects that proper communication which employs proper methods and tools such as face to face meetings, e-mails, and workshops between the project managers and the project stakeholders influences some of the major products of the planning processes of the nine knowledge areas. For example, the lack of communication between the project managers and the project sponsor or the BS people affects the implementation of the planning process that defines how the project is executed, monitored, controlled and closed (project integration management) during the execution phase (see chapter 2, section 2.3.9). In other words, the PM team is responsible for executing the project within the project plan. However, due to the lack of communication between the project manager and the project stakeholders, expressly, the project sponsor and the BS people, the project will deviate from its original plan. As mentioned in section 2.3.9., the project managers should ensure that there is clear and continuing integration between the policy requirements, the programme, and the project's scope and deliverables since changes in policy might affect the programme and, in turn, cause the project to be modified or even cancelled (PMI, 2008). Many issues were discussed relevant to the communication factor in the four cases which led to some problems that affect the project deliverables

(project scope management). The project scope process is required to ensure that the project includes all the work necessary to complete the project successfully such as collect requirements, define scope, and create WBS (see chapter 2, section 2.3.9). However, some lack of communication affects the project management scope. For example, a project manager commented:

*“In the month of Ramadan the PM team encountered miscommunication with our executives and with the government agencies. In this month, some of our executives as well as the government employees take their annual vacation which affects the speed of getting the permits and the project starting date.”* AG-M-PM

Also according to an executive:

*“If the executives develop the scope in a proper way but do not communicate it well to the PM team and to the project stakeholders or do not update the status of the scope to them they will affect the project outcome negatively.”*

Since collecting requirements is the process of defining and documenting stakeholders' needs to meet the project objectives and the requirements are the foundation of the WBS, cost, schedule, and quality planning, the lack of communications between the project managers and the project stakeholders (as presented by the participants) affects the project management scope negatively. Lack of communications affects the project time management which includes the processes required to manage timely completion of the project (see chapter 2, section 2.3.9) during the execution phase. Lack of communication affects the execution of the project and the project activities' start and end dates (project time management). For example, a project manager from the construction and power department said:

*“Sometimes, important information is incomplete or comes to us very late. The delay in getting this information affected the project activities start dates and sometime forces the project to be shifted from its plan.”*

Therefore, this attribute affects the output of the processes which requires managing timely completion of the project such as project schedule, activity duration, and schedule baseline (see chapter 2, section 2.3.9).

Moreover, the lack of communication between the project stakeholders impacts the planned processes that are involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget (chapter 2, section 2.3.9). For example, misunderstandings between the PM team and the project stakeholder

influences the process involved in controlling the cost which affects the outcome of these processes including activity cost estimate, cost performance baseline, and project funding requirements which, therefore, leads to an increase in the final project cost (project cost management). A project manager stated that:

*“We experienced lack of communication between my team and the vendor. The project team ordered telecommunications equipment but the vendor brought the wrong one. This misunderstanding between us has delayed this project one month and increased the project cost.”*

Procurements plans are the only process of project procurement management in the planning phase (see chapter 2, section 2.3.9). This plan is also affected during the execution phase by the lack of communication and the misunderstanding between the PM team and the project stakeholders. In this example the misunderstanding between the project team and the vendor affected the procurement plan since the telecommunications equipment that was ordered incorrectly forced the PM team to make another order to correct the mistake.

Project communication management in the planning phase has a process of plan communications (see chapter 2, section 2.3.9). Lack of communications between the project stakeholders or using inappropriate communication methods or tools affects this plan. The other areas of knowledge such as human resource, quality, and risk are not affected heavily by the lack of communication between the PM team and the project stakeholders.

- **Executive support**

The support from the executives influences some of the major product of the planning processes of the nine knowledge areas. For example, proper support from the company’s executives affects the implementation of the planning process which defines how the project is executed, monitored, controlled, and closed (project integration management) during the execution phase (see chapter 2, section 2.3.9).

For example, the project sponsors and executives are usually close to the corporate and BS people. This location influences their contribution to the project scope and planning (integration). Many project managers highlighted the impact of the executives’ contribution on the project planning phase. The influence is not limited to the integration knowledge only. Many issues were discussed in the executive factor sections

which show how such support helped the PM team to overcome many problems. Such problems, if not solved, will affect the project deliverables (project scope management). The project scope process is required to ensure that the project includes all the work required to complete the project successfully such as collect requirements, define scope, and create WBS (see chapter 2, section 2.3.9).

Lack of executives' support affects the project time management which includes the processes required to manage timely completion of the project (see chapter 2, section 2.3.9) during the execution phase. Such a lack affects the execution of the project and the project activities' start and end dates (project time management). Therefore, this attribute affects the output of the processes which are required for managing timely completion of the project such as project schedule, activity duration, and schedule baseline (see chapter 2, section 2.3.9).

Moreover, such executive support impacts the planned processes that are involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget (see chapter 2, section 2.3.9). For example, the support from the executives influences the process involved in controlling the cost which affects the outcome of these processes including activity cost estimate, cost performance baseline, and project funding requirements which, therefore, leads to an increase in the final project cost (project cost management). As mentioned in section 5.2.3 (executive support company M), under some circumstances, the PM team has to prioritise one competitive advantage over another (cost, quality, time) in order to meet the company's business strategy. For example, a project manager stated that:

*“In order to meet the project time constraint, we jeopardised some of the quality within an acceptable range. However, the operation and maintenance department stopped the project. We could not solve this problem, so we escalated it to the project sponsor who solved this problem immediately.”*

As mentioned in section 5.3.3 (executive support company Z), the project manager could not use the v- sat satellite instead of the fibre without the support and approval of the executives. According to the project manager:

*“Changing the connectivity from fibre to satellite increased the project cost. Without the executive's approval, I could not have finished the project within the timeframe since I was exceeding the budget and reducing the signal quality (within an accepted range).”*

The examples stated by the participants indicate that the proper support from the executives enhances the implementation of the PM processes including quality planning, human resource planning, communication, risk management, and procurement during the execution phase. Executive support helps the PM team to overcome any obstacles that prevent the business strategies' implementation in the projects. For example, they provide extra resources when needed, simplify the process of obtaining permits, and clearing the equipment through customs, push the vendors and contractors to collaborate with the PM team, and mitigate the risks associated with the project. It has been noticed from the participants that the problems that affect the PM processes and cannot be solved at the PM level, are recommended to be escalated urgently to the executives or the project sponsors.

- **Involving the project manager in the strategy development**

The analysis of this attribute highlights the significance of involving the project manager in the strategy development and the influence of such involvement on strategy implementation. Such involvement helps in the understanding of the BS (up down influence), adds practical inputs and feedback to the strategy (down up influence), and builds an effective work environment. Moreover, such involvement affects some of the products of the planning processes of the nine knowledge areas during the execution phase. For example, this involvement helps the project managers to link the project plan and the project scope (project integration and scope management) with the company's business strategy during the course of the project (planning and execution phase).

Involving the PM team in the strategy development affects the creation and implementation of the planning process that defines how the project is executed, monitored, controlled, and closed (project integration management) during the planning and the execution phases (see chapter 2, section 2.3.9). In other words, the PM team should execute the project within the project plan and the plan should follow the company's business strategy. Such involvement affects the other PM processes during the planning phase. For example, the effect of such involvement on the project time management can be recognised by the executive's statement:

*“We changed the project timeframe as suggested by the project manager. The project manager has more experience in the technical issues than the strategy planner.”*

Similarly, other areas of knowledge, such as cost and quality, are affected heavily by such involvement since the project managers reflect understanding about the strategy on the formation of the plan process and execute the project according to this plan which indicates the project timeframe, cost, and quality. Project risk management in the planning phase has five processes including plan risk management, identify risks, perform qualitative risk analysis, perform quantitative risk analysis, and plan risk responses (see chapter 2, section 2.3.9). Planning and managing the risks during the project execution is enhanced by such involvement since the project managers in the telecommunications companies alert the strategy people to the risks that affect the implementation of the business strategies as they bring their experience to bear from managing the previous projects.

Careful and clear planning enhance the probability of success for the five risk management processes. For example, identification of risks (e.g. time, quality, cost, vendors, government agencies, market conditions) is the process of determining which risks may affect the project and documenting their characteristics. Therefore, the output of this process (risk register) can be enhanced by such an involvement (the project managers can discuss such risks with the BS people). Similarly, performing qualitative risk analysis, quantitative risk analysis, and planning risk responses are affected by such involvement. A project manager explained:

*“Actually, we have experienced some difficulties regarding the goal and objectives of the company. However, if the project managers and their teams are close to the strategy people, they will discuss any matter related to the BS implementation.”*

The implementation of a communication management plan can be enhanced by such involvement as the involvement helps to build an effective work relationship with the executives. Therefore, such an environment helps to accelerate communications. Although procurement plans are influenced by other alignment factors, they are not affected strongly by the involvement.

- **Departments and units’ support**

Support from the company’s units and departments enables the major products of the planning process which defines how the project is executed, monitored, controlled, and closed (project integration management) during the execution phase (see chapter 2,

section 2.3.9). For example, planning, monitoring and executing the project needs proper coordination with the PM team and the company's departments as such departments might have a stake in the project. Having a small or large stake in the project influences the implementation of the PM processes. During the planning phase, the PM team needs to know some information about the stake that the other departments have in the project in order to consider them during the planning and execution phases.

Their contribution affects the processes of developing the plan, defining the project scope (project deliverables), executing, monitoring, and closing the project (project integration management). During the execution phase, any delay from their side will affect the project timeframe. Also, if their stakes are implemented with unacceptable quality, they will affect the quality of the project. Moreover, the lack of support from the company's departments impacts on the planned processes that are involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget (see chapter 2, section 2.3.9). For example, an executive commented:

*“The financial department reduced the project budget from one billion SR suddenly to 800 million. This change in the budget affected the PM process.”*

The planning phase involves a process called “developing human resources”. It is the process of identifying and documenting project roles, responsibilities, and required skills, reporting relationships, and creating a staffing management plan (see chapter 2, section 2.3.9). The output of this process is the human resource plan which is affected by the departments and units in the four companies as they contribute to the formulation of the cross functional team (human resource management). Providing representatives from their departments to the PM team enables the major products of the planning process. Also, such contribution enhances the communication process between the project team and other departments (project communication management).

Procurement is difficult to manage since the project materials and equipment need to be approved by many departments such as the procurement and R&D departments. The implementation of the procurement plan is affected by some of the company's departments. For example, a project manager commented:

*“Because the product was not available in the kingdom, we had to order it from the manufacturer directly. This process took at least four months because we have to have consultancy from many departments such as the R&D department and manage this order with our vendor.”*

Planning the risks that might occur during the execution phase and managing such risks becomes easier when the company’s departments share such risks with the PM. Therefore, involving the related departments during the planning phase will help to mitigate the risks properly.

- **Project manager leadership competency**

Leadership competency is considered as one of the major skills that the project manager should have. The impact of such a skill on the major products of the PM planning processes is clear. For example, this skill enables the project manager to define how the project is executed, monitored, controlled, and closed with apparent links to the company’s business strategy (project integration management) during the execution phase (see chapter 2, section 2.3.9). For example, leadership competency impacts the creation and implementation of the project plan and scope. The project manager who owns the leadership competency can link the project scope and plan with the company’s goal and objectives and execute such a plan properly. Linking the project’s activities and the project deliverables (project scope) with the company’s business strategies is not a simple task. It needs leaders who can manage such activities so that they link to the company’s business strategies. Therefore, the leadership competency enables the project manager to take risks such as changing or overlapping some of the project’s processes, changing start or end dates of some of the project’s tasks, or starting the project without receiving complete documents such as government permits in order finish the project within the project’s time, cost, and quality constraints. A project manager explained:

*“I tried to construct the cell phone towers in safe places and with less cost. Sometimes the planning and design department put the towers in a valley because they had not visited the site. If I construct the towers in such locations, during the rain these sites will be flushed away and it will cost the company extra for building another.”*

It can be inferred from the interviews and observations that the project managers who own such skills are good communicators since they communicate effectively with the project team and with the project stakeholders (project communications management).



In addition, leading the project team is one of the project manager's responsibilities. Stimulating the project team to increase their performance and productivity more than 100% is a possible solution to overcome the lack of human resources and to follow the policy of the company to increase the productivity and decrease the number of workers (human resource management). This policy was made in the telecommunication companies in order to reduce the company's expenses to survive in such market competition. Leadership competency helps the project manager to manage the procurement plan and select the best scenarios for ordering the telecommunications equipment (procurement management); locate the towers during execution in order to reduce the cost (project cost management) and the time for the construction (project time management) and produce better quality (project quality management).

- **Project management team**

The project management team is considered to be one of the internal stakeholders that affects the project management process. The impact of the project team on the major products of the PM planning processes is clear. For example, the project team helps the project manager to define how the project is executed, monitored, controlled, and closed while maintaining consistency with the company's business strategy (project integration management) during the execution phase (see chapter 2, section 2.3.9). For example, the project team influences the creation and implementation of the project plan and scope which they can link with the company's goal and objectives so that the plan can be executed properly. Aligning the project's activities and the project deliverables (project scope) with the company's business strategies is not a simple task and requires an expert team.

It can be inferred from the interviews and observations that the expert project team helps the project manager to communicate effectively with the project stakeholders (project communications management). The team members seem not to have an effect on human resource management. However, they help the project manager in his tasks. Similarly, the project management team, as the subject experts, influences project risk management by planning and identifying the risks that are associated with the project.

- **Project resources**

Project resources influence some of the major products of the planning processes in the nine knowledge areas. For example, project resources affect the implementation of the planning process which defines how the project is executed, monitored, controlled, and closed (project integration management) during the execution phase (see chapter 2, section 2.3.9). Many project managers highlighted the impact of the project resources on the project planning phase. Many issues were discussed in the project resources sections which show that the availability of resources helped the project management team to manage the project strategically.

Lack of resources affects the project time management which includes the processes required to manage timely completion of the project (see chapter 2, section 2.3.9) during the execution phase. Such a lack affects the execution of the project and the project activities' start and end dates (project time management). Therefore, this attribute affects the output of the processes which are required for managing timely completion of the project such as the project schedule, activity duration, and schedule baseline (see chapter 2, section 2.3.9). Similarly, a lack of resources affects the project's final cost because such a lack delays the project closure. Therefore, it increases the project cost (project cost management).

Moreover, such a lack of resources impacts the planned processes that are involved in estimating, budgeting, and controlling costs (project cost management) so that the project can be completed within the approved budget (see chapter 2, section 2.3.9). As mentioned in section 5.3.3 (project resources company S), resources such as materials, human, and PM tools are important for the project and the implementation of the company's business strategies. If the project resources are not enough, the scope of the project will be shifted away from its original plan.

Lack of resources impacts the planning processes group including plan quality, human resource planning and the plan for managing the risks. In addition, procurement plans are the only process of project procurement management in the planning phase (see chapter 2, section 2.3.9). This plan is also affected during the execution phase by a lack of resources. Finally, project communication management in the planning phase does not seem to be affected by a lack of resources.

- **Project management tools**

Project management tools were found to be important in this study since they affect some of the products of the planning phase. PM tools such as Microsoft Project Management, Excel spreadsheets, Gant charts, project charters, and Primavera help the PM team to plan and execute the project in the proper way. For example, one of the project managers explained:

*“If the project manager does not have the right tools, the project team will have difficulty to monitor and control the project processes.”* HZ-A-PM

The impact of such tools on the major products of the PM planning processes is obvious. For example, the project management tools help the project manager and the project team to execute, monitor, control, and close the project in a way consistent with the company’s business strategy (project integration management) during the project phases (see chapter 2, section 2.3.9) and also helps the project team to collect requirements and create the WBS (project scope management).

In addition, these tools play a major role in planning and managing the project activities’ start and end time (project time management), the project cost (project cost management), the project quality (project quality management), and the project human resources (project human resource management). Therefore, such tools have an impact on the planning processes group including estimating activities resources, estimating activities durations, estimating costs, and managing quality.

Project management tools, such as e-mail, enhance the telecommunications between the project management team and the project stakeholders. Such tools affect the project communications management also they help the project management team to identify, plan, and manage the risks that are associated with the project. Moreover, such tools support the project management team when planning for project procurement. Finally, a lack of such tools will affect the project management processes and the project team’s efforts as well.

### **5.7.2 The impact of the ESH and CF on the nine knowledge areas of the PPH.**

The effect of external stakeholders and contextual factors including government agencies and services providers, vendors and contractors, site acquisition, and market

conditions on the major product of the planning processes of the nine knowledge areas during the execution phase will be discussed next.

- **Government agencies and service providers**

Government agencies and service providers affect the implementation of the planning process that defines how the project is executed, monitored, controlled, and closed (project integration management) during the execution phase (see chapter 2, section 2.3.9). For example, according to the participants and the observation, the original plans for many projects were revisited and updated many times during the course of the projects. Updating or revising the original plans are either due to the complicated processes of issuing the project's permits, clearing the telecommunications equipment through customs, obtaining electric power from SCECO or due to new regulations. Similarly, the project scope and deliverables are subject to change as a result of these reasons (project scope management). As discussed earlier, the project scope process is required to ensure that the project includes all the work required to complete the project successfully including collect requirements, define scope, and create WBS (see chapter 2, section 2.3.9). However, many problems and difficulties stated by the four companies affect the project scope management and the other major products of the planning processes (please refer to the government agencies' sections).

Project time management is influenced by issuing the government's permits. Any delay in obtaining such permits will affect the project launch time which, therefore, might affect the other projects that depend on the completion of the project. Moreover, some projects are finished on time but the project managers cannot close them as they have to wait until the electric company (SCECO) supplies the electric. According to a project manager:

*“Any project that finishes at the end of the year has to wait until the beginning of the next year in order to get the electric power. Even though the project was finished, we could not put the sites on air because we did not have the electric power from SCECO.”*

Due to some government regulations, some projects either exceed the budget or jeopardise quality. For example, such a regulation impacts the planned processes that are involved in estimating, budgeting, and controlling costs so that the project can be completed within the approved budget (see chapter 2, section 2.3.9). For example, such a problem influences the process involved in controlling the cost which affects the

outcome of these processes including activity cost estimate, cost performance baseline, and project funding requirements which, therefore, leads to an increase the final project cost (project cost management). A project manager explained:

*“SCICO electrical company changed the voltage from 110 to 220 without informing us. The change forced us to change some parts of our projects during the execution causing the PM team to exceed the budget.”*

In addition, the process of identifying quality requirements and/or standards for the project and product, and documenting how the project will demonstrate compliance (project quality management) is affected by this attribute. For example, a project manager commented:

*“Due to the municipality’s rules and regulations, we cannot guarantee the quality of our signal in some districts.”*

Managing the processes such as project time management, project cost management, and project quality management are difficult if the project team encounters difficulties from government agencies and the services providers. The procurement plan in many cases is not managed correctly since the delay of clearing the telecommunications equipment from the customs affects the implementation of the plan. For example, many participants claim that some of the project materials which were ordered from outside the Kingdom took a long time to clear them through customs. A project manager explained:

*“It is hard to manage our procurement plan since it is difficult to forecast or estimate the time needed to clear the equipment from customs.”*

This research found that the three knowledge areas including the communication plan, the risk management plan, and human resources are not affected directly by the government agencies and service providers.

- **Vendors and contractors**

In Saudi telecommunications companies, vendors are responsible for providing and installing the telecommunications equipment and the contractors are responsible for the infrastructure work for the sites such as the civil work. Vendors and contractors can affect the PM processes unconstructively. The implementation of the project plan and scope are subject to the mistakes of the vendors and contractors. If the vendors and

contractors are not qualified for telecommunications projects, the project deliverables will not meet the project's goal and objectives. For example, vendors and contractors affect the implementation of the planning process which define how the project is executed, monitored, controlled and closed (project integration management) during the execution phase (see chapter 2, section 2.3.9). The PM team is responsible for executing the project within the project plan. However, due to vendors' and contractors' mistakes, the project managers in some cases experience difficulties in controlling or even closing their projects. In other cases the project managers miss the original plan. Moreover, they affect the other products of the nine knowledge areas including project time management, cost management and quality management. For example, many project managers complained that:

*“Some of the vendors do not follow the project team's orders or keep their promises to finish the project on time.”*

They also affect the project quality management. One of the project managers explained:

*“When I visited the site, I found the fibre optic cables were placed 2 cm deep instead of 50 cm. If such a problem is not corrected, it will affect the quality of the fibre connectivity because the fibre cables will be exposed and easy to cut.”*

Another project manager commented:

*“Our vendor distributed some of the project's work to many contractors but those contractors did not understand the company's rules and standards. As a result, they provided less quality work.”*

Therefore, vendors and contractors affect the implementation of the company business strategy since some of them do not have sufficient staff, tools or resources. According to one participant:

*“One of our contractors brought a bottle of water to check if the foundation is levelled or not. He did not use the right tools usually used in such situations. This kind of work affects the quality of the project.”*

In addition, they affect the human resources since they participate in the cross-functional team and as a result they affect the team performance for managing the human resources. Some of the vendors minimise resources or hire unqualified staff in

order to reduce the expenses. If they do not provide enough human resources, they will jeopardise the company's business strategy. A project manager stated that:

*"We discovered that some of the vendor staff was not qualified".*

Another example that was mentioned by the project team:

*"During the world economy recession, some of our main vendors somehow reduced some of their people so we could not manage the project with that small number of workers."*

The implementation of the project procurement's plan is affected by the vendors since they are responsible for providing the telecommunications equipment. Sometimes vendors are responsible for providing the procurement. However, they could not manage it properly. For example, a project manager said:

*"We ordered specific equipment from the vendor but he brought equipment which was not what we wanted."*

A participant explains:

*"I was relying on Apple Company for providing iPhone 4 for my project. We announced to provide iPhone for our customers, but Apple did not provide these phones as they promised."*

Vendors and contractors do not seem to have big or direct influence on the project communication plan and the risk management plan.

- **Site acquisition**

The construction of towers faces resistance and rejection from the neighbourhood. The complication of the process of owning or leasing the sites affects the implementation of the planning process which defines how the project is executed, monitored, controlled, and closed (project integration management) and the project scope during the execution phase since the project's plan is subject to change due to redesigning and relocating the towers. For example, according to one executive:

*"The owners of the properties and the residents nearby the sites affect the implementation of our business strategies. For example, after starting one of our*

*projects, the neighbour complained to the government. They claimed that our towers affect their health and reduce the price of their properties. Therefore, we had to remove some of the towers to other locations.”*

Also, the project starting time (project time management) is affected and sometimes causes severe delay due to the difficulty of owning or leasing the sites. For example, a project manager highlighted:

*“Owning such sites requires getting permits from the municipalities, coordinating with the electrical company (SCECO), and negotiating with the owner of the property.”*

The above quotation indicates the long process that the project management team conducts during the project execution. Such a complicated process affects the project time management. The cost of the project can be increased if there is a scarcity of sites that the companies can buy or lease. Procurement plans in many cases are not managed correctly by the project managers as a result of the delay of owning the towers or the exaggeration in the prices of buying the sites from their owners. Monitoring and control of the project risks during the execution phase is affected by this attribute especially when the PM team faces resistance from the residents or rejection from the government to locate the towers in their properties. The processes of the other project management knowledge areas including project resources and project communication are not seen to be affected by the site acquisition factor. For example, a project manager pointed out:

*“Owning such sites requires: getting permits from the municipalities, coordinating with the electrical company (SCECO), and negotiating with the owners of the property.”*

- **Market conditions**

According to the project managers, during the course of the projects, some of the infrastructure of the sites should be upgraded in order to be compatible with the new technology. Such changes affect their project plan and scope. Moving from one technology to another rapidly confuses the work of the PM team which affects the processes of managing project time, cost and quality. For example, the impact of the acceleration of such technologies on the telecommunications companies can be explained by an executive:



*“The arrival of the 4G technology forced us to launch many projects and improve the projects (network) that were under construction in a short time.”*

The change in the telecommunications technologies or in the market requirements is considered to be one of the major threats that affect the project implementation plan. This threat is explained by an executive:

*“One of our competitors launched the new technology ahead of us (3G) which forced our team to change the implementation plan.”*

In addition, the market demand forces the four companies to accelerate the implementation of their projects in order to satisfy the needs and expectations of their customers which, therefore, influences the PM processes including procurement, risk, plan, quality, time, and cost. One of the company’s executives said:

*“Being in a dynamic market and in hyper competition pressures us to expedite the implementation of our projects which therefore affect the PM process.”*

The high competition between the four telecommunications companies in Saudi Arabia affected the implementation of most of the nine knowledge areas (except the project communication management). For example, a project manager explained:

*“We planned to launch our product in October 2010, but we discovered that one of our competitors was going to launch a similar product before us, therefore, we were forced to change our plan during the execution phase.”*

Another project manager explained:

*“Sometimes we have to change the plan completely or partially in order to expedite the project and catch up with the other competitors. However, squeezing the project life cycle will increase the project’s cost and reduce the quality.”*

## **5.8 Conclusions**

The chapter presented research findings of four cases from the telecommunications private sector in Saudi Arabia. The findings were presented in accordance with the conceptual framework concepts and themes. Each case gives an overview on how the alignment process could be achieved taking into account the factors that affect the implementation of the company’s business strategy, and the relationship between the

alignment and the outcome of the project. Thereafter, a comparative analysis of the cases offers an explanation of the main patterns, themes, and case-specific elements, and also to understand the phenomenon from different angles. It is found that:

- The proposed framework is able of capturing the contextual factors (AF) that affected the implementation of the company's business strategy in the project and affected the nine knowledge areas of the project management in the telecommunication companies in Saudi Arabia. Many contextual factors have emerged from the cases, confirming simultaneously the value of the proposed framework to the alignment process and also the need for more investigation and analysis of this area in future studies.
- Fieldwork evidence from the four cases showed that the proposed framework can assist the project managers to plan and execute the projects in a strategic way. The four companies do not have proper methods for measuring their alignment between the business level and the PM level. Therefore, this research would be of benefit for them.
- The differences in the alignment score between the four cases are evidence that the alignment contributes positively to the success of the project. Many techniques and methods are used by the cases in order to align their projects with their goal and objectives. However, most of these methods are used at the strategic level. A proper alignment can be achieved by considering the internal and external stakeholders and the contextual factors that are proposed in the framework as major risks that threaten the implementation of the company's business in the projects during the planning and executing phases.

# Chapter Six: Findings, Discussion, and Conclusion

## 6.1 Introduction

While chapter 5 presented data gathered from the four telecommunications case studies and organised it using the key themes in the framework, this chapter discusses the findings from the cases based on the previous literature. Also, it interprets and provides possible explanations and implications of the empirical evidence. The chapter revises the conceptual framework to identify the modifications that emerged from the empirical investigation. Revision starts with the change of the order of the factors that affect the alignment and then highlights the new emergent factors that arose from the study.

This research builds on stakeholder theory which highlights the effect of the project stakeholders on the project and the impact of the project on the project stakeholders (Freeman, 2010; Larson and Gray, 2011; Assudani and Kloppenborg, 2010) and on the derived contribution of Srivannaboon and Milosevic (2006) who show that the influence between BS and PM is two-way; and Luftman and Brier (1999) and Tan and Gallupe (2006) who highlight the enablers and inhibitors of IT and IS alignment (between strategies and IT& IS). Such factors were investigated deeply in this research to observe their impact on the process of the PM as well as on the alignment of the PM with the BS and to drive an empirical contribution. To improve the alignment, the literature suggests identifying the managerial practices that affect the alignment process (Chan, 2002; Holbeche, 2009; Skulmoski and Hartman, 2010).

Finding these factors has captured the attention of many scholars. Such scholars conceptually agree upon a number of factors to enable alignment. Yet, these factors have not been empirically validated as important factors that enable the alignment between PM and BS. Therefore, there is a clear need for a theory for a comprehensive empirical study. This study attempts to fulfil this need.

## 6.2 Themes' analysis

This section captures the findings from the interviews and links them to the conceptual framework. The use of multiple types of data from the interviews and from available literature triangulates the results, aiding their reliability. Sections 6.2.1 and 6.2.2 show the factors that affect the alignment process which answers research question 1: how could the alignment process of PM and BS be achieved and what are the factors included?

### 6.2.1 Alignment factors (AF)- Internal stakeholders and contextual factors

- **Communication**

Luftman and Brier (1999) and Tan and Gallupe (2006) who addressed the enabling and inhibiting factors of the alignment between strategies and IT and IS, included the communication attribute in their findings as one of the fifteen enablers but it was ranked in thirteenth place (see appendix B, tables B3 & B4). However, this research found effective communication between the PM team and the project stakeholders (e.g. executives) is vital and ranks in first place among many internal factors (to be discussed next) that affect the alignment process. Consistent with the empirical research, many scholars who also study the alignment in different areas and levels (except the PM) find communication to be one of the important enabling factors for alignment (Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Rosser, 2002), see table 2.5.

In addition, Fortune and White (2006) highlight 27 project success factors based on 63 publications (see table 2.2). Among these factors, they rank communication in fourth place. Furthermore, Assudani and Kloppenborg (2010) consider that effective communication is one of the important factors influencing project outcome. Similarly, communication is considered as one of the nine knowledge areas that the project manager should manage effectively during the course of the project (PMI, 2008).

The empirical study reveals that the effective communication between the project manager and the project stakeholders enables the alignment process which, therefore, helps the PM team to implement the company's business strategy in the project properly. The empirical study highlights four reasons for including communication in the framework. These reasons are:

1. To overcome most misunderstandings between the PM team and the project stakeholders.
2. To gain clear knowledge and complete information at the right time
3. Although each project has an execution plan which addresses integration, scope, time, cost, quality, human resources, communication, risk and procurement, most of the projects are subject to internal or external obstacles. Such obstacles can be solved by effective communications (e.g. arranging many meetings to discuss such issues).
4. Effective communication accelerates the planning and execution processes.

- **Executive support**

Luftman and Brier (1999) and Tan and Gallupe (2006) rank executive support in first place (see appendix B, tables B3 & B4). Consistent with their findings, the empirical study, which similarly finds executive support, is one of the important internal factors for alignment, ranking in second place among many factors. The importance of such a factor comes from the power and experience that the executives have to solve the problems associated with the projects. Therefore, they help project managers to link their projects to the company's business strategy. For example, they make the company's business strategy clear to the project managers, help the project team overcome the internal and external risks that face the project during the execution phase (e.g. vendors, government agencies), help the project manager to obtain additional resources and stimulate the company's departments to support the PM team.

It is not surprising that the empirical research finds this factor to be one of the important factors that enable the process of alignment since executives are considered as one of the project stakeholders that the project managers should manage carefully (Larson and Gray, 2011). In addition, the involvement of the executives explicitly concerned with the management of projects in strategy implementation seems, a priori, to be sensible, if only because of the need for senior management to have some control over expenditure and intended action (Morris and Jamieson, 2005). Furthermore, Fortune and White (2006) rank executive support in first place as one of the important factors that affect the PS (see table 2.2). Similarly, the importance of this factor as a key player for meeting the company's goal and objectives is highlighted by many scholars. For example, they suggest that the essence of top management support relates to effective

decision making when managing risk, and to authorise business process change (Achterkampnd and Vos, 2008; Young and Jordan, 2008; Hyväri, 2006; Broner et al., 2002).

- **Involving the project manager in BS development**

Luftman and Brier (1999) rank this attribute in second place after executive support in their study (see appendix B, table B3). However, Tan and Gallupe (2006) rank this attribute in eleventh place among 15 enablers in their study (see appendix B, table B4). Surprisingly, Fortune and White (2006) do not find involving the project manager in the strategy development as an important success factor for the project (see table 2.2). However, the empirical research finds this attribute to be one of the most important factors that enables alignment, ranking it in third place between the internal factors.

Such an attribute drives the attention of most of the project managers in the four companies. According to them there are three reasons for inviting project managers to participate in strategy development. Firstly, such involvement helps the project manager of big projects to understand the BS which, therefore, influences the implementation of the BS positively (up down influence). Secondly, the project manager provides practical inputs and feedback to the strategy (down up influence). Thirdly, such involvement builds an effective work environment with the executives and BS people. However, Crawford (2005), for example, finds that senior managers believe project managers should not be involved in strategy formulation. Moreover, project managers are perceived as strongly execution oriented and not as strategically important by senior managers (Thomas et al., 2002). Supporting the above argument, Morris explains that the PMBOK® Guide (PMI, 2008) assumes no real involvement of PM in front-end definitions, including strategy formulation (Morris, 2005). Consistent with the literature, some of the executives in the four companies did not see involving the project managers in the strategy development as important. According to them, it is enough to obtain their comments and feedback on the strategy without direct involvement in the strategy development.

This research reveals that if the strategy is formulated correctly (the executives' responsibility) but not implemented in the projects properly (the project managers' responsibility), the projects will not meet the company's goal and objectives and, as a result, they will be wasting company resources. According to the literature, about 30%

of the companies' business strategies are not implemented in the projects (Miller, 2002) since the role of PM in strategy development and implementation is often not clear (Morris and Jamieson, 2005). For example, the strategic plans are usually developed at the executive level and the implementation plan is developed and executed at the functional level (PM level). Lack of cooperation between the two levels may lead to poor implementation and poor awareness of the company's capabilities and objectives (Meredith and Mantel, 2011).

- **Departments and units' support**

Even though this attribute is considered as one of the project stakeholders that affect the PM process (Larson and Gray, 2011), it was not included in previous studies as a PS factor (Fortune and White, 2006) or as one of the enablers for the alignment process (Luftman and Brier, 1999; Tan and Gallupe, 2006). This new factor has not been discussed in the literature and found from the empirical investigation as an impacting factor for alignment. The telecommunications companies have many departments such as business, marketing and sales, IT, finance, human resource, PM, networking department, operation, and planning. According to the PMI (2008), the project manager has to manage the internal stakeholders correctly since they impact the project outcome.

The research reveals that some of the companies' departments affect the PM process which, therefore, impacts the implementation of the company's business strategies in the projects. Such departments have stakes in the project which make their contribution important for successful BS implementation. The bigger stake the department has in the project, the bigger the impact on the project outcome. This clarifies the stakeholder theory which states that the stakeholders (company's departments) affect the project (Assudani and Kloppenborg, 2010).

The empirical research found the dependencies between the companies' projects needs proper coordination and collaboration between the projects managers who manage the company's projects since each department runs its projects and the project manager team belongs to the department. Such collaboration will enable the process of alignment. Accordingly, linking the PM to the company's business strategy requires the companies to encourage their departments to contribute to the project positively and support the PM team to plan and execute the project in a strategic way. The support group (e.g. departments and units) is considered one of the project stakeholders that the

project managers should manage carefully and develop suitable methods for managing the dependency between these stakeholders (Larson and Gray, 2011).

- **Leadership competency**

The PM is not limited to managing tasks, employing certain KPIs, or providing deliverables (Aaltonen and Kujala, 2010). It includes complicated processes such as managing the stakeholders and the risks associated with the project. Therefore, the project manager leadership competency is one of the important factors that helps the project manager to overcome such difficulties and ensures the project is aligned with the company's goal and objectives. The empirical study reveals that owning the leadership competency enables the project manager to plan and execute the project in a strategic way. Hence, this skill enables the process of alignment. Such a competency helps the project manager to lead the project and the project team with apparent links to the company's business strategy. On the other hand, a project manager who does not own such a competency most likely plans and executes the project in traditional ways (focuses on completing the job rather than opening new markets for his company or meeting the company's goal and objectives) (Shenhar et al., 2005). The project managers who own such skills gain exposure to the corporate and BS levels, take and mitigate the risks, make critical decisions quickly and wisely, and solve problems innovatively which, therefore, helps the project manager to achieve the company's business strategies.

Furthermore, in case of facing shortages in resources, the project manager who utilises whatever is available such as human resources, materials and tools will be able to link his project with the company's goals and objectives. However, such efforts need a leader who increases the productivity of his team (multiplier) and improves the capability of the PM process (reengineering) rather than increases the number of his team or the other project resources (dominator). The telecommunications companies realise the significance of such a competency. Thus, they provide leadership courses, workshops, reengineering, and value engineering programmes regularly for their employees especially for the PM team. This study finds leadership competency to be one of the important factors that enables the alignment process since it affects the implementation of the company's business strategy. Such results support the work of Fortune and White (2006) which consider leadership competency as one of the important factors for project success (see table 2.2) and Luftman and Brier (1999) and



Tan and Gallupe (2006) who highlight this attribute as one of the top five enablers in their studies. In addition, such a competency is necessary for projects executed in a dynamic market since they may gain benefit from the project managers who own such competency (Turner and Muller, 2005).

- **Project management team**

The project team was not considered as one of the enablers for alignment by the previous studies (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon, 2006a). However, the empirical study reveals that this factor is critical for the alignment process between the PM and the company's business strategy. The study finds one of the cases did not consider the project team as a critical factor for the process of alignment. For example, even though case M understands the need for an expert team to plan and execute the project within the project constraints, company M did not consider this factor as important for the alignment process.

Similar to previous studies (Fortune and White, 2006; Shenhar and Dvir, 2007; Scott-Young, and Samson, 2008; Li et al., 2011), three cases ensured that forming a cross-functional team with multiple expertise and skills helps to manage the project strategically since the project team affects the project outcome. Similarly, the study supports the previous literature (Assudani and Kloppenborg, 2010; Shenhar and Dvir, 2007; Larson and Gray, 2011) for ensuring the need to consider the project team as one of the internal project stakeholders that affects the PS. Moreover, the empirical study finds the PM team is critical for the implementation of the company's business strategy and enables alignment since the expert team helps to overcome the problems that affect the PM process during the execution phase (Li et al., 2011).

- **Project resources**

Similarly, project resources are not considered by the previous research as an important factor for alignment (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon, 2006a), but highlight significance for the process of alignment in two cases. Moreover, the research found project resources as one of the PS factors consistent with Fortune and White (2006). Therefore,

project resources should be considered as one of the internal project stakeholders that enable the alignment process as suggested by Assudani and Kloppenborg (2010) and Larson and Gray, 2011). Logically, if the PM team are not supported by enough resources, the project will not meet its objectives. For example, due to the hyper-competition between the four companies and the acceleration in the development of telecommunications technology, the four companies conducted many projects at the same time. As a result, most of the project managers competed for limited resources. Hence, the PM competencies are influenced by the company's strengths and weaknesses for providing the required resources for the PM team (Isik et al., 2009).

- **Project management tools**

Not all of the four companies have internal consensus on the effect of the PM tools on the alignment process and on the implementation of the company's business strategy. Two companies (M & Z), as well as the previous research on alignment by many scholars (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon, 2006a), do not consider this factor as one of the factors that affect the alignment process. However, the other two telecommunications companies (A & S) find the PM tools are vital for assisting the PM team to monitor and manage the project during execution. Consistent with Fortune and White (2006) and Nguyen, Trong-Hung et al. (2012), the research finds this factor is an important factor because it affects the project outcome and finds it vital for aligning the project with the company's business strategy.

PM tools such as Microsoft Project Management, Excel spreadsheets, Gant charts, project charters and Primavera are useful tools for the PM team as they help the PM team to link their projects with the company's strategies. The project managers employ these tools to solve or compromise the conflicts between the PM team and the other project stakeholders such as the vendors. Such tools help the project team to manage the projects in a strategic way since they help the project team to forecast the problems, update the work automatically, ensure that the BS is implemented in the projects, and help the project managers as well as the executives to track the PM processes and give an alert if something goes wrong.

## **6.2.2 Alignment factors (AF)- External stakeholders and contextual factors**

Surprisingly, none of the external stakeholders and contextual factors (AF) was mentioned in Luftman and Brier (1999) and Tan and Gllupe's (2006) work or the works presented by the scholars who investigated the alignment in different areas (see appendix B, tables B1, B2, B3 & B4). However, the researcher finds considering the external stakeholders and factors during the course of the project are vital for the alignment process. This research reveals that government agencies, vendors and contractors, market condition, and site acquisition are major risks that affect the implementation of the telecommunications companies' business strategies in their projects. Managing such factors is difficult since these factors are out of the project manager's control.

- **Government agencies**

Government agencies are considered as one of the critical external project stakeholders that the project managers are advised to manage carefully when planning and executing the project (Larson and Gray, 2011). The four telecommunications companies have consensus on this factor and consider it as the most critical factor affecting their alignment process and the implementation of their companies' business strategies. The empirical research finds this factor as the most inhibiting factor which influences the PM process for achieving the company's business strategies. On the other hand, such a factor was not highlighted as an inhibitor factor that affects the alignment process by the previous research (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon, 2006a). In addition, the literature that aimed to identify the PS factors does not mention this factor as affecting the project outcome (Fortune and White, 2006). According to the empirical study, government agencies play a major role in the success of the implementation of the telecommunications companies' business strategies.

Government agencies are considered by the four cases as the most critical risk encountered by the company's strategy implementation in the project. Therefore, the research finds this factor as one of the inhibitor factors that affects the alignment process. The study indicates many risks associated with this attribute. These risks are:

- Risk of issuing the permits from the municipalities (delay or rejection)
- Risk of obtaining available frequencies
- Risk of obtaining the electrical power from the electrical company (SCECO)
- Risk of releasing new regulations
- Risk of clearing the telecommunications equipment from customs

Such risks stop some innovative projects before they start or terminate them at an early stage. Consequently, considering such risks during the project planning and execution phases is vital for the achievement of the company's business strategy.

- **Vendors and contractors**

Vendors and contractors come in second place to the external factors as one of the most enabling or inhibiting factors affecting the implementation of the company's business strategy and alignment process. Moreover, the study finds this factor as one of the external project stakeholders that the project managers should manage carefully during the project phases. This finding supports Larson and Gray's point of view which highlights this attribute as one of the main critical stakeholders that should be considered by the PM team (Larson and Gray, 2011). Similar to the other external stakeholders, vendors and contractors are not mentioned by the previous alignment research (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon, 2006a).

However, it is considered by the project management research as one of the PS factors (Fortune and White, 2006; Doloi et al., 2011; Alzahrani and Emsley, 2012) consistent with the findings of this research. In fact, the four telecommunications companies implement the civil infrastructure work internally and give the telecommunications work - such as providing or installing some of the telecommunications equipment - to their vendors. Depending on the vendor this can heavily affect their strategy implementation since they can delay the project or provide equipment of lesser quality. The empirical study recommends that the telecommunications companies should select their vendors and contractors based on how they contribute to the company's business strategies and not on their prices or offers. Considering this factor as an inhibiting factor affecting the strategy

implementation by the company executives as well as the PM team will improve the alignment process.

- **Market condition**

The risks that are generated from the rapid change in the market and the technology are critical for the PS (Collyer and Warren, 2009). Therefore, adjustment to the project or to the PM processes in order to meet the new market trends and requirements should be expected by the PM team during the course of the project. For example, adjustment to the project scope and to the PM processes (e.g. project time management, project cost management, project procurement management) in order to meet the project goal and objectives should be considered during the planning and execution phases as necessary to meet the new requirements that appear during the execution phase.

According to Larson and Gray (2011), projects that are conducted in highly uncertain environments such as rapidly changing market trends like the telecommunications sector are key unresolved PM issues and present challenges including planning for uncertain outcomes, balancing decision quality against decision speed and timing scope freeze during rapid change. Consistent with Gary and Larson, the study highlights the risks associated with the rapid change in the telecommunications market trend and the acceleration in the telecommunications technologies which, therefore, force companies to terminate or modify their projects in order to meet the new technology requirement and satisfy their customers.

In addition, the empirical study reveals that the market condition should be considered precisely by the company's executives and the PM team as a critical external factor affecting the implementation of the company's business strategy since a proper PM process (the proposed alignment) helps the company that works in a dynamic market to deal correctly with such environments (Collyer and Warren, 2009). However, the previous literature in the alignment does not pay attention to this factor as one of the inhibitors that affect the alignment process (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon, 2006a) or one of the factors that affect the project outcome (Fortune and White, 2006). The silence in the literature on this attribute leads some companies to miss at least one of the project constraints (e.g. time, cost, quality). For example, as mentioned in section 5.2, the rapid

development of the G series (2G to 3G) forced the four companies to integrate their projects and networks (infrastructure) in order to meet the specification of the new technology. Changing from 2G to 3G forced one of the telecommunications companies to integrate approximately 1,700 sites in order to meet the requirement of the 3G technology.

Moreover, the iPhone 5 was designed to work on a specific frequency (only works with the 1800MHz band) which forced the telecommunications companies to buy the frequency from the regulator (CITC) and upgrade their networks urgently to incorporate the product. This environment forced the four companies to accelerate the implementation of their projects which, therefore, affected the projects' outcome in meeting the companies' goals and objectives. Consequently, considering such factors during the project phases will help the PM team to align the project with the company's business strategy. Therefore, the empirical research finds this factor to be an important factor affecting the alignment process.

- **Site acquisition**

Similarly, site acquisition is one of the major inhibitors for the alignment process, stated by the four companies, since it affects the implementation of the PM process as the project managers are forced to relocate the cell phone towers many times to satisfy the neighbourhood or the government regulation during the execution phase. The difficulty of managing the telecommunications' projects can be explained as most of them take place in an external context which is influenced by the public's perceptions (Turner, 2007). In three cases they were forced to locate some of their towers in compromise locations simply to satisfy the municipalities' rules and regulations. Such rules force them to provide bad or low signal quality. In these three cases they suffered from the process of owning or leasing the sites for their towers.

As a result, the study finds this factor as an inhibitor of the alignment since it shifted the projects away from their original plan. Although this study finds site acquisition as an inhibitor for alignment, the previous research does not consider this factor as critical for achieving proper alignment. Neither research in alignment nor research in PM considers this factor as an inhibitor for the alignment process (Luftman and Brier, 1999; Tan and Gallupe, 2006; Gutierrez et al., 2008; Avison et al., 2004; Gutierrez et al., 2009; Yayla and Hu, 2009; Rathnam et al., 2005; Preston and Karahanna, 2009; Srivannaboon;

2006a) or as one of the factors that affect the PM process (Fortune and White, 2006; Doloi et al., 2011; Alzahrani and Emsley, 2012). The empirical research recommends considering this factor as one of the external factors that influence the implementation of the company's business strategy. Therefore, it should be included in the framework in order to enable the alignment process.

## **6.3 Patterns of the alignment process**

This part of the study used content analysis to compare cases and identify patterns in the PM and business strategy alignment processes across the four telecommunications companies. The four cases seek alignment between their strategies and their projects through two organisational levels including the strategic level and functional level (see figure 2.1). Summary of their alignment effort will be discussed in sections 6.3.1 and 6.3.2 which fulfil one of the research objectives: explore the nature of the alignment from the ground of the telecommunications companies.

### **6.3.1 Alignment at the strategic level**

The common steps of the alignment process between the project and the company's strategy begin at the strategic level where the long-term business goals and objectives are defined and business directions are determined through a strategic plan (Hunger and Wheelen). Here, three cases (M, Z & A) have three year strategic plans whereas one (S) has a five year strategic plan. In addition, a project portfolio process, either formal or informal, is observed in the telecommunications companies as a mechanism (method) to select the most valuable projects that contribute to the company's goals and objectives. Matching between the strategic goals and project contribution is one of multiple criteria commonly used by the four companies to select such projects and make them part of the portfolio. The term "project portfolio" was not recognised in two cases (M & Z), but its project selection and prioritisation functions were employed. The mechanisms to ensure the alignment process at the strategic level in these companies are a strategic plan, project portfolio management, alignment charts, and KPIs (see table 5.1). Obviously, the four cases employ the project portfolio management and sometimes hire consultant offices to study and select the projects that contribute to their strategic goal and objectives. It is clear that the four telecommunications companies focus on ensuring a proper alignment between the projects and their strategic goals and objectives at the strategic level.

### **6.3.2 Alignment at the functional level (PM level)**

After prioritising and selecting the projects by using the project portfolio management at the strategic level, planning and executing these projects are the PM responsibilities which are completed at the functional level (Larson and Gray, 2011). This research refers to the mechanism that ensures proper alignment between the project and the company's business strategy at the functional level (PM level) as the process of aligning the PM to the company's business strategy. Identifying this process leads to achieving the main aim of this research in order to close the gap in the literature.

At the functional level and during the planning phase, the study finds that the methods (mechanism) the four companies are using to ensure a proper alignment between the projects and the company's business strategies are varied. Yet, the most explicit is indicated in case M where project managers are required to show the link between the project plan and the company's business strategy. This step is completed by defining the project according to the company business strategy which the project aims to support.

Moreover, at the functional level, and during the execution phase, the study finds that the common mechanisms that the four companies are using to ensure proper alignment are PM tools and metrics, proper methods for coordination (e.g. project management office, EMO), pre-job conference and meetings, and dashboard between the project stakeholders (see table 5.1). However, the research finds many internal and external stakeholders and factors that affect the implementation of the companies' business strategies and the efforts toward proper alignment. Therefore, such factors should be taken into consideration by the company executives and the project managers during the project planning and execution phases in order to meet the company's goals and objectives. Hence, considering these factors will enable the telecommunications companies to achieve appropriate alignment.

In addition, the study finds the four cases focus their efforts heavily on aligning their projects with their business strategies at the strategic level with a little work at the functional level (execution level). For example, using only some of the PM tools and metrics to monitor and control the project as methods for alignment. The little work that the four companies are conducting at the functional level toward the alignment verifies the view of the scholars who highlight that the major focus of many companies is on the strategy formulation process with little attention to the strategy execution process



(Shenhar et al., 2005; Aubry et al., 2007; Alexander, 1991; Srivannaboon, 2006a & 2009). Therefore, this situation highlights the need for providing an empirical framework that helps to explain the process of the alignment between the PM and the company's business strategy at the execution level (functional level) (Shenhar et al., 2005; Williams and Samset, 2010; Srivannaboon, 2006a; Morris and Jamieson, 2005) in order to assist the telecommunications companies to execute their project with a strong link to their business strategies as this research aims to address. In addition to providing an empirical framework for the alignment, this research recommends the companies measure their alignment frequently in order to ensure that their projects remain in line with their business strategies (measure the quality of the alignment process).

### **6.3.3 Project management and business strategy alignment scores**

The alignment scores of the examined projects (MP, ZP, AP, SP) vary from 5.8 to 7.12 (see sections 5.2.3, 5.3.3, 5.4.3 & 5.5.3). The average scores are 6.54 for pairs of executive and project manager. The range of the alignment scores (5.8 to 7.12) represents medium to high alignment between the examined projects and their business strategies (Srivannaboon, 2006a). These results can be explained, perhaps, as the project managers for the examined projects work closely with the executives and the examined projects are considered successful projects as confirmed by the companies and compared by their documents. However, the projects that failed to support the companies' business strategies may show low alignment scores which, therefore, explain how the internal and external stakeholders and factors contribute to such scores. It is worth highlighting that the four companies denied mentioning their failed projects. Since this is the second time that the PM/business strategy alignment are quantitatively measured, further study is needed to determine the degree of alignment required to ensure project and business success for different contexts and industries.

## **6.4 The impact of alignment on project success**

As mentioned in the previous section 6.3.3, that the alignment scores of the examined projects vary from 5.8 to 7.12 which represent medium to high alignment between the examined projects and their business strategies (Srivannaboon, 2006b). In addition, these projects are considered by the four companies to be successful projects (perceived as successful projects by the project team and the executives) as they cater to the demands of the telecommunications market and contribute to the company's goal and

objectives. Therefore, it can be inferred that the strong alignment between the PM and company's business strategy leads to the success of the project. This finding answers research question 2: how does the alignment process between project management and business strategy influence the project's success?

This result is consistent with the literature which claims that the project performance can be improved by proper alignment (Morris and Jamieson, 2005; Shenhar, et al., 2007; Srivannaboon, 2006a) and consistent with the participants' declarations. Although the four companies employ mostly the same methods and tools for alignment, their alignment scores vary between 5.8 and 7.12 (medium to high). The differences in the alignment scores may be the result of differences in their perception, understanding, and consideration for the project stakeholders and factors discussed earlier.

## **6.5 Impact of SH and CF on the nine knowledge areas**

The empirical study contributes to the PM literature by identifying the impact of the project stakeholders and the other factors on the nine knowledge areas of the PM in order to verify the importance of considering these factors as major risks that need to be mitigated during the planning phase. The study reveals that the internal and external stakeholders and the other factors (AF) affect the processes of the nine knowledge areas of the project management (PMI, 2008). Each factor is found to influence specific processes. For example, communication affects project integration management, project scope management, project time management, project procurement management, and project cost management; whereas, executive support affects project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project risk management, and project procurement management (see section 5.7.1). Considering such factors during the course of the project helps to manage the processes of the nine knowledge areas of the project management properly which, therefore, helps to implement the company's business strategy in the project properly.

## **6.6 Stakeholder theory**

This research utilises stakeholder theory. This theory is a useful theoretical tool to identify and explore the importance of the project stakeholders during the project life cycle. Stakeholder theory helps to identify the stakeholders by exploring 'who and what

really counts' in the project and who impacts the PS. Stakeholders may vary in their level of importance. Therefore, tracking the interactions may identify 'who and what really counts' for PS (Assudani and Kloppenborg, 2010). The empirical data shows the importance of rigorous assessment and analysis of the potential project stakeholders during the project planning and execution phases. As discussed earlier, such internal and external stakeholders contribute to the success of the project management process and the implementation of the company's business strategy well. Identifying and considering the project stakeholders during the planning phase helps to highlight the major sources of the risks that may be encountered during the execution phase and indicating the size of stake that the stakeholders have in the project. Such information helps the project managers to manage them successfully.

Many stakeholders are mentioned in the literature such as the project team, project managers, functional managers, executives, project sponsors, government agencies, other organisations and customers (Larson and Gray, 2011). This empirical research highlights the project stakeholders who influence the projects of the telecommunication companies particularly. Such stakeholders impact the project management processes that are responsible for the implementation of the company's business strategy. Furthermore, the research highlights the need to consider such stakeholders during the planning and execution phases (table 6.1 shows the project stakeholders for each case). The study contributes to the stakeholder theory and to the project management literature by identifying the project stakeholders, in the companies that work in the telecommunications industry, who affect the project and the implementation of the company's business strategy and how they affect the project management processes (who they are and how they affect the project).

**Table 6.1 The project stakeholders in telecommunications industry**

Project Stakeholders	Descriptions	Example from cases			
		Case M	Case Z	Case A	Case S
Internal stakeholders	Different departmental levels and units within the four companies	Executives	Executives	Executives	Executives
		Project managers	Project managers	Project managers	Project managers
		Departments managers	Departments managers	Departments managers	Departments managers
			Project team	Project team	Project team
External stakeholders	Refers to the organisations that are outside the control of the project management team	Government agencies	Government agencies	Government agencies	Government agencies
		Other organisations	Other organisations	Other organisations	Other organisations
		Vendors	Vendors	Vendors	Vendors
		Contractors	Contractors	Contractors	Contractors
		Individual and government site owners	Individual and government site owners	Individual and government site owners	Individual and government site owners

Inadequacy in considering the project stakeholders may influence the implementation of the projects. Therefore, this research includes the above stakeholders in the empirical framework in order to provide proper alignment between the project management and the company business strategy. This alignment, when applied and measured properly, will help the telecommunications company to implement their business strategies in their projects.

The project management team should consider and mitigate the risks that come from the project stakeholders during the project planning phase. Such stakeholders influence the project since they are responsible for some parts of the project. If they do not accomplish their parts correctly, they will affect the completion of the project (dependencies). Also, they do not share with the project management team the same interest. Therefore, the project manager should develop methods for managing such

dependencies (Larson and Gray, 2011). The nature of such dependencies and interests are identified in this research as follows:

- The main role of the **project management team** in the four companies is to manage and complete the project work. They want to plan and execute the project in a proper way but they are concerned about how the project contributes to their personal goals and objectives. Improving the project team's skills and providing them with rewards help the project manager to lead the project toward the company's goal and objectives. The project and the project manager depend heavily on their work and contribution.
- **Project managers** naturally compete with each other for resources and the support from the top management (executives). They have to share resources and exchange information and expertise. They are responsible for managing the project and the project stakeholders as they depend on them for providing resources, documents, and official approvals. It was found that the interest of the project managers in the four companies differs from each other. For some of them it is interest in getting the job done (managing their project traditionally). Such project managers seem to have difficulty in aligning their projects with the company's business strategy. However, the project managers who are interested in getting the job done and focusing on the company's business strategy simultaneously (managing their projects strategically) seem able to align their projects with the company's business strategy better than their colleagues.
- **Units and departmental groups**, such as human resources, information systems, purchasing agents, finance, and maintenance provide valuable support and services for the project management team. However, they impose constraints and requirements on the project such as the documentation of expenditures and the timely and accurate delivery of information. Also, the heads of such departments have their own projects so their interest is to complete their own projects. However, the projects that are out of their responsibility (other departments' projects) gain little interest. The units and departmental managers play minor or major roles in the project depending on the size of the stake that they have in the project. Such managers (e.g. functional managers) want to cooperate only up to a certain point. They are concerned with

preserving their status within the organisation and minimising the disruptions the project may have on their own operations. The project managers who get full support and cooperation from the other units and department seem able to align their projects to the company's business strategy better than the others who receive less support and cooperation. Hence, the project managers depend heavily on their contribution.

- **Executives** (e.g. top management, CEO, project sponsors) approve funding for the project and establish priorities within the companies. They define success, formulate business strategies and decide rewards for accomplishments. Significant adjustments in budget, scope, and schedule typically need their approval. The project management team needs their contribution for solving most of the difficulties encountered in the project especially those out of the project management control such as the problems that come from the government agencies and the vendors. They have interest in the project outcome, but at the same time have to be responsive to what is best for the entire company. Sometimes executives sponsor the companies' projects. So, they champion the projects and use their power to approve them. Their reputation is tied to the success of the project, and they need to be kept informed of any developments. They defend the project when it is under attack and are key project supporters. Project managers in the four companies depend on their executives deeply as they help to overcome the problems that are associated with the project. It is worth highlighting that the project managers who receive unlimited support from their executives demonstrate more interest in their work and are able to implement the company's business strategy properly.
- **Vendors and contractors** in specific projects do the major work while the project team does the coordination between the stakeholders and supports the vendors. However, normally, they are responsible for executing some parts of the project such as installing the telecommunications' equipment. Poor work and schedule slips can affect the core work of the project management team. The differences in interest between the project team and the vendors or the contractors impact the project management processes as well as the implementation of the company's business strategy. Even though the

telecommunications companies outsource or contract out significant segments of the project work to the vendors in order to gain competitive advantages such as cost reduction, faster project completion, high level of expertise, and flexibility (companies can combine their resources with talents of other companies), outsourcing entails some disadvantages such as coordination breakdown, loss of control and conflict (as they do not share the same values, priorities, and culture with the project team). Therefore, during the planning phase the project managers should consider such disadvantages in order to overcome such problems during the execution phase if they plan to use outsourcing for the project or some parts of the project.

- **Government agencies and service providers** place constraints on the project work. Permits need to be issued. Projects and services have to be constructed within the municipalities' and regulator's codes. Products and services have to meet safety standards. Launching new products or services need specific frequencies. Such frequencies are provided by the telecommunications' regulator (CITC). Any delay in issuing the permits or providing the frequencies will impact the project negatively. Similar to the government agencies, other organisations may directly or indirectly affect the project. For example, main suppliers may provide important services for the project. For example, SCECO provides the electric power for the four companies' projects. Delay, shortage, or poor quality can affect the project management processes. Although the interest of the government agencies and the telecommunications regulator could be different from the interest of the four companies, the four companies depend on government agencies and the regulator heavily. Proper cooperation between them will help the four companies to meet their goals and objectives.
- **Market conditions.** The rapid acceleration in the development of telecommunications technology forces the four telecommunications companies to invest huge amounts of money in their infrastructure in order to improve their network and to meet the requirement of new technologies. The hyper-competition between the four cases forces the project management team to expedite the development of the project plan and affect the implementation of the nine knowledge areas of the project management.

- **Site acquisition.** During the execution phase, the project team encounters resistance from the neighbourhood to move their towers from good locations that meet the quality standards to poor locations. This problem occurs as the government agencies do not allow the four companies to construct their towers in certain places or from the individuals living nearby the towers as such towers affect their health and reduce their properties' prices. Such problems contribute negatively to the alignment process between the project management and company's business strategy.

## 6.7 Empirical framework phase two

Phase two of the framework was refined to provide the actual alignment factors (AF) that affect the alignment process and implementation of the company's business strategy which was achieved following the interviews that took place. Such factors stem from the contextual investigation process which occurred at the telecommunications companies (Figure 6.1).

The empirical framework phase two is developed from the conceptual framework phase one to fulfil the research gap by providing a proper alignment process for companies that work in the telecommunications industry. It is not surprising that the investigation revealed more factors (AF) that affect the alignment and the implementation of the company's business strategy in the telecommunication projects which were not thought of at the beginning stage of the research study since projects and project management take place in an environment that is broader than that of the project itself (PMI, 2000).

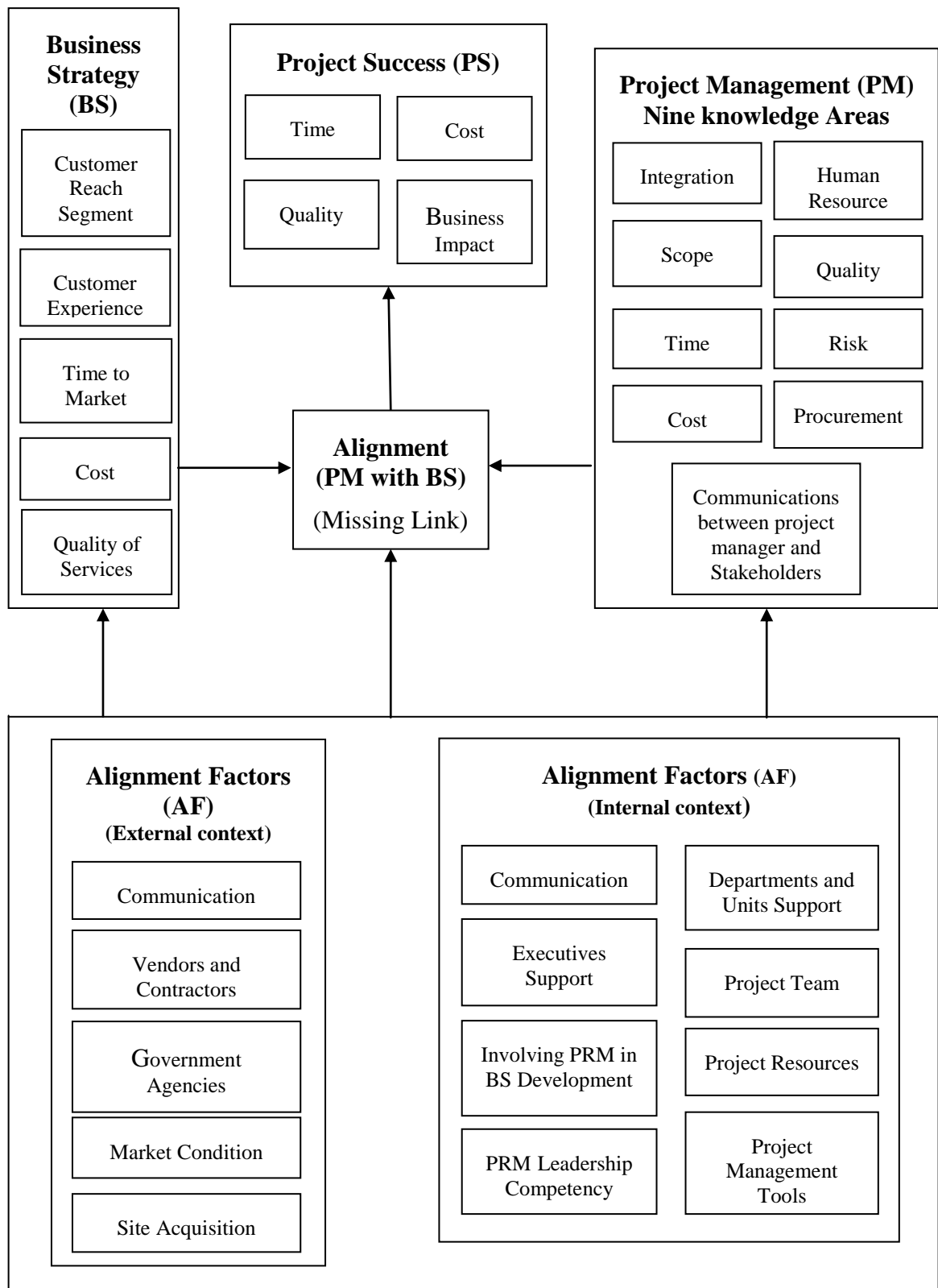
For example, the research found many contextual factors that influence project management while implementing the project and the company's business strategy. These factors are divided into two groups. The first group is titled "internal context" and includes internal factors such as internal stakeholders. The second group is titled "external context" which includes external factors such as external stakeholders and other factors. Both the internal and the external factors inhibit or enable the alignment process. For example, the alignment process contains important enablers or inhibitors factors such as the project external stakeholders and factors including communication



between the project manager and the project external stakeholders, vendors and contractors, government agencies, market condition, and site acquisition.

On the other hand, internal stakeholders and factors include communication between the project manager and the project internal stakeholders, executives support, involvement of the project manager in the business strategy development, project manager leadership competence, departmental and unit support, project team, project resources, and project management tools. Considering these factors during the planning phase will help the project management team to plan and execute the project strategically. Therefore, the project will be aligned to the company's business strategy.

The new findings (new inhibit or enabler factors) drive the creation of the empirical framework (phase two) (please see figure 6.1).



**Figure 6.1 Empirical framework phase two**

External context: external stakeholders and contextual factors

Internal context: internal stakeholders and contextual factors

Figure 6.1 shows the empirical framework phase two developed for this study. The diagram shows that the project management and business strategy should be aligned by considering the alignment factors (AF) during the project management process particularly the planning phase. Internal and external inhibitors or enablers' alignment factors have been identified from the literature and the interviews carried for this study. These factors affect and play a big role in aligning project management (the nine knowledge areas of the project management) to business strategy.

The above framework shows five main constructs, that is, business strategy (BS), project management nine knowledge areas (PM), internal and external alignment factors (AF), alignment process and project success (PS). Each of these five constructs consist of sub-constructs (variables), see figure 6.1. These factors (external and internal) influence the transition of the business strategy to the project which therefore impacts the alignment process (causing misalignment). Also, such factors affect both business strategy and project management (the nine knowledge areas of the project management). In addition the alignment is found to impact the project's success. This framework helps to achieve the aim and objectives of the research, see section 1.7. Therefore, if the decision makers in a company and the project managers consider the alignment factors (AF) during the planning and execution phases, they will achieve successful alignment.

The previous literature by Shenhar et al. (2005 & 2007), Patanakul and Shenhar (2011), and Hauc and Kovač (2000) highlighted two issues including a missing link that exists between the business strategy and the project plan and a weak point which is the point of transition from business strategy to the project, between business strategy and the project plan. Figures 3.4 and 6.1 show this transition. It can be seen from figure 6.1 that additional sub-constructs (variables) have been added to address the two issues previously mentioned.

## **6.8 Proper planning**

Consistent with the literature which indicates that the success of the project management team is, at least in part, measured by identifying various relevant stakeholders, managing robust relationships with them, making decisions that satisfy stakeholder objectives and leveraging the resources necessary to achieve the objectives (Bourne, 2006; Milosevic, 2003; Ika, 2009; Assudani and Kloppenborg, 2010), the

study finds many factors including the project stakeholders, if not considered properly during the planning phase and managed precisely during the execution phase, will affect the processes of project management (see section 5.7) since the composition of the project stakeholders changes during the project lifecycle (Altinay and Miles, 2006).

Similarly, considering such factors will improve the ability to accurately plan the project in line with the company's business strategy (Hauc and Kovač, 2000; Shenhar et. al., 2005; Srivannaboon, 2006a), increase the likelihood of the project's success (Zwikael and Globerson, 2004) and help the project management team to implement the company's business strategy properly. Hence, the alignment of the project management and the company's business strategy can be achieved through employing the empirical framework of this study which includes these factors.

## 6.9 Discussion

The unique goal of this chapter is to respond to research question 1 (How could the alignment process of the project management and business strategy be achieved and what factors included?) and research question 2 (How does the alignment process between project management and business strategy influence the project's success?)

The study used the inductive approach to derive an overview of the alignment, formulate the alignment process and to study the impact of the alignment on the PS. The general process was based on case study research, and heavily utilised within- and cross-case analyses to develop an overall framework for aligning project management with business strategy. This framework can be used to explain the alignment process at the project management level (functional level). The refined framework satisfies the major characteristics for a theoretical framework suggested by Dubin, (1978) which includes units and variables and the laws of their interaction, which will be discussed next:

- **Units/variables:** Business strategy, project management (the major processes of the nine knowledge areas in the planning phase), project success, and alignment factors (project stakeholders and contextual factors) including effective communication, executive support, the involvement of the project managers in the strategy development, leadership competency, units' and departmental support, project team, project tools (internal factors), government agencies,

vendors and contractors, market condition, and site acquisition (external factors).

- **Laws of the interaction:** A two-way influence between project management and business strategy through a formal alignment process which helps the project management to implement the company's business strategy in the project properly.

To highlight what is new in the empirical framework, let us compare it with the existing literature. First of all, Jameson and Morris (2004) identify, in their case studies, that strategic planning, portfolio management, and emergent approach are important steps in alignment. However, Jameson and Morris do not provide a framework and position their research as a set of case studies, trying not to give it a theoretical foundation for the alignment. Furthermore, Turner and Simister (2000) argue conceptually without an empirical validation, that portfolio management is an important step in aligning projects with the business strategy. In addition, Srivannaboon (2006a) identifies in his study that the relationship between business strategy and project management is a two way influence. He tries to generalise his findings by studying the alignment in many industries. However, this study focuses on one industry (telecommunications industry) in order to have an in-depth understanding of the alignment phenomena and focus the research at the project management level (planning and execution phases) since this level is the most critical level where most of the business strategies are lost (Hauc and Kovač, 2000; Shenhar et al., 2005; Srivannaboon, 2006a). Finally, none of the above studies (Jameson and Morris, 2004; Turner and Simister, 2000; Srivannaboon, 2006a) investigate the factors that affect the alignment process and the highlighted impact of alignment on the PS as this study offers.

The framework includes and relates all levels of participants (e.g. executives, PMO managers, project managers, and team members), business strategy, project management, PS, and alignment factors into a coherent structured set of relationships, which describe and may be used for prediction of the phenomenon of the project management and business strategy alignment in the telecommunications industry. The framework is based on four telecommunications companies/projects, real-world data,

and takes a multi-level view (no single-source bias), all leading to a strong theoretical framework. Furthermore, the framework seems intuitively correct. The examined companies highlight the importance of the alignment and the importance of including the project stakeholders in the framework with some differences in the detail.

The strengths of the framework include its deep focus on one industry, different types and sizes of projects, and the same level of project complexities. The study observes the alignment issues in four telecommunications companies as the industry is considered as one of the most important industries that contribute positively to the Saudi Arabian economy. Also, the telecommunications companies are considered to be major users of project management (PMI). Finally, this chapter offers important dissection on the following:

- An empirical framework which shows the process for aligning project management with business strategy
- The project stakeholders and factors that enable or inhibit the process of alignment are found to be real constraints for implementing the company's business strategy in the project
- The project stakeholders in the telecommunications companies, who they are and who counts
- The effect of the proposed alignment factors (AF) on the nine knowledge areas of the major project management processes in the planning phase (PMI, 2008)
- The impact of the alignment on the project success
- Proper planning

## **6.10 Conclusion**

In general, this study highlights the importance of managing the internal and external stakeholders and the contextual factors (AF) as they affect telecommunications projects. Through the application of the ideas of stakeholder theory, the results of the research provide new theoretical and empirical understanding of how the internal and external project stakeholders influence the project management's decision-making during the project lifecycle. Furthermore, the results identify the project stakeholders (who count) in the telecommunications industry. Each project may analyse its internal and external stakeholders and respond to their pressures and unexpected events in the context of the

projects. Ultimately, considering such stakeholders during the planning phase and developing effective project stakeholder management approaches improves the process of the alignment and, therefore, the implementation of the company's business strategy. The project managers should focus on the stakeholders' interests and strategies and project managers' interpretation toward stakeholders and their subsequent responses creates a deeper understanding of how stakeholders and project managers interact.

From a practical perspective, the findings highlight the strategic role of project stakeholder management. The study suggests that the telecommunications companies should pay attention to the external stakeholders' instructions and the project management team should consider such instructions properly during the planning phase. Moreover, they should employ appropriate methods for identifying and managing the project stakeholders and consider them as major risks that need to be mitigated.

Finally, the empirical framework of this study will help the companies to align their project management with their business strategies in order to achieve their goals and objectives as it is believed by business leaders that the achievement of business goals, strategies and performance can be improved effectively by aligning PM with business strategy (Srivannaboon and Milosevic, 2006). In addition, the framework will help to bridge the gap that exists between the project management and the companies' strategies (misalignment) which leads to approximately 30% of the projects failing to meet the company's business strategies (Miller, 2002; Mankins and Steele, 2005; Shenhar, 2007). The next chapter will discuss the research contributions, strengths, limitations, and managerial implications.

# Chapter Seven: Conclusions

## 7.1 Introduction

In chapter 6 a detailed and comprehensive discussion of the findings, which delineates the main patterns and factors, and answered the research questions through applying the framework and revising its constructs and dimensions (phases one and two; see figures 3.4 & 3.5). Contributions and implications seek to accumulate the body of knowledge with regard to the conceptualisation and investigation of the context and factors that affect the implementation of the company's business strategy in the project management literature in private sector studies. The practical implications offer insights into the managerial implications and how project managers and the company's executives could advance their practices when adopting the empirical framework during strategy formulation and implementation.

This chapter draws on the research findings which satisfy the aim, objectives and the research questions and to present an understanding of the alignment between the project management and the business strategy and the factors affecting the alignment process. The chapter starts with the research contributions, then presents practical implications and links the research novelty with the gap. Finally, the chapter will present the research limitations and suggest potential future research directions which might advance the field.

## 7.2 Research overview and key findings

The intention of this study is to provide a more holistic understanding and analysis of the alignment process and the key factors which facilitate or inhibit successful business strategy implementation in the telecommunications project. The following paragraphs provide and discuss the major points developed within the preceding seven chapters.

Chapter 1 is the introductory chapter to the entire research study. It offers a brief research background and defines the research problem. The chapter also summaries the motivations for conducting this research and highlights its relevance and significance. It was asserted that aligning project management to business strategy provides an ideal



solution for the problem which prevents successful implementation of the company's business strategy in the project.

Chapter 2 presents a critical review of the relevant literature on the main themes of this study, including business strategy, project management and the alignment. The extensive examinations of relevant literature revealed that recent studies have started to explore the alignment between the project management and business strategy in the functional level more thoroughly (Artto and Dietrich, 2004; Morris and Jamieson, 2005; Srivannaboon, 2006a; Morris, 2009). However, none of the research in this area provides a conceptual framework which includes business strategy, project management, factors that affect the alignment, and project success in a coherent framework. Also, the previous studies did not identify and examine the factors that affect the implementation of the company's business strategy and the impact of the alignment process on the project outcome.

Chapter 3 presents and discusses the conceptual framework phase one and two with detailed explanation of the main constructs. Rather than applying the grounded theory approach, in which the researcher engages the subject without pre-existing ideas or frameworks, existing theory was used to guide the research (framework phase one). Stakeholder theory was used as a basis to explore the phenomenon of the alignment. The proposed conceptual framework provided an opportunity to gain a better understanding of the key factors which impact the implementation of the company's business strategy and the alignment process as well.

Chapter 4 explains the methodological approach of this research and justifies its suitability for this particular research. This study employs a qualitative multiple-case study approach in the interpretive paradigm. Using a triangulation of semi-structured interviews, observations and documents analysis, information regarding the alignment process was obtained from multiple participants with different views, perceptions and experiences. The main advantages in using semi-structured interviews in this research was that it provides the researcher with vast opportunities to ask follow-up questions and clarify issues until adequate answers and interpretations were gained. By using multiple sources of evidence, and being able to actually observe the participants at work, helps to mitigate many potential sources of bias. Qualitative content analysis (with utilisation of Nvivo 9.2) was the technique used for analysing the empirical data in this study.

In Chapter 5, the findings from the analysis of the four cases were presented and highlighted the emergent patterns from each case. A case description of each individual company and its experience with managing the projects and business strategies enabled the researcher to construct a separate case study report and become familiar with each entity before conducting the cross-case analysis. Also, the chapter presents the findings from the cross-case analysis. The cross-case analysis facilitates to look for common patterns, and therefore draw a more holistic picture of the phenomenon.

Chapter 6 presents a discussion of the key findings which therefore led to the generation of the second phase of the framework of the alignment of the project management to business strategy. The revised framework (phase two) illustrates that the telecommunications companies can align their project management to their projects successfully by considering the twelve enabling or inhibiting factors during the planning and execution phases. These factors can be organised into internal and external factors. The internal factors are proper communications between the project manager and the internal stakeholders, executives support, involving the project manager in the business development, project manager leadership competency, department support, expert project team, and suitable project management tools. The external factors are communication between the project manager and the external stakeholders, vendors and contractors, government agencies, market conditions, and site acquisition.

Chapter 7 concludes the study and the confirmed contributions. The chapter highlights the research strengths, limitations, and the future research.

### **7.3 Contributions and implications**

This study has explored, in a comprehensive and critical way, the issues of alignment between project management and business strategy. Such alignment facilitates the project managers to implement the company's strategy in the project precisely. The research responds to the need to have contextual insights and investigations into the alignment process between the project management and the business strategy in the private telecommunications sector. The contributions of the research, therefore, accumulate the body of knowledge by offering new, extended, and sometimes validated insights that are found important in enhancing the current level of understanding of alignment in the private sector. This research, offers three contributions, see sections 7.3.1, 7.3.2, 7.3.3

### **7.3.1 Contributions to theory**

This research provides an important and novel contribution and insights to the growing body of research which has sought to examine and understand the factors that affect the implementation of the company's business strategy in the project in the context of telecommunications. The major theoretical contribution of this study is the development of a novel, holistic empirical framework (phase two) for aligning project management to business strategy, as proposed in Figure 3.5. The framework was validated through multiple case studies. As noted in Section 1.3.2, there is a lack of research offering a holistic and thorough examination and analysis of the key factors that facilitate the project manager to implement the company's business strategy in the project successfully. Considering such factors by the company decision makers and by the project managers during the planning and execution phase help the project management team to align their projects to the company's business strategies. Thus, this integrative and coherent framework is particularly important for the telecommunications companies in order to meet their goals and objectives.

The study contributes to stakeholder theory by identifying the main stakeholders in the project (who they are and who count) who affect the projects and the companies' business strategy in the telecommunications industry (Bourne and Walker, 2006; Marjolein and Janita, 2008; Ives, 2005; Jugdev and Muller, 2005; Norrie and Walker, 2004; Sutterfield et al., 2006).

The previous studies focused on the alignment between functional departments (e.g. IS, IT) and the organisations' business strategy (see section 2.4.1). However, few studies are conducted in the area of project management or examined the effect of the internal and external stakeholders and contextual factors (AF) on the alignment process. In addition, none of the previous studies have examined the impact of the alignment process on the project's success. Although, scholars points to the important role of alignment between the functional departments and the business strategy for effective and efficient running of the company (Cooper, 2011; Boar, 1994; Dutta, 1996; Reich and Benbasat, 2000; Fonvielle and Lawrence, 2001; Papke and Malhotra, 2001; Srivannaboon, 2006a; Chan, Sabherwal and Thatcher, 2006; Gutierrez et al., 2008; Preston and Karahanna, 2009; Yayla and Hu 2009; Holbeche, 2009; Williams and Samset, 2010), this research has empirically examined particularly the role of the alignment between the project management and one of the functional departments and

the company's business strategy. The findings of this study add new valuable insights to the project management research and contribute to incorporating the alignment perspective into the project knowledge management literature by showing empirically how alignment is effective for the likelihood of success of the projects. Additionally, this study contributes to the current literature of project management by highlighting the role of the alignment process in implementing the company's business strategy in the project successfully. Whereas previous studies focussed largely on decision-making, risk management, critical success factors, project phases, project manager competencies, stakeholder management, resource management, and strategic management (see table 1.8), this study extends the existing literature by emphasising the importance of the alignment process between the project management and the company's business strategy for successful projects.

Another theoretical contribution of this study is that the study provides rich exploration of the alignment and contextual factors that are associated with the implementation of the company business strategy in the telecommunications industry. The research helps illuminate an interesting area such as the alignment that needs theoretical and empirical attention to understand such phenomena. The need stems from the identified over-reliance on exploring the contextual factors, constraints and enablers of the strategy implementation in the project that can shape and influence the process of the alignment (Jameson and Morris, 2004; Turner and Simister, 2000; Sirvannaboon, 2006a).

As discussed in chapter 2, the literature review reveals that the field of project management lacks a comprehensive framework that can offer a clear process for the alignment which includes the main project stakeholders and the contextual factors associated with the alignment process. This research responds to the calls that highlight the need for this study empirically (Sirvannaboon, 2006a). The final framework phase two shown in figure 3.5, represents a contribution as it emphasises the project stakeholders and the other contextual factors. Such factors, when considered properly during the project planning and execution phases, strengthen the alignment process.

The research highlights the important impact of the main project stakeholders (e.g. executives, project team, departments & government agencies) and the contextual factors on the main processes of the nine knowledge areas of the planning phase (PMI, 2008; Assudani and Kloppenborg, 2010). Moreover, this study is the first investigation which includes the project stakeholders and the contextual factors in a comprehensive

framework that seeks proper alignment in the Saudi telecommunications context. Therefore, it accumulates the existing knowledge in the field by providing new insights from the telecommunications industry.

### **7.3.2 Contribution to methodology**

This study is one of a few studies that have employed a rigorous qualitative approach to address the alignment in general, and it is believed to be the first to qualitatively address the phenomenon (misalignment) in the context of the telecommunications in particular. As explained in chapter four (Research Methodology), this study adopted an interpretive qualitative multiple case study approach to answer the research questions. This approach enabled the researcher to provide a detailed investigation and understanding of the alignment phenomenon in the telecommunications private sector. This flexible method allowed establishing close contact with executives and project managers directly involved to an extent that was necessary to understand what was going on in the field. The semi-structured interviews allowed for in-depth discussions and emergence of new issues not already considered. Additionally, the multiple case study approach provided a rich and descriptive account of relevant events, as well as an in-depth analysis to get detailed information and explain the complexities of the alignment process.

The researcher managed to utilise his contacts and personal networks to gain access to the field and then establish trust and build deeper connection with the participants in the four telecommunications companies. This helped to increase the likelihood of gaining accurate, honest and thorough responses. The time spent in the field was an additional strength of this research. The long engagement in the field assisted in developing relationships and rapports with the participants.

Additionally, the observation technique afforded the researcher the opportunity to be invited into the work environment and witness the project managers' natural daily interactions with project stakeholders and understand their communications and management skills.

In this study, the data analysis was based on the conceptual framework phase one. This approach allowed the researcher to conduct the analysis with certain expectations based on prior theory, while also allowing new issues to emerge from the data.

This study used Nvivo 9.2 qualitative data analysis software. Nvivo 9.2 helps to effectively and efficiently manage the complexity of coding the mountains of qualitative data collected from multiple sources of evidence. Such computer-based qualitative data analysis tools have been considered to produce more accurate, transparent and rigorous results (Eriksson and Kovalainen, 2008). The research collected data from the private sector (telecommunication industry) in Saudi Arabia, and as far as the researcher is aware, this study is the first investigation into the alignment in the private sector in Saudi Arabia. This can be a contribution to the methodology. In addition, the methodological contribution, therefore, can be seen in strengthening the alignment process by accurately including the project stakeholders and the contextual factors that affect the implementation of the telecommunications companies' business strategies in the projects. However, this study focuses on one industry (telecommunications industry) to consistently have in-depth understanding for the alignment phenomena.

### **7.3.3 Contribution to practice and context**

The findings reported in this study lead to a number of significant contributions and valuable implications to practice in general and to the telecommunications private sector of Saudi Arabia in particular. Although the four companies have been increasingly investing in projects, they traditionally lack understanding on how to align their projects to their companies successfully. This study provides some useful insight for the executives and the project managers who often need to take critical decisions with regard to the project management. The empirical framework phase two also provides general guideline for the practitioners in the telecommunications private sector of Saudi Arabia to structure an effective alignment process when conducting their projects. By carefully and holistically understanding the key factors which impact the implementation of the company's business strategy, a more comprehensive strategy guiding intended projects might be considered. For example, telecommunications companies should consider two main issues. Firstly, the decision makers should consider employing project managers who own the leadership competency, involving the project managers in the strategy development, giving the project team unlimited support, ensuring a proper engagement with the other units and departments, providing sufficient resources for the project management team, hiring provisional vendors and contractors, and providing adequate knowledge about the market conditions to the project management team. Secondly, project managers should consider employing

proper methods for communications, forming a professional team, taking into account the difficulties and the risks of managing the internal and external stakeholders, and the risks from acquiring the sites. In addition, the study contributes to practice (implication) by enriching the two managerial issues including the project management process and the alignment process. This will be discussed next.

- **Implications to the project management process**

In continuation of the study by Zwikael (2009) which highlights the knowledge areas that appear to have the highest influence on project success, this study highlights the effect of the proposed factors (e.g., project stakeholders and contextual factors) on the nine knowledge areas in order to consider them during the planning phase (PMI, 2008). Each business strategy (e.g., cost leadership strategy, customer experience, time-to-market, expanding the coverage, customer segment reach) requires focus on specific areas out of the nine knowledge areas that appear to have the highest influence on the implementation of the business strategy. For example, when a company employs a differentiation strategy (e.g., differentiate in quality and time to market), the attributes of their differentiation approach should be well-articulated to the project management teams. Therefore, the project management team should focus on managing the quality and the time knowledge areas during the planning and execution phases but not neglecting the other areas. Similarly, for a cost leadership strategy, the focus on cost reduction should be well-articulated to the project management teams. For a best-cost strategy, the balanced emphasis on competitive attributes (such as quality) and cost management must be well-articulated and communicated.

In addition, telecommunications companies may wish to consider the following issues:

1. Have a clear product and project definitions that are grounded in the competitive attributes of the business strategy (e.g., the product and project definitions are grounded in the cost reduction goals of the business strategy or grounded in a particular level of quality with minimum cost).
2. Identify clear strategic focus associated with the competitive attributes of the business strategy, and articulate these rules to the project teams (e.g., clear strategic focus associated with the cost reduction goals of the business strategy or clear strategic focus associated with the quality set level with minimum cost).

3. Build a flexible organisational structure that helps facilitate the competitive attributes (e.g., a structure that is easy to adapt to changes in process improvements resulting from cost reduction goals or helps facilitate the project team to achieve a particular level of quality with minimum cost).
4. Build a flexible process with the aim of facilitating the competitive attributes (e.g., build a standard and built-on template process to reduce variation and cost or accomplish a particular level of quality with minimum cost).
5. Focus on particular tools and metrics that help accomplish the competitive attributes (e.g., focus on schedule, cost tools, and cost metrics with the aim to reduce cost or equally focus on scope/performance, schedule, cost metrics, and cost tools).
6. Build a project culture that facilitates the competitive attributes such as rewards for speed and quality e.g. a project culture that is driven by cost reduction goals such as rewards for cost efficiency or a project culture that facilitates the project team in achieving a particular level of quality with the minimum cost such as rewards for quality.
7. To avoid the risk from vendor and the contractor, telecommunications companies should establish a complete and scientific contractor selection process.

- **Implications to the alignment process**

An alignment process is crucial for any company to consistently achieve business goals and objectives through project management. To properly align projects with the business strategy at the functional level (project management level), the following recommendations are provided.

- Private companies should establish standards for the project lifecycle phases with some kind of flexibility where every project follows the same general steps but leaves space for customisation on the lower levels to account for project specifics. Private companies should pay special attention to the project plan



review and project strategy. For instance, during the project planning phase, the project management teams should link their project definitions and product definitions with the goals of the business strategy. Such linkage helps the companies to achieve their goal and objectives.

- The telecommunications companies should establish methods such as stage gate and stage gate reviews in order to review their projects for operating conditions (e.g., project status, staffing level and market shift). The companies should employ stage gates including milestone reviews to filter their projects in order to realign the projects with the company's business strategy. For example, when the projects do not meet their requirements (goal and objectives) by each of the stage gates (so-called misaligned), the project managers are required to go back and make some adjustments for their projects (if they are not terminated).
- They should establish a control method (such as dashboards in cases A and S) to monitor projects. For example, establishing the proper project tools and metrics that balance project and strategic objectives. Such metrics would help the project management teams to effectively monitor their progress towards meeting the business needs and goals.
- Companies should measure the alignment between their projects and business strategies constantly. Such measurement helps the company to evaluate their alignment status to consistently improve it.

## **7.4 Linking research novelty with the gap**

This research validates the framework phase two as mentioned in chapter 3, section 3.5 to further the understanding of the contextual factors that affect the implementation of the company's business strategy to consistently strengthen the alignment process between the project management and business strategy for telecommunications projects in the private sector. The gap was the lack of provision of an empirical framework that can help the companies as well as the project management team to plan and execute their projects in a strategic way. In addition, this study helps the companies, researchers and academics to understand in depth the alignment phenomenon and, therefore, minimise the uncertainty, complexity, and the high rate of failure in projects. In this

regard, a new empirically examined framework was validated to show the project stakeholders and contextual factors associated with the implementation of the company's business strategy in the telecommunications sector. The research explores, empirically, the outcome and the benefits of the alignment in the private sector. The contribution of this alignment to the outcome of the projects helps in bridging the gap also in particular in terms of defining how the outcome is impacted by the project stakeholders and the contextual factors. It helps the project managers and policy makers in understanding what processes are required in similar industries to reach a particular outcome. Moreover, the research is the first study to investigate and examine the contextual factors that affect the implementation of the company's business strategy in the telecommunications projects in Saudi Arabia, which applies such factors in an empirical framework in the project management field. This attempt has resulted in validating an alignment process between project management and business strategy levels.

## **7.5 Research strengths and limitations**

This study features many strengths. The first, its solid empirical basis. Since the topic of project management and business strategy alignment is relatively new with little research has been conducted in this area (Shenhar et al., 2005 & 2007; Patanakul and Shenhar, 2011; Srivannaboon, 2006a), the case study approach is a rigorous methodology for developing the theoretical framework. In addition, the four cases consist of large companies that develop their strategies frequently and invest heavily in the project management approach. Therefore, they continue to provide large projects in order to survive in such harsh competition and dynamic markets; these large projects provided the researcher with rich information about the project management approach and the alignment phenomena.

In this research, four cases in a real-life context were extensively studied in parallel with reviewing the existing literature. In each case, different groups of participants including CEOs executives, project management officers, project managers, assistant project managers, and team members were interviewed to obtain information from different perspectives. In total, 39 interviews with four companies in the telecommunications industry which represent all the companies in Saudi Arabia were conducted to obtain deep information and strengthen the research validity by focussing on one industry

rather than many industries. In addition, the case studies were written and analysed based on a triangulation of multiple data sources with the aim to avoid biasness, where the interviews were a major source. The perception of the executives and project managers of the four cases were triangulated with additional data sources such as, comparison of other interviews, documents, companies' reports and statements on the Saudi stock market. In addition, the research focused on the alignment between project management and business strategy, an area where little is known and new perspectives are needed. From a practitioner point of view, the proposed framework is simple, easy to understand, and covers the major elements relevant to project management and business strategy alignment.

However, the research has some potential limitations. The first limitation is the relatively small number of cases (four cases). However, the use of four case studies can be viewed as being appropriate as Eisenhardt (1989) argues that four to ten cases should be sufficient for analytic generalisation. In addition, the research might suffer from bias of company management views and researcher opinions. However, the study minimised the bias by using multiple data sources (e.g., the existing literature, triangulation of multiple data sources) (Yin, 2009). One limitation of the research is that the examined projects were successful projects. The researcher could not find failed projects to consistently compare them with the alignment as the participants denied that their companies had conducted unsuccessful projects. Furthermore, due to time constraints, the research focused on one project in each company. Each project was supporting one of the company's business strategies. More projects and business strategies will lead to a clear full picture of the alignment.

## **7.6 Recommendations for further studies**

The research findings and limitations suggest the following four directions for future research. First, this research indicates that the proper alignment leads to the increase rate of successful projects. However, this conclusion was made by studying successful projects only. Therefore, this research suggests future studies to consider failed projects in their samples in order to ensure the relationships between the alignment and the PS in different environments. Second, further study is needed to determine the degree of alignment required under different circumstances to assure project and business success.

Third, more business strategies and projects should also be considered in order to understand the alignment and the outcome of it.

Next, a large sample study (survey) should be conducted to confirm the findings in the present research. It is recommended also to conduct a positivistic study to answer the questions of which of these contextual factors (AF) have more effects and influences in the process of the alignment. Finally, the framework was applied and revised in the context of developing countries, therefore examining and testing it in different contextual environments will validate the findings and confirm the reliability of the framework.

## **7.7 Thesis conclusion and reflection**

This study extended efforts to conceptualise project management and business strategy alignment from the stakeholder theory perspective. This research has attempted to highlight some of the key factors that enable the alignment process to succeed. The literature showed that there is a lack of prior research which explores the alignment between project management and business strategy. In this respect, the use of stakeholder theory offered a theoretical perspective for analysing these factors and helped to conceptualise a number of project stakeholders and contextual factors (AF) that impact implementation of the company's business strategy in terms of the pressure they impose on the project management in the telecommunication companies in Saudi Arabia. This study has therefore highlighted some of the key challenges that the project management face when undertaking big projects and, therefore, helped to advance the understanding of big projects. Additionally from a practical perspective, the proposed empirical framework, and the relevant factors, will provide the telecommunication companies project managers with a framework of reference for better understanding and managing big projects, through alignment of project management and business strategy.

The study highlights the twelve alignment factors (AF) that enable or inhibit the alignment process, that is, effective communication, executive support, involving the project manager during the development of the company business strategy, the project leadership competency, department and units support, project team, project resources, project management tools, vendor and contractors, government agencies, market condition and site acquisition. Such factors (AF) impact the project management

process which influences the nine knowledge areas and the company's business strategy so that the alignment process leads to a successful project.

The framework addresses the nature of alignment and also portrays the alignment process in a comprehensive way that is new to the literature. In practice, the framework is expected to help the telecommunications companies align their projects with their business strategies at the functional level. As discussed in section 2.3.9, project managers are expected to manage 42 processes, among them 20 processes for the planning phase (PMI, 2008). The planning processes represent approximately 48% of all the processes that the project managers are responsible for during the project planning and execution phases. The empirical research recommends companies to put more emphasis on the planning phase in order to link their goals and objectives with their projects. Therefore, the planning phase should be given consideration top priority and enough time to consistently plan projects properly. It is worth highlighting that the literature shows some criticisms of the project planning efforts especially with regard to the ability to accurately plan the project in line with the business strategy (Hauc and Kovač, 2000; Shenhar et al., 2005 & 2007; Patanakul and Shenhar (2011); Srivannaboon, 2006a).

This study has provided a unique contribution by developing a theoretical framework for the telecommunications companies in Saudi Arabia for aligning project management with the business strategy. This study has been conducted in Saudi Arabia, but it is very likely that this study could be replicated and applied in the GCC countries and some Middle Eastern countries, due to the similarity of its structures, organisations, and cultural issues.

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# Appendices

## Appendix (A) Research Gap

Appendix (A) includes academic articles published in journals including patterns, comments, schools of thought of project management, category of the project management topic, stream of project management topics in IJPM and stream of project management topics in PMJ.

### Schools of thought

- Optimization School: Logic-based, prescriptive research drawing on management science, optimization techniques and systems analysis.
- Factor School: Empirical research relying on descriptive statistics on the criteria and factors of project success and failure.
- Contingency School: Empirical research, case-study-based and survey based research on the differences between projects, characteristics of projects and contextual dimensions.
- Behaviour School: Interpretative and descriptive research on organizational behaviour, processes and learning in projects.
- Governance School: Prescriptive research on governance and contract problems in projects.
- Relationship School: Descriptive case-study research on relations between actors in projects.
- Decision School: Descriptive and interpretative research on politics and decision-making in projects.

**Table A1 Selected journals: Patterns and comments (305 articles)**

Journal	No. of articles	Patterns and comments
1. Academy of Management Journal	20	In AMJ there is a wide array of publications ranging from studies of decision-making in complex projects, communication in R&D projects, to studies of project team evolution. A few shorter research notes were excluded from the sample.
2. Academy of Management Review	4	Most of the articles in the sample from AMR are relatively old. Two themes seem to have attracted special attention: planning and matrix organization.
3. Administrative Science Quarterly	8	No common theme was identified in the articles in the sample published in ASQ. However, a set of themes have attracted many attention from

Science Quarterly		other scholars on topics such as craft administration, product development processes, escalating commitment, group longevity and project performance, and temporary systems.
4. British Journal of Management	5	The papers published in BJM do not have a strong common theme, although the papers in various ways seem to take an interest in the processes and behaviour of projects. The articles are also all based on qualitative research, case studies being the most common approach.
5. California Management Review	12	In CMR are found some of the classics in project management and the main inspiration for the notion of projects as temporary organizations. Many of the early articles on programme management, temporary systems and matrix management were published in this journal.
6. Creativity and Innovation Management	8	CIM is a rather new journal that has published many articles on subjects of relevance to project management. However, many of the articles focus on aspects of individual work, including creativity and motivation. Accordingly, these papers were not included in the data set. The papers included in the data set discuss creativity and control in projects, and the impact of temporal contexts on management.
7. European Management Journal	9	In the EMJ, one finds a set of articles on project success. Many short articles and empirical reports were excluded from the sample. Also excluded were a few articles on project-based firms that primarily dealt with company-wide issues. Of the papers included in the data set, many have a governance orientation.
8. European Management Review	1	Given the success of the EURAM track on project management, it was expected that more articles would be published in EMR dealing with project management/organization. However, in the end, only one of the articles matched the selection criteria.
9. Harvard Business Review	9	Papers are primarily about two topics, either practical approaches to the management of projects (including rugby approaches, overlapping approaches, planning techniques, PERT), or as reports from failed projects (false economies, lessons learned). A number of practice-oriented papers and short notes were excluded from the sample. Some of the articles in the data set were also difficult to analyse because the theoretical foundation was not really made explicit (Gaddis 1959), and hence excluded from the sample.
10. IEEE Transactions on Engineering Management	14	The bulk of papers in IEEE-EM deal with either critical success factors of projects and project management or methods for optimizing project implementation. The papers have a rather strong engineering or mathematical orientation. The author was only able to search issues between 1987 and 2007.
11. Industrial Marketing Management	7	The papers could be divided into two groups: one dealing with supplier–client relationships in complex projects, the other dealing with project performance and project success. IMM has published a special issue that addresses project management issues.
12. International Business Review	10	The papers published in IBR generally look at the relationship aspects of projects, covering topics such as owner involvement, network development, systems selling and project marketing. IBR has published a special issue on project marketing and systems selling in which many of the papers included were published.
13. International Journal of Innovation Management	2	The two papers in IJIM that have a project-centric focus deal with global innovation projects and the importance of ‘project vision’. Both papers generally address the management challenges of innovation projects.
14. International Journal	6	In IJTM, a wide range of topics were found relating to project management, from planning, cross-functional integration to the practice

of Technology Management		of project management. It was difficult to identify a common theme among the papers. However, the majority of papers deal with project management in new product development.
15. International Studies of Management & Organization	7	Most papers have an organization theory orientation dealing with either cultural diversity or complex decision-making.
16. Journal of Management	3	In JM, only three papers were found. No common theme could be identified; one paper deals with cross-functional structures, one with critical success factors, and one with pacing and deadlines in projects. All papers identified have a high citation rate (89, 86, 27 respectively).
17. Journal of Management Studies	14	In JMS, the first paper on project management was found, published in 1970. The papers published have a fairly strong organization theory perspective and cover a wide range of topics, including papers on critical success factors, matrix organization, political perspectives on projects, and critical perspectives on project management.
18. Journal of Operations Management	18	In JOM the first 15 volumes contained ten papers focusing on scheduling, forecasting and priority rules. The most recent ten volumes have focused to a greater extent on critical success factors. Two papers had high citation scores (112 and 81).
19. Journal of Product Innovation Management	6	Three of the papers have a focus on project success/product success and project management. The remaining papers address organizational structures and complexity. A few articles that only focused on success factors for product development without a specific focus on projects were excluded from the sample.
20. Long Range Planning	2	One paper deals with project success, the other deals with planning approaches and work breakdown structures. Five practice-oriented papers were excluded from the sample.
21. Management Science	58	In MS, many papers on project management and project planning were identified. These papers have a strong operations research orientation, dealing with project scheduling, solving resource conflicts, project planning methods, etc. Many papers were excluded either because the focus was too narrow or due to mismatch in the level of analysis, including project portfolio management, multi-project scheduling, or a focus on project selection.
22. Organization	3	The papers in Organization have a critical orientation and a strong organization theory background, carried out within a qualitative research paradigm.
23. Organization Science	11	The papers published in Organization Science have a strong organization theory origin. Papers are produced within two different traditions: one quantitative tradition and one case-study based/qualitative tradition. Many papers have touched upon inter-team co-ordination/ inter-departmental co-ordination.
24. Organization Studies	9	Learning and knowledge processes seem to be recurring themes in the papers published in Organization Studies. Many of the papers are published in the same special issue covering knowledge, learning and project organizing.
25. R&D Management	15	A number of the papers deal with success factors in different types of development projects. Some papers cover relational aspects, including stakeholder management, governance, and collaboration. A number of papers were excluded from the sample because they were considered to be outside the scope of the present review, including project portfolio, and project valuation. The author had access to issues only between 1997 and 2007.



26. Research Policy	14	In RP, many influential papers were identified, ranging from success factors in projects and innovation projects to contextual analyses of projects.
27. Scandinavian Journal of Management	11	The papers in SJM have a strong organization theory orientation. Many of the papers are published in a special issue of selected papers from a project management conference. The theme of this special issue was 'project management and temporary organization'.
28. Sloan Management Review	7	Two papers are clearly within the line of success factors and project management; the other papers deal with managing uncertainty and models for project management. Many papers were not included because they primarily dealt with the firm-level, e.g. project portfolio and strategy.
29. Strategic Management Journal	2	Two papers were included in the data set: one dealing with critical success factors, one focusing on knowledge integration in projects. Many papers were left out because they dealt primarily with company-wide issues, including multi-project strategies.
30. Technovation	15	The majority of publications deal with project success, how to evaluate successful projects, and critical factors in projects. Most of the papers deal with innovation and new product development projects.

Source: Söderlund (2010)

**Table A2 Schools of project management research: contributions and keywords**

School	No. of papers in data set	Examples of highly cited contributions (based on citation analysis, presented in chronological order)	Keywords from paper summaries	Base discipline/key influence
Optimization School	73	Fulkerson (1961), Wiest (1981), Davis and Heidorn (1971), Davis and Patterson (1975), Cooper (1976), Talbot (1982), Liberatore and Titus (1983), Northcraft and Wolf (1984), Drexl (1991), Demeulemeester and Herroelen (1992), Adler and Mandelbaum (1995), Kolisch (1996), Levitt <i>et al.</i> (1999), Eppinger (2001), Huchzermeier and Loch (2001)	Optimal, quantitative, analysis, logical, management science, analytical, techniques, critical path, PERT, planning, work breakdown structure, resource allocation, project scheduling, value, activity networks, algorithm, duration, estimates, modelling.	Management science, applied mathematics
Factor School	64	Alter and Ginzberg (1978), Katz (1982), Katz and Allen (1985), Larson and Gobeli (1987; 1988; 1989), Pinto and Prescott (1988), Pinto and Mantel (1990), Henderson and Lee (1992),	Project success, failure, determinants, satisfaction, performance, criteria, antecedents, effects, critical, outcome, and measure.	Diverse, including innovation studies, operations and technology management

		Pinto et al. (1993), Clark (1989), Iansiti (1995), Tatikonda and Rosenthal (2000), Hoegl and Gemeunden (2001), Bonner et al. (2002)		
Contingency School	42	Tushman (1978), Takeuchi and Nonaka (1986), Clark and Wheelwright (1992), Ford and Randolph (1992), Eisenhardt and Tabrizi (1995), Adler (1995), Kirsch (1996), Shenhar and Dvir (1996), Lindkvist et al. (1998), Hobday (2000), Shenhar (2001), MacCormack et al. (2001), Pich et al. (2002), De Meyer et al. (2002)	Contingency, project organization, structure, information, decentralization, design, flexibility, fit, environment, conditions, characteristics, approach, matrix organization, adaptive, typology, framework, cross-functional structure, communication, taxonomy, complexity, uncertainty, interdependence, complex tasks, co-ordination, differences.	Sociology, organization theory
Behaviour School	64	Gersick (1988; 1989), Goodman and Goodman (1976), Lundin and Söderholm (1995), Packendorff (1995), Kreiner (1995), DeFillippi and Arthur (1998), Jarvenpaa and Leidner (1999), Hoopes and Postrel (1999), O'Mahony (2003), Engwall (2003)	Behaviour, process, learning, team, emotion, development, communication, creativity, longitudinal, climate, boundary object, transition, time, conflict, human, temporary, evolution, knowledge integration, motivation, role, practice, culture, diversity, pacing, gender, power, trust, change.	Organizational behaviour, organization theory, psychology, learning,
Governance School	19	Stinchcombe (1959), Eccles (1981), Croisier (1998), Turner and Keegan (2001), Clegg <i>et al.</i> (2002), Gerwin and Ferris (2004), Turner and Müller (2004)	Governance, authority, transaction cost, bureaucracy, market, variability, administration, contract, incentive, control, contracting, subcontracting, co-operation, construction projects, joint venture, consortium, hierarchy, strategic, alliance, principal, agent	Economics, transaction cost theory, principal agent theory
Relationship School	18	Hellgren and Stjernberg (1995), Hadjikhani (1996), Cova <i>et al.</i> (1996), Millman (1996), Cova and Hoskins (1997), Starkey <i>et al.</i> (2000),	Project network, formation, marketing, project business, network development, international projects, systems selling, project milieu,	Industrial marketing, economic geography

		Vaaland and Håkansson (2003)	stakeholders, social capital	
Decision School	25	Ross and Staw (1986), Ross and Staw (1993), Harrison and Harrell (1993), Conlon and Garland (1993), Staw and Ross (1978), Matta and Ashkenas (2003), Lovallo and Kahneman (2003)	Information, bias, escalation, commitment, influence, investment, project assessment, politics, termination, risk, option.	Political science, psychology

Source: Söderlund (2010)

**Table A3 Schools of project management research: main focus and research approach**

School	Main focus of analysis	Primary research approach and methodologies	Empirical context
Optimization School	Planning, breakdown techniques and scheduling of complex tasks	Logic-based, modelling, simulation, experiments, static/dynamic	Engineering, R&D
Factor School	Success factors and project outcomes/project performance	Surveys, quantitative cross-sectional analysis, regression analysis, deductive, static	R&D
Contingency School	Project organization design/structure	Surveys, multiple case studies, single case studies, deductive/inductive, static	R&D
Behaviour School	Project organization processes	Case studies, experiments, inductive, longitudinal, dynamic	Change, development
Governance School	Governance of project organizations/ Transactions	Case studies, deductive, static	Construction
Relationship School	Management of the formation and development phase of projects	Case studies, inductive, longitudinal, dynamic	Engineering, construction
Decision School	The interplay among decision-makers in the (mainly) early stages of projects	Case studies, longitudinal, deductive/inductive, dynamic	Public sector, IT

Source: Söderlund (2010)

**Table A4 Schools of project management research: key questions, ideas and maxims**

School	Key questions/issues investigated	Dominant project idea	Project management maxim
Optimization School	How to manage/plan a project?	Complex set of activities	'Optimizing project implementation by planning'
Factor School	What determines project success?	Complex task	'Targeting project management by factors'
Contingency School	Why do projects differ?	Organizational structure	'Adapting project organization to contingencies'
Behaviour School	How do projects behave?	Organizational process	'Shaping processes of project organization'
Governance School	How are projects governed?	Complex transaction	'Governing project organization/transactions'
Relationship School	How are the early stages of projects managed and how are projects formed?	Multi-actor network	'Developing relationships and projects'
Decision School	Why are projects instigated, why do they continue to live?	Large-scale investment	'Politicking and influencing decision-making processes'

Source: Söderlund (2010)

**Table A5 Category of project management topic**

Category of topic	Topic	Synthesis of results
Cost Management	<ul style="list-style-type: none"> <li>• Cost Management</li> </ul>	Displayed consistent significance throughout the study period
Cross Unit Outcomes	<ul style="list-style-type: none"> <li>• Estimating</li> <li>• Integration Management</li> <li>• Project Context/Environment</li> <li>• Project Life Cycle/Phasing</li> </ul>	An increase of interest in these topics. Increasing attention to estimating and project context/environment in both journals. Attention paid to integration increases in IJPM, but decreases in PMJ. The focus on the project life cycle are common within IJPM, but comparatively rare within PMJ
Finalization	<ul style="list-style-type: none"> <li>• Project Closeout/Finalisation</li> <li>• Testing, Commission, Handover and Acceptance</li> </ul>	Tend to either be ignored by writers on project management or identified as not being of significance
Interpersonal	<ul style="list-style-type: none"> <li>• Conflict Management</li> <li>• Leadership</li> <li>• Negotiation</li> <li>• Problem Solving</li> <li>• Teamwork</li> </ul>	The significance has peaked. Decreases in interest in conflict management and problem solving can be seen in both journals
Legal Issues	<ul style="list-style-type: none"> <li>• Legal Issues</li> </ul>	A low level of interest from writers in both IJPM and PMJ. Tend to

	<ul style="list-style-type: none"> <li>• Safety, Health and Environment</li> </ul>	either be ignored by writers on project management or identified as not being of significance
Marketing	<ul style="list-style-type: none"> <li>• Marketing</li> </ul>	Tend to either be ignored by writers on project management or identified as not being of significance
Product Functionality	<ul style="list-style-type: none"> <li>• Configuration Management</li> <li>• Design Management</li> <li>• Requirements Management</li> <li>• Technology Management</li> <li>• Value Management</li> </ul>	Product functionality shows significance from 1994 to 1999 and not significance from 2000 to 2003.
Programme Management	<ul style="list-style-type: none"> <li>• Programme Management</li> </ul>	This topic is reported as significant in years 1996-1998
Project Evaluation and Improvement	<ul style="list-style-type: none"> <li>• Organizational Learning</li> <li>• Performance Management</li> <li>• Project Evaluation and Review</li> </ul>	Increasing in its significance to the field. Increasing in attention to organizational learning in both journals
Project Planning and Control	<ul style="list-style-type: none"> <li>• Change Control</li> <li>• Project Monitoring and Control</li> <li>• Project Planning</li> </ul>	Decreasing interest in IJPM, while increasing in focus in PMJ
Project Start-up	<ul style="list-style-type: none"> <li>• Goals, Objectives and Strategies</li> <li>• Project Initiation/Start-up</li> <li>• Success (Criteria and Factors)</li> </ul>	Increasing in IJPM, while decreasing in PMJ over the study period
Quality Management	<ul style="list-style-type: none"> <li>• Quality Management</li> </ul>	The significance has peaked
Relationship Management	<ul style="list-style-type: none"> <li>• Benefits Management</li> <li>• Document Management</li> <li>• Information and Communication Management</li> <li>• Reporting</li> <li>• Team Building and Development</li> </ul>	Remaining strong in both journals, demonstrates the same tendency. Displayed consistent significance throughout the study period
Resource Management	<ul style="list-style-type: none"> <li>• Personnel/Human Resource Management</li> <li>• Procurement</li> <li>• Project Organization</li> <li>• Resource Management</li> </ul>	<p>An interesting tendency can be seen in the results. Displayed consistent significance throughout the study period. Procurement in IJPM remains strong in attention but drops dramatically in PMJ.</p> <p>Project organization becomes less key in IJPM, but becomes more key within PMJ</p>

Risk Management	<ul style="list-style-type: none"> <li>• Risk Management</li> </ul>	Risk management has shown consistent trends, being of significance and increasing in significance respectively.
Scope Management	<ul style="list-style-type: none"> <li>• Scope Management</li> </ul>	Tend to either be ignored by writers on project management or identified as not being of significance
Strategic Alignment	<ul style="list-style-type: none"> <li>• Business Case</li> <li>• Financial Management</li> <li>• Project Appraisal</li> <li>• Strategic Alignment</li> </ul>	Increasing in significance to the field. Strategic alignment has been found by other studies to be of significance, while this study found it to be increasing in significance. This suggests that strategic alignment could form a progressively dominant aspect of the field
Time Management	<ul style="list-style-type: none"> <li>• Time Management</li> </ul>	Increasing in IJPM, while decreasing in PMJ over the study period. Displayed consistent significance throughout the study period

Source: Crawford et al., (2006)

### Stream of project management topics and the significance to the field in International Journal of Project Management from 2003 to 2013

**Table A6 Stream of project management topics in IJPM**

International Journal of Project Management				
Category of Topic	No. of articles	Topic	Comments	Authors
Cost Management	2	<ul style="list-style-type: none"> <li>• Cost Management</li> </ul>	Tools for managing cost such as S-curve, minimising cost	Cioffi, D., (2005); Yang (2007)
Cross Unit Outcomes	3	<ul style="list-style-type: none"> <li>• Estimating</li> <li>• Integration Management</li> <li>• Project Context/ Environment</li> <li>• Project Life Cycle/Phasing</li> </ul>	Methods for project conceptualization. Integration as a project management concept.	Yang et al., (2006); Joham (2009); Kirsilä (2007)
Finalization	1	<ul style="list-style-type: none"> <li>• Project Closeout/ Finalization</li> <li>• Testing, Commission, Handover and Acceptance</li> </ul>	Closing phase which needs for planning, budgeting and scheduling	Dvir (2005)
Interpersonal	14	<ul style="list-style-type: none"> <li>• Conflict Management</li> </ul>	Project manager competence, skills, coping with problems.	Thomas and Buckle-Henning (2007);

		<ul style="list-style-type: none"> <li>• Leadership</li> <li>• Negotiation</li> <li>• Problem Solving</li> <li>• Teamwork</li> </ul>	Ability to plan, communicate, coordinate, manage, organize and control. Team competence, the effect of teamwork, team environment and pressure on project performance. The role of project leader in term of management/leadership in project management	Crawford and Aitken (2007); Barber (2004); Chen and Partington (2006); Li et al., (2010); Yang et al.,(2011); Fisher (2011); Lee (2009); Crawford (2005); Müller and Turner, (2007); Nordqvist et al (2004); Henderson (2004); Kaulio (2008); Lloyd-Walker and Walker (2011); Kissi (2013); Boonstra (2013); Rees-Caldwell and Pinnington (2013)
Legal Issues	1	<ul style="list-style-type: none"> <li>• Legal Issues</li> <li>• Safety, Health and Environment</li> </ul>	The impact of relationship between project owner and manager on communication	Müller and Turner (2005)
Marketing	1	<ul style="list-style-type: none"> <li>• Marketing</li> </ul>	Relationship between project marketing and project management	Cova and Salle (2005)
Product Functionality	3	<ul style="list-style-type: none"> <li>• Configuration Management</li> <li>• Design Management</li> <li>• Requirements Management</li> <li>• Technology Management</li> <li>• Value Management</li> </ul>	technology transfer, innovation, managing product development	Saad et al., (2002); Sundström and Zika-Viktorsson (2009); Danilovic and Browning (2007); McCurdy (2013); Yang (2012)
Programme Management	2	<ul style="list-style-type: none"> <li>• Programme Management</li> </ul>	Integrated programme management model. Problems in managing multi-projects	Thiry (2002); Elonen and Artto (2003); Eamonn and Stewart (2013)
Project Evaluation and Improvement	2	<ul style="list-style-type: none"> <li>• Organizational Learning</li> <li>• Performance Management</li> <li>• Project Evaluation and Review</li> </ul>	Methods for evaluation the projects such as Payback (PP), IRR, NPV, ARR/ROI. Management capability assessment methods.	Milis and Merchen (2004); Jaafari (2007)
Project Planning and Control	30	<ul style="list-style-type: none"> <li>• Change Control</li> <li>• Project Monitoring and Control</li> <li>• Project Planning</li> </ul>	Tools for planning, planning and controlling and monitoring. Cost control. Breakdown techniques and scheduling of complex tasks, project cost estimation, CPM/PERT, Dependency Structure Matrix (DSM). Tools for assessing time delays on projects. AHP, PMIS for decision making method to help project managers to make proper decisions. Relationship between	Hartman and Ashrafi (2004); Chou (2011);Rand (2000); Koppenjan et al.,(2011); Williams (2003); Al-Harbi (2001); Dvir, D. et al.,(2003); Pajares and López-Paredes(2011); White (2011); Naeni, et al.,

			<p>project planning and project success, a control system enabling the project manager to predict project costs and staffing requirements, EVM project management technique to measure project progress in objective manner, methods for successful management. Planning tool such as NPV.</p> <p>Project management performance assessment (PMPA).</p>	<p>(2011); Kapsali, (2011); Maheswari and Varghese (2005); Wei et al.,(2002); Gardiner and Stewart (2000); Qureshi et al.,(2009); Crawford and Bryce (2003); Raymond and Bergeron (2008); Yaghootkar and Gil (2012); Kastor and Sirakoulis (2009);Shi (2011); Al-jibouri (2002);Hardie (2001); Rozenes et al., (2004); Al-jibouri (2003); Marques et al., (2011); Zhang et al., (2006); Zhang et al.,(2006); Chen and Lee (2007); Bernroider and Ivanov (2011); White (2006); Hadad et al., (2013); Eweje et al., (2012)</p>
Project Start-up	19	<ul style="list-style-type: none"> <li>• Goals, Objectives and Strategies</li> <li>• Project Initiation/Start-up</li> <li>• Success (Criteria and Factors)</li> </ul>	<p>Project Success factors and success criteria: External communications, cost, time, quality, and satisfying the needs of other stakeholders, top management support. Project outcomes/project performance. Measuring project success, value-centred. Project strategy. Project management competencies</p>	<p>Müller (2003); Agarwal and Rathod (2006); Yu and Kwon (2011); Bryde and Robinson (2005) ; Yu et al., (2005); Jha, K.N and Iyer, K.C. (2007); Young and Jordan (2008);Tesch et al., (2009); Westerveld (2003); Sausser et al.,(2009);Cooke-Davies (2002); Dietrich and Lehtonen (2005); Arto, et al.,(2008); Diallo and Thuillier (2004); Isik et al., (2009); Al-Tmeemy et al.,(2011); Pheng and Chuan (2006); Fortune and White (2006); Ling et al., (2009); Tang and Shen (2013); Verburg et al., (2013); Young et al., (2012)</p>
Quality Management	1	<ul style="list-style-type: none"> <li>• Quality Management</li> </ul>	<p>Managing project quality and the impact of quality on project performance: ISO 9000 certification</p>	<p>Din et al., (2011); Flyvbjerg (2013)</p>
Relationship Management	6	<ul style="list-style-type: none"> <li>• Benefits Management</li> <li>• Document Management</li> <li>• Information and</li> </ul>	<p>Project management and leadership style: How cultural differences shape the way project management is exercised, leadership, team climate as a factor for team</p>	<p>Zwikael et al., (2005); Pheng and Leong(2000); Mäkilouko (2004); Loo, R.,(2003);Tseng et al.,(2004); Thamhain</p>



		<p>Communication Management</p> <ul style="list-style-type: none"> <li>• Reporting</li> <li>• Team Building and Development</li> </ul>	performance. Formation of multi-functional teams in project management.	(2004)
Resource Management	11	<ul style="list-style-type: none"> <li>• Personnel/Human Resource Management</li> <li>• Procurement</li> <li>• Project Organization</li> <li>• Resource Management</li> </ul>	Human resources, project organization (PMO), the relationship between human capital and project management performance. Resource allocation. The relationship of project management assets and the firm's capability. The impact of human resource management on project success factors.	Raiden et al., (2004); Aubry et al., (2007); Ling (2003); Wang and Armstrong (2004); Brown et al., (2007); Laslo and Goldberg (2008); Huemann et al., (2007); Jugdev et al., (2007); Belout and Gauvreau (2004); Thiry, (2004); Dzeng and Wen, (2005)
Risk Management	8	<ul style="list-style-type: none"> <li>• Risk Management</li> </ul>	Risk in projects from a project management perspective. Project management of unexpected events. Managing risk in projects, Risk from change. Uncertainties in projects and the scope of project management	Camprieu et al., (2007); Barber (2005); Söderholm (2008); Kwak and Smith (2009); Williams (2000); Jani (2011); Atkinson et al., (2006); Kutsch and Hall (2005)
Scope Management	2	<ul style="list-style-type: none"> <li>• Scope Management</li> </ul>	Strategic management	Naaranoja et al., (2007); Hauc and Kovač (2000)
Strategic Alignment	1	<ul style="list-style-type: none"> <li>• Business Case</li> <li>• Financial Management</li> <li>• Project Appraisal</li> <li>• Strategic Alignment</li> </ul>	The relationship between business strategy and project management. Project management in strategy implementation	Srivannaboon and Milosevic (2006)
Time Management	1	<ul style="list-style-type: none"> <li>• Time Management</li> </ul>	Improving efficiency by the management of time-critical operations in project environment.	Hameri and Heikkilä (2002); Elshaer (2013); Aliverdi et al., (2013)

**Stream of project management topics and the significance to the field in Project Management Journal from 2003 to 2013**

**Table A7 Stream of project management topics in PMJ**

Project Management Journal				
Category of Topic	No. of articles	Topic	Comments	Authors
Cost Management		<ul style="list-style-type: none"> <li>• Cost Management</li> </ul>		
Cross Unit Outcomes	3	<ul style="list-style-type: none"> <li>• Estimating</li> <li>• Integration Management</li> <li>• Project Context/Environment</li> <li>• Project Life Cycle/Phasing</li> </ul>	Stakeholder management. Project planning phase.	Sutterfield et al., (2006); Zwikael (2009); Byosiere and Luethge (2007)
Finalization		<ul style="list-style-type: none"> <li>• Project Closeout/Finalization</li> <li>• Testing, Commission, Handover and Acceptance</li> </ul>		
Interpersonal	8	<ul style="list-style-type: none"> <li>• Conflict Management</li> <li>• Leadership</li> <li>• Negotiation</li> <li>• Problem Solving</li> <li>• Teamwork</li> </ul>	Project manager competence such as communication competence. Leadership competence, skills. Soft skill assessment: a model that allows soft skill quantification (SSQ) and its utility in predicting performance. Project manager emotional intelligence as a key of project manager competence.	Gehring (2007); Henderson (2008); Muzio et al. (2007); Turner and Müller (2005); Neuhauser (2007); Clarke (2010); Sotiriou and Wittmer (2001); Skulmoski and Hartman (2010); Besner and Hobbs (2013)
Legal Issues		<ul style="list-style-type: none"> <li>• Legal Issues</li> <li>• Safety, Health and Environment</li> </ul>		
Marketing		<ul style="list-style-type: none"> <li>• Marketing</li> </ul>		
Product Functionality	2	<ul style="list-style-type: none"> <li>• Configuration Management</li> <li>• Design Management</li> <li>• Requirements Management</li> <li>• Technology Management</li> <li>• Value Management</li> </ul>	Technology transfer, innovation, managing product and new development.	Pons (2008); Kenny (2003)
Programme Management		<ul style="list-style-type: none"> <li>• Programme Management</li> </ul>		
Project Evaluation and		<ul style="list-style-type: none"> <li>• Organizational Learning</li> </ul>		

Improvement		<ul style="list-style-type: none"> <li>• Performance Management</li> <li>• Project Evaluation and Review</li> </ul>		
Project Planning and Control	18	<ul style="list-style-type: none"> <li>• Change Control</li> <li>• Project Monitoring and Control</li> <li>• Project Planning</li> </ul>	<p>Tools and methods for planning, controlling and monitoring such as Balanced Scorecard to improve operational performance of the project team, agile method. The role of technology in project manager performance. The impact of the project manager on project management planning processes.</p> <p>Cost control. Breakdown techniques and scheduling of complex tasks, project cost estimation, CPM/PERT, Dependency Structure Matrix (DSM). Tools for assessing time delays on projects. Tools and methods such as DSMS, AHP for decision making to help project managers to make a proper decision. Decision making - how a project manager's prior experience and risk propensity influence his or her decision making.</p>	<p>Norrie and Walker (2004); Herroelen et al., (2002); Yazici (2009); Anantatmula (2008);</p> <p>Globerson and Zwikael (2002); Besner and Hobbs (2006); Dolol and Jaafari (2002); Khodakarami, et al. (2007); Haga and Marold (2004); Chiocchio (2007); Conforto and Amaral (2010);</p> <p>Huff and Prybutok (2008); Williams and Samset (2010); Chiesa et al., (2007); Cohen et al. (2004); Ingalls and Morrice (2004); Liberatore (2002); Rozenes et al., (2006)</p>
Project Start-up	12	<ul style="list-style-type: none"> <li>• Goals, Objectives and Strategies</li> <li>• Project Initiation/Start-up</li> <li>• Success (Criteria and Factors)</li> </ul>	<p>Project success factors and success criteria: Project manager's leadership, project management software. The role of vision in project success. Project management competencies. Integration of planning and team building to develop an effective project. Project management success value from stakeholders' perspectives. Success factors and criteria for project's success for each project phase - conceptualizing, planning, implementing and closing</p>	<p>Geoghegan and Dulewicz (2008); Thomas et al. (2008); Kloppenborg et al., (2006); Prabhakar (2005); Zhai et al., (2009); Christenson and Walker (2004); Hyväri (2006);</p> <p>Dvir et al., (2006); Khang and Moe (2008); Kendra and Taplin (2004); Ika (2009); Bani Ali et al., (2008); Turner and Zolin (2012)</p>
Quality Management		<ul style="list-style-type: none"> <li>• Quality Management</li> </ul>		
Relationship Management	5	<ul style="list-style-type: none"> <li>• Benefits Management</li> <li>• Document Management</li> <li>• Information and Communication Management</li> <li>• Reporting</li> </ul>	<p>Team climate as a factor for team performance. Formation of multi-functional teams in project management. Project management communication. Team leadership effectiveness.</p>	<p>Giffin (2002); Thamhin (2004); Peterson (2007); Schmid and Adams (2008); Schmid and Adams (2008)</p>

		<ul style="list-style-type: none"> <li>• Team Building and Development</li> </ul>		
Resource Management	2	<ul style="list-style-type: none"> <li>• Personnel/Human Resource Management</li> <li>• Procurement</li> <li>• Project Organisation</li> <li>• Resource Management</li> </ul>	Human resources, Criteria for project manager.	Hauschildt et al., (2000); Besner and Hobbs (2008)
Risk Management	3	<ul style="list-style-type: none"> <li>• Risk Management</li> </ul>	Risk in project from a project management perspective. Uncertainties in projects and the scope of project management	Dillard and Nissen (2007); Krane et al., (2010); McLain (2009)
Scope Management	1	<ul style="list-style-type: none"> <li>• Scope Management</li> </ul>	Strategic management - moving from corporate strategy to project strategy	Morris and Jamieson (2005)
Strategic Alignment	4	<ul style="list-style-type: none"> <li>• Business Case</li> <li>• Financial Management</li> <li>• Project Appraisal</li> <li>• Strategic Alignment</li> </ul>	Aligning project management with business strategy. Linking project management with business strategy. Aligning capability with strategy. Strategic fit between strategy and project management	Srivannaboon and Milosevic (2006); Crawford et al., (2006); Cooke-Davies et al., (2009); Srivannaboon (2006); Shiferaw and Klakegg (2012)
Time Management		<ul style="list-style-type: none"> <li>• Time Management</li> </ul>		

## Summary of the most popular topics in project management

**Table A 8 Summary of the most popular topics in project management**

Summary of topics in project management	Authors
Decision-making and managing risk in complex projects including tools and methods	Söderlund (2010); Crawford et al., (2006); Eweje et al., (2012); Dweiri (2006); Huff and Prybutok (2008); Samset (2008); Williams and Samset (2010); Marques et al., (2011)
Critical success factors and project success criteria in project development: conceptualising, planning, implementing and closing. Methods for optimising project implementation. Project performance and project management performance assessment (PMPA).	Müller (2003); Agarwal and Rathod (2006); Yu and Kwon (2011); Bryde and Robinson (2005) ; Yu et al., (2005); Jha, K.N and Iyer, K.C. (2007); Young and Jordan (2008);Tesch et al., (2009); Westerveld (2003); Sauser et al.,(2009);Cooke-Davies (2002); Dietrich and Lehtonen (2005); Artto, et al.,(2008); Diallo and Thuillier (2004); Isik et al., (2009); Al-Tmeemy et al.,(2011); Pheng and Chuan (2006); Fortune and White (2006); Ling et al., (2009); Tang and Shen (2013); Verburg et al., (2013); Young et al., (2012); Söderlund (2010); Crawford et al., (2006); Geoghegan and Dulewicz (2008); Thomas et al.

	(2008); Kloppenborg et al., (2006); Prabhakar (2005); Zhai et al., (2009); Christenson and Walker (2004); Hyväri (2006); Dvir et al., (2006); Khang and Moe (2008); Kendra and Taplin (2004); Ika (2009); Bani Ali et al., (2008); Turner and Zolin (2012)
Project lifecycle such as planning, scheduling, controlling, and monitoring including planning techniques such as PERT, NPV, and work breakdown structures. Methods for project conceptualisation.	Hartman and Ashrafi (2004); Chou (2011); Rand (2000); Koppenjan et al.,(2011); Williams (2003); Al-Harbi (2001); Dvir, D. et al.,(2003); Pajares and López-Paredes(2011); White (2011); Naeni, et al., (2011); Kapsali, (2011); Maheswari and Varghese (2005); Wei et al.,(2002); Gardiner and Stewart (2000); Qureshi et al.,(2009); Crawford and Bryce (2003); Raymond and Bergeron (2008); Yaghootkar and Gil (2012); Kastor and Sirakoulis (2009);Shi (2011); Al-jibouri (2002);Hardie (2001); Rozenes et al., (2004); Al-jibouri (2003); Marques et al., (2011); Zhang et al., (2006); Zhang et al.,(2006); Chen and Lee (2007); Bernroider and Ivanov (2011); White (2006); Hadad et al., (2013); Eweje et al., (2012); Norrie and Walker (2004); Herroelen et al., (2002); Yazici (2009); Anantatmula (2008); Globerson and Zwikael (2002); Besner and Hobbs (2006); Dolol and Jaafari (2002); Khodakarami, etal. (2007); Haga and Marold (2004); Chiochio (2007); Conforto and Amaral (2010); Huff and Prybutok (2008);Williams and Samset (2010);Chiesa et al., (2007); Cohen et al. (2004); Ingalls and Morrice (2004); Liberatore (2002); Rozenes et al., (2006); Söderlund (2010); Crawford et al., (2006)
Project managers, project team, and project management competencies such as project manager's skills and leadership. The role of project leader in terms of management/leadership in project management. Project management and leadership style: Project manager competence such as communication, leadership, skills, emotional intelligence. Some topics such as the impact of the project manager on the project management planning process. Team leadership effectiveness, team climate as a factor for team performance. Coping with problems. Ability to, communicate, coordinate, manage, organise and control.	Söderlund (2010); Crawford et al., (2006); Thomas and Buckle-Henning (2007); Crawford and Aitken (2007); Barber (2004); Chen and Partington (2006); Li et al., (2010); Yang et al.,(2011); Fisher (2011); Lee (2009); Crawford (2005); Müller and Turner, (2007); Nordqvist et al (2004); Henderson (2004); Kaulio (2008); Lloyd-Walker and Walker (2011); Kissi (2013); Boonstra (2013); Rees-Caldwell and Pinnington (2013); Gehring (2007); Henderson (2008); Muzio et al. (2007); Turner and Müller (2005); Neuhauser (2007); Clarke (2010); Sotiriou and Wittmer (2001); Skulmoski and Hartman (2010); Besner and Hobbs (2013)
Some papers cover relational aspects, including stakeholder management, governance, and collaboration. Some papers deal with supplier–client relationships in complex projects; the others, generally, look at the relationship aspects of projects, covering topics such as owner involvement, network development, systems selling and project marketing.	Cova and Salle (2005); Aaltonen and Kujala (2010); Achterkamp and Vos (2008); Altinay and Miles (2006); Assudani and Kloppenborg (2010); Söderlund (2010); Crawford et al., (2006)
Innovation, technology transfer, technology forecasting, and new product development projects.	Saad et al., (2002); Sundström and Zika-Viktorsson (2009); Danilovic and Browning (2007); McCurdy (2013); Yang (2012); Pons

	(2008); Kenny (2003); Söderlund (2010); Crawford et al., (2006)
Resource management including human resources and resource allocation, the impact of human resource management on project success factors. The effect of team environment such as cultural differences and team climate on team performance and project management exercise. Tools and methods to improve operational performance of the project team. Formation of multi- functional teams in project management.	Söderlund (2010); Crawford et al., (2006); Raiden et al., (2004); Aubry et al., (2007); Ling (2003); Wang and Armstrong (2004); Brown et al., (2007); Laslo and Goldberg (2008); Huemann et al., (2007); Jugdev et al., (2007); Belout and Gauvreau (2004); Thiry, (2004); Dzung and Wen, (2005); Hauschildt et al., (2000); Besner and Hobbs (2008)
Project management tools, methods, and templates including tools for communications, project management software, tools for assessing time delays on projects, cost control such as S-curve, project cost estimation, CPM/PERT, a control system which enables project managers to predict project cost and staffing requirements, EVE project management technique to measure project progress in an objective manner and methods for evaluation of the projects such as payback (PP), IRR, NPV, and ARR/ROI. Quality management.	Cioffi, D., (2005); Yang (2007); Milis and Merchen (2004); Jaafari (2007); Din et al., (2011); Flyvbjerg (2013); Hameri and Heikkilä (2002); Elshaer (2013); Aliverdi et al., (2013);
Risk Management. Risk in project from a project management perspective. Project management of unexpected events. Managing risk in projects, Risk from change. Uncertainties in projects and the scope of project management	Camprieu et al., (2007); Barber (2005); Söderholm (2008); Kwak and Smith (2009); Williams (2000); Jani (2011); Atkinson et al., (2006); Kutsch and Hall (2005); Dillard and Nissen (2007); Krane et al., (2010); McLain (2009); Crawford et al., (2006); Source: Söderlund (2010)
A few papers on strategic management. Linking project management with business strategy. Aligning capability with strategy. Strategic fit between strategy and project management. The relationship between business strategy and project management. Some papers pay some attention to project portfolio, project selection, programme management, and project strategy.	Srivannaboon and Milosevic (2006); Crawford et al., (2006); Cooke-Davies et al., (2009); Srivannaboon (2006a); Shiferaw and Klakegg (2012)

## Appendix (B) Alignment

Appendix (B) includes the stream of alignment research in the alignment between business strategy and functional strategies, alignment enabling and inhibiting factors, measuring the alignment, and questionnaires for calculating the alignment score for the four telecommunications companies.

### Stream of alignment research between BS and functional strategies

**Table B1 Stream of alignment research between BS and functional strategies**

Theme	Title	Nature of Study	Meth.	Finding	Contribution	Author
Aligning BS with IS	Aligning business and IS-thinking: A cognitive approach	E	Qualitative  (Interview)	A higher level of a commonality between BS and IS executives strengthening the alignment	Supports the idea that shared cognition is an important component of the social dimension of alignment.	Tan and Gallupe (2006)
	Antecedents of IS strategic alignment: A nomological network	E	Using matched-pair surveys of CIOs and TMT peer executive	IS strategic alignment is influenced by a shared CIO-TMT understanding.	Shared understanding is an important antecedent of the intellectual dimension of IS strategic alignment	Preston and Karahanna (2009)
Aligning BS with IT	A process-oriented perspective on the alignment of IT and BS	E	Using data from matched surveys of IT and business executive at 241 firms	IT business value is positively related to alignment at the process level for all value disciplines	Alignment has been conceptualized and evaluated at the process level	Tallon (2007)
	Process to align IT projects with business strategy	E	Qualitative  (Un-structured interviews)	Addressing the importance of knowledge sharing and the involvement of IT in strategy development.  Highlighting problems that lead to misalignment between business and IT.	A framework to assess alignment at different organizational levels	Gutiérrez et al., (2008)
	Using and validating the strategic alignment model	E	Data from completed projects are applied to the SAM model	Firms cannot be competitive if their business and IT strategies are not aligned.  Shared domain knowledge, communication and planning, and business direction contribute to successful alignment	Development and assessment of a tool for aligning IT and business strategy and its concomitant processes	Avison et al., (2004)
	IT alignment and firm performance	E	Quantitative	Identifying a positive association	Provided evidence of inconsistent results from the matching	Cragg et al., (2002)

in small manufacturing firms		(postal survey)	between IT alignment and small firm organizational performance.  Many small manufacturers had achieved a high degree of alignment between BS and IT.	and moderation approaches.  Alignment between BS and IT strategy affects the organizational performance.	
The leveraging influence of strategic alignment on IT investment: an empirical examination	E	Quantitative  (Survey)	The concept of strategic alignment of BS and IT strategy is rather robust.  The alignment supports the firm's investment in small and medium sized firms.	Empirical evidence regarding the utility of different conceptualization of strategic alignment on the effectiveness of IT investment.	Byrd et al.,(2006)
Enabler and inhibitors of business-IT alignment	E	Quantitative  (survey study)	Certain activities can assist in the achievement of the alignment while others are clearly barriers.	Enablers and inhibitors of business-IT alignment.  Enablers and inhibitors of the alignment.  (see table 2.6 )	Luftman and Brier (1999)
Factors affecting IT and business alignment: A comparative study in SMEs and large organizations	E	Quantitative  (Online survey)	Factors relevant to attain alignment seem to be relevant for all organizations regarding size.  Companies that have similar strategies can attain better level of alignment.	Contribution to the existing studies of the alignment in SMEs	Gutiérrez et al., (2009)
Antecedents and drivers of IT-business strategic alignment: Empirical	E	Quantitative  (Survey)	Positive correlation between integration business plan and IT plan.	Developing a comprehensive strategic alignment model	Yayla and Hu (2009)



	validation of a theoretical model			Communication between business managers and IT managers positively affects the alignment.		
	Alignment of business strategy and IT strategy: A case study of a Fortune 50 financial services company	E	Qualitative (Interview)	Identifying a gap between BS and IT strategy caused by lack of communications and misalignment between business departments.	Contributing to theory by highlighting a gap between business strategy and IT strategy and identifying the factors that contribute to such gap.	Rathnam et al., (2005)
	Ideal patterns of strategic alignment and business performance	E	Quantitative (Postal survey)	Low-performance firms exhibited a conflicting alignment pattern of business strategy, business structure, IT strategy, and IT structure	An operational model of strategic alignment	Bergeron et al., (2004)
Aligning BS with MS	The alignment between manufacturing and BS: Its influence on business performance	E	Quantitative (Survey)	Aligning MS and BS leads to improvement of business performances.	A framework including business strategy, MS, business performance, and manufacturing performance.	Sun and Hong (2002)
Aligning project management with business strategy	Linking project management with business strategy	E	Qualitative (Case study)  Semi-structured interview	BS realizes its influence on project management via the competitive attributes of the business strategy (time-to-market, quality, cost)	Empirical framework is developed to address the configuration of PM as influenced by the business strategy and vice versa.	Srivannaboon (2006)

E: Empirical; Meth: Methodology; TMT: Top management team; MS: Manufacturing strategy

**Factors that affect the alignment between the functional departments and the strategies from previous studies**

**Table B2 Alignment factors**

Alignment enabling factors						
Theme	Title	Enabling factors	Methodology	Finding	Contribution	Author
Aligning BS with IS	Aligning business and IS-thinking: A cognitive approach		Qualitative  (Interview)	A higher level of a commonality between BS and IS executives strengthening alignment	Supports the idea that shared cognition is an important component of the social dimension of alignment.	Tan and Gallupe (2006)
	Aligning business strategy with IS.	Communication, value metrics, IT governance, partnership, scope and architecture, skills	Unstructured interviews and observation technique to observe day-to-day organizational processes and tasks	Highlighting the importance of knowledge sharing and the involvement of IT in the strategy development.  Highlighting the problems causing misalignment between business and IS.	A framework to assess alignment at different organizational levels	Gutierrez et al., (2008)
	Antecedents of IS strategic alignment: A nomological network	Common understanding between the CIO and the TMT on the role of IS in the organization	Using matched-pair surveys of CIOs and TMT peer executives	IS strategic alignment is influenced by a shared CIO-TMT understanding.	Shared understanding is an important antecedent of the intellectual dimension of IS strategic alignment	Preston and Karahanna (2009)
Aligning BS with IT	A process-oriented perspective on the alignment of IT and BS		Using data from matched surveys of IT and business executive at 241 firms	IT business value is positively related to alignment at the process level for all value disciplines	Alignment has been conceptualized and evaluated at the process level	Tallon (2007)
	Using and validating the strategic alignment model	Information, communication, competencies, resource management, infrastructure architecture, and customer oriented	Data from completed projects are applied to the SAM model	Firms cannot be competitive if their business and IT strategies are not aligned.  Shared domain knowledge, communication and planning,	Development and assessment of a tool for aligning IT and business strategy and its concomitant processes	Avison et al., (2004)

				and business direction contribute to successful alignment		
	IT alignment and firm performance in small manufacturing firms		Quantitative  (Postal survey)	Identifying a positive association between IT alignment and small firm organizational performance.  Many small manufacturers had achieved a high degree of alignment between BS and IT.	Provided evidence of inconsistent results from the matching and moderation approaches.  Alignment between BS and IT strategy affects the organizational performance.	Cragg et al., (2002)
	The leveraging influence of strategic alignment on IT investment: an empirical examination		Quantitative  (Survey)	The concept of strategic alignment of BS and IT strategy is rather robust.  The alignment supports the firm's investment in small and medium size firms.	Empirical evidence regarding the utility of different conceptualization of strategic alignment on the effectiveness of IT investment.	Byrd et al.,(2006 )
	Enabler and inhibitors of business-IT alignment	executive support, IT involvement in strategy development, IT understands the business, business-IT partnership, well-prioritized IT projects, and IT demonstrates leadership	Quantitative  (survey study)	Certain activities can assist in the achievement of the alignment while others are clearly barriers.	Enablers and Inhibitors of Business-IT alignment.  Enablers and inhibitors of the alignment.  (see table 2.6 )	Luftman and Brier (1999)
	Factors affecting IT and business alignment: A comparative study in SMEs and large organizations	Communication between business and IT, competency/ value measurement, governance, partnership, architecture and	Quantitative  (Online survey)	Factors relevant to attain alignment seem to be relevant for all organizations regarding size.  Companies that	Contribution to the existing studies of alignment in SMEs	Gutierrez et al., (2009)

		scope, skills		have similar strategies can attain better levels of alignment.		
	Antecedents and drivers of IT-business strategic alignment: Empirical validation of a theoretical model	Connection, communication	Quantitative (Survey)	Positive correlation between integration business plan and IT plan.  Communication between business managers and IT managers positively affects alignment.	Developing a comprehensive strategic alignment model	Yayla and Hu (2009)
	Alignment of business strategy and IT strategy: A case study of a fortune 50 financial services company	Improving BS development, collaborating the strategy development between IT and business department, communicating the BS properly and highlighting the need to align IT and business strategy	Qualitative (Interview)	Identifying a gap between BS and IT strategy caused by lack of communication and misalignment between business departments.	Contributing to theory by highlighting a gap between business strategy and IT strategy and identifying the factors that contribute to such gaps.	Rathnam et al.,(2005 )
	Ideal patterns of strategic alignment and business performance		Quantitative (Postal survey)	Low-performance firms exhibited a conflicting alignment pattern of business strategy, business structure, IT strategy, and IT structure	An operational model of strategic alignment	Bergeron et al.,(2004 )
Aligning BS with MS	The alignment between manufacturing and BS: Its influence on business performance		Quantitative (Survey)	Aligning MS and BS leads to improvement of business performances.	A framework including business strategy, MS, business performance, and manufacturing performance.	Sun and Hong (2002)

Aligning PM with BS	Linking project management with business strategy		Qualitative (Case study)  Semi-structured interview	BS realizes its influence on project management via the competitive attributes of the business strategy (time-to-market, quality, cost)	Empirical framework is developed to address the configuration of PM as influenced by the business strategy and vice versa.	Srivannaboon (2006)
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**Table B3 Enablers and inhibitors of IT alignment**

Enablers	Inhibitors
Senior executive support	IT & non-IT lack close relationship
IT involved in strategy development	IT is not prioritized well
IT understands business	IT fails to meet commitments
IT & non-IT have a close relationship	IT does not understand business
IT shows strong leadership	Senior executives do not support IT
IT efforts are well prioritized	IT management lacks leadership
IT meets commitments	IT fails to meet strategic goals
IT plans are linked to business plans	Budget and staffing problems
IT achieves its strategic goals	Antiquated IT infrastructure
IT resources shared	Goals/vision are vague
Goals/ vision are defined	IT does not communicate well
IT is applied for competitive advantage	Resistance from senior executives
Good IT / business communication	IT plans are not linked
Partnerships/ alliances	Others
Other	

Source: Luftman and Brier (1999)

**Table B4 Enabler and inhibitors of business and IS alignment**

Enablers	Inhibitors
Senior executive support IS	Senior executive do not support IS
IS understands business	IS does not understands business
IS & business executives have a close	IS & business executives lack a close

relationship	relationship
IS management shows strong leadership	IS management lacks leadership
IS efforts are well prioritized	IS does not prioritize well
IS meets commitments	IS fails to meet commitments
IS plans are linked to business plans	IS plans and business plans are not linked
IS achieves its strategic goals	IS fails to achieve its strategic goals
Goals/vision are defined	Goals/vision are vague
Good IS/business communication	IS does not communicate well
IS is involved in strategy development	IS is not involved in strategy development
IS/business partnership	Resistance from senior executives
Adequate resourcing of IS	Budget and staffing problems
Up-to-date IS infrastructure	Antiquated IS infrastructure
IS is applied for competitive advantage	IS is applied to automate

Source: Tan and Gallupe (2006)

## Questionnaires for calculating the alignment score in company M

### This questionnaire is for the executive

Items below include many dimensions that are extracted from the interview with you about the main aim you would like to gain from the 3 G project. Please indicate the importance you attach to each dimension in reference to **the project management** based on **your opinion**. Thank you for your valuable input.

(1) Not at all important

(2) Somewhat important

(3) Important

(4) Very important

(5) Extremely important

#### **Business support (Dimension 1)**

- Sustainable competitive advantage (1) (2) (3) (4) (5)
- Increase the company's revenue (1) (2) (3) (4) (5)
- Expand the customers' segment reach (1) (2) (3) (4) (5)
- Customer experience (1) (2) (3) (4) (5)

#### **Time to market (Dimension 2)**

- Major milestones (1) (2) (3) (4) (5)
- Finish date (1) (2) (3) (4) (5)

### Quality (Dimension 3)

- |                              |     |     |     |     |     |
|------------------------------|-----|-----|-----|-----|-----|
| - Integration                | (1) | (2) | (3) | (4) | (5) |
| - High speed broadband       | (1) | (2) | (3) | (4) | (5) |
| - Data service in big domain | (1) | (2) | (3) | (4) | (5) |

### Cost (Dimension 4)

- |  |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|
| - Project cost                                     | (1) | (2) | (3) | (4) | (5) |
| - Cost saving by using the existing infrastructure | (1) | (2) | (3) | (4) | (5) |
| - Reduce the towers' cost (reduce no.)             | 1)  | (2) | (3) | (4) | (5) |

### This questionnaire is for the project manager of the project 3 G

Items below are many dimensions extracted from the interview with you about management priorities in your project 3G. Please indicate the importance you attach to each dimension in **reference to the project 3G** based on **your opinion**. Thank you for your valuable input.

(1) Not at all important

(2) Somewhat important

(3) Important

(4) Very important

(5) Extremely important

### Business support (Dimension 1)

- |                                     |     |     |     |     |     |
|-------------------------------------|-----|-----|-----|-----|-----|
| - Sustainable competitive advantage | (1) | (2) | (3) | (4) | (5) |
| - Increase the company's revenue    | (1) | (2) | (3) | (4) | (5) |
| - Deploy more sites                 | (1) | (2) | (3) | (4) | (5) |
| - Customer satisfaction             | (1) | (2) | (3) | (4) | (5) |
| - Satisfy the market needs          | (1) | (2) | (3) | (4) | (5) |

### Time to market (Dimension 2)

- |                    |     |     |     |     |     |
|--------------------|-----|-----|-----|-----|-----|
| - Major milestones | (1) | (2) | (3) | (4) | (5) |
| - Finish date      | (1) | (2) | (3) | (4) | (5) |

### Quality (Dimension 3)

- |                        |     |     |     |     |     |
|------------------------|-----|-----|-----|-----|-----|
| - Integration          | (1) | (2) | (3) | (4) | (5) |
| - High speed broadband | (1) | (2) | (3) | (4) | (5) |
| - Enhance the coverage | (1) | (2) | (3) | (4) | (5) |

#### Cost (Dimension 4)

- |  |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|
| - Project cost                                     | (1) | (2) | (3) | (4) | (5) |
| - Cost saving by using the existing infrastructure | (1) | (2) | (3) | (4) | (5) |
| - Reduce the towers cost (reduce no.)              | (1) | (2) | (3) | (4) | (5) |

#### Questionnaires for calculating the alignment score in company Z

##### This questionnaire is for the executive

Items below include many dimensions extracted from the interview with you about the main aim you would like to gain from the **connectivity fibre optic project**. Please indicate the importance you attach to each dimension in reference to **the project management** based on **your opinion**. Thank you for your valuable input.

- (1) Not at all important  
(2) Somewhat important  
(3) Important  
(4) Very important  
(5) Extremely important

##### **Business support (Dimension 1)**

- |                                     |     |     |     |     |     |
|-------------------------------------|-----|-----|-----|-----|-----|
| - Sustainable competitive advantage | (1) | (2) | (3) | (4) | (5) |
| - Increase the company's revenue    | (1) | (2) | (3) | (4) | (5) |
| - Growth                            | (1) | (2) | (3) | (4) | (5) |
| - Reduce dependence on competitors  | (1) | (2) | (3) | (4) | (5) |

##### **Time to market (Dimension 2)**

- |                    |     |     |     |     |     |
|--------------------|-----|-----|-----|-----|-----|
| - Major milestones | (1) | (2) | (3) | (4) | (5) |
| - Finished date    | (1) | (2) | (3) | (4) | (5) |

##### **Quality (Dimension 3)**

- |                              |     |     |     |     |     |
|------------------------------|-----|-----|-----|-----|-----|
| - Network capability         | (1) | (2) | (3) | (4) | (5) |
| - High speed transition      | (1) | (2) | (3) | (4) | (5) |
| - Data service in big domain | (1) | (2) | (3) | (4) | (5) |

##### **Cost (Dimension 4)**

- |  |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|
| - Project cost                                       | (1) | (2) | (3) | (4) | (5) |
| - Cost saving by reducing the no. of the lease lines | (1) | (2) | (3) | (4) | (5) |



- Reduce operation cost (1) (2) **(3)** (4) (5)

**Case Study Z & Fibre Optic Connectivity**

**This questionnaire is for the project manager in reference to the project Fibre optic connectivity**

Items below include many dimensions that are extracted from the interview with you about management priorities in your project fibre optic connectivity. Please indicate the importance you attach to each dimension in **connectivity fibre optic project** based on **your opinion**. Thank you for your valuable input.

- (1) Not at all important
- (2) Somewhat important
- (3) Important
- (4) Very important
- (5) Extremely important

**Business support (Dimension 1)**

- Sustainable competitive advantage (1) (2) (3) (4) **(5)**
- Increase the company’s revenue (1) (2) (3) **(4)** (5)
- Connect more sites (1) (2) **(3)** (4) (5)
- Stakeholder satisfaction (1) (2) **(3)** (4) (5)

**Time to market (Dimension 2)**

- Major milestones (1) (2) (3) **(4)** (5)
- Finished date (1) (2) (3) (4) **(5)**

**Quality (Dimension 3)**

- Network capability (1) (2) (3) (4) **(5)**
- High speed transition (1) (2) (3) (4) **(5)**
- Enhance the coverage (1) (2) (3) (4) **(5)**

**Cost (Dimension 4)**

- Project cost (1) (2) (3) **(4)** (5)
- Cost saving by reducing

the lease lines

- Reduce operation cost (1) (2) (3) (4) **(5)**

**Case Study A:** The project is building a network that provides data, voice, and high speed broadband to their customers by wi-max technology (a part of a “fourth generation”).

**This questionnaire is for the executive**

Items below include many dimensions that are extracted from the interview with you about the main aim you would like to gain from **the wi-max project** (building a network that provides data, voice, and high speed broadband to their customers) Please indicate the importance you attach to each dimension in reference to **the project management** based on **your opinion**. Thank you for your valuable input.

- (1) Not at all important
- (2) Somewhat important
- (3) Important
- (4) Very important
- (5) Extremely important

**Business support (Dimension 1)**

- Sustainable competitive advantage (1) (2) (3) (4) (5)
- Increase the company’s revenue (1) (2) (3) (4) (5)
- Increase customer segment reach (1) (2) (3) (4) (5)
- Expand the coverage (1) (2) (3) (4) (5)

**Time to market (Dimension 2)**

- Major milestones (1) (2) (3) (4) (5)
- Finished date (1) (2) (3) (4) (5)

**Quality (Dimension 3)**

- Network capability (1) (2) (3) (4) (5)
- High speed broadband (1) (2) (3) (4) (5)
- Data service in big domain (1) (2) (3) (4) (5)

**Cost (Dimension 4)**

- Project cost (1) (2) (3) (4) (5)
- Reduce operation cost (1) (2) (3) (4) (5)

**Questionnaires for calculating the alignment score in company A**

**Case Study A:** The project is building a network that provides data, voice, and high speed broadband to their customers by wi-max technology (a part of a “fourth generation”).

**This questionnaire is for the project manager in reference to the wi-max project (building a network that provides data, voice, and high speed broad band to their customers).**

Items below are many dimensions extracted from the interview with you about management priorities in your project fibre optic connectivity. Please indicate the importance you attach to each dimension in **the wi-max project** (building a network that provides data, voice, and high speed broad band to their customers) based on **your opinion**. Thank you for your valuable input.

- (1) Not at all important
- (2) Somewhat important
- (3) Important
- (4) Very important
- (5) Extremely important

**Business support (Dimension 1)**

- Sustainable competitive advantage (1) (2) **(3)** (4) (5)
- Increase the company’s revenue (1) (2) **(3)** (4) (5)
- Connect more sites (1) (2) (3) **(4)** (5)
- Increase customer segment reach (1) **(2)** (3) (4) (5)

**Time to market (Dimension 2)**

- Major milestones (1) (2) **(3)** (4) (5)
- Finished date (1) (2) (3) **(4)** (5)

**Quality (Dimension 3)**

- Network capability (1) (2) (3) (4) **(5)**
- High speed broad band (1) (2) (3) (4) **(5)**
- Enhance the coverage (1) (2) (3) (4) **(5)**

**Cost (Dimension 4)**

- Project cost (1) (2) (3) **(4)** (5)
- Reduce operation cost (1) (2) **(3)** (4) (5)

## Questionnaires for calculating the alignment score in company S

Case Study S: The project is the project business to business and business to individual customers (B to B to C).

### This questionnaire is for the executive.

Items below include many dimensions that are extracted from the interview with you about the main aim you would like to gain from **the project business to business and business to individual customers (B to B to C)**. Please indicate the importance you attach to each dimension in reference to **the project management** based on **your opinion**. Thank you for your valuable input.

(1) Not at all important

(2) Somewhat important

(3) Important

(4) Very important

(5) Extremely important

#### **Business support (Dimension 1)**

- |                                     |     |     |     |     |     |
|-------------------------------------|-----|-----|-----|-----|-----|
| - Sustainable competitive advantage | (1) | (2) | (3) | (4) | (5) |
| - Increase the company's revenue    | (1) | (2) | (3) | (4) | (5) |
| - Increase customer spending        | (1) | (2) | (3) | (4) | (5) |
| - Retention (loyalty)               | (1) | (2) | (3) | (4) | (5) |

#### **Time to market (Dimension 2)**

- |                    |     |     |     |     |     |
|--------------------|-----|-----|-----|-----|-----|
| - Major milestones | (1) | (2) | (3) | (4) | (5) |
| - Finished date    | (1) | (2) | (3) | (4) | (5) |

#### **Quality (Dimension 3)**

- |                             |     |     |     |     |     |
|-----------------------------|-----|-----|-----|-----|-----|
| - Integration between units | (1) | (2) | (3) | (4) | (5) |
| - Customer's support        | (1) | (2) | (3) | (4) | (5) |

#### **Cost (Dimension 4)**

- |                         |     |     |     |     |     |
|-------------------------|-----|-----|-----|-----|-----|
| - Project cost          | (1) | (2) | (3) | (4) | (5) |
| - Reduce operation cost | (1) | (2) | (3) | (4) | (5) |

**Case Study S:** The project is the project business to business and business to individual customers (B to B to C).

**This questionnaire is for the project manager of the project the project business to business and business to individual customers (B to B to C).**

The items below are many dimensions that are extracted from the interview with you about management priorities in your project fibre optic connectivity. Please indicate the importance you attach to each dimension in **the project business to business and business to individual customers (B to B to C)** based on **your opinion**. Thank you for your valuable input.

- (1) Not at all important
- (2) Somewhat important
- (3) Important
- (4) Very important
- (5) Extremely important

**Business support (Dimension 1)**

- Sustainable competitive advantage (1) (2) (3) **(4)** (5)
- Increase the company's revenue (1) (2) **(3)** (4) (5)
- Inspire loyalty (1) (2) (3) **(4)** (5)

**Time to market (Dimension 2)**

- Major milestones (1) (2) (3) (4) **(5)**
- Finished date (1) (2) (3) (4) **(5)**

**Quality (Dimension 3)**

- Internal system capability (1) (2) **(3)** (4) (5)
- Integrated system between the units (1) (2) **(3)** (4) (5)
- Enhance the communication (1) (2) **(3)** (4) (5)

**Cost (Dimension 4)**

- Project cost (1) (2) (3) **(4)** (5)
- Reduce operation cost (1) (2) (3) **(4)** (5)

## Appendix (C) Data collection protocol

Appendix (C) includes interview guides for the company's executives and project managers.

### Interview Guide for Executives

The interview guide has been designed to follow the themes of the PhD study, project management, business strategy, and alignment. The first theme, business strategy is to help the researcher understand the company business strategy and to identify the priorities of the executives and the project managers. The second theme, project management, is to help the researcher explore the project management efforts. The third theme, alignment, is to explore the factors that affect the alignment of project management to business strategy and the outcome of such alignment.

**Company**

**Project title**

**Position**

*(BS: business strategy = competitive advantage; PM: project management; AL: alignment of the project management to the business strategy = the compatibility of priorities of the executives and the project managers)*

**BSE:** *theme, business strategy; participant, executive*

**PME:** *theme, project management; participant, executive*

**ALE:** *theme, alignment; participant, executive*

### **Business strategy**

(These questions are about your opinion with regard to business strategy)

**BSEQ1.** As an executive director, what is the main aim you would like to gain from the above project?

**BSEQ2.** What is the company's business strategy and competitive advantage in relation to the above project?

**BSEQ3.** What was the motivation behind the above project? (e.g. business opportunity, identified need, competitive advantage, process improvement, any other motivation)

**BSEQ4.** What are the factors that affect the implementation of the business strategy in the above project?

## **Project management**

(These questions are about your opinion with regard to project management)

**PMEQ5.** As an executive, in your opinion, how does the project contribute to company development? (e.g. open future opportunity, customer loyalty)

## **Alignment**

(These questions are about your opinion with regard to alignment)

**ALEQ6.** Do you have any mechanism that the company uses to ensure the above project is aligned to the company business strategy? How?

**ALEQ7.** Based on your experience, please describe the variables (problems) that differentiate successful and unsuccessful alignment efforts during the last five years?

**ALEQ8.** Can you think of any project that you worked on which was not aligned to the company business strategy, but turned out a success at the end?

**ALEQ9.** How does the executive director affect the project management and to what extent?

**ALEQ10.** How does involving the project manager in the strategy development affect the alignment of BS and PM and the project management process and to what extent?

**ALEQ11.** How does project manager leadership competence impact alignment and project management processes and to what extent?

**ALEQ12.** How does effective communication between the project manager and the executive affect alignment and project management processes and to what extent?

**ALEQ13.** How is business strategy communicated to the different departments in your company? What effective method of communication do you use?

**ALEQ14.** What are the other factors that I did not ask and you think are important for alignment and for project management process?

**ALEQ14.** From your experience, what degree does the impact of alignment have on the project success?

## Interview Guide for the Project Manager

<b>Company</b>	<input type="text"/>	<b>Project title</b>	<input type="text"/>	
<b>Position</b>	<input type="text"/>	<b>Year of experience</b>	<input type="text"/>	
<b>Project duration:</b>	<b>Planned</b>	<input type="text"/>	<b>Actual</b>	<input type="text"/>
	<b>Estimate cost</b>	<input type="text"/>	<b>Actual cost</b>	<input type="text"/>

(**BS:** business strategy = competitive advantages; **PM:** project management; **AL:** alignment of the project management to the business strategy = the compatibility of priorities of the executives and the project managers)

**BSP:** theme, business strategy; participant, project manager

**PMP:** theme, project management; participant, project manager

**ALP:** theme, alignment; participant, project manager

### **Business strategy**

(These questions are about your opinion with regard to business strategy)

**BSPQ1.** As a project manager, what specific business strategy did your project align to?

**BSPQ2.** As a project manager, what is the main aim you would like to gain from the above project?

**BSPQ3.** What are the factors that may affect the implementation of business strategy in relation to the project?

### **Project management**

(These questions are about your opinion with regard to project management)

**PMPQ4.** Briefly explain your experience in managing the above project. What worked, what didn't work in this project?



**PMPQ5.** Did the project meet its objectives? (e.g. time, cost, quality)

**PMPQ6.** What were the important factors that led to the project being a success?

**PMPQ7.** What kind of support did the executives offer to the project manager? At which project phases did they contribute?

**PMPQ8.** Have you experienced any problems that affect the implementation of the company business strategy (e.g. time to market, cost, budget) in relation to the project? What were they?

**PMPQ9.** How did you manage the project? Please describe how you measured project progress? What kind of metrics have you used?

**PMPQ10.** During the planning phase, were the project stakeholders identified and consulted? Who were they? Have they contributed to the project during this phase?

**PMPQ11.** During the planning phase, what was the main focus (e.g., was it on meeting cost, quality, time-to-market)?

**PMPQ12.** What tools and metrics did you use for managing the project? Which one did you think important? Why?

**PMPQ13.** What was the most important information (issues); did you communicate with the project stakeholders?

**PMPQ14.** How did you plan for communication with the stakeholders? Have you experienced any communication difficulties? Did it affect the implementation of the business strategy? Please explain?

**PMPQ14.** Have you experienced any project problems generated by lack of communication between the project manager and the business executives? Please explain briefly?

**PMPQ15.** How did you identify and manage risks associated with the project? What were they? How did they affect the project?

(e.g., risk associated with the business strategy competitive advantage such as time, cost, and quality)

**PMPQ16.** Have you experienced any problems in relation to the project that affect the effort of the project management? What were they?

## **Alignment**

(These questions are about your opinion with regard to alignment)

ALPQ17. How did you align your project with the company business strategy, what mechanisms, methods, processes, and/or tools did you use to make sure that alignment was properly done?

ALPQ18. How does the executive director contribute to alignment and to project management and to what extent?

ALPQ19. As a project manager, in relation to the above project, did you or your team participate in the development of the business strategy and what was your contribution?

ALPQ20. In your opinion, does the involvement of the project manager in strategy development contribute to the success of alignment and project management processes and to what extent?

ALPQ21. How does project manager leadership competence affect alignment and project management processes and to what extent?

ALPQ22. How does the communication between the project manager and project stakeholders contribute to the alignment process and to what extent?

ALPQ23. What are the other factors that I did not ask and you find important for alignment and for the project management process?

ALPQ24. Have you experienced any problems that cause misalignment between business strategy and project management? Please state?

ALPQ25. From your experience, what is the impact of alignment on the success of a project?

## **Appendix (D) Data Analysis**

Appendix (D) includes categories and coding scheme, interviewees' code for the four telecommunications companies and the main participants.

### **Categories and coding scheme**

#### **A. Business strategy (Category 1 )**

Most organizations have three strategy levels. The corporate level highlights the corporate strategy. Corporate strategy includes growth, efficiency (in terms of time, cost, quality, resources, and utilization), and differentiation (in terms of innovative products and services). Corporate strategy is cascaded down to the business level. The business level - which are the units and the departments of the company - translate the corporate strategy to many business strategies including leading the next generation of broadband, ignite business, focus on enterprises or regular customers, expand customer

segment reach, and develop and retain employees. These business strategies can be achieved through projects and competitive advantages such as time to market, cost, and quality. The third level is the functional level or project management level where these projects are executed.

1. Lead the next generation of broadband (theme or code 1)
2. Ignite business (theme or code 2)
3. Focus on enterprises or regular customers (theme or code 3)
4. Expand customer segment reach (theme or code 4)
5. Time to market (theme or code 5)
6. Cost (theme or code 6)
7. Quality (theme or code 7)

## B. Alignment internal factors (Category 2)

Efforts, factors, and actions that should be taken into consideration by the company as well as the project management team in order to enhance the process of implementation of business strategies in the projects. These factors are internal factors (inside the company).

- 1 Effective communication such as e-mails, face to face meetings, coordination between project stakeholders and regular presentations (between the project manager and project stakeholders including the project sponsor, units and departments of the company, and vendors and contractors) (theme 1)
- 2 Project manager participation in the business strategy development (involving the project manager in the strategy development in order to participate in two ways: understanding the business strategy and give comments and feedback on the business strategy such as visibility and applicability of strategy implementation) (theme 2)
- 3 Executive support (any efforts or support from the top management, executives, chiefs, and the board of directors to help the project manager to overcome any problems that affect the implementation of the business strategy as well as the project such as additional resources, issuing permits, clearing the materials from customs, pushing vendors and contractors, and the contribution during the project planning and the execution phases) (theme 3)

- 4 Project manager leadership competence (a management skill that helps the project manager to plan and execute the project in a strategic way) (theme 4).
- 5 Project team (any person who takes responsibility for any milestone or any activity of the project and becomes a member of the project organization and works under the management of the project manager) (theme 5)
- 6 Project management tools (any mechanism or method the project management team uses to plan and monitor the project during the planning and execution phase including dash board, KPI, excel spread sheet, Gant chart, project charter, Microsoft Project Management, reports, and Primavera) (theme 6)
- 7 Project resources (any materials, programs or skilful workers that play major or minor roles in the completion of the project ) (theme 7)
- 8 Proper planning: preparation work for the project by the project management team including planning (risk assessment and mitigation, reports, identifying the project stakeholders, method of communication, clear scope in terms of mission, objectives, and requirement), scheduling in terms of dates and milestones, controlling, and monitoring) (theme 8).

### C. Alignment of external factors (Category 3)

Efforts, factors, and actions that should be taken into consideration by the company as well as the project management team in order to enhance the process of implementation of business strategies in projects. These factors are external factors (outside the company).

1. Government agencies (any organizations, regulators, and offices that are under the government's control completely or partially and the projects cannot be approved, started, or launched without their permission or services including municipality, CITC, customs, and SCECO) (theme 1)
2. Vendors and contractors (any person, company, operator, subcontractor, and supplier that provides small or large products or services from inside or outside the country and their products or services are major or minor in the project) (theme 2)

3. Site acquisition (any piece of land or property which is owned by the government or the people and suitable for constructing the telecommunications towers or their transformers on it) (theme 3).
4. Dynamic market (market trend and the market situation including changes in the telecommunications technology and the nature of the market competition which forces the telecommunication companies to change their infrastructure, project scope, and strategies in order to satisfy their customers and meet the market requirements) (theme 4)

#### D. Project management elements (Category 4)

Project management elements are the efforts and actions that the project manager should consider in order to manage the project correctly.

1. Integration (theme 1)
2. Scope (theme 2)
3. Time (theme 3)
4. Cost (theme 4)
5. Quality (theme 5)
6. Human resource (theme 6)
7. Communication (theme 7)
8. Risk (theme 8)
9. Procurement (theme 9)

#### E. Project success (Category 5)

Criteria used to measure the success of the outcome of the project.

1. Time (theme 1)
2. Cost (theme 2)
3. Performance (theme 3)
4. Impact on customers (theme 4)
5. Business impact (theme 5)
6. Opening future opportunity (theme 6)
7. Stakeholders' satisfaction (theme 7)

### **Main participants**

Based on the pilot and main stage findings, the core people and main participants were found to be from: corporate and business levels such vice president, director of site and

power, corporate performance manger, COO executive assistant, executive manager for planning and design, executive manager, site engineering and projects, director strategic knowledge management, chief engineer RAN implementation, senior vice president corporate affairs, reporting manager, strategic PMO manager, CEO for strategic operations, corporate performance measurement, senior director-marketing and strategy, chief operations officer, project manager, executive manager corporate strategic projects, executive in strategy department, executive manager optimization and control, project team, network projects director, executive board director, chief business support officer, director, programs and performance, project support manager, manager of transport network, corporate reporting director, network capacity control chief engineer, director of system solutions, project management office (PMO) manager.

### Interviewees' code

**Table C1 Interviewees' code company M**

Interviewees' Codes			
Code	Name	Enterprise	Position
SH-M-EX	S. H.	M	Executive Manager Corporate Strategic Projects/Corporate Performance Measurement
TM-M-EX	T. M	M	Executive Manager/RAN/Implementation
MD-M-EX	M. D.	M	Executive Manager Wholesale Planning & Design
SM-M-EX	S. M.	M	Director/Site & Power
NE-M-PM	N. E.	M	Executive Manager-Site Engineering-PM &Projects
AF-M-PM	A. F.	M	Network Capacity Control Chief Engineer-PM
AM-M-PM	A. M.	M	Chief Engineer RAN Implementation-PM
SJ-M-PM	S.J.	M	Senior Engineer- Ran Implementation-PM
MB-M-PM	M. B.	M	Executive Manager Optimization &Control/S&P/PM
AG-M-PM	A. G.	M	Construction and Power/PM

**Table C2 Interviewees' code company A**

Interviewees' Codes			
Code	Name	Enterprise	Position
SB-A-EX	S.B.	A	Vice President Administration & HR
AM-A-EX	A.M.	A	Executive Board Director Chief Business Support Officer
MG-A-EX	M.G.	A	Executive Manager Wholesales Planning & Design
S-A-EX	S.	A	Executive Manager
HZ-A-PM	H.Z.	A	Project Manager/ System Solutions
RB-A-PM	R.B.	A	Senior Director, Marketing & Strategy
MH-A-PM	M.H.	A	Project Manager
TF-A-PM	T.F.	A	Project Manager

**Table C3 Interviewees' code company S**

Interviewees' Codes			
Code	Name	Enterprise	Position
AA-S-EX	A. A.	S	Business strategy/ Corporate strategy/ EX1
AD-S-PM	A.D.	S	Project Manager P1
TK-S-EX	T.K.	S	Director, Programs & Performance Corporate Strategy Sector
FA-S-EX	F.A.	S	Corporate Performance Manager/ Corporate Strategy Sector
AM	A.M.	S	Project Manager
RA-S-PM	R.A.	S	Project Manager
AA-S-PM	A.A.	S	Project Manager

**Table C4 Interviewees' code company Z**

Interviewees' Codes			
Code	Name	Enterprise	Position
MS-Z-PM	M.S	Z	Project Manager/ Network projects
AD-Z-EX	A. D.	Z	Executive Manager, Network Projects Director
AS-Z-EX	A.S	Z	Executive Manager for the transport network & MBB Department
AJ-Z-EX	A.J.	Z	Executive manager-Marketing department
AK-Z-EX	A.K.	Z	Executive, PMO Manager
HA-Z-EX	H.A.	Z	Executive Manager
HS-Z-PM	H.S.	Z	Network capacity control- PM
MK-Z-EX	M.K.	Z	Strategy and business planning team leader
MS-Z-EX	M.S.	Z	Strategic PMO Manager
SD-Z-PM	S.D.	Z	Project Management Department- PM
TG-Z-PM	T.G.	Z	Network capacity control-PM
FB-Z-EX	F.B.	Z	Strategy Department-EX

**Business Strategy**

Name	Sources
Cost	2
Customer experoucnce	3
Expand customer segment reach	3
Focus on enterprise or regular customers	1
Ignite Business	2
Leading the next generation of the broad band	0
Quality	2
Time to market	3



## Project Management Elements

Name	Sources	References	Created
Communication	0	0	08/07/21
Cost	2	3	08/07/21
Human resource	1	1	08/07/21
Integration	0	0	08/07/21
Procurement	4	5	08/07/21
Quality	2	2	08/07/21
Risk	1	1	08/07/21
Scope	1	2	08/07/21
Time	4	8	08/07/21

## alignment internal factors

Name	Sources
Effective Communicaitons	6
Executive support	6
Involving the project manager in the strategy development	4
Project management team	3
Project management tools	4
Project manager leadership competency	4
Project planning	3
Project resources	4
Units and departments support	5

## alignment external factors

Name	Sources	References
Dynamic market	5	9
Government Agencies	6	9
Site Aquasition	2	2
Vendors and Contractors	6	15

## Project Success Critirea

Name	Sources	References
Business impact	2	2
Cost	2	2
Impact on customers	2	2
Opening future opportunity	1	1
performance	1	1
Stakeholder's satisfaction	2	2
Time	1	3

