Strategic Knowledge Management System

In Public Sector in Saudi Arabia:

An adaptation of the Balanced Scorecard

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Abstract

Knowledge has increasingly been viewed as a source of competitive advantage. KM is the process of creating value from the intangible assets of an enterprise. It deals with how best to leverage knowledge internally in the enterprise (in its individual employees, and the knowledge that gets built into its structures and systems) and externally to the customer and stakeholders. This study aims to investigate how do Knowledge Management Strategies influence the development of an organisation's strategies, and Could BSC be used to develop Strategic Knowledge Management Balanced System (KMBS) for strategic management.

Hence, this study is an exploratory investigation into the Strategic Knowledge Management (SKM) project based on an integrated approach. The thesis provides a theoretical theory through linking research and literature on Strategic Management (SM), Knowledge Management (KM), and Balance Scorecard (BSC). This is followed by an empirical investigation to understand how Strategic Knowledge Management system, processes and the critical factors identified are being addressed. To investigate this problem the research focuses on Strategic Management and Knowledge Management as practised in the Institute of Public Administration (IPA) in Saudi Arabia.

The research design was largely derived from Yin (2003). Multiple-case design was employed, with quantitative and qualitative data collection methods. Questionnaires were distributed to 238 employees in all IPA organisations. In addition, semi-structures personal interviews were conducted with the IPA leaders and senior managers to perform strategic management and Knowledge Management initiatives.

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The resulting data is analysed at descriptive, exploratory and explanatory levels. The study focuses on factors that may critical and influence the development of a Strategic Knowledge Management in public sector in Saudi Arabia. The study identified 13 critical factors that must be carefully considered to ensure strategic KM success. The study divided these critical factors into four groups from different perspectives point views to Knowledge Management Strategies. These perspectives adequately capture focus of organisation's strategy and provide balance between external and internal knowledge, and explicit and tacit knowledge. On the basis of this research, the thesis concludes with a conceptual model of SKMBS designed to be valuable in providing a path for transferring to KM organisation if carefully applied. In addition, a road map which, once made, can offer a framework from for which a SKM could develop within IPA.

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This stage in my educational career would not have been possible without the blessing and mercy of Allah. Thanks and praise to Allah, the most Gracious and most Merciful.

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Declaration

Strategic Knowledge Management System in Public Sector in Saudi Arabia:
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Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

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List of Abbreviations

ASDD	Applications and System Developing Department
APQC	American Productivity and Quality Centre
BSC	Balanced Scorecard
CAGR	Compound Annual Growth Rate
CEO	Chief Executive Officer
CIO	Chief Information Officer
CKO	Chief Knowledge Officer
CoP	Community of Practice
CRM	Customer Relationship Management
CSFs	Critical Success Factors
DIKW	Data Information Knowledge Wisdom
HR	Human Resource
HRM	Human Resource Management
IA	Intellectual Asset
IC	Intellectual Capital
ICT	Information and Communication Technologies
IMA	Institute of Management Accountants
IP	Intellectual Property
IPA	Institute of Public Administration
IS	Information System
IT	Information Technology
KM	Knowledge Management
KMS	Knowledge Management Strategy
KMBS	Knowledge Management Balanced System
KMO	Kaiser-Myer-Oklin
KSA	Kingdom of Saudi Arabia
LO	Learning Organisation
NCB	National Commercial Bank
OECD	Organization for Economic Co-operation and Development
OL	Organisational Learning
PM	Performance Measurement
RBV	Resource-Based View
SBP	Strategic Business Plan
SKM	Strategic Knowledge Management
SKMBS	Strategic Knowledge Management Balanced System
SM	Strategic Management
SPSS	Statistical Package for Social Studies
SFO	strategy focused organisation
SWOT	strengths, weaknesses, opportunities, and threats
TQM	Total Quality Management

Chapter one

Research Introduction

1.1 Introduction:

In an era of sweeping technological and economic change, interest in Knowledge Management (KM) and the Balanced Scorecard (BSC) has grown among public administrators because these address issues of change, innovation, and environmental adaptation, all of which have been major concerns in organisation theory and practice for decades and are clearly important now as public organisations are being reinvented and reengineered (Wiig, 2002; Koole and Roos, 2010).

Knowledge has increasingly been viewed as a source of competitive advantage (Spender, 1996). Not surprisingly, organisations have turned their attention to Knowledge Management (KM). According to one estimate, global corporate spending on KM services will increase from US$4.2 billion in 2003 to US$8.9 billion by 2006 (IDC Group, 2002). However, organisations that have invested in Knowledge Management have not realised the benefits they expected (KPMG, 2000).

Despite interest in Knowledge Management in relation to organisational learning and information technology, there has been little research about the effect of Knowledge Management on firms' performances using a Balanced Scorecard. This study examines the underappreciated influence of strategic Knowledge Management on performance management by using the Balanced Scorecard in the Institute of Public Administration in Saudi Arabia. The Institute of Public Administration (IPA) faces the problem of how to cope not only with an increasing number of tasks but also with open dynamic processes and changing resources and services. It therefore needs to develop better organisational routines, actions and performances and to learn new skills and values. This will involve coping with continuous change, continuous quality improvement, transferring knowledge and learning from experience.

In this chapter, the background research, the research problem, aims and objectives, the research questions, the research design and methodology, and the organisation of the thesis will be described in more details.

1.2 Research Background:

Knowledge Management and the Balanced Scorecard are new phenomena within management systems, and thus implementation methodologies are still developing with more experience. Consequently, there has not yet been a common comprehensive or holistic approach to KM and BSC implementation.

First of all, Knowledge Management is one of the most recent administrative concepts; it is a normal concept for the age of information and knowledge which is characterised by rapid and deep changes with the spread of globalisation which can be seen in competition, development of information and communications technology, increases in the interest in taking advantage of human thought and the accumulation of scientific creations (Koole, and Roos, 2010). All these changes increased the importance of knowledge and are considered rival elements.

Knowledge is considered a valuable asset that must be managed, and the essence of KM is to provide strategies which make the knowledge of an organisation available to those who need it, where they need it, when they need it, and in the form that they need it in order to increase human and organisational performance (Nonaka and Takeuchi, 1995; Wiig, 1997; Davenport and Prusak, 2000; Ergazakis et al., 2005; Faucher et al., 2008). At present, organisations are challenged to be more creative and innovative, to constantly improve performance, to form new partnerships and alliances and to undertake new ventures outside traditional organisational

boundaries (Bennett and Gabriel, 1999; Liu and Tsai, 2007). Drucker (1995) has described knowledge as the key economic resource in the knowledge society, rather than capital, natural resources or labour.

On the other hand, a recent trend in measuring the success of organisations is the increasing emphasis on their intangible and non-financial resources. Recognising the relevant issues lost in the performance measures of traditional management accounting, Kaplan and Norton (1992, 1996a, b) developed the theory of the Balanced Scorecard (BSC) as an approach to integrating financial and non-financial measures into management to help it to keep its place in a strong competitive market (Liu and Tsai, 2007). According to surveys by the Institute of Management Accountants (IMA), more than 50% of the large companies in the USA are using some form of BSC (Pangarkar and Kirkwood, 2008). This means that a large amount of academic literature on BSC has been published, and there have been many conferences around the world dealing with BSC issues.

In the last ten years, the BSC has been adopted by several large companies in Saudi Arabia, for example the Saudi Arabian Oil Company, Al-Zamel Company, Saudi Telecom, Saudi Basic Industrial Corp, and the National Commercial Bank (NCB). While many cases of successful BSC implementation have been reported, there are also numerous instances of failure. For example, research by the Hackett group (2004) found that overall nearly two-thirds of all typical companies had some type of BSC programme in place or in development. But Hackett found that only 17% of all typical companies had developed mature BSC that relies on a mix of financial and operation metrics. The BSC presents a tool for translating an organisation's mission into more tangible measurable goals, actions and performance measures (Bigliardi and Dormio, 2010).

Simultaneously, Knowledge Management Strategy (KMS) using the Balance Scorecard system enables the organisation to recognise its most immediate and future knowledge priorities, goals and objectives, and its critical knowledge domains so as to work toward building strategic knowledge systems and embedding work systems within them (Alavi et al., 2006). In addition, KMS using the BSC system will help organisations become more competitive by using new knowledge to reduce costs, increase speed, and meet customer needs (Grayson and O'Dell, 1998; Civi, 2000; King, 2008). Consequently, KMS using the BSC allows organisations to increase profits, identify new markets, improve efficiency, improve market share and be more effective. Moreover, KM Strategy (KMS) using the BSC system will help employees to improve their performance, productivity and employability, by expanding resources immediately available to them and enabling them to make more intelligent decisions (Bollinger and Smith, 2001). This will increase employee satisfaction and reduce the loss of Intellectual Capital (IC) from employees who leave the organisation (Ahmed et al., 1999; Bontis et al., 2000).

1.3 Research Problem:

Knowledge Management and Balanced Scorecard initiatives, projects and systems are just beginning to appear in organisations. There is little research and field data to guide the successful development and implementation of such systems or to guide the expectations of the potential benefits of such systems (Alavi and Leidner, 1999; Civi, 2000; Cormican and O'Sullivan, 2003; Kaplan and Norton, 1992, 1996a, b; Jasimuddin, 2008).

Some scholars argue that shifting the focus of organisational KM efforts from technology to people and processes is important for effectively and beneficially managing knowledge (Davenport & Prusak, 2000; McDermott, 1999). Others assert that knowledge is a strategic

imperative and, therefore, firms must develop strategies for managing knowledge (Zack, 1999a). In this research Knowledge Management is considered to be one of the fundamental sources of competitive advantage within the context of strategic management. Against this background of an emerging literature in strategic management and continual striving to find a workable means of strategic implementation for Knowledge Management, managers in a wide variety of industries are rethinking their performance measurement systems (Evan, 2005).

Papalexandris et al. (2005) discussed the fact that Kaplan and Norton provide significant insight into the application potential of the BSC for private and public sector companies and provide numerous design and implementation examples from a range of industries. Nevertheless, little attention is paid to different supporting elements such as organisational culture, strategy, management commitment, information and knowledge systems, continuous improvement, and organisational learning which may be considered to be critical for the successful implementation of KM and the BSC.

The results of today's education system and knowledge will therefore be key contributions to Saudi's future. The preparation of human resources for the 21st century is the task of the educational system of KSA (Ministry of Planning, 2009), and most crucially of the Institute of Public Administration as an educational and training organisation. However, the Institute of Public Administration is finding it difficult to cope with the complexity, dynamism and inevitable crises and difficulties of such rapid development. In particular, new developments in the field of information and technology are exposing the IPA to world competition. In essence, the problem facing the IPA is that they operate in a period of rapid technological and social change, but appear reluctance to abandon hierarchy structures and culture, whilst recognising the pressure from labour market forces to improve quality and to speed up their activities (Alshareef,

2005). However, over the next decade, the Institute of Public Administration will face a greater period of transition that it has ever experienced before. This prospect means that it is necessary to look at the processes by which organisations cope with and respond to change. Finding a way for organisations to develop in response to their changing environment culminated in the development of the theory of Knowledge Management. The ability to think analytically and conceptually will be required by all top managers, leaders and employees in the IPA. More precisely, they will need to prepare their organisation for transformation and to consider new kinds of organisational structures if they are to bring about a significant change in the IPA system.

The relation between Knowledge Management and the Balanced Scorecard has been widely embraced by many organisations during the last decades. After several years of development, many organisations such as AT&T, BMW, DuPont, Mellon, and UPS, have shown an excellent performance based on the BSC which allows them to use resources effectively based on the implementation of a strategy (Wu, 2005). Despite some scepticism, it has become a significant force for organisational improvement and change, and is hailed as a critical weapon for competitiveness in the modern competitive market, particularly in developed countries (Alshareef, 2005). Research on these issues, however, is concentrated mostly in advanced countries (Senge, 1990; Watkins and Marsick, 1993; Pedler et al., 1997).

This research is justified for a number of reasons, the **first** being the recognition of Knowledge Management's importance to both theory and practice. Knowledge has been recognised as the basis of competition and the key for business success (Drucker 1999; Nonaka & Takeuchi, 1995; Pemberton & Stonehouse, 2000). The globalisation of business, new legislation, increasingly demanding consumers and the shift from production-based to a knowledge-based economy are

creating a revolution that is forcing organisations to utilize and leverage their knowledge to be able to compete (Civi, 2000; Chong and Choi, 2005). Knowledge Management as an emerging discipline is becoming increasingly important to organisations seeking to improve their efficiency and competitive abilities (Davenport & Prusak, 2000).

Second, as KM projects and strategic systems are just beginning to appear in organisations, there is little research and field data to guide the successful development of such systems. Further, there exist different views among practitioners and even researchers on how a KM strategic system can be designed and implemented in organisations (Feher, 2004). Consequently, there has not yet been a common comprehensive or integrated approach to the KM strategic system.

Third, there is a growing realisation of the importance of the development and understanding of theory for both Strategic Management (SM) and Knowledge Management (KM) in relation to Strategic Balanced Scorecard System (BSC) (Drucker, 1994; Kaplan and Norton, 2008). According to the global information services market (2008), the worldwide spending on KM service will grow from $7.9 billion today to $10.9 billion in 2012, representing a compound annual growth rate (CAGR) of 8.2%. Business technology, knowledge management, and business performance solutions will dominate this spend, although the information strategy segment will see the fastest growth throughout the forecast period (Forrester Research, 2008).

Fourth, due to the complex and integrated nature of KM, the investments involved, and the relatively high implementation failure rates, about 84 percent of the KM programmes failed worldwide due to an inability to cope with the many factors that contribute to the success of KM project implementations (Chua and Lam, 2005; Alsadhan, 2007). KM that are poorly planned and implemented could lead to poor organisation knowledge, which in turn can produce poor management decisions, strategies, and policies (Stewart et al., 2000). For these reasons, this

research attempts to fill this gap by investigating the feasibility of adopting a Strategic Knowledge Management by using the Balanced Scorecard System and identifying the critical factors of success in IPA as a case study. In addition, the researcher intends to propose an integrated model for KM strategies with their critical factors as a strategic KM balanced system.

Finally, the Saudi Public Sector has recognised that Knowledge Management is essential to enable it to continue to provide its services (Alshareef, 2005). Finding ways to effectively capture knowledge has become an imperative, given the increasing emphasis on "*knowledge work*" in the public sector, and the risk posed to corporate memory through loss of employees. In Saudi Arabian organisations the employee's income in the public sector is lower than the employee's income in the private sector. This means that a large percentage of the staff is likely to leave or to ask for early retirement in the near future. Parallel to this, IPA, as a public sector organisation, is facing the likely departure of a significant proportion of its educated and expertise workforce over the next five years (Ministry of Planning, 2009). Overall, this makes the public sector fertile ground for research. One possible strategy to promote such a transformation is to develop the notion of balancing the Knowledge Management Strategies, which can be seen as being useful in coping with unpredictable changes and challenges and which will help IPA to deal with any that may be faced both now and in the future.

Despite the fact that many developing countries have made significant progress in business, educational, and technological development, research on the integrated nature of strategic KM and the BSC system which investigates the critical success factors of implementation in organisations have not been adopted. In addition, there is a growing interest in Knowledge Management and the Balanced Scorecard in both approaches which can be related to current pressures which have come about because of change facing KSA. However, a number of authors

and practitioners have conducted many studies regarding the critical factors in KM implementation (Davenport et al., 1998; Alazmi and Zairi, 2003; Hung et al., 2005; Wong, 2005; Chong, 2006; Oliver and Kandadi, 2006). This study explores the integrated approach to identify the relationship between KM strategy and the critical factors by using the BSC system as a specific mechanism to promote organisational change.

1.4 Statement of Aims:

For the purposes of this research, **Knowledge Management** will be discussed along with **Strategic Management by Using the Balance Scorecard System**. This study aims to investigate how do Knowledge Management Strategies influence the development of an organisation's strategies, and Could BSC be used to develop Strategic Knowledge Management Balanced System (KMBS) for strategic management. In addition, an examination of Strategic Management and Knowledge Management as practised in the Saudi Arabia Public Sector will be performed to place the research issues in context.

1.5 The Research Objectives

In order to understand the problem to be examined, this study has the following objectives:

- To develop a conceptual integrated view of KM strategies from the literature through using BSC strategic system, to be explored in the field through a complementary empirical case study investigation using a combination of qualitative and quantitative methods.

- To provide an overview of the existing nature of KM in IPA in KSA and to identify the challenges it faces for the future.

- To identify the nature of the relationship between strategic management and Knowledge Management in IPA in KSA.

- To identify how the knowledge is managed at IPA

- To explore the significant differences in personnel responses to the KMBS in IPA according to their Demographic Characteristics such as work place, position, work experience, and education.

- To propose an integrated model for KM strategies by using Balance Scorecard System.

- To assess the suitability of applying the SKMBS as a Strategic Knowledge Management system within IPA

1.6 The Research Questions:

To achieve the objectives set out above the study's main questions are as follows:

1) How does Knowledge Management strategy fit into the wider strategic management system?

2) What are the critical factors for effective KM strategies at IPA? KM Strategies were studied from Four Perspectives inside IPA and divided to sub-questions as follows:

   a) What are the critical factors for a knowledge resource strategy?

   b) What are the critical factors for a knowledge management information technology strategy?

   c) What are the critical factors for a knowledge management learning and innovation strategy?

   d) What are the critical factors for a knowledge management Beneficiaries strategy?

3) What are the significant differences in personnel responses to the KMBS in IPA according to their demographic (work place, work nature, years of experience, years of education)?

4) How can IPA successfully implement the KMBS model?

1.8 The Organisation of the Study:

To meet the research aims the study contains eight chapters. These chapters are presented such that major ideas unfold in a logical sequence.

Chapter one (Introduction to Study) highlights the back ground research. The research problems and the aims and objectives of the study are discussed. This chapter also states how the contents of the dissertation are outlined.

Chapter Two (Background to IPA in KSA) presents the background to KSA to provide the reader who is unfamiliar with the social nature and the economics of KSA. It offers an overview and an explanation about the KSA in order to understand the environmental characteristics. In addition it provides more detail about IPA in KSA to the reader who is unfamiliar with the nature and the development of this sector.

Chapter Three (Literature Review) considers relevant literature from several fields of study, which cannot be fully understood without looking into the relevant literature. this study is associated with the issues and fundamentals of Knowledge Management, Strategic Management and Balance Scorecard.

Chapter Four (Theory Development) is based on the views found in the literature, and presents the relation between Strategic Management, Knowledge Management and Strategic Balanced Systems. This research theoretically develops the Knowledge Management strategic system for four types of strategies for managing Knowledge.

Chapter Five (Research Design and Methodology) presents the research methodology employed in the study. It deals with the data gathering instruments associated with the methodology, and links the background materials of Chapters Two, Three, and Four with the work of Chapter Five.

Chapter Six (Analysis of the IPA case study) presents the data collected from the empirical study. It offers the analysis of the case study in IPA in Riyadh. Propose
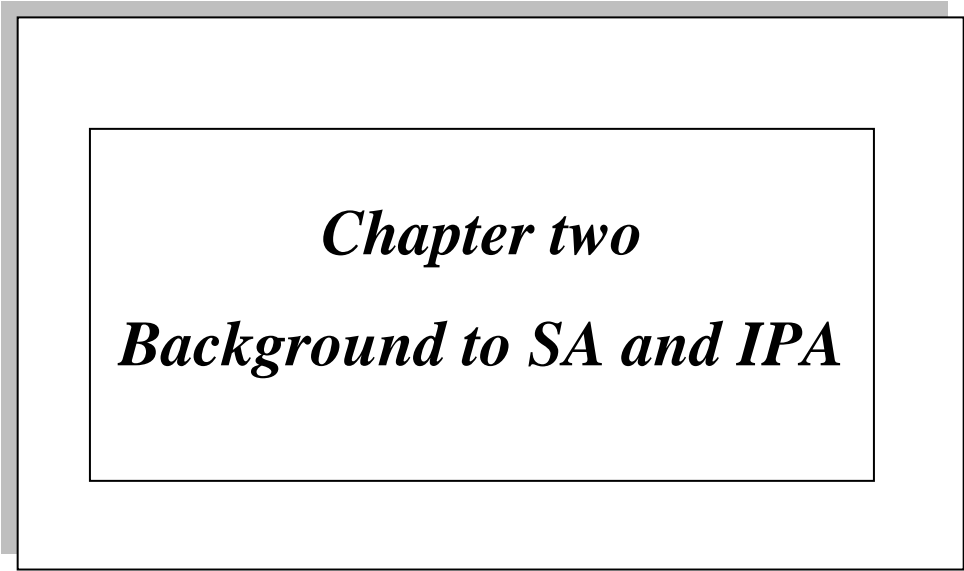
Chapter Seven (Discussion and Model proposal) provides a comprehensive discussion on the analysis of the results and findings of the quantitative and qualitative data presented and proposes a holistic strategy formulation model.

Chapter Eight (Contributions and Recommendations) deals with the main findings of the research. It draws conclusions based on the findings of the research. This chapter states the contribution and the limitation of the study, and provides some recommendations that may contribute to a successful implementation of Strategic Knowledge Management in KSA.

The organisation of this study is summarised and shown in figure 1.1 below:

Figure 1.1 the Framework for the Thesis

Chapter two

Background to SA and IPA

2.1 Introduction:

Knowledge is considered to be one of the most important assets for a firm in creating a sustainable competitive advantage (Nonaka et al., 2000). Drucker (1999) has described knowledge, rather than capital, natural resources or labour, as the key economic resource in the knowledge society. Strategic Knowledge Management can only be adequately understood within the context of its environment, both organisational and social. For the current study, it is therefore essential to present a portrait of KSA in general and of the system of the Institute of Public Administration in particular.

This chapter aims to make the reader familiar with the nature of society, culture, and organisational structures in Saudi Arabia as this is still unfamiliar to many western and non-Islamic people. To achieve this aim, the chapter is organised into six sections which cover the main social and economic characteristics of organisational management in KSA. The next section draws attention to the nature of the social environment, including the habits, traditions and values that may influence how learning occurs and how knowledge transfers within organisations and for individuals. The third section reviews the economic setting and development plans in KSA. The fourth section highlights management development in the public sector in Saudi Arabia. The fifth section demonstrates the importance of human capital resource development as a central development process which supports economic development. The last section presents a broad introduction to the IPA in order to give the reader a better understanding of IPA's objectives and activities and the more specific context of the current study, followed at the end by the chapter's conclusions.

2.2 Saudi Social and Cultural Setting:

Knowledge Management, like other management disciplines or functions, is made up of technical (hard) and social or behavioural (soft) elements. This is in line with the distinction made by Nonaka and Takeuchi (1995) between *tacit* and *explicit* knowledge, Soft elements are normally tacit while hard elements are more explicit. Functions such as production, R&D, innovation, finance and accounting, are made up of more hard elements; whilst other functions such as organisation, marketing and HRM are made up of more soft elements. Hard elements are less subject to the influence of cultural and environmental variations and can be applied immediately with little or no adaptation; while soft elements are more culture-bond and context-specific, and require more adaptation during the transfer (Nonaka, 1994). Empirical evidence can be found in Easterby-Smith et al.'s study (1997); they noted that the definition of hard and soft elements differ according to the different cultural backgrounds. The distinction between explicit knowledge and tacit knowledge is the key to understanding the differences between the Western approach to knowledge (explicit knowledge) and the Japanese approach to knowledge (tacit knowledge) (more details in Chapter Three Section 3.2.1.3).

The fact that the West and East, more specifically the United States and Japan, have very different cultural values is well-acknowledged. The U.S. is characterised by such values as assertiveness, decisiveness, innovativeness, and risk-taking (Webster and White, 2009). The cultural value system in Japan, on the other hand, has been heavily influenced by Shintoism, Buddhism, and Confucianism. Further, Japan has a consensus-bonded, group-oriented culture that emphasises conflict avoidance, respect, and concern for people, and the importance of close, long-lasting relationships with others (Webster and White, 2009).

The social structure of the Middle Eastern countries, KSA being one of them, is based on ancient traditional and cultural principles. Arab society differs largely from Western society and considers the family unit the main social structure to which individuals are loyal. Members of the family are closely attached to one another and each feels a deep sense of responsibility for the family. Society values obedience and deference to those above in the hierarchy of the family and the organisation (Hofstede, 1984). Hence, the systems of family and tribe may affect all the actions of the individuals within organisations in KSA (Alshareef, 2005). These have a significant influence on interactions and behaviours, and influence the wider organisation. On the other hand, some characteristics observed in KSA may appear to be similar to those of Japanese culture; for example, the cultural value system in Japan has been heavily influenced by Shintoism, Buddhism, and Confucianism. As a result, the culture focuses individual and corporate success criteria on harmony, uniformity, and subordination to the group, but in fact there are differences in all important aspects.

 This idea can be used further to look at the nature of management in KSA. It is necessary, therefore, to consider the impact of national culture on management styles. Culture can be seen to include all traditions, habits, religion, arts and languages and to work as a system of collective values that distinguishes the members of one group from another (Hofsted, 1984).

Saudi society tends to concentrate on obeying role obligations within a legitimately unequal distribution of power, roles, and resources (Hofstede, 1984). Saudi society is characterised by a highly traditional attitude towards the roles of the sexes based on the particular form of Islam which is widely practised. According to this doctrine there are limits on places where the sexes can interact together which in general translates into the domination of the public sphere by men

and the domestic sphere by women (women for instance, are not allowed to drive). Most workplaces are therefore exclusively male dominated, with the exception of health-care organisations; but even here, there are generally separate facilities for males and females. In general, this pattern of social organisation is largely accepted within the Kingdom and the absence of female respondents will therefore not be considered an issue requiring specific comment within the scope of the present research.

Based on Islamic law, it would appear that the Islamic work ethic emphasises cooperation consultation, equality and social relations in work that may offer opportunities for learning. On the other hand, the systems of tribe, kinship and family in Saudi that govern individuals' behaviour (Atiyyah, 1999) have an impact which is seen in the hierarchy and obedience to authority in that managers tend to be autocratic while subordinates expect direct supervision (Hofstede, 1984). Hence, this influence may cause opportunities for learning to be missed due to reliance on established procedures, which does not empower individuals to share and implement new ideas effectively.

2.3 Saudi Economic Setting:

The history of the economy of KSA was significantly affected by the discovery of oil in 1938. The beginning of a flourishing economy in the Kingdom of Saudi Arabia occurred after the discovery of oil. Oil wealth has made possible rapid economic development; this began in earnest in the 1960s and accelerated spectacularly in the 1970s, transforming KSA. Oil reserves in KSA are the largest in the world, and KSA is the world's leading oil producer and exporter.

The discovery of oil changed Saudi Arabia into a wealthy nation and enabled the Government to implement comprehensive development, planned in five-year periods. The development witnessed in the Kingdom has successfully reached all aspects and areas of modern life, for example advances in commerce, industry, power, agriculture, construction, and banking. Huge amounts of money have been invested in the Kingdom's infrastructure: roads to connect the Kingdom's production, new housing projects, schools, hospitals, and factories (Ministry of Information, 2004).

Long-term planning was adopted to increase Saudi economic efficiency and widen the production base. Economic targets included training of low-skilled workers and increasing the capabilities of the labour force in order to aid the development of new technologically advanced industries and thereby increase productivity.

The planning for development was set in five-year term plans and has evolved through the past three decades. Since 1970, KSA, under the supervision of the Ministry of planning, has developed and implemented eight development plans, each covering a period of five years (starting with 1970 and finishing with 2010). Through these development plans, the government has sought to use its petroleum income to transform its relatively undeveloped, oil-based economy into that of a modern industrial state while maintaining the Kingdom's traditional Islamic values and customs.

The seventh five-year socio-economic development plan, covering the period 2000-2005, was the first plan to adopt a long-term perspective, looking to the year 2020 while setting short and medium-term objectives. The start of the Seventh Development Plan coincided with the Kingdom's centenary; it also coincided with start of the 21st Century. The plan's prominent

feature was its policy-oriented approach. It incorporated a mix of fiscal and monetary policies, aimed at balancing the budget and setting the stage for continued economic growth.

The eighth five-year socio-economic development plan, covering the period 2005-2010 focuses more on economic diversification and the private sector playing a greater role in the Saudi economy. The new development plan expects the government to continue expanding Saudi's infrastructure in order to meet the needs of a growing population and new development efforts. It aims at developing and upgrading the competency and skills of Saudi manpower to satisfy the requirements of economic and social development, and at ensuring increased participation of Saudi manpower in the labour market and improving its productivity. To achieve this goal, upgrading all elements of technical education and new training programs enables the national cadre to cope with modern technology developments in various sectors; it gives further impetus to the use of the new technology (Ministry of Planning, 2009).

At the present time the situation of the Saudi economy is very much diversified and a great deal of the infrastructure has been completed. There has been substantial investment in education and health and the capabilities and skills of Saudi citizens. The plan has adopted a set of economic policies that fit into long-term perspectives designed to develop human resources, raise the efficiency of manpower, and increase employment opportunities both by generating new jobs and by replacing non-Saudi manpower (*Saudisation*).

It is clear that, through the development plans, the government has sought to train low-skilled workers, increasing the manpower capabilities in order to aid the development of new technologically advanced industries and to increase productivity. Hence, the Institute of Public Administration (IPA) is being required to improve its training and educational standards by

updating training and educational programs and enhancing the performance in terms of quality

and quantity in line with labour market needs.

2.4 Public Sector Management in KSA:

The public sector's main responsibility is to provide society with the needed goods and services.

Yahya and Farah (2009) indicated that, the public sector is the part of a nation's economic

activity which is traditionally owned and controlled by government. However, any country is in

need of a relatively stable an efficient public sector in order to provide its society with the most

suitable goods and services. The need for public sector development is also applicable to Saudi

Arabian public sector organisations, which have now grown to a size where they command

significant resource and perform extensive operations.

The system of government in Saudi Arabia is a monarchic system, and the Judiciary in the

Kingdom derives its sanctions from the Islamic 'Sharia'. In accordance with Islamic teaching,

the State's affairs are run by a Council of Ministers, which is the supreme body of government,

presided over by His Majesty the King of Saudi Arabia (Ministry information, 2004).

In 1998, the Saudi Arabian public sector witnessed its most important reforms. A royal decree

was issued to establish Administrative Development Departments (ADD) in every public

organisation. The main responsibility of these departments is to develop both administrative

matters and the workforce in every public organisation.

Countries, societies and organisations have their own unique cultures (Alshareef, 2005),

therefore, organisations need to take these issues into consideration when planning, designing

and implanting any strategic KM system in order to ensure that the strategic system matches the

organisation's needs (see more details in chapter four). Obviously, Saudi Arabian public organisations have their own cultural identity. Thus, it is important to understand the Saudi Arabian context and its implications for management behaviour in specific terms.

According to Hofstede (1984), organisations in Saudi Arabia are highly centralized systems, highly controlled and more bureaucratic bodies. This can be seen as a reflection of the high uncertainty avoidance identified as a part of Arab culture, meaning that managers are not willing to be involved in situations where outcomes are not clearly determined and which involve high risks. The Power Distance represents how far individuals accept the unequal distribution of power in institutions and organisations. Hofstede's results showed that Arab countries (KSA) tended to be high on power distance. High power distance countries tend for highly centralised organisations with a strong separation between manager and employees and with little vertical mobility. This can be seen through the multi hierarchical levels. Organisation structure, which is one of the necessary elements for organisations to function effectively, is also considered an important factor in transferring knowledge and learning between individuals and groups. In terms of organisational relationships, managers in high power distance societies tent to exert a great influence over the behaviour of subordinates, who then tent to be submissive rather than independent. Hofsted's (1984) in his analysis is in support of the view that the culture of Saudi Arabia encourages organizations that are highly centralised, strictly hierarchical and fully bureaucratic.

The concept of human development places the individual at the centre of the development process, creating policies and instruments that would ensure a more equitable distribution of the benefits of economic development (Ministry of Information, 2004). The Institute of Public

Administration (IPA) (1999) has raised the question of how the State should realize its administrative and human resources development, as the human being is the means to realize the overall development whilst also being the aim and end at the same time. Administrative development, therefore, will be realized by developing the skills, abilities, knowledge and talents of the labour force with view to improving their productivity and limit joblessness.

According to the United Nations Report (2005), the government of the Kingdom of Saudi Arabia, in its realization of the importance of education in general and the information and communication technology in today's world specifically has addressed in the Eighth Development plan, issues necessary for the country and its people to compete in global world, in particular the relationship between education and the labour market, and the level of science and technology necessary for innovation and growth. Education in the Kingdom of Saudi Arabia has witnessed giant leaps that place education on a level comparable to that of advanced countries. The Government's continuous concern about education has led to it to try to implant the urge and desire for knowledge and learning in the hearts of its citizens.

In order to fortify the educational standards of graduates and to train government employees, the government established the Institute of Public Administration in 1961 (see following section 2.5 for more detail). This institute undertakes the renaissance and advancement of administrative development in the Kingdom, and contributes in raising the standard of efficiency of government employees through training and qualifying them academically to carry out their responsibilities and practise their functions in the government posts they assume. The Institute also contributes to raising standard of administrative organisation of the government bodies and renders advice on administrative problems if required. Their staff conducts research work and administrative

studies relating to administration affairs, administrative documentation, and boost cultural relations in the field of Administration.

2.5 The Institute of Public Administration (IPA):

The government of Saudi Arabia in recognition of its need for development programs to prepare and develop the competent human resources, in order to upgrade the performance level and efficiency of government agencies working in various development fields-established the Institute of Public Administration by Royal Decree No. (93), dated 24/10/1380H (1961A.D.), as an autonomous corporate body with headquarters in Riyadh (Institute of Public Administration: objectives and Activities, 2009). It was necessary, due to the extensive amount of training, research, and consultation needed, to establish three branches: the IPA branch in Dammam started its work on 13/10/1393H (1973), the Makkah branch started its work on 8/1/1394H (1974), and a third branch for women was established in Riyadh on 1/11/1403H(1983).

2.5.1 Background to IPA's Strategic Management:

Since 1970 KSA, under the supervision of the Ministry of Planning, has developed and implemented seven development plans, each covering a period of five years (starting from 1970 and finishing at 2005). As previously stated, the objective of the development strategy under the Eighth Development Plan form (2005-2010) is to achieve qualitative improvement and quantitative growth through implementation of the following specific objectives (the eighth development plan, Planning Ministry):

- To develop and upgrade the competency and skills of Saudi manpower to satisfy the requirements of economic and social development.

- To ensure increased participation of Saudi manpower in the labour market and improving its productivity.

The objective of the IPA is to upgrade competency and proficiency levels among government employees, in order to ensure improved performance in support of the development process. IPA experienced steady expansion throughout the course of the Seventh Development Plan from (2000-2004), and now provides training programs that fit specific requirements of government agencies.

IPA offers two types of training activities: preparatory training (to qualify trainees for employment), and training of existing employees (to upgrade employee skills and level of proficiency). It also organizes symposia and workshops and provides management consulting services to government agencies, in addition to conducting management research and studies.

2.5.2 Mission and Vision of IPA:

In light of the comprehensive development the Kingdom is witnessing and within the framework of total Quality Management that the IPA has adopted, the IPA mission is as follows (IPA, Quality application guide, 2009, p.5):

  "*The institute of Public Administration works to achieve administrative development in the kingdom by providing distinctive and efficient services to the government and private sectors that meet the users' expectations and gain their satisfaction.*"

The IPA's Vision can be stated briefly as follows (IPA, information guide objectives and activities, 2009, p.5):

"The Institute of Public Administration endeavours to be distinct, pioneering and leading in the provision of high quality services in the field of administrative development that will be exemplary at the local, regional and international levels."

2.5.3 Aim and Objectives of IPA:

The IPA aims at achieving the main goal behind its establishment, which is serving the cause of comprehensive development in the kingdom. The IPA's objectives, as stated in its by-laws are as follows:

1. To raise the efficiency of government employees and instruct and train them to shoulder their responsibilities and exercise their authority so as they contribute to the development of administration and bolster the foundations of administrative development;

2. To support the efforts of administrative reform and development;

3. To provide consultations in administrative fields requested by ministries and other government agencies; and

4. To enrich administrative thought with conducting and publishing; administrative research, and translating outstanding works related to administrative development.

In order to achieve these objectives, IPA should adopt the following principles (IPA, information guide objectives and activities, 2009, p. 6):

1. Set up and implement in-service training programs for various employment grades in the government;

2. Set up pre-service programs in various administrative fields according to market needs;

3. Conduct workshops and seminars for the executive branch in the government;

4. Sponsor conferences and symposia concerned with administrative development issues;

5. Provide consultations to government agencies and assist in their implementation;

6. Encourage the authoring and publishing of original works and conducting research and administrative studies related to administrative development;

7. Translate into Arabic outstanding international works in the fields relevant to the IPA's line of work;

8. Classify government documents and facilitate their access;

9. Seek membership with regional; Arab and international institutions and organisations in the fields of administrative development;

10. Participate in conferences; symposia and meetings related to administrative development inside and outside the kingdom; and

11. Grant scholarships to faculty members to further their education; and dispatch them on study and training missions in areas relevant to the IPA's areas of concern.

2.5.4 Major IPA Activities:

In a relentless endeavour to achieve the objectives of a better administrative development, IPA undertakes in Riyadh head office and branches four major activities, namely training, consultations, research and administrative documentation (The IPA Achievements, 2009). These activities interact and merge to form an interconnected series wherein the output of one activity is the input of another in support of means of achieving IPA objectives. Following is a brief review of each activity separately:

2.5.4.1 Training Activities:

Training at IPA aims to raise administrative efficiency of government employees and prepare them professionally and practically to undertake responsibility and implement tasks in a manner ensuring the enhancement of performance level. For the end, IPA executes a number of training activities as follows:

- Training Programs (In-Service) which is targeted to government officials in order to fulfil their on-the-job training needs and raise their productive efficiency be equipping them with the knowledge, skills and tendencies which help them to improve performance and contribute to the process of administrative development.

- Preparatory Programs (Pre-Service Training) which are targeted to university and high school graduates to qualify them for civil service or private sector organisations.

- Special Training Programs that aims to meet training needs of special nature in government organs or corporate companies.

- Workshops, which are targeted to higher administrative leaderships in the government. These workshops aim to provide favourable atmosphere for this category of employees in order to be acquainted with modern administration trends and exchange viewpoints, proposals and expertise in their field of competence.

2.5.4.2 Consultation Activities:

Consultation activities at IPA can be dealt with from two dimensions:

First, the General Department for consultations at IPA provides Administrative Consultations that contribute to organizing government administration and advising on the problems faced by government agencies.

Second, Studies of the General Secretariat of the Higher Committee for Administrative Reform. The Committee Secretariat Office will include two IPA employees in addition to an IPA expert on public administration who works as an adviser at the Secretariat Office. The Secretariat tasks originate from the competencies of the Higher and Preparatory Administrative Committees.

2.5.4.3 Research Activities:

Scientific research at IPA aims to study administrative issues and problems for diagnosis and appropriate solutions. In addition, it publishes administrative research to serve administrative development in the kingdom by feeding the Saudi library in particular and the Arab library in general with books, field research, translations, administrative studies and scientific articles in the domain of public administration and other relevant domains such as accounting, economics, law, health administration, and different administrative technologies.

2.5.4.4 Administrative Documentation Activities:

IPA began since inception to develop interest in information and administrative documentation as a basis for administrative development in the Kingdom. This role is undertaken to the Department for Libraries and Documents and related departments (Central Library, Documents and Archives Centre) as well as branch libraries.

2.5.4.5 Support Activities:

Besides IPA main activities, there are a set of support administrative and technical activities represented in a number of departments, centres and specialized committees as follows:

- Planning and Development Department.
- Computer Centre.
- Printing and Publishing Department.
- Administration and Finance Department.
- Quality Council
- Public Relations and information Department.

2.6 Summary:

Based on the above discussion, it can be concluded that Saudi organisations are influenced by many traditional social-cultural factors that push them towards the significance of centralisation of authority and control as a reflection of systems of tribal, kinship and family of Saudi Society. As mentioned above, it is noticed that the Kingdom of Saudi Arabia has experienced many development plans in the last three decades, aiming to develop its organisations and meet global economic challenges. Knowledge flows are regarded as the most important factors in the economy. The next chapter will present the knowledge management literature review from different perspectives and consider knowledge as the most important assets for an organisation to create a sustainable competitive advantage.

Chapter three

Literature Review

Knowledge Management, Strategic

Management, and Balance Scorecard

3.1 Introduction

Nowadays, companies try their best to utilise their resources properly to create value for shareholders, personnel, and other interest groups in order to stay competitive in the battle for the market. Knowledge is considered a valuable asset that must be managed, and the essence of knowledge management is to provide strategies to make the knowledge of an organisation available to those who need it in order to improve human and organisational performance (Davenport and Prusak, 2000; Ergazakis et al., 2005, Hislop, 2009). In this context, the balanced scorecard (BSC) is a strategic management system that allows organisations to explain their vision and strategy, and translate them into action. Kaplan and Norton (2001a) claim that the BSC becomes a complete tool for creating a strategy-focused organisation.

This chapter provides a review of the relevant literature from numerous fields of study associated with the essential issues of strategic management, knowledge management, and the balanced scorecard (BSC) concepts. This will be clarified firstly by an overview of the knowledge management concept and will be divided into two parts. The first part will cover knowledge definitions, knowledge hierarchies, knowledge types, and knowledge conversion. The second part will be on the definition of knowledge management and knowledge management perspectives. Secondly, an overview of strategic management concept and knowledge management will be included and the link between KM and business strategy, strategic knowledge management, KM in public sector, and benefits and limitation of KM will be covered. Finally, the concept of the BSC will be examined in two parts. The first part will be included BSC definition, the BSC strategic system and the BSC process and perspectives. And the second part will study the BSC in public sector, BSC benefits and limitations.

3.2 Knowledge Management (KM)

This section presents a review of the relevant background literature that helps to understand the research objectives and questions. Knowledge management (KM) has become a critical and popular subject of discussion in the business and academic literature in last decade (Bhatt, 2001). Over the past several years there has been intensive discussion of the importance of KM in organisations.   This section defines the concept of knowledge, Knowledge Management, the organisational KM, and KM perspectives.

3.2.1 Knowledge Definition:

There is no single, absolute definition of the term knowledge management. A comprehensive understanding of the concept of knowledge is needed in order to manage it effectively. The definition of knowledge has been debated since the classical Greek era and is still being debated in academic circles, and the search for formal definition continues (Alavi and Leidner, 2001; Hicks et al., 2006; Hislop, 2009). There are still problems connected with both the diversity of the theoretical base and the gap between theory and practical application (Aidemark, 2009). There are, however, several accepted definitions.

Table 3.1 Definitions of Knowledge

Reference	Definition of Knowledge
Alavi and Leidner (1999)	*Justified personal belief that increases an individual's capacity to take effective action*
Zack (1999a)	*(That) which we come to believe and value on the basis of the meaningfully organised accumulation of information through experience, communication or inference*
Wiig (2000)	*Knowledge consists of truths and beliefs, perspectives and concepts, judgments, and expectations, methodologies and know-how and is possessed by humans, or other active*

	entities, and is used to receive information and to recognise, analyse, evaluate, synthesise, decide, implement, monitor, and adapt – i.e. to act more or less intelligently
Bollinger and Smith (2001)	*Knowledge is the understanding, awareness, or familiarity acquired through study, investigation, observation or experience over the course of time; it is an individual's interpretation of information based on personal experiences, skills, and competencies.*
Grant (2007)	*Knowledge exists within the people, products, and processes*

It can be seen from Table 3.1 that knowledge can be interpreted differently, but in general it has more value than information. It includes personal beliefs and experiences and drives possessors to action and causes them to make decisions. Moreover, knowledge is dynamic in nature and can be accessed through collaboration and communication with experts who have that knowledge. The next section will identify the differences between data, information and knowledge.

3.2.2 The Knowledge Hierarchy:

The literature is filled with different interpretation of the three terms (data, information and knowledge), and their meanings vary from author to author.

Bagshaw (2000) approaches knowledge via the distinction between data, information and knowledge, as can be seen in Figure 3.1 below.

Figure 3.1 Data, Information and Knowledge Model

Data → Information → Knowledge

Processing, Filtering, and Organising

Transforming, Abstracting, and Extending
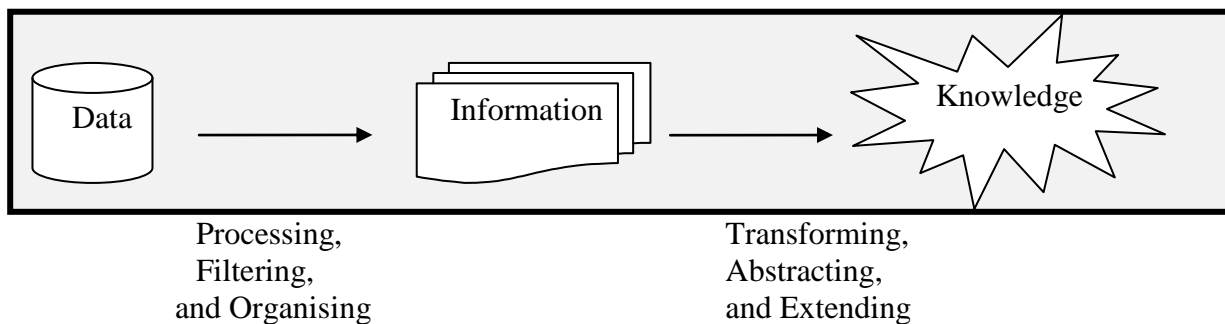
Source: Bagshaw (2000)

Definitions of data, information and knowledge offered by various other researchers are similarly Galliers and Leidner (2009) define data as context-free and claim that it can be interpreted in many different ways for different purposes while information is the processing of data and is context dependent, and information systems have to include human beings in the act of interpretation for the term to be at all meaningful. Vlada and Nica (2010) stated that knowledge can be identified as information in context, although information is not automatically knowledge.

The most common theme in the KM literature is the knowledge hierarchy (Davenport and Prusak, 2000; Zack, 1999a; Nissen et al., 2000; Alavi and Leidner, 2001; Clarke and Rollo, 2001; Hicks et al., 2006); this hierarchical concept is discussed exhaustively in the literature which states that data is transformed into information, and information is transformed into knowledge (see Figure 3.2).

The hierarchy exists, on the one hand in the temporal sense, i.e. information develops from data, and knowledge then develops from information. On the other hand, there is a value hierarchy, where knowledge is considered to be high order information, while information is considered to be high order data (Tuomi, 2000, Hicks et al., 2006).

Figure 3.2 Knowledge Hierarchy
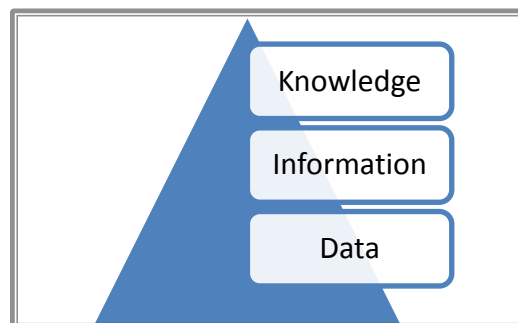
Source: Hicks et al. (2006)

Typically the discussion of knowledge is linked with data, information, knowledge and wisdom. Figure 3.3 illustrates the concept of knowledge. Knowledge is believed to be derived from the simplest level which is data. Data are collections of discrete facts that are presented in an objective way (Hoe, 2006). Data are unprocessed raw representations of reality which are drawn on to produce information (Faucher et. al, 2008). This process involves arrangement, categorisation and analysis of data and contextualisation. The context can be made up of physical, virtual, mental elements or any combination of these. An extension of the knowledge hierarchy is expressed by Clarke and Rollo (2001, p 206) who write "*as data and information are processed and interpreted and become invested with meaning through analytical thought processes, they increase in utility and value. Wisdom remains a rare phenomenon.*"

The traditional model of the data-to-knowledge continuum incorporates the history of the development of KM. Figure 3.3 shows the shift from data management which intensified in 1950 and 1960, to the situation in the Information Age and finally to the situation in the current period of KM.

Figure 3.3 The Traditional Data-Information-Knowledge-Wisdom Continuum

Data	Information	Knowledge	Wisdom
1940-1960	1970-1980	1990s	2000-
Development of computers with capacity to "*crunch*", store, and analyse massive amounts of data Backroom applications	Rapid growth of information systems Arrival of the Information Age Massive investments in information technologies	Emergence of KM as a separate discipline Technical advances in computing power, lower costs, and miniaturisation	Sense making by managers Widespread applications of KM Strategic emphasis

Source: Geisler and Wickramasinghe (2009, p. 25)

Figure 3.4 (One view of the DIKW hierarchy) shows terms such as data, information, knowledge and the newly introduced and highly debateable wisdom concept which are very popular in the scientific literature as a data chain that varies from basic to complex (Pelau et al., 2010).

Figure 3.4 The DIKW Hierarchy
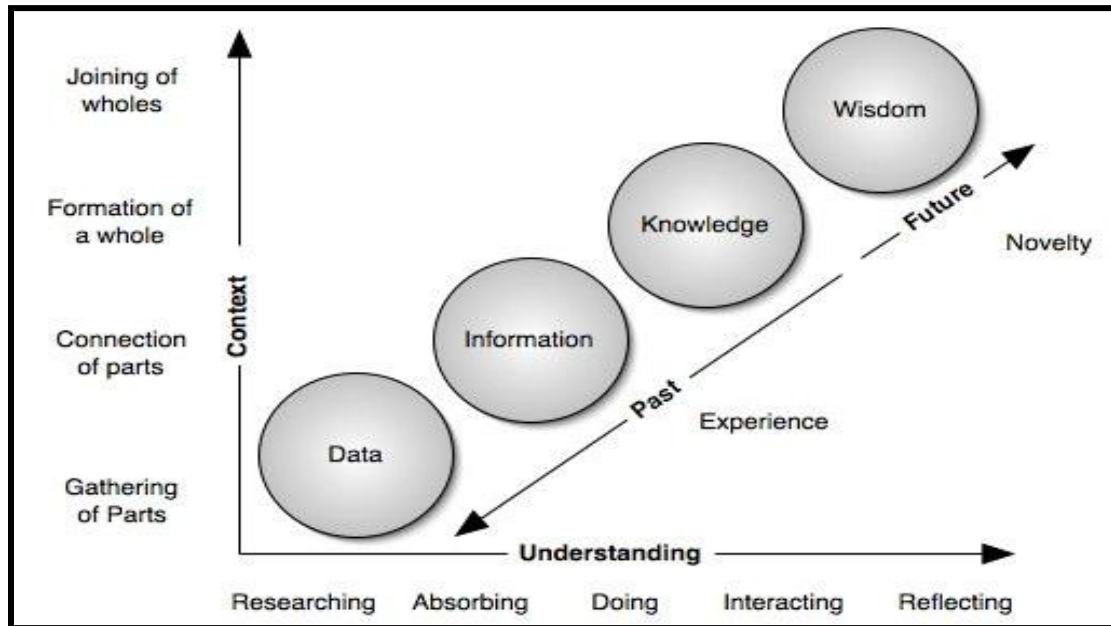
Source: Clark (2004)

3.2.3 Knowledge Type:

The type dimension is the most important for knowledge management in a company. It categorises knowledge according to its presence and availability. It must be asked whether it is only available for the owning human being, whether it can be communicated, applied or transferred to the outside, or whether it is externally available in the company's organisational memory, detached from the individual human being (Ammann, 2010). Some knowledge resources are tangible, for example infrastructure, people as human capital, manuals, while others are intangible, for example individual or organisational abilities, know-how, insight, relationships etc. (Bratianu, 2009; Leon and Atanasiu, 2010). As we stated in chapter two, the

most common classification in knowledge management literature to date is the distinction

between 'explicit knowledge' and 'tacit knowledge' (see Table 3.2: The Characteristics of Tacit

and Explicit Knowledge) (Koskinen and Pihlanto, 2008). Both tacit and explicit knowledge are

recognised as important sources of competitive advantage and value creation, as indispensable

ingredients for the development of dynamic core competencies (Madhoushi and Sadati, 2010).

Table 3.2 the Characteristics of Tacit and Explicit Knowledge

Tacit Knowledge	Explicit Knowledge
Inexpressible in a modifiable form	Codifiable
Subjective	Objective
Personal	Impersonal
Context-specific	Context-independent
Difficult to share	Easy to share

Source: Hislop (2009, p. 23)

Explicit knowledge, is regarded as objective, standing above and separate from both individual

and social value systems and secondly as something that can be codified in a tangible form.

Tacit knowledge on the other hand represents knowledge that people possess but which is

inexpressible. The main characteristics of tacit knowledge are therefore, that it is personal, and

that it is difficult, if not impossible, to disembody and codify (Hislop, 2009). Explicit knowledge

can be described in formal language as the *"know-what"*, and is documented and public, has

structured fixed-content, and is externalised and conscious (Misci and Uzunoglu, 2008).

Explicit, knowledge is codified in a formal manner, for example in the form of grammatical

predicates, design specifications, procedure manuals, etc. (Nonaka and Takeuchi, 1995).

Explicit knowledge is what can be captured and shared through information technology. It can

be easily passed on from one medium to another; therefore, one can say it is transferable. Alavi

and Leidner (2001) have added that it is articulated, codified, and communicated in symbolic form or natural language. Furthermore, it is whatever can be captured and processed, transmitted and stored relatively easily through information technology (Nissen et al., 2000). Hence, it is reusable in a consistent and repeatable manner.

'Tacit knowledge' on the other hand, may be seen as implicit knowledge or hidden knowledge, as opposed to explicit knowledge. Tacit knowledge, or implicit knowledge, is personal knowledge, and resides in the human mind, behaviour, and perception (Misci and Uzunoglu, 2008; Duffy, 2000). Tacit knowledge represents the direct result of the interaction between the individual and the external environment. It is deeply rooted in experiences, actions, ideas, values, and involvement in a particular context (Alavi and Leidner, 2001; Misci and Uzunoglu, 2008). Thus, it is hard to share and difficult to formalise, express, codify, or communicate to others.

Fundamentally, tacit knowledge should not be considered independently from explicit knowledge, as there is a tacit dimension to all forms of knowledge (Polanyi, 1996). Explicit knowledge without tacit insight quickly loses its meaning. Knowledge is created through interactions between tacit and explicit knowledge, rather than from tacit or explicit knowledge alone (Nonaka et al., 2000; Hislop, 2009). Codification and collective ownership of knowledge thus both facilitate knowledge-sharing and integration in the organisation (Leiponen, 2006, p. 242). Managing and coordinating the explicit and tacit knowledge of individuals in organisations can sustain a competitive advantage among different organisations. In fact, tacit and explicit knowledge are complementary and form a spectrum. Both permeate the daily life of organisations and both contribute to the fulfilment of organisational goals. Some knowledge assets are explicit and others are tacit. The next section will discuss Knowledge assets in details.

3.2.4 Knowledge Conversion

The challenge for every organisation is to transform passive knowledge into active knowledge and to transform individual, tacit knowledge into group, organisational knowledge. Organisations have to put processes in place and come up with knowledge initiatives to bring about this transformation. Managing knowledge is about creating an environment to encourage knowledge creation and transfer. Tacit knowledge is transferred from one individual to another and from individuals to groups and teams through conversations, dialogues and meetings. Many times, this transfer takes place informally. A transformation of tacit to explicit knowledge takes place through the creation of documents (Leon and Atanasiu, 2010). Nonaka and Takeuchi (1995) discuss four different modes of knowledge conversion, as are shown in Figure 3.6.

This social constructivist model of creation, transfer and conversion of tacit and explicit knowledge across different social layers permits a better understanding of the emergence and development of epistemic structures, ideas, models, semantics or paradigms as part of a differentiated conversion process that is has a strong connection with internal and external organisational knowledge resources (Pelau et al., 2010).

Figure 3.5 Four modes of knowledge conversion

	Tacit Knowledge	Explicit Knowledge
Tacit Knowledge	**Socialisation**	**Externalisation**
Explicit Knowledge	**Internalisation**	**Combination**

Source: from Nonaka and Takeuchi (1995)

It is accepted that knowledge can be transformed from one form to another. The four modes are (Nonaka and Takeuchi 1995, Leon and Atanasiu, 2010):

1. *Tacit knowledge to tacit knowledge*, which is called **socialisation**. This is a process of sharing experiences which creates tacit knowledge, such as sharing mental models and technical skills through workgroups and communities of practice;

2. *Tacit knowledge to explicit knowledge* or **externalisation**. This is a knowledge creation process by which tacit knowledge becomes explicit, taking the shapes of metaphors, analogies, concepts, hypotheses or models.

3. *Explicit knowledge to explicit knowledge* or **combination**. This is coordinated between different groups in the organisation, and involves combining different bodies of explicit knowledge, along with documentation of existing knowledge, for example when individuals combine and exchange knowledge through media such as documents, telephone conversations or meetings.

4. *Explicit knowledge to tacit knowledge* or **internalisation**. This is a process of transforming explicit knowledge into tacit knowledge and is closely related to 'learning by doing'. This in turn involves translating such knowledge into a tacit form at the organisation level, through, for example, work practices and routines.

Tacit knowledge is embedded in complex organisational routines and developed from experience, and tends to be unique and difficult to imitate.

3.2.5 Knowledge Management of Definition:

The term knowledge management describes everything from the application of new technology to the harnessing of intellectual capital within an organisation (Sallis and Jones, 2002; Graham and Thomas, 2008). Furthermore, it relates to concepts such as organisational learning, collaborative work, organisational memory, information sharing, and information technology. Despite the voluminous literature on KM, there is no readily accepted definition of the concept (Earl, 2001). The term knowledge management (KM) is just as difficult to define as knowledge itself (Bhatt, 2001). Here is a selection of definitions of KM:

Table 3.3 Definitions of Knowledge Management

Davenport and Prusak (2000)	*KM is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information.*
Beckman (1999)	*KM concerns the formalisation of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value*
O'Dell et al. (1998)	*KM can be viewed as strategies and methods of identifying, capturing, and leveraging knowledge to help a firm compete*
Egbu (2004)	*The capability of an organisation to innovate and continuously improve depends upon the effective sharing and exploitation of its knowledge*
Rao (2005)	*KM is a systematic discipline and set of approaches to enable information and knowledge to grow, flow and create value in an organisation*
Koskinen and Pihlanto (2008)	*KM comprises a range of practices used by organisations to identify, create, represent and share knowledge for reuse, awareness and learning.*
Madhoushi and Sadati (2010)	*KM is a planned, structured process to manage the creation and acquisition, sharing and transfer and application of explicit and tacit knowledge as an organisational asset to encourage innovation and to enhance competitive advantage*

Bhatt (2001) defined KM as the processes and procedures that govern the creation, dissemination and utilisation of knowledge by merging organisational structures and people with technology in order to better leverage resources within an organisation. Davenport et al. (1998) have argued that knowledge management is concerned with the exploitation and development of the knowledge assets of an organisation with a view to furthering the organisation's objectives. The knowledge to be managed includes both explicit, documented knowledge, and tacit, subjective knowledge. They also suggest that management entails all of those processes associated with the identification, sharing and creation of knowledge.

KM mainly highlights the information-processing aspects of KM, such as capture, refinement, storage, retrieval and distribution. In addition most of the definitions focus on managing the knowledge already existing within the organisation but do not consider the importance of knowledge creation, which is a source of competitive advantage (Nonaka, 1994), and most of the definitions focus on making the knowledge available but pay little attention to developing the capabilities that are needed to utilise the available knowledge which determines the extent to which a firm benefits from its knowledge (Hass and Hansen, 2005).

The existing definitions of knowledge management may have focused on a limited domain because they have been reached from different perspectives (for more details see section 3.2.4). In short, each of the existing definitions of knowledge management focuses on a limited aspect of organisational knowledge management and considered the strategic aspects.

The definition of KM adopted in this study integrates various approaches to KM. A researcher advocates the holistic approach to KM definition and believes the KM can encompass any or all the following items: IT, business process; human/individual dimension and competitive

advantage.   These dimensions allow the organisation to develop, transfer, transmit, store and

applies knowledge. The following definition was adopted in this research:

KM is the strategic application of integrated managerial strategy, which combines the explicit (IT) and tacit (people) knowledge with organisational process to create, store, share, and apply knowledge assets from the different sources (internal and external) of knowledge to make the right decisions in order to gain the strategic objectives.

3.2.6 Knowledge Management Perspectives:

As earlier mentioned, scholars in Knowledge Management literature viewed knowledge as an

asset and emphasised the need to leverage it (Egbu, 2004, Davenport and Prusak, 2000, Grant,

1996). The research in organisational learning pointed to the importance of learning processes

that create knowledge.   Armed with high power computing and communication tools, the

information technology discipline viewed KM as a technical activity providing IT which stores

information.   Moreover, knowledge is dynamic in nature and can be accessed through

collaboration and communication with experts who have that knowledge (Cormican and

O'Sulliva, 2003). The following is Knowledge Management perspectives in details:

3.2.6.1 Knowledge Management and Information Technology:

The literature on KM in the IT discipline viewed knowledge as an object that information

technology could manage (Meireles et al., 2010).   Accordingly, it presents information

technology as the anchor for developing ideas of KM directed towards the systematic search for,

description, and replication of information and knowledge existing inside the organisation

(Meireles et al., 2008).

The major purpose of KM is to enhance value through innovation which will develop sustainable advantage for the future aligned with and supporting strategy. In this context technology has a fundamental role in supporting KM, especially in large, spread-out, multi-national organisations, because it can help knock down barriers of time and distance (Alberghini et al., 2010). With networks of computers and groupware tools being the keys, the focus here is more on creating databases for storing information and making the information available through computer networks, and thus the focus is mainly on explicit knowledge (Martensson, 2000; Galliers and Leidner, 2009). Knowledge storage permits finding and comparing information and includes information tracking and retrieval (Alberghini et al., 2010). The researchers who support this view usually come from a background which is computer and/or information science oriented; they perceive knowledge to be an object and KM to refer to "*Management of Information*" (Sveiby, 1997; Alavi and Leidner, 2001; Hlupic et al., 2002; Chong and Choi, 2005; Galliers and Leidner, 2009).

Knowledge management promotes an integrated approach to identifying, capturing, retrieving sharing, and evaluating an enterprise's information assets. These information assets may include databases, documents, policies and procedures, as well as the un-captured tacit expertise and experience stored in individual workers' heads (Koskinen and Pihlanto, 2008).

In addition, IT is seen as a critical enabler for KM initiatives. Its key roles focus on making knowledge more explicit by supporting the capture, organisation, storage, retrieval, reuse and distribution of relevant knowledge for the benefit of whoever needs it. However this vision is limited since it ignores the human (or soft) dimension that represents an important aspect of the

knowledge concept (Hlupic et al., 2002). Moreover, it fails to link the application of KM to the business strategy and objectives.

3.2.6.2 Knowledge Management and Human Resources:

This perspective focuses attention on the role of people as a central element in creation and acquisition, sharing and manipulation of knowledge (Meireles et al., 2010). Based primarily on the idea that each new member of the organisation comes with a set of skills which are useful to the group and serve the organisation's interests, human resources is considered the most important element in managing an organisation (Boronea, et al. 2010; Esteves and Caetano, 2010). This view centres on the human resources issue with emphasis on organisation culture and teamwork. A strong, positive organisational culture is critical to promoting learning, development and the sharing of skills, resources, and knowledge. Thus, the focus in this case is mainly on tacit knowledge. The researchers, who belong to this school, generally come from a background of philosophy, psychology, sociology or management, and consider knowledge to be processes based on individual and organisational competencies such as skills and the know-how, know-what and know-why of individuals (Nonaka and Takeuchi, 1995; Davenport and Prusak, 2000; Alavi and Leidner, 2001; Hlupic et al., 2002; Mentzas, 2004; Chong and Choi, 2005, Gottschalk, 2005).

This view is consistent with the human capital theoretical approach, which argues that the skills, knowledge and abilities possessed by HR provide economic value to an organisation (Esteves and Caetano, 2010). The human capital approach provides opportunities for emphasising the intellectual aspects of a firm's capital (Teece, 2003). However, it is asserted that the human

capital in an organisation is the most important intangible asset, especially in terms of innovation (Edvinsson, 2000).

This view highlights the importance of human-centred assets. It also deals with the management of people and their motivations to facilitate sharing and leveraging knowledge and expertise. However, this vision is also limited since it neglects the technological dimension that represents an important factor in supporting KM implementation (Hlupic et al., 2002). Furthermore, it fails to link the implementation of KM to the organisation's objectives.

3.2.6.3 Knowledge Management Capturing Knowledge Resources:

In contrast to the IT perspective on KM, which is mostly practitioner-driven, the literature on organisational knowledge is more strongly linked to research (Vera & Crossan, 2003). Organisational and managerial practice have recently become more knowledge-focused (Alavi and Leidner, 2001), for example, the use of benchmarking, best practice transfer, and knowledge audits point to the realisation of the importance of organisational knowledge and intangible assets in general (Spender, 1996; Civi, 2000; Grant, 2000; Shankar et al., 2003). Knowledge provides value to the organisation by way of offering an improved environment for new developments and the use of experience to handle problems (Nonaka and Takeuchi, 1995). This experience is in fact the knowledge repository of the organisation (Shankar et al., 2003).

The knowledge-based theory of the firm lies in its emphasis on the internal resources available to the firm, rather than on the external opportunities and threats dictated by industry conditions (Gottschalk, 2005). The knowledge-based theory suggests that the services provided by tangible resources depend on how they are combined and applied, which is in turn a function of the firm's

know-how, which is organisational knowledge (Alavi and Leidner, 2001). This knowledge often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, norms (Davenport and Prusak, 2000; Koskinen and Pihlanto, 2008), products, and services (Demarest, 1997). It is also dependent on organisational culture and identity, policies, and systems as well as individual employees (Sveiby, 1997). Moreover it is exchanged, bartered, generated, and applied to work within the organisation (Davenport and Prusak, 2000).

Consequently, firms try to "*capture the knowledge of specialists in knowledge bases which other specialists or qualified people can use*" (Earl, 2001, p. 218). The capture-based KM strategy views knowledge as an entity separate from the people who create and use it. Therefore, firms following this strategy store documents in repositories from which they can be easily retrieved (Davenport et al., 1998). Davenport and his colleagues found three basic types of repositories: "(1) *external knowledge, for example competitive intelligence; (2) structured internal knowledge, such as research reports; product-oriented marketing materials, and techniques and methods; and (3) informal internal knowledge; like discussion databases full of know-how*" (Davenport et al., 1998, p. 45). The structured internal knowledge is usually codified knowledge, often available in printed or printable form and stored in the repositories. The informal internal knowledge is stored by capturing conversations on discussion boards and e-mail systems. The repositories containing the informal internal knowledge try to capture the tacit experience and learning of employees. However, what gets captured is only the explicit component of employees' knowledge and experience. The tacit components of employee knowledge are unravelled only through social interactions (Nonaka, 1994).

3.2.6.4 Knowledge Management and Organisational Learning:

Organisational learning has received increased attention from researchers and practitioners alike as a means of addressing how firms respond to rapidly changing environments (Goldman, 2010; Meireles et al., 2010). Many researchers suggest that the only sustainable competitive advantage may be an organisation's ability to learn faster than its competitors (Stata, 1989; Nonaka and Von Krogh, 2009; Goldman, 2010). Several research models and frameworks explain how learning occurs at the individual, group and organisational level. Groups, not individuals, are the fundamental unit of learning in modern organisations (Senge, 1990, Goldman, 2010). Notable among the organisational learning models are: single-loop and double-loop learning (Argyris, 2006), exploration (March, 1991), and information acquisition, information distribution, information interpretation, and organisational memory (Huber, 1991).

As stated by Nonaka and Von Krogh (2009), knowledge is justified true belief. Individuals justify the truthfulness of their beliefs based on their interactions with the world. At the same time, knowledge is the actuality of skilful action and/or the potentiality of defining a situation so as to permit action (Goldman, 2010).

However, it is difficult to manage knowledge with the help of databases and protection systems because knowledge is not only explicit but is also tacit (Polanyi, 1996). Further; knowledge is not only a resource as is the view of capture-based KM strategy but is a process of knowing (Nonaka; 1994; Spender, 1996; Zack, 1999a). The literature on organisational learning has emphasised that learning is a process that creates knowledge (Vera & Crossan, 2003). The belief that learning is a means to create and manage knowledge is central to a learning-based KM strategy.

In short, a learning-based strategy focuses on creating organisational processes that help individuals to share knowledge in a group. Further, groups are encouraged to interact with each other to share their solutions. By defining the objectives of KM in an overarching manner, learning-based strategy enables people to look beyond what is known and create new solutions to organisational problems. Accordingly, there is a focus on knowledge creation. In addition, high levels of interaction between organisational members facilitate the transfer of both tacit and codified knowledge.

3.2.6.5 Knowledge Management from a Holistic Perspective:

In a context where competitive advantages are related to knowledge, it can be affirmed that it is important to make an effort to delineate a comprehensive approach which conceptualises a renewal and dynamic articulation between practices of strategic management of people and KM initiatives (Meireles et al., 2010). The holistic approach is applied to the definition of KM and points to the same fundamental idea that knowledge management refers to the critical issues of organisational adaptation, survival and competence in the face of discontinuous environmental change. Essentially it embodies organisational processes that seek a synergistic combination of data and the information-processing capacity of information technologies, and the creative and innovative capacity of human beings (Malhotra, 1998). Zuckerman and Buell (1998) pointed out that KM is the strategic application of collective company knowledge and know-how to build profits and market share. Knowledge assets, both ideas or concepts and know-how, are created through the computerised collection, storage, sharing, and linking of the corporate knowledge pool. Advanced technologies make it possible to tap into the corporate mind. On the other hand, Hung et al. (2005) stated that knowledge management is a systemised and integrated managerial

strategy which combines IT with the organisational process. KM is a managerial activity which develops transfers, transmits stores and applies knowledge, as well as providing the members of the organisation with real information so as to be able to react and make the right decisions, in order to attain the organisation's goals.

In this last view, a holistic approach is a practical part of the KM approach. In this category, KM has the aim of improving organisational productivity, effectiveness, innovativeness, responsiveness and competitiveness. KM can also encompass any or all of the following items: IT, business processes and organisational knowledge; the human/individual dimension and learning organisations. These items allow the organisation to systematically create, store, share, and apply knowledge assets from different sources to gain the strategic objectives of KM implementation. A common theme in these definitions is that KM provides a framework that builds on previous experiences and creates new means of generating and sharing knowledge.

This view of KM enables the organisation to identify its critical knowledge domains, its most immediate and future knowledge priorities, goals and objectives, and to work toward building critical knowledge systems and embedding work systems within them. It advocates a multidisciplinary approach to understanding and researching the field of KM.

In summary, this section has presented a survey of KM fundamentals through a comprehensive review of relevant literature. During the last two decades, individuals and organisations have begun to realize the increasingly important role of knowledge in the emerging hyper-competitive environment. An effective KM system is essential for retaining employees' knowledge within a firm by using appropriate technology and tools to capture and store the knowledge residing in the minds of its employees, so it can be easily shared and reused. Furthermore, a change in strategic

direction may result in the loss of knowledge in specific area. A subsequent reversal in policy may then lead to a renewed requirement for this knowledge, but the employees with that knowledge may no longer be there (Civi, 2000). In this research, the researcher advocates the holistic approach to the perception of knowledge management and believes that KM should include, beside the strategic objectives, the hard dimension (IT), soft dimension (people and process), captured resources, and learning organisations. The next section represents the relation between knowledge management and strategic management.

3.3 Strategic Management and Knowledge Management

This section will discuss the integration between Knowledge Management and Strategic Management. As previously stated in chapter one there is a growing realisation of the importance of the development and understanding of theory for both Strategic Management and Knowledge Management in order to guide the successful development of a Strategic Knowledge Management system. The aim of this research is to develop a conceptual integrated view of KM strategies from the literature through the discussion along with strategic Management and KM management concept. In this section the description of how KM activities must effectively be linked to the strategy of the organisation to ensure effective incorporation as the guiding method for the enhancement of the knowledge function's strategic role.

3.3.1 Strategic Management:

The best known approach to defining strategy is the SWOT (strengths, weaknesses, opportunities, and threats) framework (Andrews, 1986). Performing a SWOT analysis involves describing and analysing a firm's internal capabilities – its strengths and weaknesses – relative to

the opportunities and threats of its competitive environment (Thompson, and Martin, 2010). Strategy can be seen as the balancing act performed by the firms between the external environment (opportunities and threats) and the internal capabilities of the firm (strengths and weaknesses).

More recent writers define the strategy of an organisation as a plan or course of action taking the future into account (Mintzberg, 1994, Thompson and Martin, 2010). In the generic literature, the concept of strategy is defined as the direction and scope of an organisation over the long term (Johnson and Scholes, 1993, p. 10). Michael Porter (1996) defines strategy as achieving competitive advantage to add unique value for the customer. There is an alternative view which puts the emphasis back into the original notion of business strategy; recent work in the area of strategic management and economic theory has begun to focus on the internal side of the firm's resources and capabilities (Barney, 1997; Thompson, and Martin, 2010). This new perspective is referred to as the resource-based view (RBV) of the firm, which believes the main drivers for strategic choice are internal ones, such as an organisation's core competences (Grant, 2000). From this analysis, a number of strategies are developed for evaluation and selection (Robbins et al., 2000). This is followed by implementation and on-going evaluation. The entire process is iterative, with performance evaluation providing feedback through tools such as Kaplan and Norton's (1996a) balanced scorecard for subsequent adjustments to plans (Aaker, 2001).

Kaplan and Norton (1996a) presented the "*balanced scorecard*", methodology in a 1996 Harvard Business Review article entitled, "*using the balanced scorecard as a strategic management system*". They point out that in the contemporary business environment, organisations currently compete based on information, and that an organisation's ability to exploit intangible assets is

increasingly more important than its ability to exploit physical assets (more details about BSC in the following section 3.4). The problem according to Kaplan and Norton is that most organisations' operational and management control systems are built around financial measures and targets that do not measure the organisation's progress in achieving long-term strategic objectives. A gap exists between the development of strategy and its implementation.

3.3.2 Link Knowledge Management to Business Strategy:

It has already been shown that the key components of successful knowledge management are strategy, culture, technology, organisation and people (James, 2004; Alsadhan 2007; Dayan, 2006). Skyrme (2002) claims the integration of knowledge management processes into the business management process and strategic thinking has significant benefits. He believes the knowledge contribution to strategy can be divided into two 'thrusts':

- Making knowledge that is already known easily accessible;

- Innovation: the creation of new knowledge that has value;

Strategic knowledge management refers to the organisation's relationship with its outside environment. It is an organisational orientation that aims for competitiveness and in which stakeholders have a predominant role since there is constant play on the knowledge we hold (or do not hold), the knowledge competitors hold (or do not hold), what we want (or do not want) them to know that we know, and finally what others want (or do not want) us to know. This aspect allows better adaptation to the outside environment and promotion of sustainable competitive advantage (Cardoso et al., 2010).

In Figure 3.8 the strategic management process is shown as a chronological set of analyses and choices that can increase the chance of the firm choosing a good strategy that produces competitive advantages (Barney and Hesterly, 2006, p.5). Building a knowledge dimension into the use of strategic systems is a first step towards developing and implementing a knowledge management strategy system. Effective management of critical knowledge requires an organisational strategy, and processes to carry out that strategy, and measurements to evaluate how well their processes are working (Patton, 2007). A wide variety of strategy tools are compatible with knowledge management (Dayan, 2006).

Figure 3.6 The Strategic Management Process

Mission → Objectives → External Analysis / Internal Analysis → Strategic Choice → Strategy Implementation → Competitive Advantage

Source: (Barney, Hesterly, 2006, p.5)
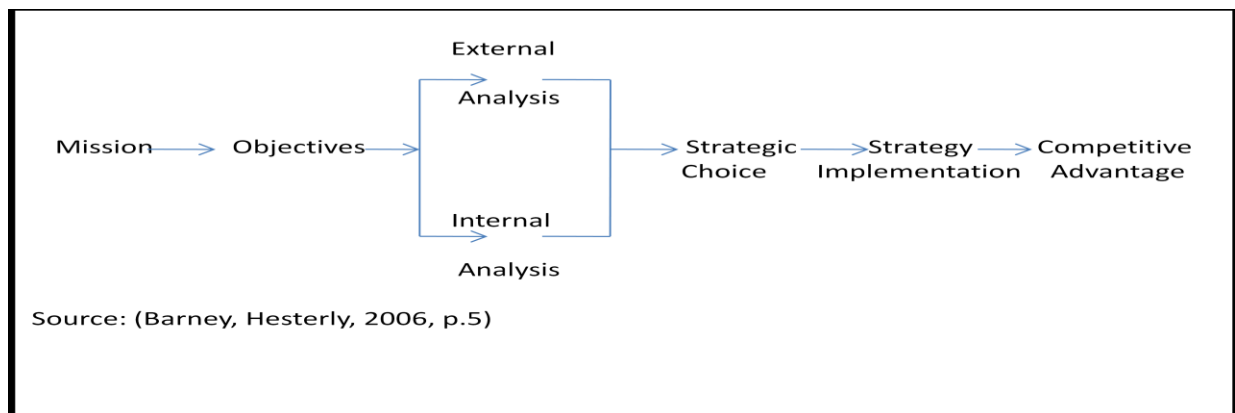
3.3.3 Strategic Knowledge Management:

Knowledge management literature dealing with strategy issues is relatively young (Koskinen and Pihlanto, 2008). This section will discuss strategic knowledge management with a respect to the previous discussion in section 3.3.1. This section reviews the relevant literature that helps to understand the research question about how KM strategy fit into the wider strategic management

system. The success of KM depends strongly on the selection of initiatives that align with organisational strategy (Alberghini et al., 2010).

When Zack (1999b) discusses the process involved in developing a knowledge strategy, he describes an organisation's knowledge in terms of core, advanced and innovative knowledge. *Core knowledge* is the minimal knowledge required to stay in the game. *Advanced knowledge* enables a company to be viable relative to its competitors. It may have a similar scope and quality of knowledge to its competitors, but a specific knowledge that places it in a niche market situation differentiates this knowledge as being of an advanced nature. *Innovative knowledge* allows the company to lead in its industry segment and significantly differentiate itself from competitors. When core knowledge matches the competition, the company becomes a viable competitor. However, once a company has advanced knowledge relative to its competitor, this places that competitor in a position behind the company. When a company has innovative knowledge relative to its competitor, then the competitor is at risk because, as well as having a differentiated competitive advantage, the leading company may well have advanced innovative practices that lower costs and thus provide cost advantages (Koskinen and Pihlanto, 2008; Walker et al., 2005).

Hansen et al. (1999) propose codification and personalisation strategies as alternative ways by which organisations can develop their knowledge management strategies (see table 3.5). Codification strategies are heavily based on technology and use large databases to codify and store knowledge. This knowledge is stored in a 'knowledge repository' so that other projects and individuals in the organisation can use the same material for their own projects. In this case,

codification strategies are clearly aligned with the organisation's business strategy, focused on efficiency, cost savings and cost leadership.

Personalisation strategies are less about technology and more about people. They place considerable emphasis on knowledge sharing by face-to-face communication and gaining deeper insights into problems. In this sense, a personalisation is in alignment with business strategy focused on differentiation through innovative solutions.

Table 3.4 Codification and Personalisation Knowledge Strategies

Knowledge Strategy	Codification	Personalisation
Business-knowledge link	Competitive advantage through knowledge reuse	Competitive advantage through knowledge creation
Relevant knowledge process	Transferring knowledge from people to documents	Improving social processes to facilitate sharing of tacit knowledge between people
HRM implications	Motivate people to codify their knowledge Training should emphasise the development of IT skills Reward people for codifying their knowledge.	Motivate people to share their knowledge with others Training should emphasise the development of inter-personal skills Reward people for sharing knowledge with others.

Source: Hansen et al. (1999) and Hislop (2009)

Knowledge management strategy will either be people-to-documents for codification or person-to person for personalisation. People-to-documents implies developing an electronic document system that codifies, stores, disseminate, and allows reuse of knowledge. Person-to-person implies developing networks for linking people so that tacit knowledge can be shared. With codification, where the goal is to connect people with reusable codified knowledge, the

organisation invests heavily in IT. With personalisation, where the goal is to facilitate conversations and exchange of tacit knowledge, the organisation invests moderately in IT. With codification the human resources approach will be concerned with training people in groups and through computer-based distance learning. With personalisation, the human resources approach will be concerned with training people through one-on-one mentoring (Gottschalk, 2005, Koskinen, and Pihlanto, 2008, Hislop, 2009).

Beckman, (1999) stated that knowledge management is the formalisation of and use of access to experience, knowledge and expertise to create new capabilities, enable superior performance, encourage innovation, and enhance customer value. The organisation's strategic plan, performance and results provide the input into the firm's knowledge strategy (Mouritsen et al., 2004; Zack, 1999b). Knowledge strategy is, however, different from knowledge management strategy, as explained by Zack: "*knowledge strategy is oriented towards understanding what knowledge is strategic and why knowledge management strategy guides and defines the processes and infrastructure (organisation and technological) for managing knowledge*" (Zack, 2002, p. 271). The notion of knowledge strategy relates to how a firm approaches its knowledge needs, whereas KM strategy relates to how it approaches knowledge management as an activity.

The conceptual distinction between "*knowledge strategy*" and "*knowledge management strategy*" made by Zack (2002) is echoed in other works. For example, Earl (2001) recommends that firms analyse and manage knowledge gaps with the help of three broad knowledge management strategies: technocratic, economic and behavioural. These three strategies are further subdivided into seven different strategies: technocratic (systems, cartographic and engineering), economic (commercial) and behavioural (organisational, spatial and strategic). These strategies differ in their focus, aim and critical success factors (Earl, 2001).

The knowledge and strategy link indicates that the strategic choice that a company makes regarding technology, markets, products or processes will have a direct impact on the knowledge, skills and competencies that it needs to compete in its intended market (Zack, 1999a, b). To be competitive, competitive strategic plans are developed and deployed to close the gap between what a firm can do and what it must do. As with competitive strategies, knowledge strategies can be developed and deployed to close the gap between what a firm knows and what a firm must know to be competitive (Zack, 1999a), as shown in Figure 3.9 below:

Figure 3.7   KM Strategy Framework

Source: (Zack 1999, p. 136)
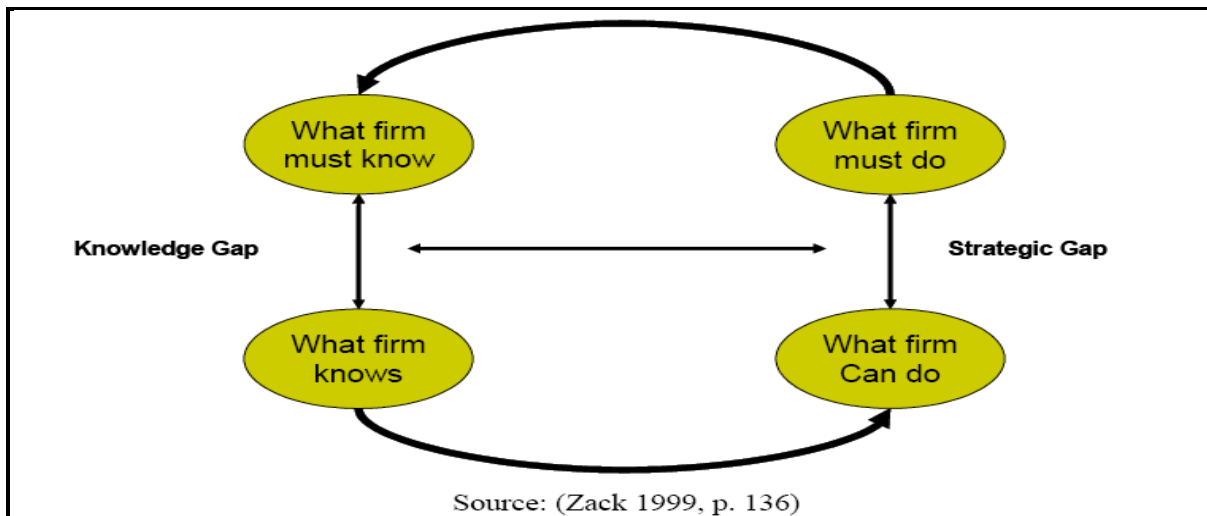
A knowledge strategy defines the actions necessary to ensure the organisation's knowledge assets meet organisational objectives and support its strategies.   In line with competitive strategies, knowledge strategies provide goals, a unified vision, a base for decision making, a communication tool, and a foundation for consistent operations. A knowledge strategy includes actions or options to do the following (Callahan, 2002; Zack, 1999b):

- Determine in detail which knowledge assets are required;
- Acquire or develop new knowledge assets;
- Make major changes or adaptations to existing knowledge assets;

- Maintain the existing knowledge assets, i.e. minor updates;

- Make the knowledge available; and,

- Dispose of redundant knowledge assets that are no longer required due to obsolescence, being in surplus, or because they are no longer economically viable.

Technical skills and capabilities on their own are not enough to make a firm competitive. To be of use, this knowledge should lead to coordinated, productive and efficient action. This means that a knowledge strategy is not solely about identifying the technical capabilities required by the firm's strategic plans. A knowledge strategy should also ensure that capabilities are able to deliver productive output (Zack, 1999b).

At the strategic level, the organisation needs to be able to analyse and plan its business in terms of the knowledge it currently has and the knowledge it needs for future business processes (Zack, 1999b). At the tactical level, the organisation is concerned with identifying and formalising existing knowledge, acquiring new knowledge for future use, storing it in organisational memories and creating systems that enable effective and efficient application of the knowledge within the organisation (Sveiby, 2001). At the operational level, knowledge is used in everyday practice by professional personnel who need access to the right knowledge, at the right time, in the right location (Civi, 2000).

In summary, there is an important distinction between 'knowledge management' and 'knowledge management strategy'; knowledge management is a set of practices and processes whereas knowledge management strategy is the orientation/philosophy or the common thread that guides various activities of KM. The content of KM can change depending on a particular firm's needs and business context but the common underlying theme, which is the knowledge management strategy, remains the same.

3.3.4 Knowledge Management in Public Sector:

The emphasis on economics and profit is not an insurmountable barrier to KM adoption by the public sector which has not been immune from the more significant changes that have swept across the corporate landscape over the last decade. One of the potential difficulties has been the fact that KM has had to compete for managerial attention in the public sector with a range of other changes.

3.3.4.1 Importance of Knowledge Management in Public Sector:

It is only in recent years that knowledge management has begun to be discussed in the context of public sector organisations, which are in dire need of more efficient and innovative product and service delivery. As mentioned in previous chapters, one considerable problem of this research is the demographic shift in the work place, whereby a large percentage of the working population will retire in the coming five to ten years. This calls for public sector organisations to institutionalize the tacit knowledge of the experienced civil servants who will soon be retiring, and passing that knowledge on to new staff through various training and mentoring programs. This problem is further compounded by high turnover rates in the public sector (OECD, 2003, 6).

This recognition of the importance of knowledge management is reflected in a survey of public sector organisations in The Organization for Economic Co-operation and Development (OECD) countries in 2003. About 44 percent of organisations surveyed indicated that managing knowledge was a strategic priority (see figure 3.10).

Figure 3.8 Knowledge Management as priority
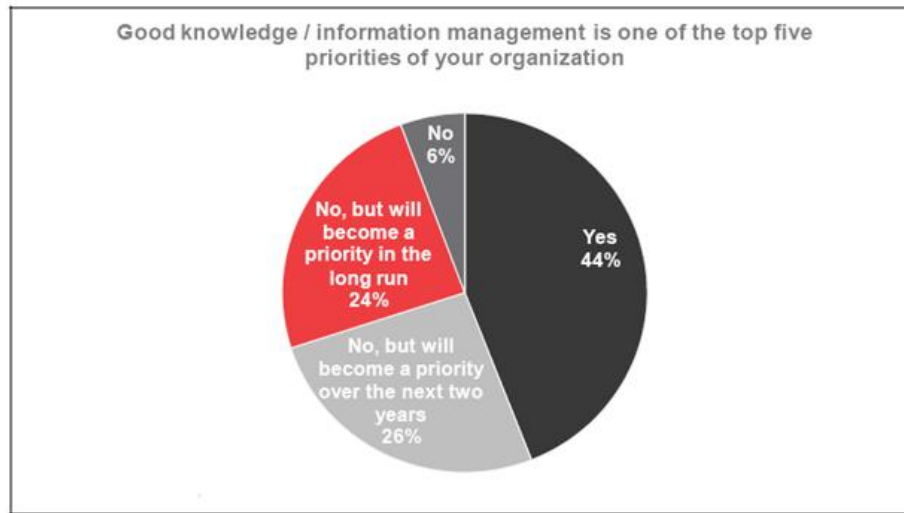
Source: OECD (2003)

Interestingly, even for those departments where knowledge management has been articulated as a strategic priority, this has often neither been communicated across departments nor translated into actions. Only 40% of organisations questioned by the OECD (2003) who have a KM strategy have actually communicated these widely across stakeholders. In a sample of 27 mostly non-OECD countries in Asia, (Middle East and North Africa) MENA and Europe, over two thirds are evaluating the need for knowledge Management but less than a third have or are currently setting up a knowledge management program (Yuen, 2007). Ultimately, unless public sector organisations start becoming aware of the benefits of setting organisation-wide knowledge management goals and strategies, which involve viewing knowledge as a "*significant competitive differentiator and resource of wealth and value-creation*" they will risk falling behind the dominant practices in the private sector (Riege and Lindsay, 2006, p.25).

3.3.4.2 The Challenge Face KM in Public Sector:

As previously stated in chapter two, in this section are some of the challenges which the public sector faces (Earwaker,2005):

- The organisation structures and hierarchies would benefit from flattening and reduction of middle management

- Loss of flexibility (for example, targeted grant support), local autonomy and accountability.

- The rewards system for example service through special funding.

- Demand for services always exceeding budget and ability to respond

- Poor public image and status of public sector staff, high levels of turnover and vacancies, skills shortages.

- The necessary IT infrastructures were not always in place given poor historic levels of investment which resulted in failed programmes

Milner (2000) suggests that the lack of enthusiasm to adopt KM in public services is directly linked to the required achievement of innovative and creative outcomes through the sharing of tacit knowledge "*knowledge-rich open and creative operating cultures*" (Milner, 2000, p74).

The connection between KM implementation and organisational form has been explored by Zack (1999b) who concluded that the greatest barrier to implementing KM was the lack of fit between an organisations strategy, its structure and culture.

Kanter has observed the public sector bureaucracies as "*In traditional bureaucratic companies, roles were circumscribed in that most relationships tended to be formal and impersonal ...rules and procedures...tended to stifle initiative and creativity. The new entrepreneurial company...brings people closer together, making the personal dimension of relationships more important*" (Kanter, 1990, p.280).

 To achieve this, more flexible working relations are required. It has been suggested that *"...soft controls, management priorities and policies have supplanted hierarchical and bureaucratic control and that the entrepreneurial form of governance is pervasive*" (DuGay, 1996,p.7)

Oliver and Roos (2000) have noted how knowledge can be seen to grow at individual, community and organisational level. The lower levels of that hierarchy together create the upper level or organisational knowledge landscape. They note "*much of today's wealth is created by knowledge workers who require vastly different management context from employees of the bureaucratic organisations of the industrial era*" (Oliver and Roos, 2000, p.24).

3.3.5 Knowledge Management Benefits

Most managers depend on knowledge before making a decision, so knowledge can be regarded as one of the most important sources of competitive advantage. Knowledge management is important for companies, because what worked yesterday may or may not work tomorrow (Civi, 2000). KM will help organisations become more competitive by using new knowledge to reduce costs, increase speed, and meet customer needs (Grayson and O'Dell, 1998; Civi, 2000). Civi (2000) adds that KM allows companies to increase profits, identify new markets, improve efficiency, improve market share and be more effective. An example of the benefits of KM can be found in customer management. With KM, employees will spend less time looking for information and expertise. This will enable highly paid professionals to concentrate on their areas of expertise (Bollinger and Smith, 2001). Moreover KM will help employees to improve their performance, productivity and employability by expanding resources immediately available to them, enabling them to make more intelligent decisions (Bollinger and Smith, 2001). This will increase employee satisfaction (Ahmed et al., 1999). Furthermore, KM will allow the level of loss of IC from employees who leave to be reduced (Bontis et al., 2000). The general benefits of KM can be summarised in the following points (Levett and Guenove, 2000):

- Increased profits (Civi, 2000).
- Improved quality of decision-making and other intelligent tasks.

- Processes performed more effectively by capturing insight and experience to make them available and usable when, where and by whom required;

- Rapid and effective problem-solving.

- Identification of new markets and opportunities.

- Adaptation and flexibility, where the organisation can identify and respond to change and change itself.

- More effective use of HR.

- Prevention of knowledge loss; sources of know-how and expertise easier to find and reuse, whether they are recorded in a physical form or held in someone's mind.

- Improved innovation and product introduction.

- Improved competitive advantage through understanding customers, the market and the competition.

3.3.6 Knowledge Management Problems

Stewart et al. (2000) argue that there are two types of investment costs in KM programmes. The first is the operational cost (for example, the cost of putting resources into KM systems), while the second is the risk of spending too many resources on managing knowledge (for example, the size of the databases being developed may be extremely large, causing increased overhead time and cost in maintaining such data). Chong et al. (2000), argue that the average investment cost in implementing KM projects is between 1.5 and 15 million dollars, depending on the type of project. This cost may seem substantial, but the cost to an organisation of losing what key employees know, or being unable to respond to clients' questions quickly, or making poor decisions based on insufficient knowledge, may be even higher.

Martensson (2000) discusses a number of problems in the actual process of knowledge management, such as the lack of support from top management, the lack of communication, lack of creativity, culture barriers, employees' fear of sharing knowledge, their lack of motivation, and the lack of time for KM processes and of tools to measure its outcomes.

Radding (1998) also lists several problems that an organisation may encounter in the knowledge management process:

- Technical complexity.

- Top management ambiguity: the management commitment to knowledge management strategies, plans and roles is uncertain and unclear.

- Middle management and worker resistance.

- Short-term mentality: knowledge management requires a long-term outlook that may lead to employees becoming discouraged.

Moreover, KM is expensive and time-consuming and its users must be motivated to use and maintain the system; this is the most prevalent problem for companies (Williams, 2002).

In summary, the previous sections discussed Knowledge Management and Strategic Management. Knowledge management has been approached by various disciplines and researchers in different ways. In this research, the holistic approach of KM perspectives will be adapted to the perception of knowledge management and believes that KM should include, beside the strategic objectives, the notion that knowledge is an object that can be managed by IT, knowledge as a resource; knowledge as a process of Learning Organisation (LO). The knowledge and strategy link indicates that the strategic knowledge management choice that a company makes regarding technology, markets, products or processes will have a direct impact on competitive service and market. Horngre et al., (2009) stated BSC provides feedback on both the internal business processes and external outcomes so as to facilitate continuous improvement in strategic performance and results. The next section describes the potential application of the BSC as strategic system for KM implementation.

3.4 Balanced Scorecard (BSC)

In this section the literature study will provide an overview of the balanced scorecard (BSC). As previously mentioned in chapter one, the aim of this research is to develop a conceptual integrated view of KM strategies through using BSC strategic system. This section provides a literature review that helps to understand the concept of BSC. This section defines the concept of BSC, and describes the BSC strategic system and the process and perspective.   A balanced scorecard consists of an integrated set of performance measures that are derived from and support the company's strategy (Noreen et al., 2008).

3.4.1 Balanced Scorecard Definition:

The balanced scorecard was first developed by Robert Kaplan, an accounting professor at Harvard University, and David Norton, a consultant from the Boston area. It was first mentioned by Johnson and Kaplan (1987) in their book *Relevance Loss*. The origins of BSC were further documented in 1990, when the Nolan Norton Institute, the research arm of KPMG, sponsored a one-year, multi-company study, *Measuring Performance in the Organisations of the Future*. The study, according to Kaplan and Norton (1996a), was motivated by a belief that existing performance measurement (PM) approaches, primarily relying on financial accounting measures, were becoming obsolete.

Brewer et al., (2004) reported that Kaplan and Norton conducted research in 12 companies in the USA to explore new methods of performance measurement (PM). The study results supported the point of view that financial measures of performance were ineffective for the new business environment. The researchers were also convinced that a reliance on financial measures affected the ability to create value in the companies studied. Therefore, they established the BSC as an

alternative to using financial measures only, producing a "*set of measures that gives top managers a fast but comprehensive view of the business*" (Kaplan and Norton, 1992; 1996c; 2004b).

The article "*The BSC-Measures that Drive Performance*" was published in 1992, in which Kaplan and Norton summarised the results of their study. The BSC as a strategic management technique has achieved much popularity amongst managers, since it has given corporate management a structured approach to measuring and managing business performance in four key areas, namely customers, financials, internal processes, and organisational learning and improvement (Kaplan and Norton, 1996a). Research has shown that a growing number of firms are replacing their financial PM and compensation systems with BSC, incorporating multiple financial and non-financial indicators (Kaplan and Norton, 1996a; 2004b).

Young (1998, pp. 27-28) defines BSC as:

> "*... A tool for communicating corporate goals to the front line workers who are responsible for reaching them. It balances traditional financial measures such as net income and ROI, with operational measures – customer satisfaction, internal business processes and an organisation's ability to innovate and learn. The scorecard lists goals and then measures and records whether the business is reaching them. The goals are broken down into measurable metrics built from data collected throughout the business…*"

In addition, Kaplan and Norton (1992, p.71) describe the innovation of the BSC as follows:

> "*The BSC retains traditional financial measurements. But financial measurements tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measurements are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation*"

Niven (2008, P. 13) describe the Balance Scorecard as:

"A carefully selected set of measures derived from an organisation's strategy. The measures selected for the Scorecard represent a tool for leaders to use in communicating to employees and external stakeholders the outcomes and performance drivers by which the organisation will achieve its mission and strategic objectives"

According to the literature review, some studies attempted to examine BSC from different role perspectives, first in a role of performance measurement and second in a strategy implementation role (Ittner, et al., 2003; Geuser et al., 2009; Wu, 2005). Geuser et al. (2009), in their empirical studies, claim that BSC plays dominant function not only as a strategic performance measurement system but also as the core component of strategic processes. Chavan (2009) emphasises that the reason for adapting the BSC system is to guide, control and challenge an entire organisation towards realising a shared conception of the future.

It can be seen from the discussion above, BSC has been offered as a superior combination of non-financial and financial measures of performance. Because the BSC explicitly focuses on links among business decisions and outcomes, it is intended to guide strategy development, implementation and communication. For that reason, in this research the BSC strategic system will be used as a framework for Strategic Knowledge Management.

3.4.2 Balance Scorecard Strategic System:

The BSC is a management system that enables organisations to explain their vision and strategy, and translate them into action. It provides feedback revolving around both the internal business processes and external outcomes to facilitate continuous improvement in strategic performance and results (Wu, 2005). When fully deployed, the BSC transforms strategic planning from theory into a strategic map for the organisation (Kaplan and Norton, 1992). In the balanced

scorecard approach, top management translates its strategy into performance measures that employees can understand and influence (Noreen et al., 2008). Using the balanced scorecard system as a framework for translating the strategy, these organisations create a new language of measurement that serves to guide all employees' actions toward the achievement of the stated direction (Niven, 2008). The balanced scorecard is ideally created through a shared understanding and translation of the organisation's strategy into objectives, measures, targets, and initiatives in each of the four scorecard perspectives (Niven, 2008).

Kaplan and Norton (2001b) start to examine the BSC's role as a management system. They describe how organisations use the BSC for strategic mapping to accomplish comprehensive and integrated transformations (Angel and Rampersad, 2005; Wells and Weiner, 2005). In addition, Kaplan and Norton (2004a, P.10) claim that the BSC becomes a complete tool for creating a strategy-focused organisation and then express the belief that "*without a comprehensive description of a strategy, executives cannot easily communicate the strategy among themselves or to their employees*". They also noted "*Without a shared understanding of the strategy, executives cannot create alignment around it*" (Kaplan and Norton, 2004a, PP 10-17).

Consequently, Gumbus and Wilson (2004) reported that BSC has developed into a strategy map. The scorecard makes the strategic hypothesis explicit, and enables it to be described as a set of cause and effect relationships that are testable. Andersen et al. (2004) added that the strategic hypothesis requires the identification of the activities that are the drivers (or lead indicators) of the desired outcome (lag indicators). Kaplan and Norton (2001c, pp.65) believe that "*Executives use the BSC to communicate a vision for performance that is dramatically better than the present. The focus then shifts to governance, with emphasis on team-based approaches to deal*

with the transition to a new performance model". Based in their field studies, Kaplan and Norton (2001a) proposed five principles in their strategy focused organisation model (SFO); they stated if the organisation follow these principles, they would be *"strategy focused"* and therefore experience improved performance (Geuser et al., 2009). The latter term is used to describe organisations that have successfully implemented the following principles (Kaplan and Norton, 2001a):

- Translating strategy into operational terms
- Aligning organisation to strategy
- Making strategy everyone's everyday job
- Making strategy a continual process
- Mobilising leadership for change

Wenisch (2004) summarises BSC characteristics as presented in Table 3.5 below. He believes that BSC could be expected to lead to homogenisation, in the sense that many companies are applying the BSC as a concept.

Table 3.5 Characteristics of BSC according to Kaplan and Norton

PM from four perspectives	Learning and growth, Customer, Internal processes, Financial
Balance set of indicators	Financial and non-financial indicators
	Outcome measures and performance drivers (lag and lead indicators)
	Short-term and long-term orientation
Focus on strategy	Indicators should be deduced from strategy, and thus help to implement and measure strategy
Avoidance of proliferation of indicators	Use of reasonable number of indicators by focusing on the strategically most critical ones
Cause-and-effect relationship	Non-financials and financials should be linked in a logical way so that non-financials can predict future financial performance
Strategic management	Through communication and translation of the strategy into operational goals, related feed-back and business planning

Source: Wenisch (2004)

However, Kaplan and Norton (1993, p. 134) emphasises that "*the BSC is not a template that can be applied to businesses in general or even industry-wide. Different market situations, product strategies, and competitive environments require different scorecards. Business units devise customised scorecards to fit their mission, strategy, technology, and culture.*"

Although there are enthusiastic success stories from Kaplan and Norton, and the worth of the BSC is widely recognised, there are various doubtful studies from other researchers which make the BSC an interesting research subject, which means that the BSC's validity remains in question among scholars. While its proponents, consulting companies and the innovators of the concept themselves argue that the BSC is an innovative PM and strategic management tool, its critics question its effectiveness as a communication, control and evaluation mechanism (Malina and Selto, 2001).

These allow self-serving managers to choose and manipulate measurements solely to enhance their own earnings and bonuses. They discuss four mistakes that companies make when trying to measure non-financial performance and provide six steps to follow to do it right (Kaplan and Norton, 1992; Gumbus and Wilson; 2004; Angel and Rampersad, 2005; Wells and Weiner, 2005).

The recent work of Kaplan (2010) has various activities for strategy development, planning, alignment, operational planning, operational control, and strategy control integrated within a closed-loop, comprehensive management system.

In spite of that, there is no doubt that the concept of the BSC has delivered a new and radical approach to business management. The BSC promotes the systematic development of vision and

strategy, and moreover permits verification of whether strategy has succeeded or failed at any stage of business. While there is some criticism against BSC implementation, the important point is that BSC designers should bear in mind that each organisation has its own environment, so that a BSC designed for a specific organisation might not be efficient in another.

3.4.3 The Process of Implementing the BSC System

The BSC initially was conceived as an improved PM system. Nevertheless, it soon became evident that it could be used as a management system to implement strategy at all levels of the organisation (Andersen et al., 2004; Gumbus and Wilson, 2004; Wang, 2005; Wells and Weiner, 2005; Kaplan, 2010).

As previously mentioned, the BSC links the company's vision and strategy to a number of measures, which together function as a framework for strategic measurement. Thus, companies that use the scorecard do not have to rely on short-term financial measures as the sole indicators of the company's performance. As an alternative, they have the opportunity to introduce four new management processes that contribute to linking long-term strategic objectives with short-term actions (Kaplan and Norton, 1996b).

Kaplan and Norton (1996b) identify four major steps in implementing BSC, as shown in Figure 3.11:

- Clarify and translate vision and strategy
- Communicate and link strategic objectives and measures
- Plan, set targets and align strategic initiatives
- Enhance strategic feedback and learning.

Figure 3.9 Strategic Management Systems
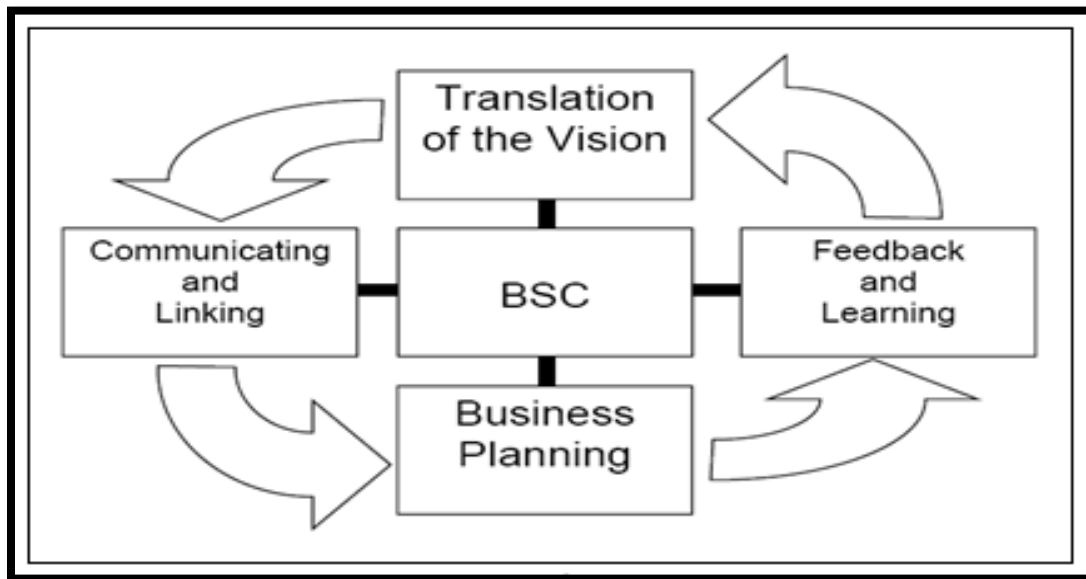
Source: from Kaplan and Norton, (2001b)

3.4.3.1 Clarify and Translate Vision:

Kaplan and Norton (1996c) suggest that, to build up BSC, top level management should gather together to translate the strategy and mission of the business into specific strategic objectives. The translation of strategic objectives into quantifiable measures clarifies the management team's understanding of the strategy and helps to develop a coherent consensus.

Van der Meer and Vosselman (2004) argue that the difficulty of this process largely depends on how the strategy has been developed. It is easier to translate a vision and strategy if it is shared among the employees in the company. Kettunen and Knattola (2005) added that the executives who developing the strategy need input from people throughout the organisation to be able to develop a competitive strategy. They need information from the experts within the company to help them take the right decisions. For example, the workers on the front line are the ones who

really understand what customers want, and are the ones who can execute strategies in a way that will please the customer (Birchard, 1996).

Kaplan and Norton (2008) argue that the organisation has to undertake a strategic analysis of itself to identify the external and internal resources and capabilities that give the firm a competitive advantage. They stated that the aim here is to *"insure that the strategy leverages internal strengths to pursue external opportunities, while countering weaknesses and threats"* (Kaplan and Norton, 2008, pp.5). The latest work developed the link between strategy and operations into a comprehensive six stage closed-loop management system (Kaplan and Norton, 2008):

- Develop the strategy

- Translate the strategy

- Align the organisation

- Plan operations

- Monitor and learn

- Test and adapt the strategy

Kaplan and Norton (1996a) argue that the organisation has to decide the key areas that the business should struggle to attain in terms of the financial perspective, for example sales revenue and profitability. Next, they should decide the customer groups that to be are targeted to accomplish the financial goals previously determined. Then, the organisation should look at its internal business process to set the objectives and measures that are most critical for achieving the desired performance. Finally, they should set the learning and growth objectives that aim to train the employees and improve the technology and system to a high standard.

3.4.3.2 Communicate and Link Strategic Objectives

The BSC can serve to translate high level objectives into operational objectives and communicate the strategy effectively throughout the organisation (Kaplan and Norton, 2008). This helps the employees to focus their efforts on a common goal and to work in the same direction (Urrutia and Eriksen, 2005; Kaplan and Norton, 2008). Properly done, this should also increase flexibility in the organisation, since the BSC helps employees to understand the organisational core competencies and values. The BSC therefore gives managers a way of ensuring that all levels of the organisation understand long-term strategy, and that both departmental and individual goals are aligned with it (Kaplan and Norton, 1996c). Nevertheless, unless an organisation ties the balanced set of measures to a compensation system, it will not be able to use the scorecard as the central organising framework for its management systems (Kaplan and Norton, 2004b).

3.4.3.3 Plan, Set Targets, and Align Strategic Initiatives

The third process is the process whereby the company integrates its business plans into its financial plans. This includes aligning departmental business plans to organisation strategy. Kaplan and Norton (2008) suggest that senior executives should set specific long-term goals for financial measures; then managers at a lower level should seek specific targets for their customers, internal processes and learning and growth measures, and adjust the targets where necessary in order to achieve breakthrough objectives.

Nielsen and Sorensen (2004) believe that the BSC aims not to reduce the creative initiatives from different departments, but tries to establish balanced measures as the basis for allocating

resources and setting priorities, so that the organisation and its subparts can co-ordinate and undertake the initiatives that move them towards their long-term strategic objectives.

3.4.3.4 Enhance Strategic Feedback

Executives receive feedback on whether the strategy implementation is proceeding according to plan, and whether the strategy itself is successful. According to Kaplan and Norton (2001b), the fourth process gives the organisation the capacity for strategic learning. The basis for this is that the organisation applying the BSC can observe the results from the four perspectives and assess the strategy in the light of recent performance. Therefore, the BSC enables the organisation to reflect on its situation, and thereby provide opportunities to adapt or change strategies to fit the current circumstances (Wang, 2005).

Karathanos and Karathanos (2005) state that the organisation needs to have the capacity for double-loop learning. This is the kind of learning that occurs when managers question their assumptions and reflect on whether the basic values and ideas under which they were operating are still consistent with current evidence, observations and experience.

3.4.4 BSC Perspectives:

There is no 'law' in the balanced scorecard that states that a company should use all the perspectives described below or that it cannot add an extra perspective. On the contrary, companies implementing a balanced scorecard should consider adapting it to their environment and internal business processes. Kaplan & Norton (1997) also recognise that there is sometimes a need for changes in the balanced scorecard perspectives, but they say that companies should consider changes in the scorecard perspectives carefully. They claim that there is a risk of putting focus on too many things, and thereby to lose the focus on the things that form the basis for competitive advantage.

To achieve "*balance*" within the scorecard, four perspectives need to be mutually dependent in order for the effects of different actions not to counteract each other. The purpose of the concept is to put the company's vision and strategy into action, as well as to outline business strategy in four different respects, corresponding to the four perspectives (Kaplan & Norton, 1996c; Noreen et al., 2008). See figure 3.12 below:

Figure 3.10 The BSC Four Perspectives
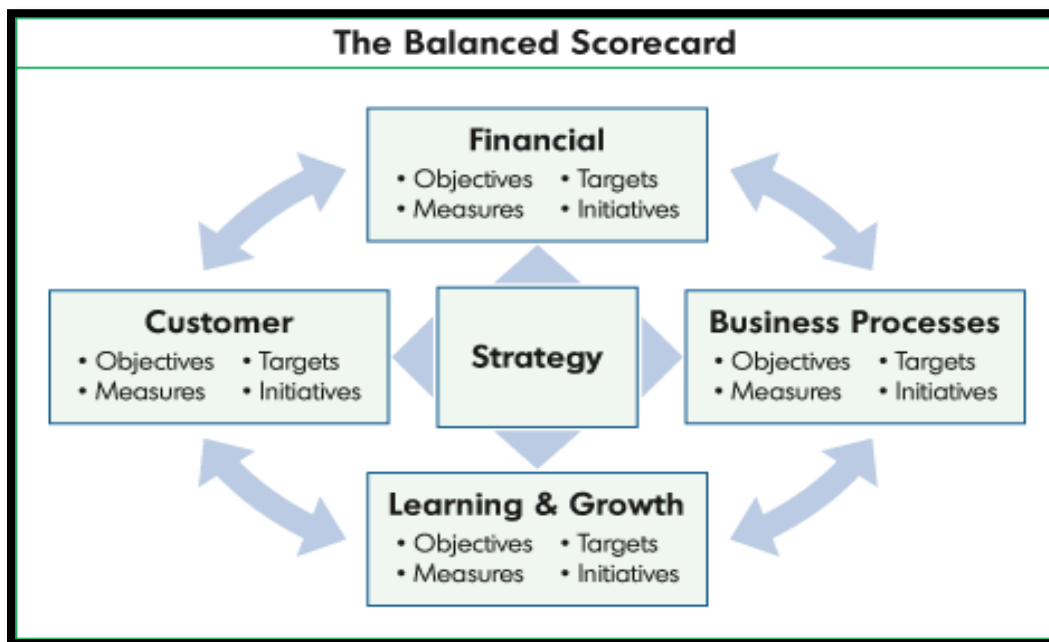
Source: Kaplan & Norton, (1996c)

3.4.4.1 Financial Perspective

The financial measures define the long–term objectives of the business unit (Kaplan & Norton, 1996c).   This perspective helps managers answer the question, "*how do we look to shareholders?*" The ultimate goal of companies is to generate income for their owners. Therefore, company strategy revolves around increasing the company's profits through increasing revenue growth and increasing productivity (Horngren et al., 2009). These objectives are established in the strategy and linked to sequences of action that should be taken within the

four different perspectives in order to achieve the desired long-term outcome. The different

measures selected in the balanced scorecard should be links in a chain of cause-and-effect

relationships that culminate in improved financial performance. Eventually, all objectives and

measures in the other scorecard perspectives will be linked to achieving one or more of the

objectives in the financial perspective (Kaplan & Norton, 1996b,c; Horngren et al., 2009). By

doing that, the company recognises that the long-term goal for the business is to generate

financial returns to investors, and that all the strategies should enable the business unit to achieve

its financial objectives.

Financial objectives are typically related to profitability, asset returns or revenue enhancement.

A basic financial goal for most companies is to provide superior returns based on the capital

invested in the unit (Kaplan & Norton, 1996b,c). As in the traditional management control

systems, the balanced scorecard also recognises the need for financial information. Periodic

financial statements and other financial measures continue to play an essential role in the

scorecard; they are there to remind managers that the measures in the following perspectives are

just the means to an end. If they are not translated into financial performance, the shareholders

will lose their faith in the management and demand changes to ensure profits. Kaplan and

Norton (2008) identified the sources of enterprise synergy which produced value for financial

perspective through the internal capital management and corporate brand.

3.4.4.2 Customer Perspective

In this perspective, the company establishes who their customers are and the market segments in

which they want to compete. Then they must arrive at adequate objectives and core measures

and determine which critical success-factors influence company competitiveness. When these

steps are completed, the company can create its own product mix. This perspective enables companies to align their core customer outcome measures – satisfaction, loyalty, retention, acquisition, and profitability – to targeted customers and market segments (Kaplan & Norton, 1996c; 2008).

Kaplan (2010) identify two sets of attributes that organise the value propositions in all of the industries where they have constructed balanced scorecards:

- Cross-selling to create value by cross-selling a broad range of products and services from several business units.
- Common value proposition to create a consistent buying experience, conforming to corporate standards at multiple outlets.

According to Kaplan & Norton (1996c), the company should determine what characteristics their products should have in order to satisfy customers, and how the company should act. Customer value propositions represent the attributes that supplying companies provide through their products and services to create loyalty and satisfaction in targeted customer segments.

3.4.4.3 Internal Business Process Perspective:

The internal business process perspective, and the process of deriving objectives and measures, represents one of the sharpest distinctions between the balanced scorecard and traditional performance measurement systems (Tyagi and Gupta, 2008). The balanced scorecard usually reveals entirely new business processes. Objectives and measures for the internal business process are derived from explicit strategies in order to meet shareholder and target customer expectations.   The key to balanced scorecard success lies in selecting and measuring the processes that lead to improved outcomes for customers, and ultimately allow the organisation to work towards fulfilling its mission (Niven, 2008).   A common shortcoming of traditional

measurement systems is that they attempt to improve the performance of individual departments rather than of integrated business processes. A second shortcoming is that traditional measurement systems tend to focus on products and services for today's customers, while the balanced scorecard concept puts the focus on entirely new products and services for future customers, in order to achieve long-term financial success (Kaplan & Norton, 1996b,c). Companies should also attempt to identify and measure their core competencies, the critical technologies needed to ensure continued market leadership (Kaplan & Norton, 1992).

3.4.4.4 Learning and Growth Perspective

This final perspective aims at helping managers develop objectives and measures that drive organisational learning and growth. This perspective's point of departure is the company infrastructure, and how it must be changed to create long-term growth and improvement. The objectives in the learning and growth perspective provide the infrastructure the opportunity to enable ambitious objectives in the other three perspectives to be achieved. The infrastructure consists of three parts (Kaplan & Norton, 1996b,c): people, systems, and organisational processes. All organisations that want to achieve the ambitious goals set in the other three perspectives should develop and refine their infrastructure in order to reach those objectives.

Kaplan & Norton (1996b,c) divide the learning and growth perspective into three principal categories; employee capabilities, information system capabilities and finally motivation, empowerment and alignment.

In employee capabilities, the core measurements are employee satisfaction, which stems from the basic notion that satisfied employees tend to have the most satisfied customers, employee retention, where the organisation recognises that it is important to retain qualified employees

within the company, and employee productivity, where the total number of employees is related to the total output.

Information systems capabilities acknowledge that the efficiency of the employees is connected to the information systems they have at their disposal. It is important that these provide fast and accurate follow-ups on completed activities so that they can be evaluated in order to affirm or change decisions taken. A low-capacity information system greatly affects the impact of the balanced scorecard, since accurate feedback is an important part of ensuring efficiency.

In summary, the balanced scorecard focuses performance measurement on progress toward the company's goals in each of the four perspectives. In designing the scorecard, managers start with the company's goals and its strategy for achieving those goals and then identify the most important measures of performance that will predict long-term success. Some of these measures are operational lead indicators, while others are financial lag indicators. Managers must consider the linkages between strategy and operations and the way those operations will affect finances, now and in the future (Bamber et al., 2008).

3.4.5 Balance Scorecard in Public Sector

The BSC is a management model which is used to translate an organisation's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system (Kaplan and Norton, 1996a).

The BSC's acclaimed merits and prescribed design seem to be identical for both the business and the pubic management contexts. The literature is full with examples of the successful implementation of the Balanced Scorecard approach, especially in private organizations. In Public sector, companies have recognized that financial metrics by themselves are inadequate for

measuring and managing their performances (Kaplan 2001a). Kaplan and Norton (1992, 1996) complemented the financial perspective with the other three perspectives: the customer, the internal process, and learning and growth. For-profit seeking corporations, the financial perspective provides clear long-run objectives (Kaplan 2001a). On the other hand, in the not-profit sector, the financial perspective provides a constraint rather than an objective. While the not-profits monitor spending and adhere to financial budgets, their success or failure is not measured by spending in relationship to budgeted amounts. According to Kaplan, the typical not-profit has had difficulty placing the financial perspective at the top of the Balanced Scorecard. He suggests that the not-profits consider placing a mission objective at the top of their scorecard as the mission represents the accountability between the not-profit and society. He also suggests the not-profits expand the definition of who their customer is. As noted by Kaplan, a growing number of not-profits have begun using the Balanced Scorecard model (Kaplan 2001a).

The Public Sector Scorecard (Moullin, 2002), was designed specifically for the public and voluntary sectors, rather than being an adaptation from the private or other sectors. It has five perspectives:

1. Strategic refers to the key performance outcomes reflecting why the service exists and what it hopes to achieve.

2. Service is concerned with how the organisation looks to service users and other key stakeholders.

3. Operational excellence refers to the effectiveness of process and of staff, and includes measures such as staff satisfaction.

4. Financial refers to how well and organisation mangers its funds and keeps cost down.

5. Innovation and learning looks as whether it is continuing to improve, learning from others, and creating additional value for service users and other stakeholders.

3.4.5.1 The Comparison between Private and Public Sectors in BSC

The Balanced Scorecard Institute has compared the different strategic objectives of the Public and Private Sectors. Table 3.6 shows the differences in each strategic level:

Table 3.6   Comparison of Private and Public sector Strategies

Strategy	Private Sector	Public Sector
common target	competitive	achievement of mission
financial target	profit, growth, increasing market share	cost reduction, effectiveness
values	innovation, creativity, acceptance	responsibility to publicity, equity, integrity
desired result	customer satisfaction	customer satisfaction
stakeholder	founder, market, stockholder	Tax payer, Legislator, Auditor
prioritization of budget	customer demand	Management, Legislator
Orientation in terms of security	securing intellectual property	National security
critical factors for success	fourth-rate, revenue, market share, uniqueness, superior technology	Best management practices, consistency, standardized technology

Resource: API, http://balancedscorecard.org/metrics/translatin.html,05.12.2005

A special requirement for adoption is needed for the financial perspective. Even though the Balanced Scorecard seems to be balanced all perspectives and measures are aligned to the financial success and profitability of the organization. The Public Sector's financial perspective

is mainly adjusted to budget targets, saving potentials, securing the basis for taxes, sustainment of credit worthiness and similar.

3.4.5.2 The Challenges of Implementing BSC in Public Sector:

A move towards managing by measures may have profound effects on the culture and working practices of the organisation. The following some challenges of implementing BSC in public sector (Aslani, 2009):

- Designing and implementing the strategy require the constant support and backing from top management. Management support and their approach to create a cultural change is the required foundation to encourage employees and departments to engage in this process.

- A comprehensive strategic plan such as BSC needs participation and active engagement of the employees that carry out the momentum of cultural change. Incentive programs and employee rewards for those aligned with the organisation performance should be planned and executed so that the cultural change becomes effective and be a part of the core competency of the organisation.

- A channel of Communication which is normally overcomes through training sessions for management and stakeholders along with a specialized website addressing the BSC progress. Selecting computer software which allows the users to export, cut and paste information, and grant access rights (for viewing and designing interfaces). Easy to use along with capabilities in displaying information according to the customer preference in a short time should be of great importance.

3.4.6 Balanced Scorecard Benefits:

The balanced scorecard excels at focusing the organisations on the issues that are most important to its success. Strategic objectives can be achieved through the implementation of the balanced

The basic philosophy of the balanced scorecard focuses people's attention on important aspects in order to achieve the organisational objectives. Most organisations focus on a few financial measures, but this limits the organisation in how it improves its overall performance. This is due to normal processes not indicating which important focal activity points will ensure the achievement of the targeted result (increasing shareholder value). Having knowledge of the determining factors of shareholder value is of great importance for the organisation. The results of the balanced scorecard reports enable the organisation to direct managers and employees to the key issues that will create an enhanced performance level for the organisation (Kaplan & Norton, 2000, pp 1-21).

The organisation can draw from the implementation of the balanced scorecard other benefits, such as an enhanced communication ability enabled through cascading and measurement tracking processes. The balanced scorecard is able to predetermine future threats and opportunities for the organisation (Norton & Kaplan, 2000, pp 21-29).

Kaplan and Norton (2004b) believe that the BSC can act as a communicator that assists managers and employees to simplify and gain consensus about the strategy and mission. Brewer et al. (2004) also suggest that setting up the BSC can support the managers at the higher level to increase consensus on both short-term and long-term objectives of the business, and set up the goals to prepare and implement strategy in order to gain breakthrough performance in the future.

On the other hand, Wenisch (2004) suggests that the BSC can communicate the strategy top-down to managers at a lower level who are to prepare the objectives and measures for the internal process and learning and growth, and then to the front-line employees, which enables employees to understand the effect of their daily work in connection with the overall strategy (Neely et al., 2004; Ahn, 2005).

Finally, Kaplan and Norton (1996a, 1996c) summarised the benefits of the BSC as follows:

- Makes strategic implementation happen

- Helps the company to focus on what it has to be so that the organisation can have a full picture of its performance and link short-term objectives to its long-term business strategy.

- Drives the process of change

- Supports the communication of strategy.

- Defines a platform to communicate strategic priorities across the company

- Achieves consensus concerning the highest priority sectors for achievement and improvement, identifying additional sectors that need attention, such as quality and productivity.

- Customer evaluations from customers of the unit's services are managed to collect criticism and feedback and help plan future efforts.

- Serves to update the targets and goals for division managers

- Develops the bottom line by providing better resource allocation

- Makes employees aware of the meaning of their work and of the underlying assumptions about the future and the company.

3.4.7 Balanced Scorecard Limitations

The balanced scorecard like other management tools has its own limitations that may lead to problems in practice. Butler et al. (1997) consider the Kaplan and Norton model to be too

general, and point out that it may not suit a firm's culture. All discussions about the relationship between BSC and shareholder-value creation are therefore culture-specific (Barsky and Bremser, 1999). It might be extremely difficult for personnel in any organisation to agree on how strategy should be constructed (Epstein and Manzoni, 1998). Lipe and Salterio (2000) agree that it is difficult to arrive at exact figures when measuring non-financial items. There might be uncertain aspects which are beyond human ability to calculate, so that businesses are hesitant in their use of BSC as a performance evaluation system (Marr and Adams, 2004).

Marr and Adams (2004) argue that the cause-and-effect relationships between outcome measures and driver measures for each of the four perspectives can be too complex to understand, and their interlinked relationship can lead to change in several outcome measures stemming from one particular driver measure. Wenisch (2001) wondered whether the cause and effect relationship is in the right proportion, especially on non-financial measures. As is known, the improving quality of the product will certainly result in better customer satisfaction, and hence business should cost more prior to quality improvement. In this respect it is very difficult to say how much business will benefit from improving quality having sacrificed the money in advance and expecting a befit later. It has been indicated that the balanced scorecard was originally used as a diagnostic tool. In this regard the BSC is an excellent tool as it can tell where the illness is and the extent of tit. However, following the diagnosis of the problem, managers can no longer use the BSC alone to create a sound new strategy although it can form the foundation for strategy, mainly because it does not reflect competitor situations. It needs to be supported by other initiatives such as industry analysis, competitor analysis and corporate culture. Though the methods of building the scorecard suggested by Kaplan and Norton (1996a) are supposed to be cost effective, it has been shown that collecting data and conducting analysis are still labour-

intensive and time consuming. Moreover, the scorecard may be stopped due to a change of executive before being fully implemented.

Based on the literature reviewed in this chapter, the following chapter will discuss the theoretical development of this research through the examination of the relationship between the three concepts, strategic management, knowledge management and the balanced scorecard.

The balanced scorecard has been developed to suit the American culture and may suit other cultures in the same magnitude. It has been implemented by North American and West European companies in the main, but has not seen much taken on by companies in Asia.

3.5 Summary

This chapter has presented a comprehensive review of relevant literature. It has provided a detailed discussion on knowledge which includes knowledge definitions, knowledge hierarchies, knowledge types, knowledge assets, and knowledge conversion. It was shown that there are numerous interpretations and definitions of KM due to wide range of interests, purposes, and perspectives. KM has been viewed as an issue of IT, as a human resources issue, as a process dealing with knowledge activities, as a strategic issue, or as a holistic view, which covers most of the others. This research has adopted the holistic view, since KM should include beside the strategic objectives, the hard (IT) and soft (people and process) dimensions. Following that, the relationship between knowledge management and strategic management were described, before the KM development was discussed. In the last part of the chapter, more details were given concerning the background of the BSC. The purpose of the concept of BSC is to put the company's vision and strategy into action, as well as to outline business strategy in four different respects, corresponding to the four perspectives (financial, customer, internal business process, and learning and innovation). At the end the benefits and limitations of BSC were discussed.

Chapter four
Theory Development

The Relation between Knowledge Management, Strategic Management, and Strategic Balanced Scorecard Systems

4.1 Introduction

This chapter examines the relationship between Knowledge Management, Strategic Management and the Balanced Scorecard based on the views found in the literature review in chapters two and three. As previously mentioned in chapter one, this research investigates the possibility of BSC to inform Strategic Knowledge Management Balanced System in the public sector. In this chapter, the holistic approach to strategic knowledge management is formulated by analysing all of the different perspectives with regard to strategic management formulation from a strategic business point of view, as well as from a knowledge management point of view, and that of the balanced scorecard. A number of authors and practitioners have carried out many studies examining the critical factors in KM systems (Davenport et al., 1998; Hung et al., 2005; Wong, 2005; Chong, 2006; Oliver and Kandadi, 2006, Alsadhan, 2007). Nevertheless, most of these studies have not taken an integrated approach to KM strategic systems (Welch and Alhamoudi, 2008). Hence there is a need for an integrated approach to KM programmes based on empirical investigation.

In this chapter, the research develops the holistic approach to the knowledge management strategic system of the four types of strategies for managing knowledge: knowledge management resources, ICT internal knowledge, learning organisation based knowledge, and beneficiaries' external knowledge. In addition, it discusses the critical factors that affect KM strategies based on a comprehensive analysis of KM literature. This will be clarified firstly by studying Strategic Management and Knowledge Management Strategies within the concept of Strategic Balanced Scorecard System. Secondly, the Theoretical Framework for Knowledge Management Strategies Balanced Systems will be examined from the different perspectives of BSC system.

4.2 Summary of the previous studies of CSFs in SM, KM and BSC implementation

Critical Success Factors (CSFs) can be defined as "areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation" (Rockart, 1979, p.85). Oakland (2000) defined them as what the organisation must accomplish to achieve its mission by examination and categorisation of the impacts. He adds that they are the minimum key factors or sub-goals that the organisation must have or need, and which together will achieve the mission.

One problem in recognising actual factors is the lack of empirical studies on Strategic Knowledge management and BSC literature. Out of a review of the academic and practitioner literature, this research found some relevant studies; the following table 4.1 provide a summary of literature review.

Table 4.1 Summary of Literature Review Identifying Key Factors Influencing SM, KM and BSC

	Reference	Factors	Research approach
SM	Mintzberg (1990)	1. External and internal appraisal 2. Threats and strengths 3. Key success factors and distinctive competencies 4. Creation of strategy 5. Managerial values and social responsibility 6. Evaluation and choice of strategy 7. Implementation of strategy	case study
	Kaplan and Norton (1996)	8. translating the vision 9. communicating and linking 10. business planning 11. feedback and learning	case study
	Zack(1999)	1. strategic gap 2. knowledge gap 3. intellectual resource and capabilities 4. knowledge management strategy	Not empirical (Based on lessons learned and anecdotes)
	Niven (2002)	1. destination statement 2. strategic objectives	case study

		3. strategic linking knowledge and perspective 4. measures and initiatives	
	Cobbold et al. (2004)	1. destination statement 2. a strategic linkage model 3. measures and targets 4. Initiatives	case study
	James (2004)	1. strategic management 2. organisational strategy (product and service) 3. Knowledge management assets	Case study
	Edwards (2006)	1. competitive strategy 2. KM strategies (personalization and codification) 3. organizational culture 4. leader ship	Not empirical (Based on lessons learned and anecdotes)
KM	Davenport et al., (1998)	1. senior management support 2. a knowledge-oriented culture 3. Organisational infrastructure 4. knowledge structure 5. multiple channels for knowledge transfer	Qualitative (case study)
	Liebowitz (1999)	1. KM strategy with support from senior leadership 2. KM Infrastructure 3. Need knowledge anthologies and knowledge repositories 4. KM system and tools 5. building supportive culture	Not empirical (Based on lessons learned and anecdotes)
	Skyme and Amidon (2000)	1. link to business imperative 2. compelling vision/architecture 3. knowledge leadership 4. having a knowledge-creating and sharing culture 5. continuous learning 6. well-developed technology infrastructure 7. systematic organisational knowledge processes	Qualitative (case study)
	Soliman and Spooner (2000)	1. Alignment of KM with Business directions 2. Implementing a know-how strategy 3. creating KM leadership creating supportive environments 4. using technologies for KM 5. creating KM team	not empirical (based on HRM perspective)
	Egbu (2004)	1. Having a vision and innovation strategy 2. an innovation supporting culture 3. having an innovation champion 4. the ability to build knowledge enhancing approaches 5. systems and technology 6. integrating the person and the team around the	Quantitative (Survey)

		product and service	
	Hung et al. (2005)	1. a benchmarking strategy and knowledge structure 2. the organisational culture 3. Information technology 4. employee involvement adn training 5. the leadership and commitment 6. learning environment 7. evaluation professional training	Quantitative (Survey)
	Wong and Aspinwall (2005)	1. management leadership and support 2. culture 3. strategy and purpose 4. resource 5. processes and activities 6. training and education 7. human resource management 8. information technology 9. motivational aids 10. organisational infrastructure 11. measurement	Quantitative (survey)
	Chong (2006)	1. Employee training 2. employee involvement 3. team working 4. employee empowerment 5. top management and commitment 6. information systems infrastructure 7. performance measurement 8. knowledge friendly culture 9. benchmarking 10. knowledge structure	Quantitative (survey)
	Alsadhan (2007)	1. top management competence 2. championship and evangelisation 3. knowledge culture 4. organisational infrastructure 5. Human resource management 6. KM process 7. content and structure 8. technical infrastructure	triangulation (survey and interviews)
	Burford and Ferguson(2009)	1. Executive engagement 2. practice-let models 3. credibility and communication 4. authority and KM standard	case study (focus groups and interviews)
BSC	Kaplan and Norton (2001a)	1. organisational culture 2. reviewing 3. communication 4. management commitment	Case study

		5. compensation 6. strategy focus 7. target setting	
	De Waal (2002)	1. organisational culture 2. alignment 3. review and update 4. management commitment	Case study
	Hackett Group (2004)	1. focus 2. balance 3. scope 4. audience 5. technology 6. implementation	Questionnaire survey
	Papalexandris et al. (2005)	1. preparing factors 2. understanding factors 3. identification factors 4. selection factors 5. operations factors 6. implementations factors	Theoretical framework
	Assiri (2006)	1. top management commitment 2. stimulate culture 3. BSC team 4. Communicate BSC 5. vision –mission –strategy 6. implementation plan 7. information system 8. measurements assessment 9. reward and recognition 10. benchmarking 11. learning and innovation	triangulation (survey and interview)
	Chang (2009)	1. supplier/service 2. internal process 3. technology and planning 4. customer measurement 5. financial 6. business process 7. Innovation and learning	Case study
	Chavan (2009)	1. the business imperative 2. defining competencies 3. integrated technology 4. customer perspective 5. financial perspective 6. internal business process 7. learning and growth	Case study

The success factors proposed in the literature are fragmented and diversified, depending on the researchers' background and interests. In addition, little attempt has been made to integrate all the success factors proposed by the SM, KM and BSC researchers. The following points highlight the important gaps and weaknesses of previous studies on this topic:

- Some studies cover only part of the KM perspectives or stages.

- Some studies are not empirical and based only on lessons learned

- Studies are either qualitative or quantitative.

There is a need for an integrated study on KM project that is:

- Empirical; to learn from organizations' experiences and practices in implementing KM projects;

- Covering all stages and processes;

- Based on a triangulation approach by combining quantitative and qualitative methods to gain an in depth and better understanding of the process of KM implementation in organizations; and

- Used to generate an integrated model based on best practices.

4.3 Theoretical Framework for Knowledge Management Strategies Balanced Systems (KMSBS):

The following analyses the Strategic Knowledge Management System by reviewing the relevant literature on both soft and hard factors that are said to contribute to success of KM efforts.

4.3.1 Strategic Management and Knowledge Strategies within Strategic BSC Systems:

As previously stated, KM is a new phenomenon within management systems, and thus implementation methodologies are still developing with experience (Chong and Choi, 2005). In this section, the relation between Knowledge management and strategic management will be

examined within the concept of BSC strategic system.   To ensure the success of KM strategies, a KM strategic plan to confirm that the KM goals are in congruence with the strategic goals of the firm or the enterprise business strategy should be developed based on the overall business strategy (Davenport et al., 1998; Hansen et al, 1999; Zack, 1999b; Lam and Chua, 2005; Wong and Aspinwall, 2005).

A previously stated in chapter three, Kaplan and Norton (2001a) claim that the BSC provides a complete tool for creating a strategy-focused organisation and in later work (2004a, pp.10-17) express the belief that "*without a comprehensive description of a strategy, executives cannot easily communicate the strategy among themselves or to their employees. Without a shared understanding of the strategy, executives cannot create alignment around it*". The BSC initially was conceived as an improved performance management system. Nevertheless, it soon became evident that it could be used as a management system to implement strategy at all levels of the organisation (Andersen et al., 2004; Gumbus and Wilson, 2004; Wang, 2005; Wells and Weiner, 2005, Chavan, 2009). Managers use it to set individual and team goals, allocate resources, compensate employees and plan budgets (Young, 1998). Additionally, it provides feedback on an ongoing basis as to how individuals, departments and business units are performing. Kaplan and Norton (1996c) claim that the BSC is not only used as a strategic measurement system but also as a strategic management system. They argue that as more and more companies work with the BSC, managers and senior executives see that it can be used to clarify and gain consensus about strategy, communicate strategy throughout the organisation, align goals regarding strategy departmentally and, on a personal level, link strategic objectives to long-term targets and manual budgets, identify and align strategic initiatives, and obtain feedback to learn about and improve strategy.

As earlier mentioned in chapter three, the evolving definition of the function of knowledge management has stressed its increasingly strategic orientation. The KM activities must effectively be linked to the strategy of the organisation to ensure effective BSC incorporation as the guiding method for the enhancement of the knowledge function's strategic role. Figure 4.1 shows the strategic knowledge management system.

Figure 4.1 The Strategic Knowledge Management System
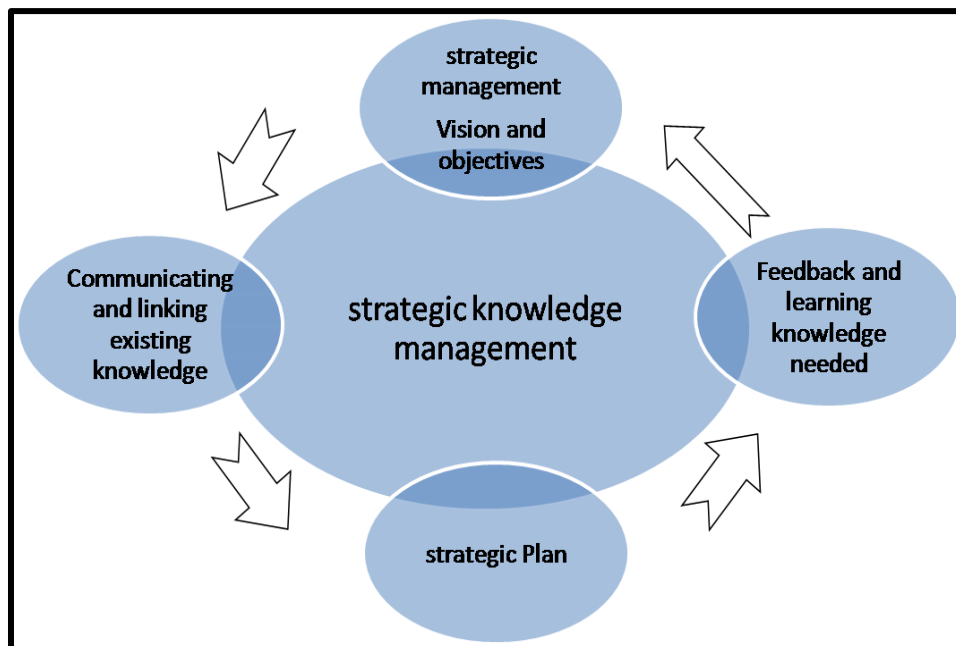
Produced for the purpose of this research

Strategic knowledge management, by utilising the BSC strategic system, can only be effectively implemented for strategic performance enhancement if the organisation is aligned to strategy. Therefore it is imperative that the strategy and related aspects be studied and understood. In Figure 4.1, the relation between strategic management, strategic knowledge management, and the strategic business plan within the organisation is illustrated. The following explains how these three concepts interact and knowledge is exchanged between them.

Strategic Management (SM) is developed and deployed with the mission and vision of helping organisations to close the gap between what firms can do and what firms must do to be competitive (Zack, 1999a,b, 2002). Strategic management provides the input to formulate a vision and objectives for competitive strategy based on the firm's knowledge assets. Kettunen and Knattola (2005) stated that the executives who develop the strategy need input from people throughout the organisation to be able to develop a competitive strategy. They need knowledge from the experts within the company to help them take the right decisions, for example, from the workers on the front line who are the ones who really understand what customers want, and can execute strategies in a way that will please the customer.

Strategic Knowledge Management (SKM) uses the output from SM to define the actions necessary to ensure the organisation's available knowledge assets meet the organisational vision objectives and support its strategies. This involves the process required to manage the gaps between the knowledge available from internal processes and the knowledge needed from external environments. The knowledge audit is an attempt to find out what knowledge exists and what is missing, where and how it is being created, and who owns it (Lee, et al., 2010). Strategic organisational knowledge is used to focus on competitiveness, in which information about customers and competitors plays a dominant role. The main purpose for managing this sort of knowledge is to respond satisfactorily to environmental changes (Monteiro and Cardoso, 2010).

The results from SKM show that knowledge assets, resources and capabilities have two types of output, which provide strategic competitive management, and input, which is a prime strategic resource for drawing up the strategic business plan.

The Strategic Business Plan (SBP), using the output from SKM, will influence the strategic options developed in the next stage of the strategic planning process, as will the external market environment of customers and competitors. The performance and results of the SBP provide input into the firm's strategic management and knowledge management strategies through feedback so that the firm can learn about knowledge needed and can improve strategy (Callahan, 2002; Zack, 1999a; Kaplan and Norton, 2001a,b).

This means that the KM strategy must be closely aligned, integrated and linked to the overall business strategy, and must produce a tangible result for the organisation as a whole. Many organisations develop vision or mission statements as a means of communicating identity and providing broad guidelines for strategic decision-making and control. A meaningful focus on knowledge can be introduced into such a statement. Mission and vision cascade down to objectives and targets which may be part of a balanced scorecard. Kaplan and Norton (1996b,c) argue that the balanced scorecard is a tool for organisational learning and improvement, as well as a performance measurement system. Although the balanced scorecard can form the foundation for organisational strategic success, it is not sufficient in itself. Along with KM strategies, there must be initiatives, such as business process improvement efforts, to steer the organisation in the right direction and improve KM strategy implementation.

Knowledge Management Strategies (**KMS**) the four perspectives of the balanced scorecard BSC, as previously mentioned in chapter three, (financial perspective, customer perspective, internal business process perspective, learning and growth perspective) allow both tacit and explicit knowledge to be created, stored and shared using technology. Filius et al. (2000) stated that finding the right direction for KM activities such as creation, organisation, transfer, and

application requires a clear understanding of the organisation's mission and values which is the centre of the BSC system. Van der Meer and Vosselman (2004) argue that problems with this process are largely connected with how the strategy has been developed. It is easier to translate a vision and strategy if it is shared among the employees in a company (Chavan, 2009).

In looking at the Kaplan and Norton strategic system (1996c, 2001a), knowledge management strategies clearly fit within, if they do not define, the knowledge resource and learning aspect of their framework (see figure 4.2). If this is true, knowledge management strategy outputs will impact on other processes in the organisation's strategy, which is an important extension of the current work of Kaplan and Norton extended.

4.3.2 Proposed Taxonomy of CSFs in Knowledge Management Strategies:

Successful KM programmes are able to address competitive challenges not because they excel at one thing, but because they effectively integrate all the parts of the process into a strategic whole. From the previous discussion in section 4.3.1 it can be seen that the potential use of the BSC for strategic knowledge management can now be examined from the different perspectives it is used to highlight. Comprehensive integration begins with a clear notion of what needs to be integrated. This demands a comprehensive understanding of all the knowledge elements the organisation must use to compete effectively. Figure 4.2 below describes the link between knowledge management strategies and their success factors using the balance scorecard perspectives.

Figure 4.2 The Link between Knowledge Management Strategies using BSC
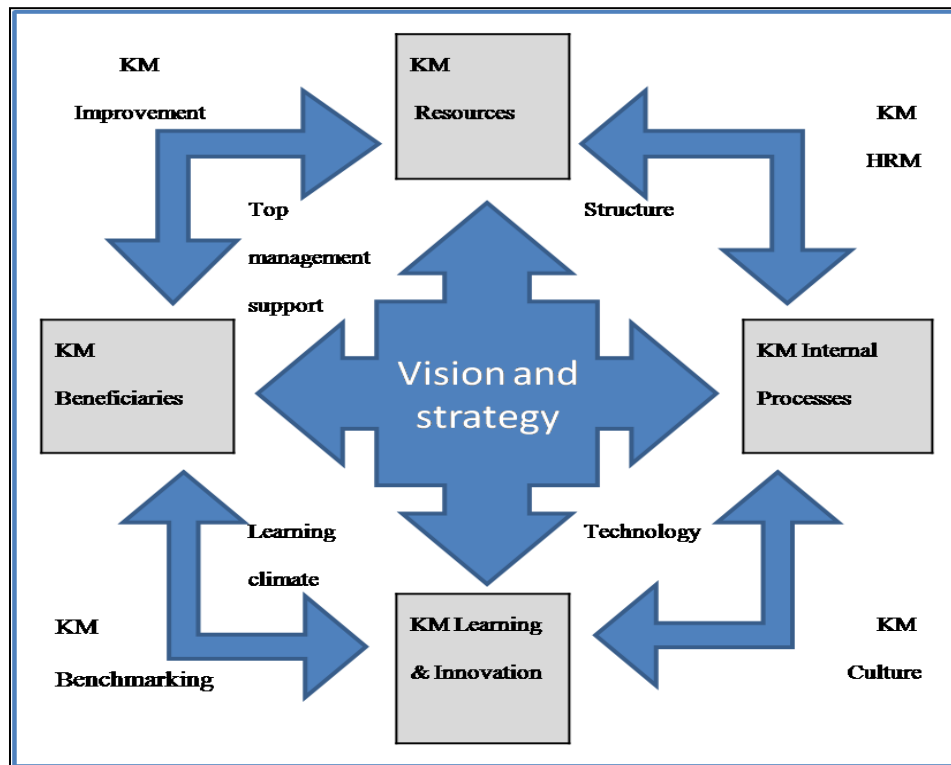
Produced for the purpose of this research

The research develops the holistic approach to the knowledge management strategic system of the four types of strategies for managing knowledge: knowledge management resources, ICT internal knowledge, learning organisation based knowledge, and beneficiaries' external knowledge. In addition, it discusses the critical factors that affect KM strategies based on a comprehensive analysis of KM literature. The four strategies listed below are distilled from various articles and empirical research from different perspectives from the KM literature review in chapter three. They were categorised into a number of subgroups representing various dimensions of critical factors related to KM implementation. These dimensions were used to build a proposed framework for Strategic KM from different perspectives to be examined and tested in the empirical study chapters (six and seven) see figure 4.3 The dimensions with their factors are listed in Table 4.2

Figure 4.3 Proposal Model for Strategic Knowledge Management Balanced System

Strategic Management

Vision and Objectives

KM STRATEGIES

Communicating And Linking Knowledge Exist

KM Resource	KM Internal System	KM Learning & Innovation	KM Beneficiaries
Top management support	Process for KM	Organisational Learning	KM Customer
Organisational structure	ICT for KM	Learning Climate	Continues Improvement
Storing and Retrieving Knowledge	Culture Transferring	Self- development	External Environment and Benchmarking
KM for HRM			

Feed back and Learning Knowledge Needed

Level two: KM Strategies

Level one: SKM Within SM

Strategic Plan

Produced for the purpose of this research

As Figure 4.3 shows, the model has been divided into two levels. The first level is made up of the dominant strategic knowledge management critical factors related to Strategic Management which play a more overriding strategic role in KM projects. These factors are KM strategy and vision, communicating and linking existing knowledge, the strategic plan, and feedback and

learning about knowledge needs. The second level is made up of the main Knowledge

Management Strategies and has been divided into four strategies, namely KM Resources, KM

Technology, KM Learning and Innovation, KM Beneficiaries strategies. These strategies are not

independent of each other, and each strategy should be used in interaction with the others. Each

strategy contains a number of critical factors. The dimensions with their factors are listed in

Table 4.2 and discussed in the following sections.

Table 4.2 Taxonomy of Critical Success Factors in Knowledge Management Strategies

Dimension	Factors	Description
Strategic Knowledge Management	A theme that guides and defines a firm's knowledge management efforts which include:	
	KM strategy and vision	KM strategy provides the foundation for an organisation to deploy its resources and capabilities to achieve its strategic goals and objectives. KM vision defines the core values, purpose and goals of knowledge. It focuses on the identification of the sources of sustainable competitive advantage and how managing knowledge might contribute value to the enterprise and its members.
Knowledge Resource Organisation Strategy:	An emphasis on knowledge resources from people, structures, and codifying organisational knowledge for storage in repositories, and on protecting organisational knowledge from leakages and misappropriation which include:	
	Top Management Support	Top management support and commitment which provides the necessary resources, budget and authority or power for project success to positively influence the KM project implementation

	Organisational Structure	Flat and flexible organisational structures, supporting, facilitating and encouraging people to create and share knowledge.
	Storing and Retrieving Information	Internal resource knowledge in organisations, which can be controlled, exploited and traded like most physical resources. Often available as codified knowledge in document or printable form and stored in the repositories
	KM for HRM	People-factors are recognised as the key to driving KM from initiation to full implementation by empowering, involving, developing and retaining employees. Moreover, appropriate reward systems should be in place to encourage knowledge sharing and creation.
Knowledge Management Information Technology Strategy:	An emphasis on knowledge processes and providing basic IT infrastructure and creating visible KM roles for sharing and transferring knowledge between employees in friendly culture which include:	
	Process for KM Transfer	KM processes provide the organisation with knowledge needed in systematic way to enable employees to access and reuse it easily
	ICT for KM	Information and communication technology in a comprehensive plan required to support and facilitate the knowledge processes and activities, and communicate it to all employees.
	Organisational Culture Knowledge Transferring	Knowledge-friendly culture that is open and built upon trust, cooperation and collaboration among employees. It is also important to allocate time for employees to share and reuse knowledge.
Knowledge Management Learning and	An emphasis on organisational learning that occurs through two-way interaction between individuals, groups and organisations in a climate of learning that encourage employees to learn and develop in ways of producing and sharing knowledge which include:	

Innovation Strategy:	Organisational Learning	Facilitates the learning of its individuals; requires open channels and free flow of information and knowledge between colleagues, departments, organisations through joint ventures and meetings together for mutual exchange for KM.
	Learning Climate	Creates the climate that encourages individual to learn and to participate in work groups. Also motivates individuals to work freely and successfully without fear of failure due to the fact that there is no punishment for mistakes.
	Self-Development Opportunities for All	Each individual is responsible for and can plan their own development through education and training in order to bring that knowledge to and to share learning within the whole organisation.
Knowledge Management Beneficiaries Strategy:	An emphasis on the external knowledge resources that give the organisation a competitive edge derived from external knowledge, typically focussing on customer-related knowledge	
	KM Customer	Analyse the customer markets needs and requirements to develop products and services
	Continuous Measurement and Improvement	Careful performance measurement and assessment is the key to success for organisations. Based on the results, the necessary improvement should be carried out.
	External Environment and Benchmarking	The KM strategy may use benchmarking on knowledge to set targets, and the firms should stretch the targets according to best practices inside and outside the organisation.

This proposition is the result of a systematic effort that identifies the factors in an integrative and comprehensive manner. This conceptual framework will be tested with an empirical investigation using a combination of qualitative and quantitative methods to check whether these

factors have an impact on KM strategy implementation or not (see Chapter Six). The following

shows the dimensions with their factors as described in Table 4.2 and they are discussed in the

following sections based on a comprehensive analysis of KM literature (see chapter three), the

following section explains the integrated approach to KM strategic systems using four types of

strategies and describes their success factors in more details.

4.3.2.1 Strategic KM

Success in implementing a KM project within an organisation relies on clear, well-designed KM

strategy and an implementation approach tailored to the organisation and its constituents

(Soliman and Spooner, 2000; Bixler, 2002; Alazmi and Zairi, 2003; Walczak, 2005; Wong and

Aspinwall, 2005, Harlow, 2008). In the realising this mission and vision, the values, attitudes,

and activities of employees are critical (Yang et al., 2009). Mission and vision statements define

the general goals and direction for the organisation, and they assist shareholders, customers and

employees in understanding the concerns of the company and what it intends to achieve (Kaplan

& Norton, 1996a, 2004a; Yang et al., 2009). KM strategy provides the foundation for an

organisation to deploy its resources and capabilities to achieve its strategic goals and objectives.

Zack (1999a) identified KM strategy as "*the balance act between the internal capabilities of the

firm (strengths and weaknesses) and the external environment (opportunities and threats)*". A

good KM strategy needs to delineate clearly the resources to be dedicated to tacit and explicit

knowledge (Davenport et al., 1998; Niven, 2002;Wong and Aspinwall, 2005).

Strategic Knowledge Management widely accept that within the literature on knowledge

management (see chapter three) there are two fundamental approaches; personalisation and

codification (Hansen et al, 1999, Hicks et al., 2006; Gottschalk, 2005). These two approaches

were originally identified and described as being fundamental by Hansen et al. (1999). Personalisation takes the viewpoint that the organisation's knowledge resides mainly in the heads of its people, and the main purpose of KM systems is to help people locate it and communicate it to each other. Codification takes the viewpoint that the most relevant knowledge for the organisation can be codified and stored in computer format, so that it may be widely shared.

4.3.2.2 Knowledge Management Resource Dimension:

The KM strategy and approach should be documented and presented to senior management to ensure buy-in and alignment to organisational goals (Lam and Chua, 2005). Ferdinand (1999, p.22) identified the resources of organisation as stocks of available assets that are owned or controlled by a firm, i.e., know-how, financial and physical resources, human capital. Organisations have the following motives for managing knowledge: capturing lessons learned, avoiding repeating mistakes and capturing expertise before it leaves (Davenport et al., 1998).

In this research, the knowledge resource strategy is considered to emphasise the personal knowledge possessed by the firm, and the organisational knowledge possessed by the firm (Gehani, 2002). These two kinds of knowledge were supported by KM Human Resource and KM capturing Resource schools (see chapter three). This strategy will include top management support, the organisation structure, resources captured, and human resources knowledge.

4.3.2.2.1 Top Management Support:

Leadership is responsible for creating the knowledge vision of the organisation, communicating that vision by setting clear objectives, prioritising knowledge projects, drawing up knowledge strategies and building a culture that regards knowledge as a vital company resource (Davenport

et al., 1998; Bixler, 2002; Wong, 2005; Yang et al., 2009). Top management can show its

commitment and support constantly in numerous ways, including vocal support, inaugural

memos and 'wandering around' different business units to invite impulsive idea generation and

knowledge creation from all staff levels (Chan and Chau, 2005). Top management provides the

motivation for staff to share knowledge and increase the chance of the success of the KM

programme (Soliman and Spooner, 2000, Yang et al., 2009). On the other hand, financial

support is inevitably required if an investment in a technological system is to be made.

According to Chong (2006), a lack of commitment in budgeting and funding can be a major

problem and a barrier to effective KM strategies. In BSC implementation projects, top

management support and commitment were consistently identified as the most important and

crucial success factors (Kaplan and Norton, 2001a; Andersen et al., 2004; Brewer et al., 2005;

Wang, 2005; Wells and Weiner, 2005). McDermott and O'Dell (2001) cite several examples

where well-designed KM tools and processes failed because people believed they were already

sharing knowledge well enough and top managers did not support the initiative.

However, successful knowledge management strategies are dependent upon resources (Wong,

2005). Therefore, with a high level of competence in the organisational leadership role, top

management are able to ensure sufficient allocation of resources and to perform as a change

agent to create a more conductive environment for KM implementation (Nielsen and Sorensen,

2004; Brewer et al, 2005).

4.3.2.2.2 Organisational Structure:

Organisational Structure refers to the formalising of relationships and roles that control work and

enable employees to work together to achieve organisational aims. It indicates an enduring

configuration of tasks and activities (Madhoushi and Sadati, 2010). Organisational structure has often had the unintended consequence of inhibiting collaboration and sharing of knowledge across internal organisational boundaries to promote knowledge creation (Walczak, 2005). Liebowitz, (1999) notes that organisational hierarchical structure inhibits interactions among organisational members, leads to inefficiency, ineffectiveness, and powerlessness, and prohibits sharing knowledge and expertise among employees and managers. A hierarchical structure allows vertical chains of command knowledge transfer, but inhibits horizontal knowledge transfer that crosses the organisation's functional boundaries (Walczak, 2005). A decentralised structure encourages communication and increases employee satisfaction and motivation, because in less centralised environments, the free flow of lateral and vertical communication is encouraged, experts on the subject have a greater say in decision-making than the designated authority, and responsiveness to market conditions is enhanced (Madhoushi and Sadati, 2010). To facilitate KM more effectively, organisational structures have to be aligned with network structures which foster cross-functional communication, with low functional barriers to encourage sharing and collaboration across boundaries within the organisation and across the supply chain (Liebowitz, 1999; Pemberton and Stonehouse, 2000).

Structures can influence organisational effectiveness by changing the controls that influence staff performance (Torrington and Hall, 1995). Therefore, it is important that organisational structures enable the flow of knowledge within the organisation in order to limit uncertainty in decision making, and to achieve effective coordination of the various activities taking place within the organisation.

4.3.2.2.3 Storing and Retrieving Knowledge

The concept of utilising knowledge as the primary source of competitive advantage became known as the knowledge based view (KBV). The KBV implies that knowledge is an internal resource in organisations which can be controlled, exploited and traded like most physical resources (Styhre, 2003; Knog and Cai, 2008). Organisations using the codification system explicitly attempt to increase organisational efficiencies by codifying and reusing knowledge through advanced IT, eliminating the threat of knowledge assets being lost (Choi and Jong, 2010, p. 44). The structured internal knowledge is usually codified knowledge, often available in document or printable form and stored in repositories such as policy manuals, product manual drawings, and other forms of explicit knowledge which lend themselves to the application of metrics (Harlow, 2008). The repositories containing informal internal knowledge try to capture the tacit experience and learning of employees. However, what gets captured is only the explicit component of employee knowledge and experience. The tacit components of employee knowledge are unravelled only through social interactions (Nonaka, 1994). Explicit knowledge can be stored as written documents or procedures and made available to others (Yahya and Farah, 2009). Consequently firms following this process store documents in repositories from which they can be easily retrieved (Davenport et al., 1998).

4.3.2.2.4 KM HRM:

Researchers agreed that people are the main driver of KM since they are the sole originators of knowledge (Civi, 2000; Robertson and Hammersely, 2000; Soliman and Spooner, 2000; Wong and Aspinwall, 2005; Mehrizi,et al, 2008; Yang et al., 2009; Yahya, 2009; Esteves and Caetano, 2010). Human capital (HC) includes various human resources elements, including attitude,

competencies, experience and skills, tacit knowledge, and the employee's motivation; these sources of HC are owned by the employee and can be taken home or onto the next employer (Kong and Cai, 2008). The skills and competences of knowledge workers need to be continuously developed in order for them to produce valuable contributions for a company (Wong and Aspinwall, 2005). Motivation in the organisation is very crucial. In order to retain employees to work for a company, it is important to provide opportunities for them to grow and to advance their career (Scarbrough and Swan, 1999; Esteves and Caetano, 2010). Moreover, providing a friendly and supportive working environment tends to increase the retention rate (Scarbrough and Swan, 1999). Many researchers (Choi, 2000; Moffett et al, 2003; Chong, 2006) regard employee empowerment as one of the critical factors for KM implementation success. Kaplan and Norton (1996a) believe that the rewards of executives and managers have to be tied to the results of performance measures. Encouraging and rewarding knowledge workers and seekers for their contribution, and utilisation of the knowledge maximises the knowledge capital (Wong and Aspinwall, 2005; Chong, 2006). Kaplan and Norton (1996c; 2001a; 2004a) advocate a situation where: "*The final linkage from high-level strategy to day-to-day actions occurs when companies link individual's reward programs to the BSC*". The successful execution "*has to be embedded in the reward systems and in the norms of behaviour that everyone practises*" (Yang and Wan, 2004, p. 940).

4.3.2.3 Knowledge Management Technology Dimension (Internal Process)

Although it is a common mistake to consider that many knowledge management solutions are only limited to certain information systems, knowledge technology is considered to be one of the central drivers of knowledge management (Davenport and Prusak, 2000). Vera and Crossan

(2003) suggest that KM is mainly concerned with providing managers with information technology solutions and prescriptions about how to proactively manage knowledge in organisations.

The literature on KM (see chapter three) mainly emphasises IT and underscores the need to proactively manage knowledge but offers very little guidance about how to do it, except for prescribing tools such as groupware, document management systems, email, and internet (Mehrizi et al, 2008). Not surprisingly, most organisations view KM as equivalent to providing the technology infrastructure (Yahya, 2009). Goldman (2010) stated it is very important to underline the idea that KM does not manage, create or integrate knowledge or an organisation's results directly. It only has impact on knowledge processes. This kind of process accomplishes its goals through actors involved in the operating process (Goldman, 2010).

In this research, the knowledge management technology strategy is considered to emphasise the Knowledge Management and Information Technology School (see chapter three). In this research the knowledge management technology strategy will include the processes for KM transfer, information and communication technology for KM, and organisational culture knowledge transfer.

4.3.2.3.1 Process for KM Transfer:

Organisational processes should be defined to address how knowledge within the organisation can be acquired and captured in the KM repositories in a timely manner (Chua and Lam, 2005). In the KM process, it is important to create, use and manipulate the knowledge so it becomes value (Misci and Uzunoglu, 2008). Unless created knowledge and best practice are stored, they

can be lost and cannot be retrieved when needed. Technology plays a significant role, and knowledge has no value if not utilised and shared in reference to the use of intelligent agencies to customise information delivery, email, data mining, intranets and web portals (Liebowitz, 2000). KM processes may vary depending on the organisation and the industry sector (Oliver and Kandadi, 2006). At a minimum, one considers the four basic processes of creating, organising, transferring, and applying knowledge (Demarest, 1997; Alavi and Leidner, 2001; Scholl et al., 2004; Misci and Uzunoglu, 2008). Knowledge creation starts with collecting facts and information obtained from internal and external source, researchers, primary and secondary sources and networks. The next stage is knowledge organising and filtering general information to meet the requirements of a specific community of users, thus producing contextual information and entering into a storage system which is organised logically (Martensson, 2000, p. 208). In the knowledge transfer stage, individuals assimilate the contextual information and transform it to become knowledge using their experiences, attitudes, and the context in which they work (Martensson, 2000, p. 208). The final step of the KM process is knowledge application and use which occurs at the stage where knowledge becomes behaviour or action.

The KM process is the "*effective sharing of tacit knowledge and effective transfer of explicit knowledge in enhancing organisational performance and innovativeness*" (Becerra-Fernandez et al., 2004, p.34). To measure the sharing process of tacit knowledge, tacit knowledge must be shared and made explicit, formalised, to have significant value for an organisation (Salleh et al., 2008). A key insight from the KM movement is that the most valuable knowledge is tacit (Bontis, 2001), and if ways can be found of transferring that knowledge to others in the organisation, either through personal interaction or by recording it explicitly, then that knowledge becomes an asset of the firm, and a key source of advantage (Alsadhan, 2007).

4.3.2.3.2 Information and Communication Technology for KM:

Information technology is considered to one of the central drivers of knowledge management (Davenport et al., 1998; Alazmi and Zairi, 2003; Hung et al., 2005 Wong and Aspinwall, 2005; Chong and Choi, 2005; Yahya and Farah 2009; Lee et al., 2010). Its capability has evolved from merely being a static archive of information to being a connector of human to information and of one human to another. Managing knowledge was continually misunderstood and reduced to the basic utilisation of new IT tools and techniques. Bayyavarapu (2005) pointed out that organisations believe that knowledge can be managed by placing IT tools in organisations and relying on technology to deliver KM. The term technology is not only used to refer to technological tools such as the intranet and collaboration software, but also to reflect the mindset that knowledge can be managed through some known and tangible tools. Some organisations are concerned mainly with storing explicit knowledge and others are attempting to capture tacit knowledge through the use of expert systems and artificial intelligence (Pemberton and Stonehouse, 2000).

On the other hand, technology is the most important element in KM success. In fact, it simply requires the skills to know which technological solutions are most suitable to connect people with the knowledge they are trying to access (Lee et al., 2010). This involves identifying the hardware and software for the practice, building the technological infrastructure, establishing connections for communication and exchange of knowledge, and finally storing and providing easy access to knowledge. Chua and Lam (2005) suggest that a technical focused individual should be appointed to the KM project team who is able to formulate a clear vision of how the technology will be used. Marr and Neely (2003) argue that if an unexpected result is given by

the BSC, managers will need access to the underlying data to explore the cause of any problem, or analyse trends and correlations. If the information system is inadequate, however, this can considerably influence the effectiveness of the BSC (Olve, 1999; Pereira et al., 2005).

4.3.2.3.3 Organisational Culture Knowledge Transfer:

Over the past decade, there has been a great deal of literature generated about the concept of culture acceptance (Davenport et al., 1998; Storey and Barnett, 2000; Hlupic et al., 2002; Oliver and Kandadi, 2006; Olla and Holm, 2006; Alsadhan, 2007; Madhoushi and Sadati, 2010). Organisational culture that refers to shared assumptions, values, and norms, is believed to be the most significant input for effective knowledge management and organisational learning in that corporate culture determines values, beliefs and work systems that could encourage or impede knowledge creation as well as knowledge sharing and ultimately decision making (Madhoushi and Sadati, 2010). Organisational culture plays a critical role in KM implementation success. Indeed KM has also proved challenging to implement even in Western organisations, often due to an underestimated requirement for change management and the repositioning of roles and their meaning for actors (Rabaa, 2009). In addition, a number of authors have indicated the culture factor to be a crucial one that may assist organisations in reaching the potential of their knowledge resource and BSC (Self, 2004; Brewer et al., 2005; Evans, 2005; Kaplan and Norton, 2005). These studies have attempted to provide models that clarify the structure or composition of culture, or draw particular attention to certain aspects.

Much of the research on bureaucracy and organizational performance in developing countries in general, and in the Arab states in particular, identifies problems of over centralization of power and control (Alshareef, 2005). In comparative public administration and development

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management, research on hierarchy and decision making faces even greater conceptual and empirical challenges. For instance, the influence of cultural values and norms on decision behaviour and organizational outcomes has been highly debated (Rabaa, 2009).

Saudi Arabia is a unique place in which to test propositions derived from leadership and organizational behaviour literature in public administration. First, there is a shortage of data coming from the region that in general has not yet received enough attention from social scientists and organizational analysts. Moreover, the region has been frequently cited for the lack of real progress in achieving good governance and organizational performance (UNDP, 2003). In spite of some efforts to diagnose and understand these problems, analysts tend to look at the region from the outside and rely on impressionistic approaches rather than evidence derived from reliable data collected in the region. As I stated in chapter two, Hofstede (1980) characterised the Arab world nations collectively as being high in *power distance*, *masculinity* and in *uncertainty avoidance*, but low in *individualism.* Hofstede's subsequent 'fifth dimension" distinguished "Long term" from "short-term" orientation but the study on which it was based did not include any Arab world countries and has in any case been criticised on philosophical and methodological grounds (Fang, 2003). The combination of these dimension values suggests a rule-based, risk averse society where leaders are powerful, and in-group loyalties are strong and enduring, (see Hofstede,1980).

Pool (2000) argued that the essential attributes measured in the organisational culture are open communication, trust, innovation, providing challenging work and cohesion among individuals. A culture of trust and confidence is required to encourage the application and development of knowledge within an organisation (Davenport and Prusak 2000; Pemberton and Stonehouse, 2000; Soliman and Spooner, 2000; Yang and Wan, 2004; Wong and Aspinwall, 2005); building

a relationship of trust and respect between individuals will help to facilitate a more proactive and open knowledge sharing process (Yang and Wan, 2004). Goh (2002) asserted that a collaborative culture is an important condition which must occur before knowledge transfer can occur between individuals and groups. This is because knowledge transfer requires individuals to come together to interact, exchange ideas and share knowledge with one another. Ortenblad (2004) maintains that the organisation structure should enable individuals to know what knowledge is available in the organisation in order to be able to share exciting knowledge and ask the right person for help when needed so that the organisation can increase its flexibility.

Clearly, open communications and good personal relationships are important for the exchange of knowledge. This approach will require the support of all levels of employees, and the communication of the organisation's knowledge-based action plans and strategies, shared values, visionary and strong leadership, and dedicated resources.

4.3.2.4 Knowledge Management Learning and Innovation Dimension:

It is difficult to manage knowledge with the help of information technology because knowledge is not only explicit, but is also tacit (Polanyi, 1996). Further, knowledge is not only a resource, but a process of knowing (Nonaka, 1994; Zack, 1999b; Goldman, 2010). The literature on organisational learning has emphasised that learning is the process that creates knowledge (Vera and Crossan, 2003).

The belief that learning is a means to create and manage knowledge is central to a KM learning strategy, which is defined in this research as an emphasis on the learning and innovation which evolve from the experiences and best practices of others and sharing and transferring knowledge

quickly and efficiently throughout the organisation. Regarding innovation, it is important to note that nowadays it is not enough for organisations to improve continually. Something must make them different. This is what makes radical innovation more than an option; it is a necessity (Goldman, 2010).

4.3.2.4.1 Organisational Learning

Learning is crucial to modern, knowledge-based organisations because it helps facilitate change and innovation. Organisational learning is considered a key factor in gaining or sustaining competitive advantage in the industry (Ropes and Tholke, 2010). Organisational learning and knowledge transfer require individuals to come together to interact, exchange ideas and share knowledge with one another. Argyris (2006) stated that Single-loop learning occurs when an organisation finds a failure that can be dealt with, using its current knowledge structures, whereas Double-loop learning occurs when the correction of a certain disturbance requires modification in the dominant knowledge structures. Double-loop learning may result in a change to the organisation and its knowledge structure. That means that the organisation is looking for creation of knowledge that can lead to radical innovation (Goldman, 2010; Argyris, 2006).

Many researchers considered the importance of employee's learning and development to KM implementation success (Yahya and Goh, 2002; Moffett et al., 2003; Chua and Lam, 2005; Hung et al., 2005; Wong and Aspinwall, 2005; Chong, 2006, Ropes and Tholke, 2010). At the personal level, employees should be willing and free to explore, and their knowledge creation activities should be encouraged by executives (Alsadhan, 2007). An increasing number of organisations are establishing a professional team to provide knowledge support services and to develop KM initiatives. At the organisational level, both the transfer of specialised knowledge

and the transfer of knowledge in general, through the processes of the organisation portal, internet and knowledge bases, are of major interest.

The goal of organisational learning is for an organisation to gain knowledge and develop skills to empower its members to work as a cohesive team (Alshareef, 2005). It entails enabling a shared understanding of lessons about the relationship between actions and outcomes that shape organisational practices (Argyris 1990; Alshareef, 2005).

4.3.2.4.2 Learning Climate

A learning climate facilitates learning and encourages individuals to practice on-the-job learning and allows the individuals to experiment so that they can feel safe enough to take risks without fear of getting punished (Ahmed, 1999), and also to motivate individuals to work freely and successfully (Soliman and Spooner, 2000). Hence, if the learning climate is to be improved, then attention should be given to the role of leaders in building a healthy climate of openness whereby mistakes and past failure are openly shared and discussed without the fear of punishment (Soliman and Spooner, 2000; Yahya and Goh, 2002; Yang and Wan, 2004; Wong, 2005). Making mistakes should be viewed as an investment process in individuals because it can be a key source in the creation of a learning organisation (Yang and Wan, 2004). A learning climate provides the freedom for individuals to make mistakes and to try things and fail since there is no punishment for mistakes (Ortenblad, 2002). Successful KM initiatives rely more on interpersonal interactions and social relationships than the technology itself (Yang and Wan, 2004). In effect, Davenport and Prusak (2000) claim tacit knowledge is normally embedded in people's brains; consequently, there is a need for extensive personal contact, for example, through interaction, mentoring programmes, social events, networking and dialogue.

It can be concluded that the learning organisation strives to create a healthy learning climate to reinforce the individual perception that it is normal for individuals to be learning to do new things.

4.3.2.4.3 Self-Development Opportunities:

Education and training for individuals and leaders play a significant role in the creating knowledge to ensure that organisational learning takes place in the most efficient way.   Senge (1990) emphasises a significant of personal mastery in LO that consists of education and training in order to bring that knowledge to the organisation and use that creativity to keep the organisation responsive to changing environmental circumstances. Some organisations are now realising the importance of opening centres for learning resources in order to support the self-development efforts of their staff (Pedler et al., 1997). Therefore, the role of leader is to provide continuous opportunities for employees' self-development (Limerick at el., 1994) for them to be able to transfer knowledge and share learning within the whole organisation.

4.3.2.5 Knowledge Management Beneficiaries Dimension (External Knowledge):

As previously stated in chapter three, every organisation exists in an environment that conditions the way the organisation conducts its business (Haggie and Kingston, 2003). Through access to organisational knowledge, employees make sense of their environment and give it meaning. They find new and better ways to perform, work together, break down barriers, share a vision, fill gaps in knowledge, increase productivity, satisfy customers and ultimately compete (Civi, 2000). Having identified the organisation's competitive knowledge position, Zack's approach is to use a SWOT analysis (strengths, weaknesses, opportunities and threats) to identify the

strategic gaps in an organisation's knowledge (more details see chapter three section 3.3). He points out the fact that organisations which are more innovative have more knowledge because they explore external knowledge resources. Binney (2001) states that knowledge management is derived from external data sources, typically focussing on customer-related information.

Thus in this study the researcher uses the term beneficiary knowledge to indicate the concept of external knowledge which emphasis the Customer focused Knowledge (see chapter three) which includes three factors: creating advantages for the customers and suppliers, performance evaluation and continuous improvement, and the external environment and benchmarking

4.3.2.5.1 Creating Advantages for the Customers and Suppliers:

One of the most important elements in the success of a company is the customer (Pelau et al., 2010). Feng et al. (2001) in their research divide knowledge management into two parts: internal and external. External knowledge management refers, according to authors, to management of research and development departments, which acquire knowledge from customers to develop products meeting their needs, sales departments which are in close contact with customers, and after-sales services which offer "*customer service knowledge*" (Feng et al., 2001, p. 60). Knudsen (2005) notes that a new product requires knowledge creation and utilisation in relation to the different partners who might become sources of different types of knowledge. Therefore, according to Knudsen, all possible relationships and their contributions need to be investigated in the knowledge creation process.

The growing importance of customer-oriented business models is emphasised by numerous publications within the area of customer relationship management (CRM) (Gebert, et al., 2002).

The aim of a company is to meet and satisfy target customers' needs and to be better than its competitors. Consumer behaviour is the study of how individuals, groups, and organisations select, buy, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and desires (Pelau et al., 2010). Focusing on customer processes requires a considerable extent of. Customer-focused companies have to provide the knowledge that customers demand, process the knowledge that customers pass on to the company, and possess knowledge about customers. As a consequence, knowledge is considered a critical resource in competition in the 21st century (Davenport and Prusak, 2000; Drucker, 1999).

Kaplan and Norton (2000) believe that many organisations have a mission that focuses on the customer, and how an organisation is performing from its customers' perceptive has become an important consideration for top management (Brown, 1996). Anand et al. (2005) mentioned that organisations always measure this perspective by defining customer requirements and justifying internal processes according to customer needs, but they should bear in mind that customer needs will undoubtedly change over time. Customer knowledge management (CKM) creates new knowledge-sharing platforms and processes between companies and their customer (Gebert, et al., 2002). On a strategy level, companies need to determine how customer knowledge management can support business goals and processes, and use these as guide lines for designing customer knowledge management processes and performance indicators.

4.3.2.5.2 Performance Evaluation and Continuous Improvement:

Performance measurement is the most important dimension for continuous improvement in KM success. KM performance measurement enables organisations to track the progress of KM and to determine its benefits and effectiveness (Yahya and Goh, 2002). According to Ahmed et al.,

(1999), measuring KM is necessary in order to ensure that its envisioned objectives are being attained. Measurement enables organisations to track the progress of KM and to determine its benefits and effectiveness (Yahya and Goh, 2002; Feher, 2004). Moreover, it enables organisations to assess the extent to which the KM project is achieving its objectives (Assiri, 2006). Basically, it provides a foundation for organisations to evaluate, compare, control and improve upon the performance of KM (Ahmed et al., 1999).

At the employee level, a comprehensive performance measurement system must be developed to capture the impact of knowledge on individual and organisational performance (Assiri, 2006), while at the organisational level, perhaps one effective way to start off is to use the balanced scorecard (BSC) technique, proposed by Kaplan and Norton (1993, 2001) which focuses on finances, learning and growth, internal business and customer perspectives. Niven (2008) added in that respect the BSC measurements have to provide a balance between different aspects such as the balance between financial and non-financial indicators of success, the balance between internal and external constituents of an organisation, and the balance between lag and lead indicator performance.

Nevertheless, there is still no absolute method for measuring KM in an organisation (Gupta et al., 2000) and this is an area which is still being explored by academics and practitioners (Cormican and O'Sullivan, 2003).

4.3.2.5.3 External Environment Knowledge through Benchmarking

Besides the knowledge existing in the organisations, companies have to regularly acquire external knowledge from the external environment. The capability of organisations to learn and

adapt quickly has become a source of competitive advantage for companies in the network economy (Alshareef, 2005). However, Alsadhan (2007) observes that over the past decade organisations have invested heavily in IT/IS. These investments have included the

 development of capabilities to store, access and disseminate knowledge in order to assist the organisation in adapting to changing environments. A deeper awareness of factors which facilitate the management of external knowledge is necessary. Cook et al. (2004) claim that benchmarking activities positively force any business unit to continuously evolve and develop in order to survive and grow in a business environment facing global competition. Organisation should use benchmarking to assess themselves regularly against other companies with recognised good knowledge practices in order to identify performance gaps and areas for improvement (Chong et al., 2000). This allows companies to learn from and act on the knowledge of others (Storey and Barnett, 2000).

4.4 The Relevance of Strategic Knowledge Management Framework to a Saudi Arabian Organisation (IPA)

As stated in Chapter Two on the background in SA and IPA, KSA Public organisations, particularly the Institute of Public Administration are facing various challenges such as: technological advances, high population growth, *saudisation* of the workforce, and unemployment. The researcher's direct experience suggests that they are finding it difficult to cope with these issues as is evidenced by a reluctance to make changes, to assume the initiative, and by anxiety in the face of new demands. As the Institute of Public Administration should be in the forefront of change in order to ensure the Kingdom has an appropriate source of future labour, it is necessary for them to address this issue directly. It seems clear that the IPA needs a new model of strategic management that will accommodate radical change and will be

responsive to labour market demands in the face of a competitive environment. As stated earlier in this chapter, KM strategic management with its four strategies provides one possible option for addressing the issue of radical organisational change and a competitive environment. It was selected as an issue for detailed evaluation within the KSA context for the following reasons:

Firstly, the idea of knowledge management strategies has emerged as a coherent and holistic approach for organisations looking for new ways to respond to the challenge of achieving competitive advantage and of improving organisational performance. In addition, the focus on 'knowledge management' as the organising principle can be regarded as having congruence with the mission of the Institute of Public Administration. IPA's motto 'Towards a Better Administrative Development' sums up its mission of being able to produce the flexible and adaptable employees required for the future economy. The institution must itself be capable of adapting in anticipation of the changes that will face the economy more generally. This requires a complete proactive focus on knowledge management resource strategies to achieve competitive advantages rather than a more restricted emphasis on a reactive position in human resources development. Strategic knowledge management is an approach that offers this clear proactive focus.

Secondly, and to follow on from the above, the IPA staff needs to ensure that is in the forefront of developments in skills and knowledge. IPA can no longer be dependent on reacting to instructions from the economic authorities and the labour market. In a time of rapid change, they must themselves be driving the initiative to meet emerging economic needs. The KM strategies model provides a model to enable organisation members to engage in this type of activity.

Thirdly, the KM strategies model is ethically compatible with Islamic principles and values. In a devout country such as the KSA, this is likely to be a key requirement in gaining any form of acceptance from the central powers and individual organisation members. By showing that the KM model is complementary to Islamic values, rather than a threat, it is likely to have a greater chance of achieving its goals than a model where the underlying principles are less supportive.

Evaluating the Strategic Knowledge Management Model using the BSC system in the context of the IPA can serve as a strategy to help the IPA to improve their abilities and develop their capabilities. Even though the concept of the KM is quite new in the KSA, its underlying values make it a feasible option for the KSA. It is hoped that KM Strategies Model offers a coherent account of how organisations can adapt to meet the changes that are widely accepted as facing the Kingdom's economy as it seeks to move into the competitive global marketplace.

4.5 Summary

This chapter provided a wide overview of the literature related to strategic management, knowledge management strategies, and the balanced scorecard. It covered in depth the suggested strategic knowledge management systems and the critical success factors found in the literature related to the KM programme. It can be concluded that putting into effect a KM project is not an easy task and has the potential for failure if the organisation does not consider these factors. In addition, a small attempt was made to integrate all the KM strategies with the success factors proposed by the KM researchers. The strategic KM framework was proposed in this chapter. This framework aims to cover the important features of KM synthesis and consequently can provide organisations with a guideline for implementation. Finally, the relevance of the KM strategies to Saudi Arabia and the IPA organisation was discussed.

Chapter five

Research Design and Methodology

5.1 Introduction:

The main purpose of this chapter is to provide an outline of the research design and the methods used in this study to achieve the research objectives. It also discusses the theories underlying the methods used to help explain the rationale for undertaking certain activities. The discussion has to be addressed within the context of the research setting introduced in Chapter One and guided by the review of literature in Chapters Two, Three, and Four.

This chapter will be divided into four main parts. The first part focuses briefly on the literature of research design and research methodology; then it covers the purpose of research, research types in terms of approach and design, the differences between quantitative and qualitative researches, data collection methods, and finally, the justification for the choice of methods used in the study.

The second part concentrates on the processes employed in the research design and execution of this research in order to obtain data that achieve the research objectives. It explains the research methodology of the study, the research strategy, and the case study plan.

The third part explains the data collection techniques adopted. It describes the design and pre-testing of the questionnaire, the selection of the survey sample, data collection, response rate, and demographic characteristics. In covering the second stage of data collection, interviews, it focuses on the interview question design, the selected sample, and the design of the semi-structured interview. The final part explains the data analysis techniques for quantitative and qualitative methods. In addition, issues of reliability and validity in the research methodology are also discussed. In the final part, a short summary is presented.

5.2 Research Design and Research Methodology:

It is important to distinguish between the two commonly used terms, namely "research design" and "research methodology", and to clarify the difference between them.

Research design is the 'blueprint' that enables the researcher to come up with solutions to possible problems and acts as guidance in various stages of a research (Yin, 2003, 2009). In addition, research design is the programme that guides the researcher in the process of collecting, analysing, and interpreting research observations (Gill and Johnson, 2010, Hallebone and Priest, 2009). Accordingly, it deals with at least four problems in carrying out successful research: what questions to study, what data are relevant, what data to collect and how to analyse the results (Yin, 2003). Thus research design covers strategic decisions concerning the choice of data collection methods, and more tactical decisions regarding measurement and scaling procedures, questionnaires, samples, and data analysis (Hallebone and Priest, 2009).

On the other hand, research methodology is a set of procedures and rules to guide research and against which its claims can be assessed (Robson, 2002). Hallebone and Priest (2009) suggest that research methodology presentation should include sampling design, data collection, data analysis, and limitations or constraints that the research faced. Choosing the right research methodology depends on certain criteria such as the aim of the study, the type of information needed, the character of respondents, manipulation of independent variables, the degree of control that the researcher has over the case under study, and constraints of time and money (Saunders et al., 2009). There is no right or wrong methodology, but the researcher should seek for the most beneficial method available.

Finally, research design provides a conceptual framework for the study, while research methodology is concerned with the tools that were used to achieve each specific aim. It provides a framework that guides data collection and data analysis. According to the above discussion, research design is more holistic and includes research methodology, since it is more related to strategic issues.

5.2.1 Research Purpose:

The role of the research is to fill a gap in a particular subject and to ensure that something new and important is added to the body of knowledge (Hallebone and Priest, 2009). Punch (2009) describes the role of research as an attempt to increase the body of knowledge by discovering new facts or relationships through a process of systematic scientific inquiry. The expected end results of the research would be to discover new facts that will help to deal with the problem situation (Sekaran, 2003).

Many authors and experts on social research agree on three main types of purpose in carrying out research, namely exploratory, descriptive and explanatory (Robson, 2002; Saunders et al., 2009; Yin, 2009; Neuman, 2004; Yates, 2004). In fact, Robson (2002) pointed out that the purpose of an enquiry may change over time, which means a study may include more than one purpose.

Exploratory research is often performed in order to clarify the nature of vague problems, and where there are few or no similar previous studies. Thus, exploratory studies try to build descriptions of complex circumstances or phenomena that are unexplored in the literature (Hallebone and Priest, 2009). Saunders et al. (2009) explained that exploratory studies "*tend to start with a wide research area, and narrow down as the research develop*s". Exploratory

research is characterised by formulating problems more precisely as the research progresses, clarifying concepts, gaining insights, eliminating impractical ideas, and forming hypotheses, although it does not seek to test them (Neuman, 2004). Ultimately, in exploratory research, flexibility is very apparent; it can be performed using a literature search, by surveying certain people about their experiences, or with case studies (Yin, 2003).

Descriptive research mainly describes phenomena as they exist, and examines the problem further than an exploratory study (Hussey and Hussey, 1997, Punch, 2009, P.15). It identifies and gathers data on the characteristics of a particular problem. The aim of descriptive research is "to portray an accurate profile of persons, events or situations" (Robson, 2002). A large proportion of social science research uses descriptive research (Punch, 2009). It is necessary to have a clear picture of the phenomena on which the researcher wishes to collect data prior to the collection of the data. Yates (2004) claims that descriptive research involves examining a phenomenon to define it more fully or to differentiate it from other phenomena. He further adds that this type of research is determined to answer 'who', 'what', 'when', 'where', and 'how' questions. As opposed to exploratory research, descriptive research should define questions, people surveyed, and the method of analysis prior to beginning data collection.

Explanatory researches (analytical studies) are very useful when research is aiming to establish causal relationships between variables identified in seeking to understand the phenomenon or problem that is studied (Hussey and Hussey, 1997; Robson, 2002; Saunders et al., 2009; Yin, 2003, Punch, 2009). In addition, Yin (2003) notes that in explanatory studies, questions deal with operational links which need to be traced over time. However, it is vital to note that conducting an explanatory research requires a well-defined research problem, and hypotheses

need to be stated. Moreover, explanatory research is used regularly within areas where extensive research has already been carried out (Punch, 2009).

5.2.2 Research Paradigm

The term "paradigm" refers to *"the progress of scientific practice based on people's philosophies and assumptions about the world and the nature of knowledge"* (Collis and Hussey, 2003, p.46); it is about the nature of the relationship between theory and empirical data. In an empirical study, the researcher observes phenomena in depth and collects information in order to depict a conclusion that adds value to knowledge. In contrast, the theoretical study is based on others' writings; the researcher attempts to benefit from these ideas and uses his or her abilities to come up with a new or different view of the situation that also contributes to knowledge. Remenyi et al. (2003) believe that it is impossible to be empiricist if one does not have a theoretical background related to the subject under study. In fact theoretical research does not occur in a void; it is rather the result of thinking about the findings of previous empirical research and of debating the different theoretical interpretations that others have made.

There are two principal research paradigms which are generally labelled positivism and phenomenology. According to Collies and Hussey (2003), the positivistic approach focuses on the "facts" and the causes of social phenomena with a little regard for the subjective state of the individual. On the other hand, the phenomenological approach stresses the subjective aspects of human activity by focusing on the meaning rather than the measurement of social phenomena. The features of the two approaches are presented in Table 5.1:

Table 5.1 Features of the positivist and phenomenological approaches

Positivism	Phenomenological
Tends to produce quantitative data	Tends to produce qualitative data
Uses large samples	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories testing
Data is highly specific and precise	Data is rich and subjective
The location is artificial	The location is natural
Reliability is high	Reliability is low
Validity is low	Validity is high
Generalises from sample to population	Generalises from one setting to another

Source: Collis and Hussey (2003, p.55)

Gill and Johnson (2010) argue that two types of research approaches exist: research-then-theory and theory-then-research. These can also be called inductive and deductive research respectively (see Table 5.2).

Table 5.2 The Differences between Deductive and Inductive Approaches

Deduction	Induction
• Scientific principles	• Gaining an understanding of the meanings humans attach to events
• Moving from theory to data	• A close understanding of the research context
• The collection of quantitative data	• The collection of qualitative data
• The application of controls to ensure clarity of definition	• A more flexible structure to permit changes of research emphasis as the research progresses
• A highly structured approach	
• The researcher is independent of what is being researched	• A realisation that the researcher is part of the research process
• Necessary to select samples of sufficient size in order to generalise conclusions	• Less concern with the need to generalise

Source: Saunders et al., 2009, P.127

Saunders et al., (2009) stress the differences between these two approaches in term of their relative emphasis upon deduction (Testing Theory) and induction (Building Theory) (Saunders et al., 2009). The deductive approach involves the development of '*a prior'* theory that is subjected to a careful empirical test, the purpose being to explain the relationship between variables and to insure validity of data.   In this respect, the researcher decides what information must be collected, how to understand this information and how to relate the results to the theory.   On the other hand, the inductive approach involves collecting data and developing theory on the basis of data analysis. The purpose is to obtain an understanding of the nature of the problem by a close understanding of the research context (Gill and Johnson, 2010).   From this difference it should be noted that deductive and inductive approaches can be linked, i.e. theories can be tested deductively but the validity of the theoretical terms and assumptions can be evaluated inductively - in effect a form of triangulation.   Similarly provisional theories can be developed (built) inductively and then tested deductively (Saunders et al., 2009).

Quantitative and qualitative methodologies are generally associated with the two principal research paradigms which are generally labelled positivism and phenomenology respectively. Positivism generally adopts a quantitative approach to investigating phenomena, as opposed to phenomenological approaches, which aim to describe and explore in depth phenomena from a qualitative perspective (David & Sutton, 2004).

Qualitative research is based on intensive study of as many features as possible of a small number of phenomena.   It seeks to build understanding in depth.   Often, its methods are associated with a phenomenological position (Collis and Hussey, 2003).   On the other hand, quantitative research is based on numerical measurement of specific aspects of phenomena; it is

a very structure approach and its main aim is to generalise (Creswell, 2003). Its methods are often associated with the positivistic position (Neuman, 2004).

5.2.3 Qualitative, Quantitative and Mixed Method Research:

As stated above, most research undertakings tend to be classified into one of two categories, "qualitative or quantitative". In considering the qualitative and quantitative data collection methods, Saunders et al. (2009) emphasise that some researchers may select a qualitative approach to examine and reflect on perceptions in order to gain an understanding of social and human activities, whereas, others choose a quantitative approach and concentrate on measuring phenomena, collecting and analysing numerical data and applying statistical tests. However, as will be discussed below, these approaches are not mutually exclusive (as with deduction and induction above) and can be "mixed" to good effect. But first it is necessary to consider each separately.

Qualitative methods have become increasingly important forms of inquiry for the social sciences in applied fields such as education, regional planning and management (Saunders et al., 2009). Such methods were developed in the social sciences to allow researchers to understand people and their social and cultural contexts, allowing the researcher to be very close to the research subjects (see Tables 5.1, 5.2 and 5.3), this being one of their main strengths. According to Eldabi et al. (2002), qualitative methods tend to have the following features:

- A commitment to viewing actions and values from the perspective of the people being studied;
- Provide a detailed description of the social setting they investigate;

- Offer an understanding of events and behaviour in their context;

- View social life as a process rather than static; i.e. longitudinally;

To cover these factors, the researcher attempts to understand behaviour and institutions by getting to know the individuals involved and their values and beliefs, thereby providing greater depth and a richer more detailed picture of social life (Punch, 2009). Qualitative researchers are generally more concerned with validity, rather than objectivity and reliability (see further discussion of these concepts below). On the other hand, quantitative approaches are designed to ensure objectivity, generalisability and reliability (Remenyi et al., 2003). The strengths of quantitative approaches are that they are claimed to produce factual and reliable data that are usually generalisable to some larger population (see Tables 5.1 and 5.3). Examples of quantitative methods now well accepted in the social sciences include survey methods, laboratory experiments, formal methods (e.g. econometrics) and numerical methods such as mathematical modelling (See Tables 5.1, 5.3 and 5.4). This approach tends to understand data in terms of amount or size rather than its subjective meaning, and is usually and mainly based on surveys and questionnaires (Gill and Johnson, 2010). According to Eldabi et al. (2002), the quantitative approach tends to obtain data to explain events and situations in terms of a cause and effect relationship so that facts can be understood in an objective way (Hallebone and Priest, 2009). Moreover, quantitative approaches allow flexibility in the treatment of data, in terms of comparative analyses, statistical analyses, and repeatability of data collection in order to verify reliability (Partington, 2002).

It is now useful to compare the qualitative approach and the quantitative approach and to examine the differences in their basic assumptions about the objectives of research (see Table

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5.3).   Some writers have argued that qualitative and quantitative perspectives represent

incommensurate paradigms (the former based on a relativist and constructionist ontology; the

latter on an objectivist and realist one (Saunders et al., 2009)). On the other hand, others have

adopted a more pragmatic approach and view both as reflecting a common realist notion of an

objective reality.

Table 5.3 The Differences Between Qualitative and Quantitative Research

From a Theoretical Perspective

Qualitative Research	**Quantitative Research**
Emphasis on understanding	Emphasis on testing and verification
Focus on understanding from respondent's point of view	Focus on facts and / or reasons for social events
Interpretation and rational approach	Logical and critical approach
Observation and measurements in natural settings	Control measurement
Subjective insider view and closeness to data	Objective outside view distant from data
Explorative orientation	Hypothetical-deductive, focus on hypothesis testing
Process oriented	Result oriented
Holistic perspective	Particularistic and analytical
Generalisation by comparison of properties and context of individual organism	Generalisation by population membership

Source: Reichardt and Cook (1979), Ghauri and Gronhaug (2002)

From a practical perspective (see Table 5.4), both approaches have their own strengths and

weaknesses. The qualitative approach is better at capturing more subjective aspects than

quantitative research and uses very different methods for collecting information, often

individual, in-depth interviews. The nature of this style of research is often exploratory and

small numbers of people are interviewed in-depth.   Researchers in this approach seek

understanding through inductive analysis, moving from specific observation to the general. On the other hand, quantitative approaches employ deductive logic, moving from the general to the specific. Thus, strength can be gained through the use of multiple methods to examine the same aspects of a problem. The weakness of one method will be hopefully compensated by the counter-balancing strengths of another, and thus the validity and reliability of the research is strengthened.

Table 5.4 The Differences Between Qualitative and Quantitative Research

from a Practical Perspective

	Qualitative Research	**Quantitative Research**
Type of questions	Probing	Limited Probing
Sample size	Small	Large
Amount of information from each respondent	Substantial	Varies
Requirements for administration	Interviewer with special skills	Interviewer with fewer special skills
Type of analysis	Subjective and interpretive	Statistical and summation
Hardware	Tape recorders, projection devices, video recorders, pictures; and discussion guides.	Questionnaires, computers and printouts
Degree of reliability	Low	High
Researcher training	Psychology, sociology, social psychology, consumer behaviour, marketing and marketing research	Statistics, decision models, decision support systems, and computer programming
Type of research	Exploratory	Descriptive or causal

Source: Based on McDaniel and Gates (2002)

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There is no rule that says that only one method may be used in an investigation. Using more than one can have substantial advantages, even though it almost inevitably adds to the time investment required. Using multi-methods to research means that different purposes may be served and that triangulation of results is facilitated (Saunders et al., 2009). Triangulation is defined as "*The combination of different methods, study groups, local and temporal settings and different theoretical perspectives in dealing with a phenomenon*" (Flick, 2002). There are many benefits in including many sources of evidence and methods of analysis; it allows the researcher to address a broader range of historical and behavioural issues, and it also leads to the case study becoming more convincing and accurate (Yin, 2003). In addition, it allows the results of a qualitative method to be checked against those of a quantitative method or vice versa to allow the researcher to be more confident of their results (Bryman and Bell, 2007). Robson (2002) argues that triangulation provides a general or more complete picture to develop of the topic under study. Neuman (2004) believes that a combination of quantitative and qualitative research can be beneficial in some studies. However, David and Sutton (2004, P.45) argue that "*the use of mixed methods attempts to gain some benefit from different methods from across the different spectra, while it is not always used for that purpose and is not a guarantee of success*".

5.2.4. Research Strategy - Case Study:

Research strategy is defined as a general plan of how the researcher will go about answering the research questions and meeting the research objectives (Saunders et al., 2009, P.141). Robson (2002) defines it as the general approach taken in an enquiry. He further distinguishes between three main strategies, namely experiments, surveys and case studies. Experimental strategy measures the effects of manipulating one variable on another variable, and usually it is related to the natural sciences, although it features strongly in much social science research, especially in

psychology. On the other hand, survey strategy is the collection of information in standardised form from groups of participants, and is usually associated with a deductive approach (Robson, 2002). Finally, case study strategy is the development of intensive, detailed knowledge about a single case, or a small number of related cases, and is usually appropriate for exploratory work (Yin, 2003).

Case studies are frequently used for management research (Saunders et al., 2009; Yin, 2009). The case study method as defined by Collis and Hussey (2003) is an extensive examination of a single instance of a phenomenon. According to Yin (2009), case studies represent an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clear. Thus, case study is best used when the researchers think that the context of the phenomenon which they are investigating has an effect on this phenomenon. Zikmund (2003) stated that case study research is an exploratory technique where a situation similar to the researcher's problem is investigated. According to Perry (2001, P.305) case research is defined as:

- an investigation of a contemporary, dynamic phenomenon and its emerging (rather than paradigmatic) body of knowledge;

- being within the phenomenon's real-life context where the boundaries between the phenomenon and context under investigation are unclear;

- when the explanation of causal links are too complex for survey or experimental methods, so that single clear outcomes are not possible;

- using interviews, observation and other multiple sources of data.

As case studies represent a research strategy that includes the selection of a case, this does not imply that a case study should include just one case.

When applied to an appropriate problem, there are many advantages to case study research. These include:

- Access to multiple viewpoints (Yin, 2009).

- It allows in-depth analysis of all or part of an organisation; can be highly focused allowing plenty of detail; allows careful study of events in sequence (Zikmund, 2003);

- It allows in-depth research in order to gain an understanding of the phenomenon;

- Appropriate where multiple sources of data are used; for example interviews, observation, documents, organisational publications (Yin, 2003);

- Case studies provide a richness of data (Yin, 2009);

- Does not require control over events (Yin, 2003);

- Interviews can provide crucial insights, suggest additional sources of evidence, and provide access to these sources;

- Highly relevant to business practice;

- Suitable for research into contemporary, complex and dynamic phenomena (Perry 2001; Yin 2003);

- It supports theory building for where phenomena are not well understood (Gummesson, 2003);

- With the appropriate rigour applied to the research design, case research is both valid and reliable (Yin 2003).

Despite the benefits of the case study approach, perhaps the major criticisms are connected with the issue of the generalisability of the findings based on the case study (Yin, 2009). Since case studies usually include one case, or a small number of cases, this raises the issue of the generalisability of case studies to a wider context. However, such a criticism is related to the view of those who believe that the objective of research is to draw inferences about the population and that the case study is 'a small sample', which is consistent with the positivistic paradigm assumptions. Such criticism overlooks the real objective of case studies. The objective of case studies is not to prove or falsify a theory for statistical generalisation, rather, it is either to describe, illustrate, explore, or explain (Yin, 2003, 2009).

Researcher bias is another possible cause of criticism in case studies; the researcher's bias can lead to lack of rigour, and rigour is a very important characteristic of good research. Yin (2009) argues that in case study research, this problem has been more frequently encountered and less frequently overcome. He suggested many techniques which may lead to this problem being overcome, including that the materials should not be altered and the investigator must work hard to report all evidence fairly.

5.2.5 Data Collection Methods:

This section will describe the data collection techniques used to collect the empirical data. There are two distinct types of data that researchers usually collect; namely secondary data and primary data.

5.2.5.1 Secondary Data:

Secondary data are data that have already been gathered by other researchers with different purposes in mind. Secondary data are usually historical, already assembled, and do not require access to respondents or subjects. They are usually obtained from books, periodicals, governmental and official publications, theses, dissertations, and public data bases. Saunders et al. (2009) argue that secondary data are usually used in case studies and survey types of studies, but they could also be used in experiments. They classified secondary data into three categories. The first is documentary secondary data, which include written documents such as reports, minutes, transcripts of speeches, books, and journals, and unwritten documents, including films, pictures, drawing, and video recordings. The second category is survey-based secondary data, which have been collected by other researchers. The third category of secondary data is multiple-source secondary data which include a combination of the previous two types.

5.2.5.2 Primary Data:

Primary data are data that researchers gather on their own with a specific purpose in mind. Within a survey strategy, several possible data collection methods are available, such as questionnaires, interviews and participant observation. In the case study strategy, various methods may be employed, such as documentary analysis, interviews, participant observation, focus groups and even questionnaires. There is no single best way of collecting data. The method chosen depends on the nature of the research questions and the results which the researcher wishes to obtain. In short, since all different methods will have different effects, it makes sense to use different methods to cancel out the various methods' effects and provide greater confidence in research conclusions (Saunders et al., 2009).

In the following sections, several data collection methods will be discussed and evaluated for their applicability to this research:

5.2.5.2.1 Interview Method:

The interview is probably the most widely employed methods in the qualitative approach being able to collect a rich and detailed set of data (Saunders et. al., 2009).

Punch (2009) describes an interview as an action involving personal contact between two sides, namely the interviewer and the interviewee. Researchers, when using interviews as a method, are not looking for answers such as 'yes', 'no', or 'maybe', but they use a style of interviewing that encourages interviewees to produce descriptions of a rich nature.

According to Collis and Hussey (2003), interviews can be used as the primary approach in a study, as in a survey. However, interviews lend themselves well to use in combination with other methods in a multi-method approach. The role of the interviewer is to play a large part in enhancing respondent participation, guiding the questioning, answering the respondent's questions and clarifying the meaning of responses. Researchers use interviews as a method to find out what direct observation cannot tell them.

Surveys conducted through interviews are usually more expensive, permit the interviewer's personal influence and bias to intrude, and may minimise the ability to maintain anonymity, which can be particularly important when sensitive issues are being researched. However they are often preferable to questionnaire surveys because of the role the interviewer can play in enhancing respondent participation, guiding the questioning, answering the respondent's questions, and clarifying the meaning of responses (Punch, 2009, Collis and Hussey, 2003). In

addition, the interviewer can explain the aim of the study and talk about the responses from interviewees, which allows the researcher to control the interview situation, resulting in a higher response rate than from the mail questionnaire, and the interviewer can probe for additional and detailed data.

On the opposite side, some disadvantages are lack of comparability (in non-standardised interviews), interviewer bias, lack of anonymity, and that they may be time-consuming and costly (may need travel) (Robson, 2002).

There are three types of interviews: fully structured, semi-structured and unstructured. For the fully structured interviews, Nachmias and Nachmias (1996) stated that questions in structured interviews are close-ended, and the sequence is the same in every interview. Structured interviews provide objectivity and are easy to analyse, but are not flexible. The unstructured interview contains open-ended questions. Although it takes more effort and time and is difficult to analyse, it is flexible and may be used to explore answers in greater depth. The semi-structured interview contains both open-ended and close-ended questions and possesses the advantages of both structured and unstructured interviews.

5.2.5.2.2 Questionnaire Method:

The questionnaire can be used to gather data, when the issues which arise are likely to be confidential and sensitive and gives respondents more time to consider their answers (Collies and Hussey, 2003, p.281). The questionnaire survey, as defined by McDaniel and Gates (2002), is a set of questions designed to generate the evidence necessary to accomplish the objectives of the research study. It is a way of getting answers to the research questions from people/participants

by asking questions (Alsadhan, 2007). Some of the advantages of questionnaires are that they are a comparatively cheap method of collecting primary data, it is easy to get a large amount of data from a lot of people, analysis of answers to closed questions is straightforward, there is less pressure for an immediate response from the respondent, the respondent remains anonymous, there is a lack of interviewer bias, and questions are standardised, and can provide suggestive data for hypothesis testing (Gillham, 2000; Saunders et al., 2009).

However, the disadvantages for the questionnaires are: low response rate, difficulty in controlling who completes the questionnaire, lack of any opportunity to check the accuracy of the answers and clarify ambiguous answers, respondents may have difficulties with reading, there may be missing data, questions must be kept simple, and the development is often poor, hence the researcher will be unable to collect in-depth data (Gillham, 2000; Neuman, 2004).

The questionnaire contains two types of question: closed-ended and open-ended, both of which have advantages and disadvantages. In a closed-ended question, respondents are offered a set of answers and asked to tick the one that most closely represents their views. Closed-ended questions are easy to ask and quick to answer; they require no writing on the part of either respondent or interviewer, and their analysis is straightforward.

5.3 The Justification for Choice of Methods Used in the Study

As previously stated (in Chapters Three and Four), strategic knowledge management which utilises the BSC system is a new phenomenon and thus implementation methodologies are still developing with experience. As a result, there has not yet been a common comprehensive or integrated approach to KM projects (Alsadhan, 2007). Furthermore, there is a lack of knowledge of the key components influencing the process of KM implementation, and the way these components should be addressed and managed in an organisational context (see Chapters Three and Four). Contribution to the literature is therefore needed to guide organisations that are seemingly caught up in a tangle of unanswered questions about knowledge management strategies.

In this study, qualitative methods were used as means of gaining a deeper understanding of the meaning attached to KM and BSC by understanding relevant values, beliefs, and meanings regarding these concepts (Bryman, 2001). In contrast, quantitative methods were used to describe and measure the success factors, relationships and patterns across and within the IPA organisations (Bryman and Bell, 2007).

This research is an attempt to evaluate the relevance of a theoretical framework within a specific empirical context. This research will start from an induction – theory building – then go on to a deduction – theory testing (Gummesson, 2003; Punch, 2009). Although this will allow the relevance of this model to be evaluated, the research does not set out to test specific hypotheses related to the model. Thus, the approach is closer to an inductive position where new insights can be drawn from the emerging data produced by the evaluation and appropriate aspects or principles of the framework modified as a result. Thus, rather than being either purely positivist

or phenomenological in terms of epistemology and ontology, the study assumes a realist ontology, in assuming that there are real and external aspects of reality (in case of the present study, individuals and their organisations) that can be observed, recorded and measured in a consistent manner. But it accepts that this external reality is also subject to social interpretation by individuals depending on their social background, experiences and interests (i.e., reality is socially-defined rather than socially constructed) (Hallebone and Priest, 2009). As a result it is necessary to take account of these perspectives (for a detailed discussion of the realist position see Saunders et al., 2009). This means that in terms of epistemology, it is necessary to be able to collect knowledge that is both 'factual' and measurable in a consistent way and to be able to recognise the significance of individual definitions and interpretations. This means that in terms of methodology it is necessary to adopt both quantitative and qualitative approaches. The structural aspects of the research's model required the use of quantitative methods relating to the extent to which the pre-defined principles are applied and allow a consistent measurement of its dimensions to be achieved. While the process aspects are best investigated using qualitative methods, the interviews will aim to capture qualitative perspectives and definitions to check for themes and issues not covered by the framework and for differences in the interpretation of key factors.

Collis and Hussy (2003) define triangulation as the use of different approaches, techniques and methods in the same study. They argue that the use of different methods in studying the same phenomenon should lead to greater validity and reliability than a single methodological approach. In addition, Bryman and Bell (2007) argue that triangulation allows a holistic picture to develop. The need to incorporate both quantitative and qualitative dimensions covering issues of both measurement and meaning also influenced the overall nature of the study design.   In

particular, the need to combine these two elements and to ensure that the particular issues raised by respondents were incorporated suggested the need for more than a simple cross-sectional study or a programme of interviews (Saunders et al., 2009; Hallebone and Priest, 2009). It is useful in capturing a more complete, holistic and contextual portrayal of the topic under study. It was rather decided that this epistemology was best developed through a case study design.

Bryman and Bell (2007) describe different uses of triangulation in research. Among these are to:

- Seek convergence of results.
- Expand scope of study
- Have one method complement the other, so different issues of a phenomenon can emerge.
- Use one method to enable the development of the other.

Based on the discussion above, a case study strategy based on quantitative and qualitative techniques was used in this research (more details will be provided in the section on case study strategy). The questionnaire will allow the 'what' questions in this research (such as the main elements and key factors of CSFs of KM strategies, their level of importance and relevant concepts and issues involved in an integrated perspective) to be answered. The interviewees will give in-depth information and answer the 'how' questions in this research such as 'how does knowledge management strategy fit into the wider strategic management system and how do organisations address the CSFs of the strategic KM project?' which will be developed from this research (see Chapter Eight). The greatest disadvantage of the case study is the external validity concern or lack of generalisation. However, since the aim of this study is exploratory and a triangulation approach was adopted, the use of the case study will serve as a complementary method to investigate in depth the relevant aspects of strategic knowledge management, and to support the results of the survey.

The researcher chose the questionnaire survey to collect quantitative data, and semi-structured interviews (and organisation's reports, documents, etc.) to collect qualitative data. These methods were chosen in the light of the time constraints imposed by a three years Ph.D. programme, and the relevance of these methods to the nature of this research, being an exploratory investigation into the factors that affect strategic KM project implementation. As mentioned, the questionnaire is extremely efficient at providing large amounts of data covering a wide range of organisations at relatively low cost in time and money and in a short period of time, if it is designed and administrated properly, an issue that will be discussed in the following section.

Semi-structured interviews may be used in relation to an exploratory study as argued by Saunders et al. (2009) and for this reason are to be used in this research. Also, they help to provide the answers to the 'how' and 'why' questions in this research. At the same time, they have an advantage over unstructured interviews for this research since the CSFs in KM projects will be the general theme in the questions which the interviewees are to be asked.

In short, combining quantitative and qualitative methods in this research study is indispensable. The triangulation methodology adopted in this research has triangulated the results from the quantitative data analysis with the result from the qualitative data analysis, and with the results from the secondary data analysis (see Chapter Seven). As previously stated, one of the main aims of this study is to propose an integrated model for effective strategic KM systems implementation based on best practice perspectives. Therefore, understanding the phenomena in depth should result from attempting to find tentative answers to questions such as 'what', 'how' and 'why'. Moreover, this combination will provide much richer findings.

5.4 The Design of this Research

This study represents exploratory research that aims to enhance existing theories and practices of strategic KM project implementation from an integrated perspective. The research design includes: Literature review, theory development, and primary case study including questionnaire survey and interviews. Figure 5.1 illustrates the design stages adopted in the entire process of this research. The subsequent sections will discuss in depth this research design.

Figure 5.1 Research design of this study

Research Design

Stage 1

Literature Review

Theory development

Stage 2

Case Study Strategy

Qualitative Analysis

Triangulation

Quantitative Analysis

How

What

Stage 3

A validated and Tested Integrated Model for SKMBS project
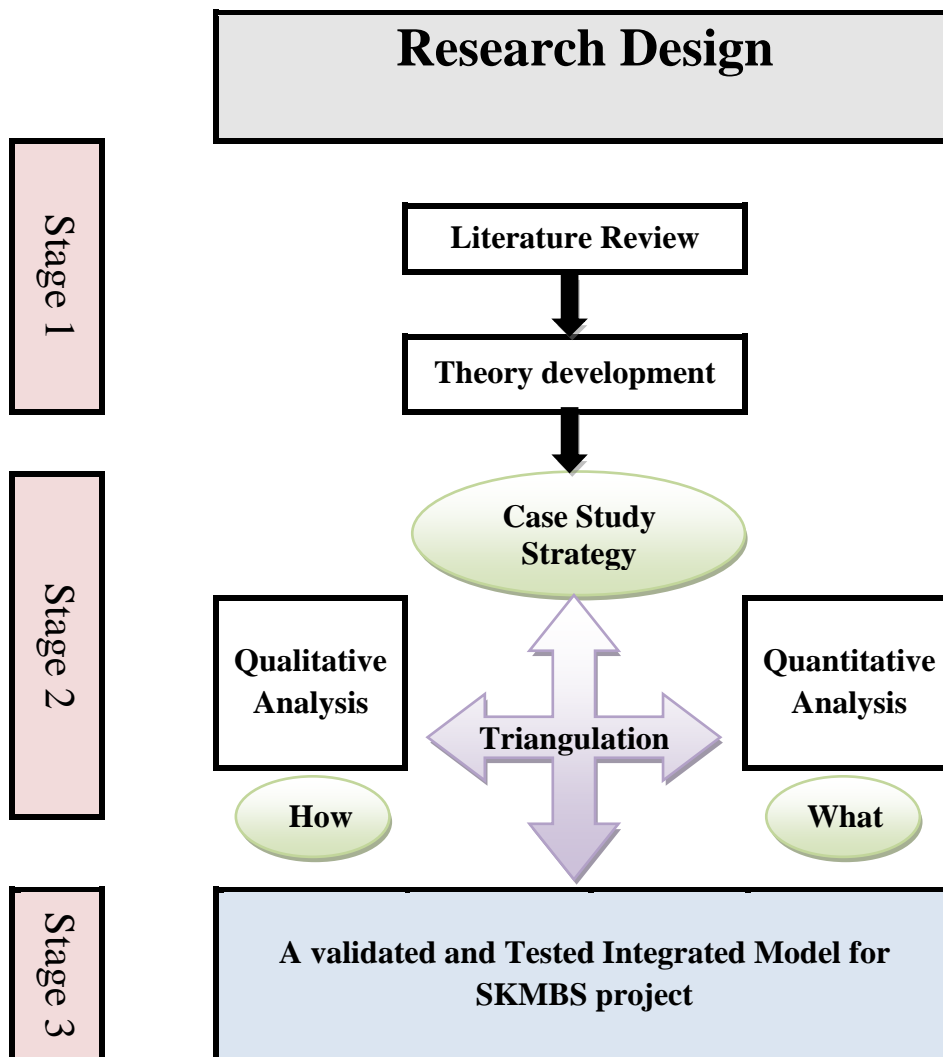
Produced for the purpose of this study

5.4.1 Literature Review

According Saunders et al. (2009), the first step in literature review is to have some ideas about and be aware of background of the field being studied. With regard to this, the researcher begins by reviewing a comprehensive list of related literature on KM projects and BSC (see Chapter Three). The study has covered many reference materials including: textbooks, academic papers, reports, theses and dissertations, and professional magazines. By doing this, the study has achieved many purposes. Firstly, it verifies concepts from the former studies which are closely related to the current study. Also, it links the study with the most recent studies in the same field.

The first part of the literature review presents an overview of KM. It begins with definitions of knowledge management, and organisational knowledge management. The next section is concerned with knowledge management and strategic management. It covers KM's links with the business strategy, knowledge management strategies and knowledge management perspectives. The last section was about knowledge management improvement, and knowledge management benefits and problems.

The second part of the literature review presents an overview of the BSC. It begins with definitions of the balanced scorecard (BSC); the next section provides an explanation of the BSC strategic system and the process of implementing the BSC system. The next part provides a clarification of BSC perspectives, and the BSC with corporate governance. The last part of the literature review is about the benefits and limitation of BSC.

5.4.2 Theory Development:

Based on the views found in the literature (Chapter Three), the holistic approach of strategic knowledge management is formulated by analysing all the different perspectives with regard to strategic management formulation from a business point of view, as well as a knowledge management point of view, and a balanced scorecard point of view. The research theoretically developed a knowledge management strategic system with four types of strategies for managing knowledge: Knowledge Management Resource, ICT Internal Knowledge, Learning and Innovation Based Knowledge, and Beneficiaries External Knowledge. In Knowledge Management Resource Management Strategy, the organisation focuses on capturing knowledge by codifying and storing it in repositories so that the existing knowledge may be reused. In the ICT Internal Knowledge Management Strategy, the organisation simply installs technological tools with the expectation that knowledge will be managed because of the availability of technology. The Learning and Innovation Knowledge Management Strategy asserts that learning is central to managing and sharing organisational knowledge. The Knowledge Management Beneficiaries Strategy is the knowledge derived from external data sources, typically focussing on customer-related information.

5.4.3 Case Study Strategy:

Case study research can be both positivist (attempting to test theory - Gill and Johnson, 2010; Yin, 2009) and interpretive (attempting to understand phenomena - Saunders et al., 2009). As has been stated in the previous section, as a research strategy, the case study can contribute in important ways to our knowledge of individual, group, organisational, social and related phenomena (Yin, 2009). Yin (2009) emphasises that case study research is being increasingly

accepted as a scientific tool in business research. The flexible nature of case study design makes for very diverse styles of study, useful for research on organisations in both the private and public sectors including workplaces, colleges institutions and universities in order to offer accounts of process as they actually operate (Saunders et al., 2009), and allows the researcher to collect data and information on the complexity of processes (Punch, 2009).   The case study method, as defined by Robson (2002, p.178) is:

"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".

In this context, the case study is independent of any particular research strategy and may be used with either paradigm. Furthermore, Yin (2003, 2009) identifies the following factors associated with the case study approach:

- The research aim and objectives are to explore certain phenomena and to understand them within a particular context. (In this study the KM/BSC framework will be explored and described in depth to gain better understanding of each organisational level of the IPA.)

- The research uses multiple approaches for collecting data which may be both qualitative and quantitative.

Considering these factors, the researcher decided on the case study as a strategy for carrying out this study for many reasons:

- The case study model fits the aims of this study well.
- The case study model provides a holistic view of the four institutions of Public Administration, including their context (Yin, 1994)
- The case study model may satisfy both qualitative and quantitative approaches in terms of describing, understanding and explaining (Yin, 2009).
- The researcher can provide a richly detailed account that leads to a more complete understanding of the situation (Hallebone and Priest, 2009).

In order to solve the research problem that was identified in Chapter One, a plan is needed to determine how, where and when to collect data. It was decided that an 'embedded, multi-case' approach, would best address these issues. These terms will first be explained and their choice will be justified. Yin (2009, P. 47) presented four types of case study designs that are shown in the following Table 5.5:

Table 5.5 Case Study Designs

	Single-case design	Multiple-case design
Holistic	Type 1	Type 3
Embedded	Type 2	Type 4

Source: adopted from Yin (2009)

A single case study is a design related to just one case, which could be about an individual, group, or company. Holistic means that the case study has a comprehensive focus (i.e. treats the case as a totality rather that breaking it down into parts) and that it uses not more than one unit of analysis. Consequently, Type 1 can be seen to focus on studying one case with a comprehensive approach (single unit of analysis). The Type 2 design is intended to study one case but does not break it down into constituent parts (multiple units of analysis). The Type 3 design is concerned with studying multiple-cases holistically (single unit of analysis), and Type 4 is used to study multiple-cases with multiple units of analysis, i.e. each one of the multiple cases is broken down into constituent parts for analysis. Multiple-case studies can be replications of single-unit case studies for the purpose of testing a general phenomenon. This allows the most sophisticated forms of comparison to be made.

This study used the multiple cases (Type 4) approach because one case study cannot give sufficient evidence to be able make robust generalisations. Multiple cases provide a general understanding and detailed description of each case and then present the themes within each case

followed by thematic analysis across cases. According to Herriott and Firestone (cited in Yin, 2003, p.46), this method means that *"multiple-cases are often considered more compelling and the results are more robust"*. Moreover, multiple cases strengthen the results by replicating and pattern-matching, thus increasing confidence in the robustness of the theory (Yin, 2003). Multiple case studies are also becoming more common in business and management studies (Remenyi et al., 2003), however, they are more expensive and time-consuming to conduct. This research was on four IPA institutions and each case was treated as a separate case but with scope for comparison between them (see Table 5.6). Regarding the level of analysis, an embedded design was adopted for each case being studied in depth. This is because the Strategic Knowledge Management model involves multiple-level analysis; thereby the study focuses carefully on the description of the processes of organisational structure and system in which the behaviours occur so as to gain a better understanding of the attitudes of different employees in each organisational level in these four institution. Table 5.6 below demonstrates the basic action plan for the case study and the main procedures:

Table 5.6 The Action Plan for the Case Study and its Main Procedures

Multiple-cases (four IPA institution)					
Analytical generalisation	**Riyadh**	**Jeddah**	**Dammam**	**Women**	**Descriptive**
	CSFs in KM strategies	CSFs in KM strategies	CSFs in KM strategies	CSFs in KM strategies	
Literal replication	Comparison between cases				**Exploratory**
Theoretical replication	Comparison with literature review and KM model				**Explanatory**

Produced for the purpose of this study

Table 5.6 shows that the four institutions, each IPA organisation investigated, as separate cases, with all of them comprising multi-cases. This enables the findings from each group to be

compared against the others and thereby to clarify any points of ambiguity and to identify any relevant issues that may have been overlooked in any single part of the study. The study was designed to gather information regarding the views and opinions of respondents in two groups (on the operational and strategic levels) from the respective IPA organisations (cases). In relation to "analytical generalisation", it is possible to generalise from multiple-case studies. Yin (1994, 2009) states that generalisations can be made from results from multiple designs to help build theories but these will not apply to the population of the field study; this is because multiple case designs are generally used to support or challenge theoretical generalities. Hence, in this study, theoretical generalisation was based on testing or confirming the model of strategic KM using a BSC strategic system. From the above table, this can be established using two forms of replication: theoretical replication and literal replication. Literal replication is where the multiple-cases are compared to determine whether they support and corroborate each other, and theoretical replication is where the cases are compared not only to each other but also to relevant theoretical propositions. It can be seen that literal replication predicts a consistent pattern of results in each IPA organisation, with theoretical replication used to compare this to theory.

In short, the study is descriptive, exploratory, and explanatory. Its descriptive role is to produce an accurate profile of Strategic Knowledge Management in the Saudi Arabian public sector, and to identify issues in need of further exploration and explanation. It is exploratory as it seeks to discover key pattern of relations that have not been previously identified or clarified. It is explanatory because it focuses on explaining such relationships within the context of relevant theory. The research analysis and data collection strategy, which were derived from this design, will be outlined in the following section.

The following table explains the research methods and data collection techniques which are used to answer the research questions:

Table 5.7 Action Plan for Research Analysis and Data Collection

Research Methods	Research Questions	Data Collection
Qualitative	1. How does knowledge management strategy fit into the wider strategic management system?	**Literature Review, Interview and Document**
Triangulation Qualitative and Quantitative	2. What are the critical factors for effective KM strategies at IPA? This question divided into four sub-questions as follows: A. What are the critical factors for knowledge resources strategy? B. What are the critical factors for knowledge management information technology strategy? C. What are the critical factors for knowledge management learning and innovation strategy? D. What are the critical factors for knowledge management beneficiaries strategy?	**Questionnaire and Interview**
Triangulation Qualitative and Quantitative	3. What are the significant differences in personnel's responses to the KMBS in IPA according to their demographic?	**Questionnaire and Interview**
Triangulation Qualitative and Quantitative	4. What is the possibility of adopting the KMBS strategies as a strategic management at IPA from the employees' perception?	**Questionnaire and Interview**
	5. How can IPA successfully implement the KMBS model?	**Comparison with Literature Review and KM Model**

Produced for the purpose of this study

Table 5.7 shows the design plan for data collection and research analysis designed to answer the questions of the research problem. The first question will be investigated through review of existing literature and primary data of case study interviews and documents. The second, third and fourth questions will be investigated by means of a triangulation analysis via a questionnaire and interviews. The last questions will be studied by means of a comparison between the literature review found in this field and the KM model resulting from this research.

5.5 Data collection Techniques:

5.5.1 Questionnaire Survey:

The questionnaire is defined as "*a general term to include all techniques of data collection in which each respondent is asked to respond to the same set of questions in a predetermined order*" (Vaus, 2002, P.94). The questionnaire can be used to gather data, when the issues which arise are likely to be confidential and sensitive and to give respondents more time to consider their answers (Collies and Hussey, 2003, P.281).

It provides an efficient way of collecting responses from a large sample prior to quantitative analysis (Saunders et. al, 2009, P.281). It is also a relatively quick method of conducting a study. It is partly for this reason that this study used the questionnaire to obtain a better range information within the limited time for the fieldwork. The aim of using it was to reflect individual attitudes and opinions related to critical success factor for knowledge management strategies. In addition, it would cover a large number of IPA staff in KSA.

On the other hand, the disadvantages of questionnaires can be summarised, according to Vaus (2002) and Robson (2002), as follows:

- The possibility of a low response rate, particularly when respondents have no special interest in the subject of the questionnaire.
- The questionnaire provides no opportunity to clarify questions or to overcome any unwillingness to answer particular questions.
- One cannot be sure who has completed the questionnaire.

These disadvantages were tackled by adopting various processes in the questionnaire design stage, including the review of initial questionnaires by experienced academic staff in order to make it as easy and attractive to complete as possible. The extensive use of questionnaires is appropriate for the following reasons:

- To cover a large number of staff in IPA.

- To deal with a culture in which staff prefer giving information through questionnaires rather than interviews. This is because the members of staff are not allowed to give information about their managers in interviews. Everyone would have had to ask for permission to take part in an interview. Even if management agreed, tape recorded interviews would not have been tolerated because of concern that the tape would be passed on to the managers, thereby making the recording of a large numbers of the interviews problematic.

The use of a questionnaire survey seemed one of the most appropriate instruments to use to answer the study questions, because it represents a relatively inexpensive means of collecting information, and usually provides a rapid turn-around time. The first step in designing the questionnaire is to define and describe the phenomenon clearly in order to identify the concept to be measured (Remenyi et al., 2003; Punch, 2009). The criteria for a good questionnaire can be categorised as that it provides the necessary information, the response is fitting, and the editing, coding and data processing requirements are built up.

By reviewing a wide range literature on KM and BSC (see Chapter Three), a standardised questionnaire was created to collect data from the field research study. The researcher used the ideas from other successful questionnaires in related fields and adapted them for this research. Careful attention was taken regarding clarity of wording and simplicity of questionnaire design.

Questionnaire design issues were taken care of including: cover page to explain the purpose and importance of the research, clear instructions given, and answers were to be recorded by putting ticks in boxes (Gillham, 2000), initial questions were easy and interesting, questions were short and purposeful, and negative and double-edged questions were avoided (to obtain valid data). Punch (2009) argues that when designing a questionnaire, the researcher should observe three attributes: questionnaires should be focused on the topic, the questions should be short enough to convey the meaning; and the questions should be simple and clear. Collis and Hussey (2003) discuss that when designing a questionnaire, the researcher should try to meet the objectives of the research, in other words to obtain the maximum accurate information, and accomplish that within the available time and with the resources at hand.   Therefore, the researcher, in this study, has tried to carefully structure the questions in order to achieve the objectives and eliminate any bias.

The design of the questionnaire was based on the knowledge gained from the literature (in Chapters Two, Three, and Four) on strategic management, knowledge management, and the balanced scorecard. The questionnaire sought to study in details aspects associated with the success factors of strategic KM projects, and to gain more understanding and make an assessment of the basic elements of BSC from the sample under investigation.

In the present study, most questionnaire questions were closed-ended, and used a five-point scale, so they were easy to complete and to analyse. Specifically, the Likert scale was used in the questionnaire. This is very widely used, and has the added advantage of being relatively easy to develop. Items in a Likert scale can look interesting to respondents, and people often enjoy using a scale of this kind. Scales can be tested for validity and reliability using different

methods. Checking reliability in a questionnaire is more straightforward. By presenting all respondents with the same standardised questions, carefully worded after piloting, it is possible to obtain high reliability of response (McDaniel and Gate, 2002; Robson, 2002, Punch, 2009).

A few open-ended questions were used to allow respondents to add other options. In addition, enclosed with the questionnaire was a letter to the respondent explaining the purpose of the study, and providing assurance of confidentiality and anonymity to the respondent and organisation participating.

The questions in the questionnaire were closed and generated from the collected KM CSFs and different aspects of KM project implementation (provided in Chapter Four). The first part covered the knowledge management resources dimension and its CSFs. The factors were top management support, the organisation structure, storing and retrieving information and KM human resources. The second part covered the knowledge management technology dimension and its CSFs. The factors were processes for knowledge transfer, information and communications technology, and organisational culture for KM. The third part covered the knowledge management learning and innovation dimension and its CSFs. The factors were organisational learning, learning climate, and self-development opportunities. The fourth part covered the KM beneficiaries dimension and its CSFs. The factors were creating advantages for customer and suppliers, performance evaluation and continuous improvement, and external environment knowledge through benchmarking. The last part was about the demographic characteristics such as place of work, position, work experience, and education (Appendix A).

5.5.1.1 Pre-testing the questionnaire:

Pre-testing of the questionnaire needs to be embarked on before it is finally administered. The objective of such pre-testing is to detect possible shortcomings in the design and administration of the questionnaire. The research design was intended to ensure the validity and reliability of the measures as presented below:

5.5.1.1.1 A Panel of Experts:

A measure of the reliability of a questionnaire is the ability of the questionnaire to give the same results when filled out by like-minded people in similar circumstances. Therefore, the original questionnaires were presented to a panel of experts to evaluate the coherence of each item. The reason was to seek suggestions and comments with regards to the wording of the questions, the scale and the structure of the questionnaires. This panel was composed of ten academics in the field of human resources management research and strategic management in IPA organisations and Portsmouth University, who have experience in designing questionnaires and conducting research. They were asked to provide feedback on the overall design, particularly the measurement scales. Their inputs were then considered to improve the design. Several modifications were made to the wording and scaling of certain questions.

5.5.1.1.2 Translated into Arabic Language:

The original questionnaires were prepared in English and then translated into Arabic (the native language of the Saudis) for fieldwork. It was felt that if they were translated the questions would be easily understood and answered by the respondents to give more correct and reliable data.

5.5.1.1.3 Pilot Testing:

The pilot study enabled the researcher to gain some evaluation of the questions' validity and the likely reliability of the data collected and to make sure that the data collected would enable the researcher to answer the research questions. Neuman (2004) argues that by using pilot tests, the researcher increases the reliability of measurements. He further adds that the principle of having pilot study means that the measurements other researchers have used will be replicated.

In this study, a pilot study was conducted with 50 candidates in IPA to validate the contents of the survey instrument and to test the questionnaire. The objectives of the pilot study were to ensure that the survey is clear and concise, to assess the time required to complete the questionnaire, and to make sure that the measurement items reveal their intended meaning. The pilot participants were asked to read the cover letter, complete the survey, and provide feedback, as well as give an overall reaction to the survey based on their experiences. Feedback was used to make necessary adjustments to improve the questionnaire.

5.5.1.2 Sample Population:

Selection of a sample is a fundamental element for a quantitative study. According to Collis and Hussey (2003, p.155) "*a sample is made up of some of the members of a population. A population may refer to a body for people or to any other collection of items under consideration for research purposes*". The target population of the study for the research questions was made up of all IPA employees. Because of the time limit, a sample was selected from the whole population, which is 999 staff members, for many reasons:

- ▪ It would be impracticable to survey the entire population.

▪ The resources limitation of this study.

▪ Sampling saves time especially when there are tight deadlines.

The distribution of the population in IPA in KSA is shown in the following table:

Table 5.8 The Distribution of the Population in IPA's Organisations

Name	Numbers of staff		Total
	No. Of Teachers	No. of Administrators	
IPA Riyadh	402	258	660
IPA Makkah	80	38	118
IPA Dammam	62	45	107
IPA Women's Branch	72	42	114
Total	616	383	999

Source: IPA, Achievements, (2009)

5.5.1.3 Sample Size:

According to Saunders et al. (2009, P.155) "*The larger your sample's size the lower the likely error in generalising to the population*". For this reason, it was determined to work with categorical data to complement the variable population of IPA. In this study the researcher will set the alpha level a priori at .05 which indicates the level of risk; the researcher is willing to take the risk that the true margin of error may exceed the acceptable margin of error, by using Cochran's sample size determination table for categorical data (Bartlett et. al., 2001; Gill and Johnson, 2009, P.130). The sample size decision for the population size (1000) was made up of 278 candidates from IPA's organisations.

Because the community is divided into layers (branches of the Institute, the nature of the work) and is not homogeneous, the researcher had to select the sample using the method of Proportional Stratified Sampling. The sample was made up using the method of proportional allocation so that representatives of each group were included in the same proportion that they were found in the community itself to give a representative sample of the community (Fahmy, 2005, p. 128).

The class size of the sample number (t) = the total sample size (278) x the proportion of class number (t). Consequently, the distribution of the 278 sample staff is shown as follows in Table 5.8 :

Table 5.9 The Distribution of the Sample in IPA's Organisations

Name	Numbers of staff		Total
	No. of Teachers	No. of Administrators	
IPA Riyadh	112	72	184
IPA Makkah	23	10	33
IPA Dammam	17	13	30
IPA Women Branch	20	11	31
Total	172	106	278

5.5.1.4 Data Collection:

After completing the pilot test and finalising the survey questions, the questionnaires were distributed personally by the researcher to the IPA organisations. However, the researcher needed to have access to the required data by establishing an agreement between the researcher and the IPA organisations where the empirical study was going to take a place. Blaxter et al.

(2002) have stated that a reasoned, planned, and modest strategy will be more likely to give the researcher access to the required data. Therefore, this study intended to make a pre-survey contact to get permission from the gatekeeper of the IPA's organisations. The researcher made an initial contact with the IPA gatekeeper to obtain permission to carry out the research plan with consideration as to what is practically accessible and ensured organisational confidentiality. The researcher explained in writing the main objectives, and value of the research, what the outcomes might be and how IPA will benefit from this research. This was attached to a letter aiming to clarifying any questions and to control conditions for survey completion. Moreover, the researcher invited the participants to this study and assured them that any information they give will be kept confidential and they would able to stop participating any time they wished. In addition, the researcher needed to specify who the participants are (teachers and administrators in the IPA), and clarify how long the survey would take to fill in. Furthermore, Blaxter et al. (2002, p.158) stress that all social research should consider ethical issues about privacy, informed consent, anonymity, and the valuable insight of the research. In order to maintain the ethical aspects of the survey research in this study, the researcher took into consideration the contribution of the participants ethically, by involving only those who wanted to take part and informing them about the structure of the survey, and how the study would assure the confidentiality and anonymity of the participants. In addition, all information from the questionnaire will be stored in confidential, locked files.

Due to the nature of the research sampling strategy, it was difficult for the researcher to personally distribute the entire questionnaires. Because of the limited time which the researcher had to collect the required data, the researcher assigned assistants who committed themselves to distributing the remaining questionnaires in the rest of IPA's organisations. They distributed the

questionnaire based on the research sampling strategy. The respondents will be selected and recruited using probability sampling which is characterised by the fact that the sample is selected by chance and there is an equal probability of being selected. The probability techniques in this study use Simple Random to recruit the sample from the research sample from different levels and sections in each IPA organisation.

5.5.1.5 Response Rate:

The survey was completed within three months from October to December 2009. The following table shows the number of responses:

Table 5.10 Response Rate of Study

IPA	Distributed	Returned Questionnaires				Response rate		
		Un usable	Usable	Teachers	Administrators	Teachers	Administrators	Total
IPA Riyadh	184	3	147	75	72	66.9%	100.0%	79.8%
IPA Makkah	33	2	31	22	9	100.0%	72.7%	93.9%
IPA Dammam	30	1	30	17	13	100.0%	100.0%	100.0%
IPA Women's Branch	31	1	30	20	10	100.0%	83.3%	93.8%
Total	278	7	238	134	104	78.4%	97.2%	85.6%

As shown in Table 5.9 the total of distributed questionnaires was 278, and the number of returned questionnaires was 245, from which 7 were excluded because they were useless, or statistically unusable. As a result, the total number of questionnaires completed was 238. The lower the response rate, the higher the likelihood of response bias or non-response error (Hager et al., 2003). Babbie (1990) state that a response rate of 50% is adequate for analysis and reporting, a response rate of 60% is good, and a response rate of 70% or more is very good.

Based on these percentages, the 85.6% response rate of this research could be regarded as very good (Hager et al., 2003).

5.5.1.6 Demographic Characteristics

In order to construct an aggregate profile of the respondents, the following background factors were obtained: place of work, position, work experience, and education. These are described in the following table:

Table 5.11 Respondents' Demographics

Demographic Characteristics N= 238		Freq	%
Work Place	IPA Riyadh	147	61.8
	IPA Makkah	31	13.0
	IPA Dammam	30	12.6
	IPA Ladies' Branch	30	12.6
Position	Number of teaching staff	134	56.3
	Number of administration staff	104	43.7
Work Experience	Less than 5 years	32	13.8
	From 5 to less than 10 years	62	26.7
	From 10 to less than 15 years	50	21.6
	From 15 to less than 20 years	39	16.8
	20 years and more	49	21.1
Education	General secondary certificate	30	12.6
	Post secondary diploma	41	17.2
	Bachelor	39	16.4
	Higher education diploma	19	8.0
	Master	93	39.1
	Doctorate	16	6.7

The above table shows a demographic summary of the sample from the Institute of Public Administration. The main branch is IPA Riyadh. Here, the number of respondents is proportionally greater than that from the other branches; hence the number of employees in this branch (147) represents 61.8% of the study sample. This is followed by Makkah, Dammam and the Women's Branch, where the number of respondents in each branch was almost the same with between 30 and 31 employees and a percentage of between 12.6% and 13%.

The position demographic was split into two groups. The first group consists of teaching staff, that is, teachers and academics who are responsible for the teaching and training services and who make up more than half of the study sample (56.3%). The second group consists of administrative staff, that is employees who work in the administrative offices (43.7%).

It is clear from the Work Experience Demographic that 60% of the respondents had more than 10 years experience, while the lowest rate (13.8%) consisted of those who had less than 5 years experience. This may imply that staff of the IPA has the knowledge and skills to exchange and transfer.

The education demographic showed that 70% of the respondents were Bachelor, Masters or PhD holders which may indicate that the staff in IPA has a high level of education. This may result in a greater creative potential, enabling them to contribute to learning exchange and knowledge management in the IPA.

Overall, these demographic factors provide a good opportunity to examine the dispersion of KM in the Institute of Public Administration. In the last part of this chapter, cross tabulations are run

on all opinions gathered in the survey against these four demographic features to explore the significance of these variables in relation to knowledge management strategies.

5.5.2 Interviews:

As stated earlier in this chapter, the aim of qualitative approaches is to describe and explore phenomena in depth. The interview is probably the most widely employed methods in the qualitative approach being able to collect a rich and detailed set of data (Saunders et. al., 2009). In this study, interviews will be used to gain an understanding of underlying reasons, and to provide insights into the setting of the problem. Furthermore, interviews were used to test the extent to which there was consistency in the responses provided in the questionnaire, and also to confirm the questionnaires' findings. While the survey questionnaire provides assessments of the importance and availability of key elements of successful KM projects, it is the role of the interview to explore how these elements are being implemented and how the strategic processes of KM are adopted to engender the level of change intended by the organisation in order to improve its performance and competitive position.

Interviews have particular strength. They allow questioning to be guided as the researcher wishes and to clarify points that need to be made explicit much more easily than in something like a mailed questionnaire (Punch, 2009). The main advantage according to Robson (2002) is that the interview is flexible and adaptable.

The interviews in this study will be semi-structured; some questions will be structured and others will be open-ended to allow the interviewer to have the opportunity to explore an issue and talk more widely on the topic under investigation. The aim behind conducting these interviews was

to investigate how the KM system is being implemented and to examine the process of strategic management related to KM.

5.5.2.1 Sample Selection for the Interviews

While the survey method in this study was designed to answer 'who', 'what', where', and 'how', the interview technique was used to answer the 'how' and 'what'. The four IPA organisations participated in this stage. Information was to be collected from interviews with people who had key roles in relation to strategic management and knowledge management. The interviewees were the head directors in the four organisations and the directors of the other departments related to strategic management and KM as is presented in the following table.

Table 5.12 The Sample Selection for the Interview

IPA organisations	The interviewees	No. of interviewees
IPA headquarter in Riyadh	Deputy of General Director	3
	Director of Planning & Development Department	
	Director of Quality Support Unit	
IPA in Makkah	Main Director of Makkah Branch	1
IPA in Dammam	Main Director of Dammam Branch	1
IPA Women's Branch in Riyadah	Main Director of Women's Branch	1
Total		6

5.5.2.2 Semi-Structured Interview Design

The interviews were contacted first by phone to explain the purpose of this research and to arrange for a phone call interview. The interview with the director of the Women's Branch was

face to face and conducted at the head office. The rest of the interviews were conducted by phone due to cultural and religious restriction. For the confidentiality and anonymity of the identity the interviewers gave the interviewees alphabetical symbols from A to F, and tape-recorded the interviews with the consent of the interviewees.

The length of time for the interview varied, mainly according to the availability of the interviewee. On average, each interview lasted one hour. Moreover, it was semi-structured; the strategic management for KM and CSFs in KM project implementation was the general theme in the questions that were asked aiming to achieve the study objectives. At the same time the chance was give to the interviewees to comment regarding how KM projects were implemented in IPA and the processes involved. The number of interviews that could be conducted was limited, due to lack of time and resources. However, follow-up calls were made to cover some aspects that were not fully covered in the interview.

Consent was obtained from the organisations to access documents and files regarding KM and strategic management. Anonymity and confidentiality were assured to the interviewee. The interviewees were asked to provide documents, reports, or any useful materials that showed progress in KM projects or the process involved. A report of the findings was to be sent to the interviewees.

5.6 Data Analysis Techniques:

Data analysis is the process whereby researchers take the raw data that has been entered into the data matrix and create information that can be used to achieve the objectives for which the research was undertaken.

5.6.1 Quantitative Data Analysis:

Quantitative analysis approaches allow the reporting of summary results in numerical terms to be presented with a specified degree of confidence.

To have a good interpretation of the data, it is important that data be organised in such a way that they may be analysed efficiently (Punch, 2009). There are a number of computer programmes that can be used to analyse survey research data. The main tool for analysis was the Statistical Package for Social Scientists (SPSS), and Microsoft Excel was used in descriptive statistical data analysis.

As previously stated, one of the main objectives of the questionnaire was to explore the importance and availability of the CSFs of strategic KM projects. The results were tested using the Chi square test and the One-population t-test for one group (one-tail T test) to determine statistical independence, significance being set at the conventional 0.05 level. In addition, the distribution of responses between the categories of a single variable was tested for chance variation using the non-parametric 'goodness of fit' chi square test, where appropriate.   In addition, the researcher conducted independent population t-tests for comparison of two groups and used One Way Analysis of Variance (ANOVA) for comparing more than two independent groups, and, if there were significant differences, the Scheffe test for multiple comparison was used to define the differences between groups.

5.6.1.1 Questionnaire Reliability

Reliability is normally seen as the degree of consistency of a measure. Moser and Kalton (2001) stated " *a scale or test is reliable to the extent that repeat measurements made by it under*

constant conditions will give the same result" (p.353). In other words, the measuring procedure should yield consistent results in a repeated test; hence the greater the degree of consistency and stability in an instrument, the greater is its reliability. The various procedures for determining the reliability can be divided into two groups, external and internal reliability. External consistency procedures compare cumulative test results with each other as a means of verifying the reliability of the measure. The internal consistency of a set of measurement items refers to the degree to which items in the set are homogeneous (Punch, 2009).

The most popular test of inter-item consistency reliability is the Cronbach's coefficient alpha (α) (Cronbach, 1984): the value of α ranges from (0 to 1). The nearer the value of α to 1, the better the reliability is. If the value is low, either there are too few items or there is very little commonality among the items. For the early stages of any research, Hair (1998) suggests that a coefficient of 0.7 or above is desirable. The internal consistency of all the CSFs in the questionnaire was computed using the SPSS v.18.0 reliability test programme.

In order for scientific inferences to be valid, one must first determine the reliability of the research instrument. Thus, prior to data analysis, the research instrument was assessed for its reliability. Reliability refers to the stability and consistency with which the instrument is measuring the concept, and helps to assess the 'goodness' of a measure (Sekaran, 2003; Alsadhan, 2007). In other words, reliability analysis allows the researcher to study the properties of measurement scales and the items that make them up. Bell (2005) believes that reliability is the extent to which a test or procedure produces similar results under constant conditions on all occasions. The reliability analysis procedure calculates a number of commonly used measures of scale reliability, and also provides information about the relationships between individual items

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in the scale that determine the extent to which the items in the questionnaire are related to each other.

Nunnally and Bernstein (1994) recommended that the coefficient alpha should be used as the first test of internal consistency in assessing the reliability of a multiple-item variable. Therefore, the reliability of the scales was tested and Cronbach's alpha was used as the indicator. Cronbach's alpha was also employed, and this provides a measure of internal consistency, which reflects how well each of the items correlates with the entire scale or sub-scale. Although some researchers suggest 0.7 as the accepted cut-off (Hair et al., 2002), a value of more than 0.6 is regarded as satisfactory (Nunnally and Bernstein, 1994).

Moreover, the corrected item-total correlation was utilised. In other words, this study examined the correlations of each item's score with the total scale score in order to investigate whether the items measured the same construct. This method usually subtracts each item's score from the total score to eliminate a false part-whole correlation. Each item's score is then compared with the corrected total score. Although there is no universally agreed cut-off point, the most widely adopted threshold is 0.3 (Nunnally and Bernstein, 1994). Furthermore, if an item has a negative 'corrected item-total correlation coefficient', the item is eliminated from further consideration.

The analysis for four strategies and their critical factors were based on the questionnaire-survey for all IPA organisations. A total of 40 items were used to measure the CSFs of KM projects. All the items used in CSFs for KM projects were measured on a 5-point scale, where 1 represented 'strongly disagree' and 5 represented 'strongly agree'.

The analysis was made for each variable, which can be seen from Table 5.12 (an example of the analysis results is provided in Appendix A). All of the scales had very high alpha scores, ranging from 0.644 – 0.0819, and were well above the generally accepted lower limit of 0.6 (Nunnally and Bernstein, 1994). Additionally, item-total correlation values for all items were greater than 0.3, a very satisfactory outcome according to the recommendations of Nunnally and Bernstein (1994). From these findings, it can be concluded that the constructs are deemed to have high internal consistency and adequate reliability for the next stage of validity analysis.

Table 5.13 Results of Reliability Analysis with Item-Total Correlations and Cronbach's Alphas for KM-Related CSFs

Domain's CSF's	Item-total correlation	Cornbach's alph
1 - Top Management Support domain's CSFs		.690
1-1 The higher administration support the exerted efforts to provide knowledge sources	.526	
1-2 The higher administration provide financial support to build and develop the knowledge sources	.526	
2 - Organizational Structure domain's CSFs		.723
2-1 The institute organisational structure may change and adapt as needed	.575	
2-2 The institute organisational structure helps in information transfer between the administrative	.575	
3 - Storing and Retrieving Information domain's CSFs		.695
3-1 The documents and information kept at the institute are considered important sources to consult if needed	.555	
3-2 The institute encourages the employees to document their knowledge for sharing.	.555	
4 - KM Human Resources domain's CSFs		.819
4-1 The institute seeks to maintain the employees by providing employment development opportunities	.578	
4-2 The highly skilled and highly qualified employees are given greater responsibility and authority	.679	
4-3 The employees are rewarded when they make the effort to transfer knowledge or	.693	

help others to learn		
4-4 The employees at my section are encouraged to take the initiative in using new and innovative methods to perform works	.614	
5 - Processes for KM Transfer domain's CSFs		.760
5-1 The institute is concerned with the collection and integration of important information to refer to as needed	.577	
5-2 The institute is concerned with classifying and coding and maintaining the information to refer to as needed	.611	
5-3 The institute has electronic information systems, aiming to ease knowledge transfer and communication	.612	
5-4 The institute provides all employees with information from all sources such as laboratories, libraries, information backup systems, computers, archives etc	.431	
6 - Information and Communications Technology for KM domain's CSFs		.809
6-1 The institute allows employees to use the office communication equipment (phone, fax, electronic memorandum, Outlook etc.) to facilitate their work	.593	
6-2 The institute makes the internet available to all employees	.655	
6-3 The institute makes available to the employee electronic support systems to obtain information,	.724	
7 - Organizational Culture of Knowledge Transfer domain's CSFs		.644
7-1 The institute organisational culture supports and recognises the importance of exchanging knowledge and experiences between the employees	.503	
7-2 There is mutual trust when employees exchange work-related information within the institute	.462	
7-3 The institute co-ordinate recreational and social activities to maintain good relations among staff	.403	
8 – Organisational Learning domain's CSFs		.813
8-1 Within a single department, the employees exchange knowledge and experiences required to perform their work	.622	
8-2 Within the whole IPA, the teamwork is arranged to exchange knowledge and experiences between the different groups, and departments	.670	
8-3 The IPA encourage the employees to spread and transfer experiences in different ways such as the internal newsletter, and meetings	.600	
8-4 The departments in headquarters and branches exchange knowledge and experiences aiming for improvement	.633	
9 – Learning Climate domain's CSFs		.800
9-1 The IPA encourage employees to learn and engage in continuous professional development	.557	
9-2 The department in which I work regards problems as opportunities to benefit from in developing and improving the work	.686	

9-3 The department in which I work regards mistakes as positive learning opportunities and not as cause for reprimand or punishment	.691	
10 – Self-development Opportunities domain's CSFs		.779
10-1 The IPA provide optional self-development and training programmes as part of the human resource management	.631	
10-2 There are good learning sources available (books, DVDs, CDs etc.) at the institute for each employee.	.642	
10-3 The department in which I work encourages the employees to benefit from the computer technology and information to develop their skills	.577	
11- Creating Advantage for the customers and Suppliers domain's CSFs		.734
11-1 There is joint cooperation between the IPA and the beneficiaries of its services in order to exchange information and experience	.552	
11-2 The beneficiaries' requirements are identified by conducting meetings or interviews with their representatives	.562	
11-3 The IPA is concerned with job market issues and identifying its needs	.523	
11-4 The IPA participates in thought and knowledge exchange with academic organisations and professional societies	.467	
12- Performance evaluation and Continues improvement domain's CSFs		.805
12-1 The IPA evaluates the employees' performance periodically and continuously	.456	
12-2 The IPA evaluates the services it provided to other sectors, for example, programmes, symposiums, debates and conferences	.676	
12-3The IPA develops its own performance and services continuously according to its need	.723	
12-4 The IPA follows the future directions outside its boundaries,	.638	
13- External Environment and Benchmarking domain's CSFs		.756
13-1 The IPA actively seek to adopt good practice in training from within the KSA and abroad through attending conferences, reviewing published researches etc	.608	
13-2 The IPA benefits from comparisons with other institutions of best practice and the implementation of fundamental activities	.608	

5.6.1.2 Construct Validity Using Factor Analysis Technique:

Validity is the extent to which differences found with a measuring tool reflect true differences among the respondents being tested (Cooper and Schindler, 2003). The usual approach is to factor analyse the set of items (CSFs) for each domain separately to check for 'unidimensionality' or 'unifactorial'. A factor (in this case the CSF dimension) is 'unifactorial'

if all its items (CSFs) estimate only one construct. The analysis was undertaken using the factor analytic procedure in the SPSS statistical software package (version 18.0). The Kaiser-Myer-Oklin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity (Field, 2000), which is acknowledged as one of the best measures of determining the suitability of a set of data for subsequent factor analysis (Field, 2000), were used to examine the data in order to determine whether a factor analysis should be undertaken. According to Field (2000) and Hair et al. (2002), the value of KMO should be 0.5 or greater.

Subsequently, communalities for all the items were tested. Then the principal components factor analysis (PCFA) procedure, with varimax rotation, was used in all cases to provide the 'simple structure' needed for interpretation. In keeping with the usual principal components approach, only factors with eigenvalues greater than one were returned (Hair et al., 2002). To determine the minimum loading necessary to include an item in its respective construct, Hair et al., (2002) suggested that variables with loadings of 0.50 or greater are considered practically significant.

However, certain requirements need to be fulfilled before factor analysis can be successfully employed. One of the most important requirements is to measure the variables by using interval scales. Using a 5-point Likert scale in the survey questionnaire fulfilled this requirement. Another important criterion is that the sample size should be more than 50 since factor analysis generally cannot be used with fewer than 50 observations (Hair, 1998). However, this requirement has been fulfilled, because there were 238 respondents in this research.

As Table 5.13 shows in the second column, the KMO value for measurement of sample adequacy (MSA) gives the computed KMO value for each domain equal or above the acceptable level of 0.5 (Field, 2000) (an example of the analysis results is provided in Appendix A). All

factor loadings were higher than 0.5 (in the third column), so each item loaded higher on its

associated construct than on any other construct. Moreover, all eigenvalues for all domains are

greater than the acceptable level of one. Furthermore, more than 50% of the variance of each set

of CSFs was explained by its respective domain. In addition, all the domains are 'unifactorial'

and therefore, have construct validity.

Table 5.14 Results of Factor Analysis

Domains for KM-related CSFs	KMO value	Factor Loading	Eigenvalue	% Variance explained
1 - Top Management Support	.500	.874 - .874	1.526	76.313
2 - Organisational Structure	.500	.885 - .885	1.566	78.280
3 - Storing and Retrieving Information	.500	.840 - .840	1.412	70.623
4 - KM Human Resources	.799	.755 - .843	2.593	64.830
5 - Processes for KM Transfer	.757	.641 - .811	2.339	58.471
6 - Information and Communications Technology for KM	.691	.812 - .888	2.172	72.399
7 - Organisational Culture of Knowledge Transfer	.641	.717 - .803	1.755	58.512
8 – Organisational Learning	.803	.775 - .830	2.565	64.136
9 – Learning Climate	.682	.782 - .878	2.148	71.584
10 – Self-development Opportunities	.697	.806 - .849	2.081	69.352
11- Creating Advantage for Customers and Suppliers	.739	.690 - .780	2.228	55.703
12- Performance Evaluation and Continuous Improvement	.754	.647 - .870	2.531	63.283
13- External Environment and Benchmarking	.500	.897 - .897	1.608	80.413
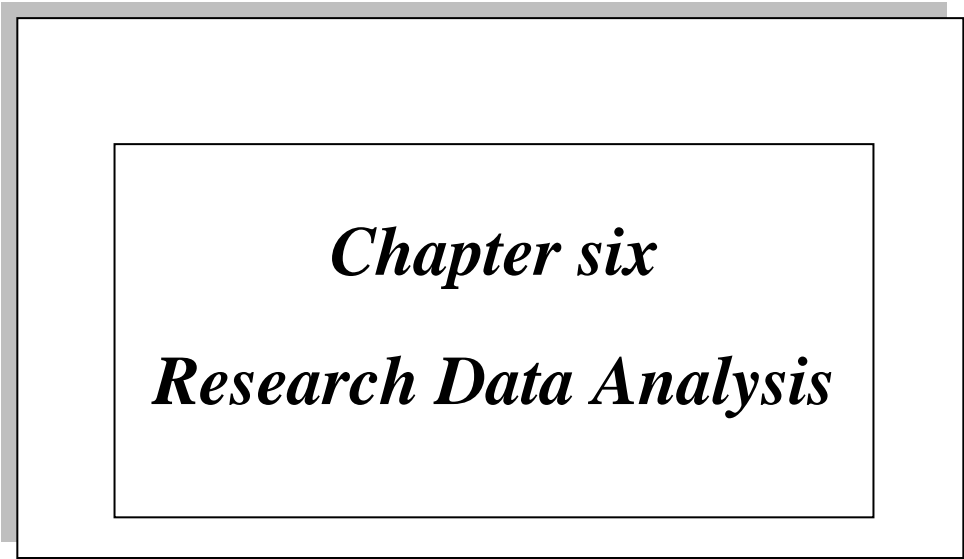
5.6.2 Qualitative data analysis

In this research, the qualitative data stemming from the interviews (transcribed from the tape

recordings) and collected documents from participated organisations had to be analysed. To

analyse the open-ended questions, content analysis was adopted. Content analysis is a scientific

instrument and a methodological research design that is used in analysing the apparent content of a certain subject in a systematic and objective way, aiming to arrive at certain reasoning (Krippendorff, 2004). This technique was used to analyse the qualitative data in order to identify other hidden factors that allow organisations to implement a strategic KM project effectively or prevent it from doing so.

5.7 Summary

This chapter reviewed and discussed some of the research design and methodological issues that researchers need to deal with. The chosen methodology has been justified according to the research objectives, and subsequent procedures have been highlighted to provide an integrated discussion and conclusive statements, which will guide the next phase of the research process. In addition, the chapter attempted to briefly clarify the debates on quantitative and qualitative research, and concluded that neither is superior to the other. Consequently, the triangulation approach has been adopted to combine the quantitative and qualitative approaches used to collect and analyse data. The researcher has chosen to apply a questionnaire survey and interview method. This has allowed richness of data and a comprehensive treatment of implementation elements which constitute the holistic approach to strategic KM. In the case study strategy, self-administrated questionnaires sent through a gatekeeper to be distributed, semi structured interviews and organisation's reports, documents etc. are used for the analysis.

Chapter six

Research Data Analysis

6.1 Introduction

This chapter presents a descriptive, exploratory and explanatory statistical analysis of the previously outlined data that was obtained from four IPA institutions, namely in Riyadh, Makkah, Dammam, and the Women's branches of the Saudi public sector. This analysis will be based on the theoretical model for KM strategies in these four organisations which was introduced earlier in Chapter Four. The analysis of the research findings is covered in two chapters (Chapters Six and Seven). This chapter will consider the strategic planning for knowledge management, and KM strategies with their success factors in IPA. It will also explore the significant differences in personnel's responses to the KMBS in IPA according to their demographic characteristics such as place of work, position, work experience, and education.

This chapter reports on the results of the study undertaken to assess and test the basic assumptions and theory of the main framework of Strategic Knowledge Management stated in Chapter Four. Quantitative methods were used to describe and measure the success factors, relationships and patterns across and within the IPA organisations. The questionnaire sought to study in details aspects associated with the success factors of strategic KM projects, and to gain more understanding and make an assessment of the basic elements of BSC from the sample under investigation. In this study the questionnaire investigated the implementation of KM and the availability of knowledge management success factors in IPA. While the process aspects were investigated using qualitative methods, the interviews aimed to capture qualitative perspectives of the strategic knowledge management and to measure the importance of the success factors. In addition, the interviews has been used in this study to check for themes and issues not covered by the framework and for differences in the interpretation of key factors.

This chapter is based on the empirical case study results of triangulation quantitative and qualitative analysis. The aim of this chapter is to analyze the information obtained from the questionnaires and the interviews on the practices of KM in KSA stated in Chapter Five.

6.2 Questionnaire Method:

As mentioned in Chapter Five, the data were collected from all the IPA branches; a survey questionnaire was distributed to 278 employees in different sectors throughout the four IPA organizations. 245 questionnaires were returned, an 85.6% response rate. The data collected were analyzed using the SPSS package (version 18) and Microsoft Excel 2007. Descriptive statistics, such as frequencies, means and percentages were used along with standard statistical analysis techniques, Chi-Square, T-Test, and the Post-Hoc Multiple Comparison Test (Scheffe).   The theories of the main statistical analysis procedures used in this research were introduced in Chapter Five.

In this section the research was carried on to investigate the KM strategies in IPA in order to answer the second question of the research, 'What are the success factors for effective KM strategies at IPA?'   KM strategies were studied from four perspectives within IPA and the following sub-questions formulated:

a)   What are the success factors for knowledge resources strategy?

b)   What are the success factors for knowledge management information technology strategy?

c)   What are the success factors for knowledge management learning and innovation strategy?

d)   What are the success factors for knowledge management beneficiary strategy?

6.2.1 Knowledge Management Resources Dimension:

In this section, the data is interpreted to arrive at solutions to the four questions by relating them

to the theoretical concepts of knowledge management resources using both financial and non-

financial resources. This section will answer the first sub-question:

What are the success factors for knowledge resources strategy? These factors are identified as

(see Chapter Four):

- Top management support

- The organisation structure

- Storing and retrieving information

- KM human resources

The Ranking Analysis of the Success Factors of the Knowledge Management Resources:

The following figure 6.1 shows the ranking analysis of sub-factors related to the **Knowledge**

Management Resources (see Appendex-B) Chi-square results refer to results of the 'goodness

of fit' test on 'agree' and 'disagree' responses:

**figure 6.1 Knowledge Management Resources
(Financial and Non-Financial) in IPA (N=238)**

1-Top Management support

Higher administration supports the exerted efforts to provide knowledge sources — 149.37

Higher administration provides financial support to build and develop the knowledge sources — 218.30

2-The Organisation Structure

The institute's organisational structure may change and adapt as needed — 66.86

The institute's organisational structure helps information transfer between the administrative… — 134.35

3-Storing and Retrieving Information

The documents and information kept at the institute are considered important sources to be consulted if… — 192.22

The institute encourages the employees to document their knowledge for sharing — 154.87

4- KM Human Resources

The institute seeks to retain the employees by providing employment development opportunities — 73.21

The highly skilled employees are given greater responsibility and authority — 44.21

The employees are rewarded when they make the effort to transfer knowledge — 33.17

The employees in my section are encouraged to take the initiative in using innovative methods — 87.28

0   100   200   300

■ Strongly Disagree   ■ Disagree   ■ Neutral   ■ Agree   ■ Strongly Agree

The results from Figure 6.1 can be sorted (in descending order of Chi-Square) to illustrate the sub-factors of success for knowledge management resource availability in the application of KM inside IPA. In each case, the percentage of 'strongly agree' and 'agree' were as follows:

Top management support in IPA in the figure above explores a consistency agreement in both statements. The majority of the respondents 87% (53.4%+33.6%) and (Chi-Square 218.30) felt that the higher administration provides financial support to build and develop the knowledge sources. This level of agreement suggests that top management commitment is available to support KM application in IPA. The **Organizational Structure** of IPA shows in order to look at how it is perceived to deal with change. There was a level of agreement in 66.4 % (47.9%+18.5%) and (Chi-Square 134.35) of respondents suggest that the organisational structure helps information transfer between the administrative levels to occur easily and smoothly. While half of the staff felt that the structure may change and adapt as needed. Looking to the **Storing and Retrieving Information factor**, the majority of respondents had a high level of agreement on both statements (82% and 75%) respectively and (Chi-Square 192.22). This suggests that documents and information kept at the institute are considered important sources. This reflects also in the participation of individuals in documenting their knowledge for sharing. **KM Human Resources** Factor, it can be seen that there is no differences between the first and fourth statements. Concerning HR knowledge, more than half of respondents 60% and (Chi-Square 87.28) were encouraged to take the initiative in using new ideas to do their jobs, and IPA provides a good retention to develop the employees. The low scores of agreement on the second and third statements (43.9% and 37.8%) which indicated that IPA did not empower the highly skilled and qualified employees less and they are not rewarded for knowledge transferring.

In the following section, variance procedures are analysed to assess and test the difference between factors. The results of t-tests in Tables 6.1 can be sorted in descending order according to the main factors of the knowledge management resource dimension (financial and non-financial resources) success inside IPA.

Table 6.1One-Sample t-test of Statistical Significance of Knowledge Management Resources in IPA

Knowledge Management Resources	Mean	One-Sample T-test		
		Standard deviation	t-statistic	Sig. (1-tailed)
1-1 Top Management Support	3.9916	0.6874	13.277	*0.000
1-2 Organisational Structure	3.5441	0.9284	2.395	*0.009
1-3 Storing and Retrieving Knowledge	4.0336	0.7484	13.062	*0.000
1-4 Human Resources that Supported Knowledge Resources	3.3550	0.9084	12.82	*0.000
Total	3.6556	0.6542	6.029	*0.000

* Significant at level 0.05

The results in Table 6.1 above are found to be very significantly different from the mid-point 3.0 (P<0.05). The overall mean of **Knowledge Management Resource Strategy** was 3.6556. This suggests that the current systems of top management, organisational structure, and storing and retrieving knowledge are available success factors for the application of knowledge management strategies in IPA. In contrast, human resource KM is a less successful factor in the application of knowledge management strategies in IPA. These results indicate that individuals do not seem to work together or exchange ideas; neither are there sufficient resources to enable them to quickly and easily obtain the knowledge that they need from different sources.

6.2.2 Knowledge Management Technology Dimension (Internal Process)

In this section, the interpretation of the three-factor solution was accomplished by relating them to the theoretical concepts of the Internal System of the IPA. This section will answer the second sub-question which is:

What are the success factors for knowledge management information technology strategy?

These factors are identified as (see Chapter Four):

- Processes for Knowledge Transfer

- Information and Communications Technology for KM

- Organisational Culture of Knowledge Transfer

The Ranking Analysis of Success Factors of the Knowledge Management Technology Dimension (Internal Process):

The following Figure 6.2 shows the ranking analysis of sub-factors related to the **Knowledge Management Technology** Dimension (Internal Process) (see Appendix-B). Chi-square results refer to the comparison of the 'goodness of fit' test results of the 'agree' and 'disagree' responses:

Figure 6.2 Knowledge Management Technology Dimension (Internal Process) in IPA (N=238)

5 - Processes for KM Transfer

The institute is concerned about the collection and integration of important information — 138.23

The institute is concerned about the classification and coding and maintenance of the information — 98.78

The institute has electronic information systems which aim to make knowledge transfer easier — 207.74

The institute provides all employees with information from all sources — 79.91

6 - Information and Communications Technology for KM

The institute allows employees to use the office communications equipment — 237.24

The institute makes the internet available to all employees — 179.18

The institute makes available to the employee electronic support systems to obtain information — **252.37**

7 - Organizational Culture of Knowledge Transfer

The institute's organisational culture supports exchanging knowledge and experiences between… — 157.57

There is mutual trust when employees exchange work-related information within the institute — 98.59

The institute co-ordinate recreational and social activities to maintain good relations among staff — 184.22

0   100   200   300

■ Strongly Disagree   ■ Disagree   ■ Neutral   ■ Agree   ■ Strongly Agree

The results in figure 6.2 can be sorted (in descending order of Chi-Square) to illustrate the availability of the sub-factors for **Knowledge Management Technology** in the application of KM in IPA. In each case, the percentage of 'strongly agree' and 'agree' were as follows:

There was a strong level of consistency agree over all (80%) of the three statements on **Information and Communications Technology for KM.** This suggest that IPA allows employees to use the office communications equipment to facilitate their work (Chi-Square 237.24), also, the IPA makes available to the employee electronic support systems to obtain information (Chi-Square 252.37), while the statement on IPA provides all employees with information from all sources came very low (Chi-Square 79.91).

According to the four statements **of Processes for KM Transfer**, there was a majority agreement of over 70% of respondents. The result suggests that IPA has electronic information systems which aim to make knowledge transfer easier (Chi-Square 207.74).

It can be seen that there is no large differences between the three statements of **Organisational Culture of Knowledge Transfer.** The majority of respondents (76%) stated that IPA organisation culture supports the social activities to maintain good relations among staff and recognises the importance of exchanging knowledge and experiences between the employees. While more than half of the respondents felt that the level of trust was low when employees exchanged work-related information within the institute.

In the following section, variance procedures are analysed to assess and test the difference between factors. The results of t-tests in Tables 6.2 can be sorted in descending order according to the main factors of Knowledge Management Technology success inside IPA.

Table 6.2 One-Sample t-test of Statistical Significance of Knowledge Management Technology in IPA

Knowledge Management Technology	Mean	One-Sample T-test		
		Standard deviation	t-statistic	Sig. (1-tailed)
2-1 Processes of Knowledge Transfer	4.0406	0.6274	15.752	*0.000
2-2 Information and Communications Technology for KM	4.2500	0.7517	17.44	*0.000
3-2 Organisational Culture for Knowledge Transfer	3.8158	0.7011	9.149	*0.000
Total	4.0364	0.5675	17.302	*0.000

* Significant at level 0.05

The results in Table 6.2 above were found to be very significantly different from the mid-point 3.0 (P<0.05). The overall mean of **Knowledge Management Technology (internal Process)** was 4.0364. This suggests that the current internal system processes, information and communications technology for KM, and the organisational culture of knowledge transfer are available success factors for the application of knowledge management strategies in IPA.

6.2.3 Knowledge Management Learning and Innovation Dimension:

In this section, the interpretation of the three-factor solution is accomplished by relating them to the theoretical concepts of the Knowledge Management Learning and Innovation Dimension in IPA. This section will answer the third sub-question which is:

What are the success factors for knowledge management learning and innovation strategy? These factors are identified as (see Chapter Four):

- Organisational Learning
- Learning Climate
- Self-development Opportunities

The Ranking Analysis of Success Factors of the Knowledge Management Learning and Innovation Dimension:

The following Figure 6.3 shows the ranking analysis of sub-factors related to the **Knowledge Management Learning and Innovation** Dimension (see Appendix-B). The Chi-square results refer to results from the 'goodness of fit' test for 'agree' and 'disagree' responses:

Figure 6.3 Knowledge Management Learning and Innovation dimension in IPA
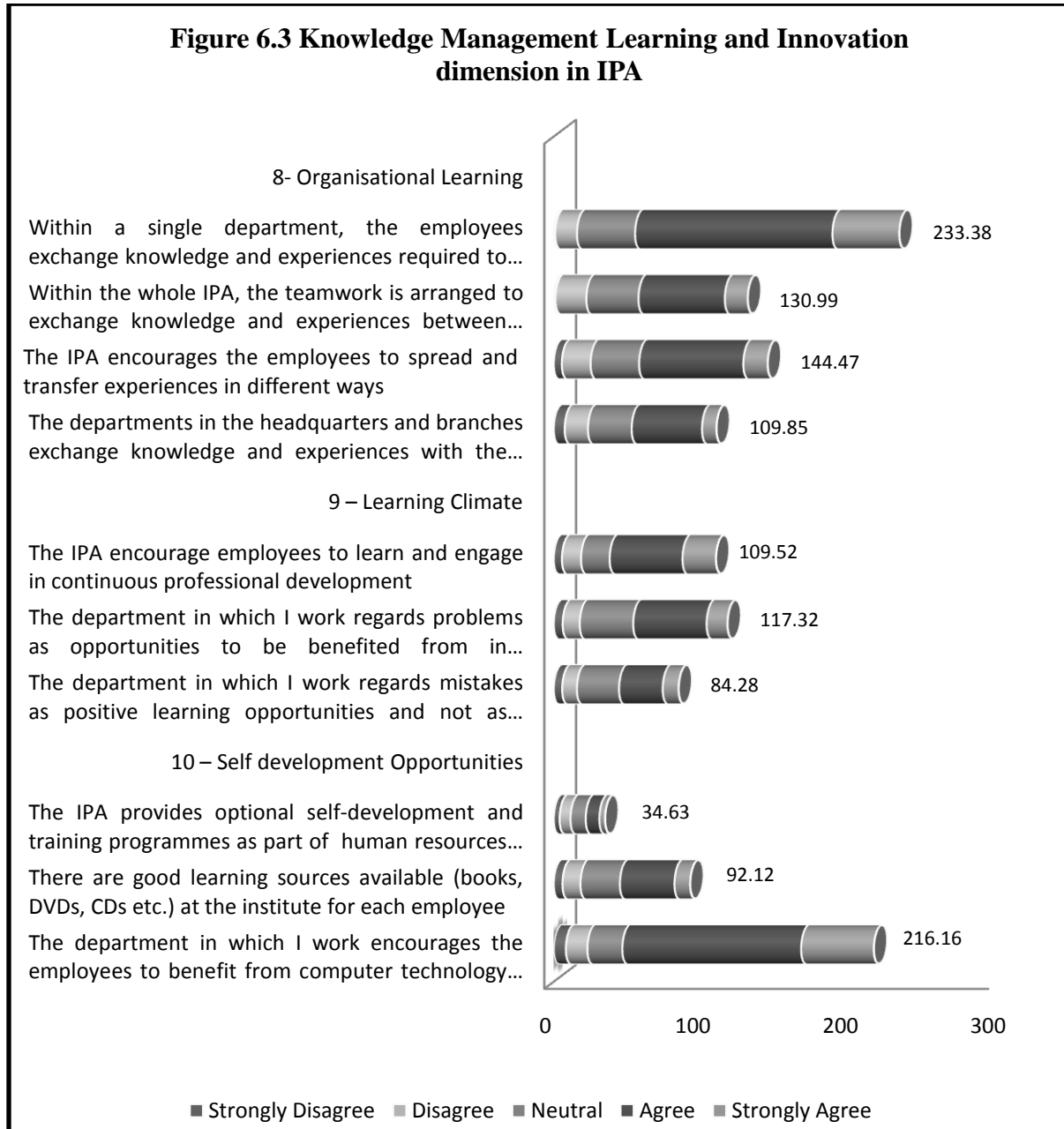
The results in figure 6.3 can be sorted (in descending order of Chi-Square) to illustrate the availability of the sub-factors for **Knowledge Management Learning and Innovation** in IPA. In each case, the percentage of 'strongly agree' and 'agree' were as follows:

Figure above shows **Organisational Learning** in IPA, there was a strong agreement from 76.4% (57.1%+19.3%) and (Chi-Square 233.38) of respondents on the statement of exchanging knowledge and experiences internally.

Learning Climate in IPA shows there was more than an average agreement from 65.6% (45.0%+20.6%) and (Chi-Square 117.32) of respondents on the second statement that "The department in which I work regards problems as opportunities to be benefited from in developing and improving the work".

Table demonstrates **Self-development Opportunities** in IPA, some noticeable differences between the three statements were recognised. It appears that, from the statement of the employees benefited from computer technology and information to develop their individual skills had a strong agreement with 78.6% (55.9%+22.7%) and (Chi-Square 216.16) of respondents. While in the second statement half of the staff felt there were good learning sources available at the institute for each employee. However, the low scores on the first statement indicated that the majority of respondents did not have self-development and training programmes as part of human resources management (Chi-Square 34.63).

In the following section, variance procedures are analyzed to assess and test the different between factors. The results of t-tests in Tables 6.3 can be sorted in descending order according to the main factors of Knowledge Management Learning and Innovation in IPA.

Table 6.3 One-Sample t-test of Statistical Significance of Knowledge Management Learning
and Innovation in IPA

Knowledge Management Learning and Innovation	Mean	One-Sample T test		
		Standard deviation	t-statistic	Sig. (1-tailed)
3-1 Organisational Learning	3.5567	0.7533	3.210	*0.001
3-2 learning climate for KM	3.4867	0.8825	15.500	*0.000
3-3 Self-development Opportunities	3.4342	0.8903	14.45	*0.000
Total	3.4988	0.7392	2.063	*0.020

* Significant at level 0.05

The results in Table 6.3 above are found to be very significantly different from the mid-point 3.0 ($P<0.05$). The overall mean of **Knowledge Management Learning and Innovation** in IPA was 3.4988.   This suggests that the organisational learning is available success factor for the application of KM strategies in IPA. In contrast, the organisational climate for KM, and self development opportunities are less success factors in the application of KM strategies in IPA. The result clearly emphasises a learning climate that is not healthy; it appears that the strategic processes of this climate are poorly developed. A possible explanation for this may be the hierarchical relationship between individuals and their line-managers meaning that they are always inclined to ask their managers for instructions and orders if they are uncertain.

6.2.4 Knowledge Management Beneficiaries Dimension (External Knowledge)

In this section, the interpretation of the three-factor solution was accomplished by relating them

to the theoretical concepts of the Knowledge Management Beneficiaries dimension (external

knowledge) in the IPA. This section will answer the last sub-question which is:

D. What are the success factors for knowledge management beneficiaries strategy? These

factors are identified as (see Chapter Four):

- Creating Advantages for the Customers and Suppliers

- Performance Evaluation and Continuous Improvement

- Obtaining External Environment Knowledge through Benchmarking

The Ranking Analysis of Success Factors of Knowledge Management Beneficiaries

Dimension (external knowledge):

The following figure 6.4 shows the ranking analysis of sub-factors related to the **Knowledge**

Management Beneficiaries Dimension (external knowledge) (see Appendix-B). Chi-square

results refer to the results of the 'goodness of fit' test for 'agree' and 'disagree' responses:

Figure 6.4 Knowledge Management Beneficiaries Dimension (External Knowledge) in the IPA (N=238)

11- Creating Advantages for Customers

There is joint cooperation between the IPA and the beneficiaries of its services — 136.24

The beneficiaries' requirements are identified by conducting meetings with their representatives — 130.27

The IPA is concerned with job market issues and identifying its needs — 171.50

The IPA participates in thought and knowledge exchange with academic organisations — 202.97

12- Performance evaluation

The IPA evaluates the employees performance periodically and continuously — 208.49

The IPA evaluates the services it provided to other sectors — 181.03

The IPA develops its own performance and services continuously according to its need — 139.01

The IPA follows the future directions outside its boundaries — 192.21

13- External environment knowledge

The IPA actively seek to adopt good practice in training from within the KSA and abroad — 206.16

The IPA benefits from comparisons with other institutions of best practice — 132.29

0   100   200   300

■ Strongly Disagree   ■ Disagree   ■ Neutral   ■ Agree   ■ Strongly Agree

199

The results from figure 6.4 can be sorted (in descending order of Chi-Square) to illustrate the availability of the sub-factors of the Knowledge Management Beneficiaries dimension in KM in IPA. In each case, the percentage of 'Strongly agree' and 'Agree' were as follows:

Figure above represents **Performance Evaluation** and Continuous Improvement **w**ith the vast majority of staff agree strongly with these statements. It appears that, IPA evaluates the employee's performance continuously and the services it provides to other sectors. More than have of respondents 66% (47.1%+19.3%) and (Chi-Square 208.49) stated that IPA develops its own performance and services continuously according to its need.

 External Environment Knowledge through Benchmarking shows there was concerning learning from best practice IPA actively seeks to adopt good practice in training from within the KSA and abroad, this came with level of agree of respondents 79% (53.4%+25.6%) and (Chi-Square 206.16). More than half of staff agree that IPA benefits from comparing itself with other institutions' best practice, the percentages of respondents who agreed were 62.6% (45.8%+16.8%).

 Creating Advantage for the Customers and Suppliers came with 74% (54.4%+19.8%=74.2%) and (Chi-Square 202.97) agreed with the statement of IPA participates in thought and knowledge exchange with academic organisations and professional societies and related organisations.

In the following section, variance procedures are analysed to assess and test the different between factors. The results of t-tests in Tables 6.4 can be sorted in descending order according to the main factors of Knowledge Management Beneficiaries in IPA.

Table 6.4 One-Sample t-test of Statistical Significance of Knowledge Management
Beneficiaries in IPA

Knowledge Management Beneficiaries	Mean	One-Sample T test		
		Standard deviation	t-statistic	Sig. (1-tailed)
4-1 Creating Advantage for the customers and Suppliers	3.6418	0.6842	5.452	*0.000
4-2 Performance Evaluation and Continues Development	3.8361	0.7145	9.417	*0.000
4-3 External Environment and Benchmarking	3.7941	0.8430	7.213	*0.000
Total	3.7514	0.6446	8.410	*0.000

* Significant at level 0.05

The results in Table 6.4 above are found to be very significantly different from the mid-point 3.0
($P<0.05$). The overall mean of the **Knowledge Management Beneficiaries dimension** was
3.7514. This suggests that creating advantage for customers and suppliers, performance
evaluation and continuous improvement, and the external environment and benchmarking are
available success factor in the application of knowledge management strategies in IPA.

**6.2.5 The significant differences in personnel's responses to the KM Strategies in IPA
according to their demographics**

This part aims to answer the third question of this research which is: "What are the significant
differences in personnel's responses to the KM strategies in IPA according to their demographic
characteristics such as place of work, position, work experience, and education?"

This section was investigated via a triangulation methods questionnaire and interview. Following
is a results analysis and interpretation:

6.2.5.1 The significant differences in personnel's responses to the KM strategies in IPA based on place of work

Table 6.5 The significant differences within IPA based on place of work

Strategies of KMBS	Work place	Mean	F	P value	Scheffe
Knowledge Management Resources strategy	1) **IPA Riyadh**	3.7377	3.403	0.018*	(1) greater than (2)
	2) **IPA Makkah**	3.3806			
	3) **IPA Dammam**	3.4889			
	4) **IPA Ladies Branch**	3.7044			
Internal System of Knowledge Resources	1) **IPA Riyadh**	4.0551	1.360	0.256*	Null
	2) **IPA Makkah**	3.9251			
	3) **IPA Dammam**	3.9281			
	4) **IPA Ladies Branch**	4.1681			
Learning Opportunities	1) **IPA Riyadh**	3.5576	6.046	0.001*	(4) & (1) greater than (2)
	2) **IPA Makkah**	3.0487			
	3) **IPA Dammam**	3.4022			
	4) **IPA Ladies Branch**	3.7726			
The Beneficiaries' Requirements	1) **IPA Riyadh**	3.8137	4.046	0.008*	(4)&(1) greater than (2)
	2) **IPA Makkah**	3.4484			
	3) **IPA Dammam**	3.6004			
	4) **IPA Ladies Branch**	3.9100			

*Significant at level 0.05

The results in Table 6.5 reveal the following results:

There are significant differences in the opinion of respondents in the various IPA work places on

the adoption of **Knowledge Management Strategies** in IPA. The Post-Hoc Multiple

Comparison Test (Scheffe) was used to investigate these differences. It shows that there is a

significant difference in the respondents' opinion about the **Knowledge Management**

Resources Strategy in IPA Riyadh is significantly more than the mean opinion in IPA Makkah. By contrast, there are no significant differences between opinions of the personnel in the other IPA work places.

There are no significant differences in the respondents' opinions in the various IPA work places on the adoption of the **Internal System** of Knowledge Management in IPA. While there are significant differences between the opinions of respondents in various IPA work places of **Learning Opportunities** in IPA work places. The result shows that the mean opinion of personnel of learning opportunities in IPA Riyadh was significantly more than the mean opinion of personnel in IPA Makkah, while there is no significant difference between the opinions of personnel in other IPA work places. Also availability means that the number of learning opportunities in the IPA Ladies Branch was significantly more than in IPA Makkah. By contrast, there are no significant differences between other work places.

There are significant differences in the respondents' opinions of the **Beneficiaries' Requirements** in the various IPA work places. The mean opinion on the beneficiaries' requirements in IPA Riyadh was significantly more than the one in IPA Makkah. Moreover, the mean opinion on the beneficiaries' requirements in the IPA Ladies Branch was significantly more than the one in IPA Makkah. By contrast, there were no significant differences between the other IPA branches.

6.2.5.2 The significant differences in personnel's responses to the KMBS in IPA based on position

Table 6.6 The significant differences in IPA based on position

Strategies of KMBS	Work nature	Means	T value	P value	Differences
Knowledge Management Resources strategy	Teaching staff	3.5064	4.129-	0.000*	Significant difference
	Administration staff	3.8480			
Internal System of Knowledge Resources	Teaching staff	3.9983	- 1.176	0.241	No difference
	Administration staff	4.0855			
Learning Opportunities	Teaching staff	3.3835	- 2.770	*0.006	Significant difference
	Administration staff	3.6474			
The Beneficiaries' Requirements	Teaching staff	3.6614	- 2.470	*0.014	Significant difference
	Administration staff	3.8673			

*Significant at level 0.05

Table 6.6 shows the following results:

There are significant differences between the opinions of teaching staff and the opinions of administrative staff on the adoption of **Knowledge Management Resources Strategy** in IPA. The mean of the administrative staff's opinions were significantly higher than values for the teaching staff's opinions. While, there are no differences between the mean opinions of teaching staff and of administrative staff of the **Internal System of Knowledge Resources Strategy** in IPA. There are significant differences between the opinions of teaching and of administrative staff of **Learning Opportunities Strategies.** The mean of the administrative staff's opinions were significantly higher regarding the adoption of Learning Opportunities Strategies than values for the teaching staff. There are significant differences between the means of respondents regarding the adoption of the **Beneficiaries' Requirements Strategies.** The means of the administrative staff's opinions on the adoption of the Beneficiaries' Requirements Strategies were significantly higher than those of the teaching staff.

6.2.5.3 The significant differences in personnel's responses to the KMBS in IPA based on years of experiences

Table 6.7 The significant differences in IPA based on years of experience

Strategies KMBS	Years of experience	Mean	F	P value	Scheffe
Knowledge Management Resources strategy	1) Less than 5 years	4.0135	3.215	0.014*	1 >2 &1>5
	2) From 5 to less than 10 years	3.5695			
	3) From 10 to less than 15 years	3.6620			
	4) From 15 to less than 20 years	3.5932			
	5) 20 years and more	3.5571			
Internal System of Knowledge Resources	1) Less than 5 years	4.2250	1.596	0.176	No difference
	2) From 5 to less than 10 years	3.9201			
	3) From 10 to less than 15 years	4.0660			
	4) From 15 to less than 20 years	4.0587			
	5) 20 years and more	4.0170			
Learning Opportunities	1) Less than 5 years	3.8969	3.867	0.005*	1 >2 &1>4 &1>5
	2) From 5 to less than 10 years	3.4177			
	3) From 10 to less than 15 years	3.5622			
	4) From 15 to less than 20 years	3.3202			
	5) 20 years and more	3.3460			
The Beneficiaries' Requirements	1) Less than 5 years	4.0542	4.083	*0.003	1>4
	2) From 5 to less than 10 years	3.7018			
	3) From 10 to less than 15 years	3.8320			
	4) From 15 to less than 20 years	3.4712			
	5) 20 years and more	3.7327			

*Significant at level 0.0

The results in Table 6.7 show the following:

There are significant differences in the respondents' opinions of **Knowledge Management Resources Strategy** in IPA according to the employees' years of experience at IPA. It shows that the mean opinion of Financial and Non-Financial Knowledge Resources for (less than 5) years is significantly more than the mean opinion Knowledge Resources for (5 years to less than 10) and (20 years and above). By contrast there is no significant difference between values for the mean opinions for other IPA employees relative to their years of experience.

There are no significant differences between the respondents' mean opinions of the Internal System of Knowledge Resources in IPA with respect to the employees' years of experience. However, There are significant differences between the respondents' opinions of **Learning Opportunities** in IPA according to their years of experience. It shows that the value for the mean opinion on the adoption of Learning Opportunities for (less than 5 years) experience was significantly more than of Learning Opportunities for (5 years to less than 10), (15 years to less than 20), and (20 years and above). By contrast there is no significant difference in the mean opinions for other employees with respect to their years of experience.

There are significant differences between the respondents' opinions of the **Beneficiaries' Requirements** in IPA according to the employees' years of experience. It shows that the mean opinion on adopting the Beneficiaries' Requirements for (less than 5 years) experience was significantly more than (15 years to less than 20). By contrast there is no significant difference between mean opinions for employees' with other years of experience.

6.2.5.4 Significant differences according to employees' mean degree of opinion of KM strategies based on levels of education

Table 6.8 Significant differences in IPA based on levels of education

Strategies KMBS	Years of experience	Mean	F	P value	Scheffe
Knowledge Management Resources strategy	1) Secondary	4.0200	8.554	0.000*	1&3 >5&6
	2) Diploma after secondary	3.7322			
	3) Bachelor	3.9322			
	4) High diploma	3.8456			
	5) Master	3.4215			
	6) PhD	3.2375			
Internal System of Knowledge Resources	1) Secondary	4.3233	3.200	0.008*	1 >5&6
	2) Diploma after secondary	3.9547			
	3) University	4.1385			
	4) High diploma	4.1257			
	5) Master	3.9649			
	6) PhD	3.7688			
Learning Opportunities	1) secondary	3.9007	5.380	0.000*	1 >5&6 and 3>5
	2) Diploma after secondary	3.4645			
	3) University	3.7379			
	4) High diploma	3.6865			
	5) Master	3.3131			
	6) PhD	3.1069			
The Beneficiaries' Requirements	1) Secondary	4.0004	4.142	0.001*	1&3 >5
	2) Diploma after secondary	3.7823			
	3) Bachelor	3.9564			
	4) High diploma	3.9322			
	5) Master	3.5832			
	6) PhD	3.4688			

* Significant at level 0.05

The results in Table 6.8 illustrate the following results:

There are significant differences between the respondents' opinions of the **Knowledge Management Resources Strategy** in IPA according to their levels of education. It shows that the mean opinion on Knowledge Resources for those who were educated to Secondary and Bachelors level is significantly more than the mean opinion for those who were educated to Masters and PhD levels. By contrast, there is no significant difference between mean opinions for IPA employees with other levels of education.

There are significant differences between the IPA employees' levels of education with respect to the respondents' opinions of the **Internal System of Knowledge Management** in IPA. It shows that the mean opinion on the Internal System of Knowledge Management in IPA for those who were educated to secondary level is significantly more than the mean opinions for those educated to Masters and PhD levels. By contrast, there is no significant difference between opinions of IPA employees with other levels of education.

There are significant differences between the IPA employees' levels of education with respect to the respondents' opinion of **Learning Opportunities** in IPA. It shows that the mean opinion on Learning Opportunities of those who were educated to secondary level was significantly more than the mean opinions for those educated to Masters and PhD levels. In addition, the mean opinion on Learning Opportunities of those who were educated to university level was significantly more than the mean opinion for those educated to Masters level. By contrast, there is no significant difference between the opinions of IPA employees with other levels of education.

There are significant differences between the levels of education of IPA employees according to the respondents' opinions on the adoption of the **Beneficiaries' Requirements** of Knowledge Management in IPA. It shows that the mean opinion on the implementation of the Beneficiaries' Requirements of Knowledge Management in IPA of those who were educated to secondary level was significantly more than the mean opinions of those educated to Bachelors and Masters levels. By contrast, there is no significant difference between the opinions of IPA employees of other levels of education.

6.3 The Interviews Methods:

As previously stated in the background on SA and IPA in Chapter Two, the Saudi public sector provides many development programmes and has make some efforts in this respect. The IPA has raised the level of importance of the administrative system and human resources development. Therefore, KM has always been given a high priority in the Kingdom of Saudi Arabia as can be seen in the amount of concern, education and training devoted to it in the development plan. In order to answer the first question of the research problem as stated in Chapter One, 'How does knowledge management strategy fit into the wider strategic management system?', an investigation using interviews and primary resources (as suggested in Chapter Five) was carried out to examine knowledge management and strategic planning at IPA. This section will focus on the description and analysis of the qualitative data collected for this study. It will investigate knowledge management and strategic planning at IPA, and the importance of each success factor of the KM project. Three interviews were carried out in the headquarters and one interview in each branch. The required data for writing the case-study was collected from the organisation records. For triangulation, both primary data from questionnaires and interviews, and secondary data from corporate brochures were used.

6.3.1 Knowledge Management at IPA:

As mentioned in Chapter Two, in order to enhance the educational standards of graduates and to train government employees, the government established the Institute of Public Administration (IPA). The history of KM at IPA started in 1998 with a cultural change towards a customer-centred organisation. Since that time, IPA has undertaken various KM initiatives. However, many of those initiatives were not integrated and did not involve formal action plans extending across the organisation. IPA realised that knowledge was crucial to the establishment of long-term customer relationships. The KM initiative is considered a part of TQM and a cultural change project which will transform IPA into a customer-focused organisation. Interviewee C stated:

> "*Since the introduction of quality into the Institute of Public Administration, several teams have been formed to continuously improve the activities of the institute. Specific examples of such projects are: the application of a quality project to training activities, the application of a quality project to the consulting activities, application of a quality project to research activities, application of quality to the printing activities.*"

Making a qualitative leap in all the institute's training programmes and transitioning from a training programme with a long duration to short one, these programmes were named in IPA, "Power-One". This lead to developments in all the training programmes, and to improvements in the portfolios and training materials which were used. In addition, improvements were made in the materials and technical potential in training rooms, laboratories, and as well as others, including improvements in the technical equipment in the halls and offices of members of the training teams.

In accordance with developments in modern information technology, the IPA Computer Centre (CC) works on promoting the information culture among the IPA staff by tracking computer developments and updating its computing and internet services. The CC also supports training activities through two departments: the Applications and System Developing Department (ASDD) and the Service Recipients Department (SRD). In addition to the technical support services that the CC provides to IPA and to its branches, the CC has developed and set up several computer systems at IPA, which is a giant stride towards complete computerisation of its activities and products.

Another initiative was to transfer all activities in support of training to an electronic environment, including records of registration, admission, attendance and absenteeism, and monitoring grades, and to enable these tasks to be accomplished more easily from multiple locations, from the offices of the members of the training team.

It was believed that the external transference and sharing knowledge was important, and this was associated with a network of information which was shared by many universities and local research institutes and in addition with some other universities, in order to facilitate the exchange of information and telecommunications in the area of research with any other global communications network such as BITNET in the United States, NORTH NET in Canada, EARN in Europe, and JANET in Britain.

An integrated document management system is another KM initiative at IPA. This helps support the role played by the Institute of Public Administration in the field of administrative development in the Kingdom, and the rapid increase in the importance of the acquisition and documentation of intellectual productions for the administrative activities of the institute in the

areas of training, research, consultancy and management development and for the Kingdom in general. The General Administration of Libraries and Documentation has three types of responsibilities: for libraries, for storing and maintaining government documents and for maintaining IPA's archives.

At present, IPA's libraries are among the most important in the Kingdom and in the Arab World. They aim to prepare and organise information bases in all disciplines which are related to the various activities of the institute and also to facilitate access to them. The libraries are well-known for having the latest information on administrative sciences and other related disciplines, such as law, accounting, economics, etc.

The Documentation and Archives Centre is responsible for collecting and organising administrative and organisational documents.   The Documentation Section also offers documentation services to government agencies and researchers, offering them direct access to the document information base (IPA, Information Guide Objectives and Activities, 2009).

6.3.2 IPA Strategic Management and KM Strategies:

As previously stated in chapter two, in light of the comprehensive development the Kingdom is witnessing and within the framework of Total Quality Management that IPA has adopted, the IPA mission is as follows (IPA, Quality Application Guide, 2009):

> *"The Institute of Public Administration works to achieve administrative development in the Kingdom by providing distinctive and efficient services to the government and private sectors that meet the users' expectations and gain their satisfaction."*

The IPA's vision can be stated briefly as follows (IPA, Information Guide Objectives and Activities, 2009):

"The Institute of Public Administration endeavours to be distinct, pioneering and leading in the provision of high quality services in the field of administrative development that will be exemplary at the local, regional and international levels."

IPA strategic management reflect the institute's future vision and mission and its policy, and aims to link all the administrative processes of the institute in a harmonious way to achieve its objectives in the short- and long-term to result in customer satisfaction with the services it provides.

The strategic planning processes in IPA go through many steps as top level managers gather together to translate the strategy and mission of the IPA into specific strategic objectives. Interviewee B stated

"top management sets the general plan and objectives for IPA activities and then they are assigned to the Computer Centre applications to formalise the details and implement the fine print."

In the next step, top level management translates high level objectives into operational objectives and communicates the strategy effectively throughout the organisation. Interviewee B stated that:

"It is important that managers at all levels of IPA understand long-term strategy and departmental goals are aligned with it"

After that the management at the lower level sets the targets for their departments and adjusts the targets where necessary in order to achieve breakthrough objectives and move towards the long-term strategic objectives. Interviewee B stated:

"There is a clear mechanism for data collection and analysis required to prepare a strategic plan."

For strategic feedback, top management receives feedback on whether the strategy implementation is proceeding according to plan, and whether the strategy itself is successful. As Interviewee B said:

"In the strategic planning system in the computer system, the review of the plans is on a regular basis so that updating and developing the plans can be considered."

The data indicates that existing knowledge will have an influence on strategic plan, but does not determine strategic plans. Interviewee A stated:

"we used the existing knowledge from our past experience in the last year as guidance to plan the next one. Rarely, we used an external need analysis from the market."

In relation to strategic management for **KM,** as expected all participating interviewees strongly agreed that developing a good KM strategy was a crucial condition for successful implementation of strategic management. They also insisted that without an accurate plan for KM, the implementation of strategic management would definitely have failed. They all strongly agreed that KM required a clear vision, mission, values and strategy. In essence, a clear KM strategy that covers both types of knowledge, tacit and explicit, or internal and external, is needed. As Interviewee A stated:

" .. We had our vision, mission, and values before even thinking of KM and I think our system and culture may affect the starting point of KM strategies." He added *"One of the main objectives of top management is to think and manage more strategically at all levels."*

The KM strategy at IPA is not formalised and announced. It concentrates more on a codification approach in which there is a tendency towards building, organising, and maintaining knowledge repositories (the productivity application system).

6.3.2.1 Knowledge management Resource:

In this section, the interview interpretation is accomplished from the strategic point of view of the top managers in IPA's organisations about the KM resource as follow:

6.3.2.1.1 Top management support and commitment

Primarily, all interviews strongly agreed that having top management support and commitment is very crucial for KM application. They believe that motivation can come from senior managers and 'move up' to the general director or can be ordered from 'the top down'. All interviewees stated that top management support is indispensable to achievement of knowledge management success. As indicated by Interviewee A:

"Senior managers are driving the IPA strategy and are very committed and supportive of KM because they have found that the KM initiative has helped them to realise the benefits of our intangible assets."

All participating interviewees strongly agreed on the importance of allocating adequate and necessary resources, including monetary, human and technological, as they are critical factors for KM implementation. Moreover, all the IPA organisations were supported by top management by the provision of sufficient budget. According to Interviewee B:

"Every year we have a sufficient budget for all KM initiative projects which is used for technology systems, employees' training and development, knowledge acquisition, etc..."

6.3.2.1.2 Organisational Structure:

All participating interviewees strongly agreed that the organisational structure affects the KM sharing critically. At present, since IPA is a government organisation, it has a hierarchical and bureaucratic structure that hinders knowledge sharing and transfer. Interviewee A explained the

IPA's organisational structure as a hierarchy which consists of a singular point of power at the top with subsequent levels of power beneath. He stated that:

   "The relation between the General Director and his subordinate administration is a sequence from the Director to the Deputies and then down to the department managers ... indeed, the structure of IPA was designed by the government ... ... changes in structure take place very slowly which is not appropriate for modern requirements".

The interviews result seems to reflect the pattern of centralisation in the hierarchical structure of IPA as reflected in the view of the interview B who stated:

   "Due a lack of budget the IPA could not provide and supply its resources to make them accessible for all individuals and departments.... in short branches does not have own budget."

This result implies that the organisational relationships are formal and highly centralised.

6.3.2.1.3 Storing and Retrieving Documents:

Since one of IPA objectives is to store and maintain historical documents and any other document provided from activities of other government agencies and it is considered important to restore and to be able to retrieve such documents when needed. all participating interviewees strongly agreed on the importance of storing and retrieving documents. Interviewee A stated:

   "IPA classifies government documents and facilitates their access".

IPA provides sources of knowledge and information through its role of documenting, recording, classifying, and storing documents and archives from all government agencies. Also, procedures have been developed for the maintenance and retrieval of government documents in the documentation centre, and to facilitate access by government agencies, through the electronic network making it easy to share and transfer knowledge between users or researchers. In

addition, the research of the department into the role of disseminating thoughts and administrative culture encourages authors and researchers to publish their original works, and to translate into Arabic outstanding international works in the field of administration.

6.3.2.1.4 HRM

Job rotation is almost the only notable human-based initiative formally undertaken by IPA. Interviewee B explained:

"*IPA has placed a high value on applying job rotation principles for several years.*"

All IPA's top managers strongly agreed that focusing too much on processes and technology, and not enough on people issues could destroy KM-based human resources.

IPA tries to fill knowledge gaps within the organisation by recruiting people with the appropriate skills. In terms of employee retention, due to the hierarchical structure employed by the organisation, employee empowerment is only moderately applied. The rotation career process at IPA aims to identify the capacity and skills of members of staff. Interviewee B pointed out the importance of the rotation career process as a means of employment retention when he said:

"*The rotation career process assists staff in highlighting administrative abilities and talents and identifying strengths and weaknesses in leadership skills and giving opportunities for development and career growth.*"

One of the modern management techniques practiced by the IPA which allows for the largest number of employees to perform most kinds of work is organised as a rotation career line with vertical and horizontal movement.

Regarding the rewards system, IPA does not have any formal mechanism to provide financial rewards to members who create, share, or use knowledge, but there are non-financial rewards such as publishing the name of employees who participate in 'volunteer work' in the IPA magazine or weekly newsletter.

6.3.2.2 Knowledge Management Internal System at IPA

In this section, the interview interpretation is accomplished from the strategic point of view of the top managers in IPA's organisations about the KM internal system.

6.3.2.2.1 KM processes

Primarily, all participating interviewees strongly agreed that there should be specific KM processes to acquire knowledge, store and organise it, and share and disseminate it in a systematic way to enable employees to access and reuse it easily. They also maintained that these KM processes should be linked to IPA processes to sustain KM practices within the organisation. All KM processes are implemented by joint venture missions that will supply the organisation with the key knowledge and expertise that is needed. This knowledge will be organised, stored, transferred (within the same member organisation and to other members) and hopefully applied in an effective way. Interviewee A said: "*All employees in different stages should have access to knowledge when they need it*". In this respect interviewee B added:

   "*Currently employees are sharing information and explicit knowledge through the knowledge database and productivity systems*".

However, the lack of structural mechanisms for knowledge creation, sharing, and leveraging makes it very difficult for many employees to access particular knowledge or even to be aware that knowledge is out there and needs to be leveraged. IPA has not applied a formal knowledge

structure or map to its knowledge repository. In addition the knowledge systems are updated irregularly by people in the IT department or by top managers in each department. It is the responsibility of the individual employee to classify and organise for future use and application emails and the knowledge they contain.

6.3.2.2.2 Technical infrastructure:

Generally, all participating interviewees noted that building an effective ICT infrastructure that supports KM processes, integrating the KM system with other information systems, and using software tools effectively to facilitate knowledge flow are critical in successful KM application. Typical approaches were followed by IPA organisations in using IT to facilitate the generation, organisation, storage, manipulation and sharing of internal and external knowledge. Interviewee D stated: *"Building a KMS with databases, search and retrieval engines, collaborative tools, groupware or even with intelligent systems is very common in IPA".*

All IPA organisations used an intranet, an internal information system based on web technologies. Through the intranet the employees of each organisation can search the knowledge in the system internally, for example for productivity systems. All interviewees strongly agreed that the intranet can empower sharing efforts by integrating databases and information sources to provide a kind of one-stop shop for knowledge. In addition, use of the intranet lowers communications costs related to the printing, mailing, and processing of documents. Interviewee C stated: "*These internal systems can improve productivity by making information more widely and quickly accessible.*" Using the right technology, creating an infrastructure and providing and facilitating access to managers and employees with necessary knowledge is critical for decision-making and solving problems. In term of integration, IPA has integrated a database system with

an extranet, which is a collaborative network that uses internet technology to link IPA with other government agencies, customers and other organisations. IPA has built an effective ICT infrastructure that supports and facilitates KM processes. All necessary databases, servers, communications devices, tools and security systems were built and utilised to assist and support the application systems.

6.3.2.2.3 KM culture:

All IPA organisations strongly agreed that a knowledge-friendly culture is crucial for KM success, a culture that is open and built upon trust, cooperation and collaboration among employees and across departments. Interviewee E stated: "*IPA's culture encourages employees to socialise and share their ideas and thoughts, so that new knowledge can be created, acquired knowledge can be reused*".

The participating interviewees all maintained that the ability, willingness, and readiness of people to create, share, and transfer knowledge heavily depend on the corporate culture. Interviewee A said "*KM systems that embed "Western" assumptions about organisational practices and that impose specific, homogenous ways of communication through technology, it might create cultural clash when these do not fit the adopting culture's norms*". At IPA there is strong trust among employees, they share knowledge, and this is part of the culture in the organisation: " *... the door is always open for any one wants to meet the senior managers and have a chat with them about any problem related to work...*", said Interviewee D.

Collaboration and knowledge-sharing among employees all exist to a moderate degree, according to Interviewee C stated "*at IPA level, many traditional bureaucracies have entrenched structures and practices that can hamper information flows and departmental coordination.*" He

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added "IPA *is prepared for knowledge sharing; you see that most people are very positive about sharing and exchanging what they know with others."* He also added *"But there are some people lacking confidence who fear sharing information in case they lose their power or lose their knowledge or position, or somebody becomes better than them. And those threats also exist, unfortunately*". The Institute of Public Administration encourages its staff to spend time together at some public events, through concerts hosted at the beginning and end of each year, training, and celebration days as well as organising tours and competitions for employees of IPA and their families. The social activity in IPA and its branches are reflected clearly in various social activities, where everyone can communicate and connect with each other, and experience all forms of human interaction, offering congratulations for joyful occasions or support and condolences for difficult ones.

6.3.2.3 Knowledge Management for Learning and innovation

In this section, the interview interpretation is accomplished from the strategic point of view of the top managers in IPA's organisations about the KM for learning an innovation

6.3.2.3.1   Organisational Learning

Organizational learning is increasingly viewed as the deciding factor in whether an organisation is able to retain employees and improve their performance or improve its competitive position locally and internationally. All the interviewees strongly agreed on the importance of organisational learning in IPA; Interviewee A believed that learning and innovation is important for any new system, stating: *"I strongly believe that learning and innovation is very important either for KM or any other new system.... learning from previous experiences may help us to improve our work system continuously*."

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Individual employees can achieve learning from facilities and learning sources available in IPA, as Interviewee B said:

   "*Every employee in IPA has got his own computer and personal access to all sources of information and knowledge in IPA.*" adding "*one way to develop the individual's skills is for them to participate in a training programme where there is a weakness or need.*"

The training programmes are available for employees when the standard of their performance is lower than satisfactory or when new technology is introduced. For example, new staff are integrated into an extensive training programme for two weeks for the purposes of social adjustment into the IPA culture and community; this helps staff to identify their colleagues and understand details of the work at IPA.

The cooperation and sharing of knowledge and information between employees in the same department or between departments in the same organisations was well implemented. Interviewee E stated:

   "*IPA encourages staff to take the initiative, to cooperate and to take collective action and share responsibility in order to consolidate the mental image of the IPA as a distinct organisation for both staff and trainees.*"

 Exchange of knowledge and experience in IPA by working together as teams and committees is very much in evidence, and takes places in various places, for example, in the audit committee and in the committee of information and technology, and in teams working on isolated projects such as the design of programmes. There are consultant teams and quality teams; all these teams are put together from different departments in the spirit of teamwork and joint action. Interviewee B said:

   "*Top management motivates employees to learn and innovate by participating in most of our activities and listening to opinions and comments.*"

IPA encourages organisational learning by encouraging their employees individually by answering their questions and correcting mistakes, or encouraging them in small or large teams or on an organisational level to learn through interactions and by sharing knowledge between participants from different departments.

In IPA, organisational learning is practised informally. There are processes for knowledge creation and generation by means of partnering with the research institutes, by benchmarking, gaining customer knowledge through customer evaluation, knowledge organisation and storage through building knowledge repositories and productivity systems; by knowledge sharing through storytelling; by exchanging emails and engaging in meetings; and knowledge application by reusing others' knowledge and expertise. However, these KM processes and activities are not linked to the daily tasks of IPA employees.

6.3.2.3.2 Organisational Environment for KM:

All the interviewees strongly agreed of the importance to the organisational learning environment. As all managers confirmed that IPA employees have their own unique of personality and conducting behaviour, as the Director of Quality Support Unit said " *... internally the IPA employees are sharing language, meaning, objectives and standards that are significantly different from other organisation."* While the Director of Planning and Development Department stated " *IPA generates a social synergy that creates knowledge, adding value to the IPA's knowledge workers and to its overall performance"*. The Deputy of General Director said "*we also attempt to create a learning and innovation environment by encouraging employees to participate in the different activities and accept their suggestions and comments*". It seems unlikely that there will be support for the kind of learning needed to avoid

mistakes and for viewing problems as opportunities to develop. This may be because staff are worried that their mistakes will be punished. In relation to avoiding mistakes, Interview A referred to these paternalistic assumptions;

> "*Some individuals do not have enough experience to deal with the problems and mistakes that face them during their work, which can be related to a lack of training programmes and education. Therefore, they ask their managers; however, when they make mistakes, we question them and punish them*"

In this respect, the interviewee B stated that

"the IPA supports its staff in gaining knowledge and learning from experience, but their anxiety about making mistakes and punishment limits their efforts."

6.3.2.3.3 Self Development Opportunities:

Staff felt there was little encouragement to take responsibility for their own self-development. Interviewee B states;

"*IPA does not have any self development plan or programmes, but we encourage employees to use the facilities available that create knowledge, adding value to IPA's knowledge workers and to its overall performance.*"

It seems unlikely that new learning will take place unless there is a motivation to activate the learning process, which is subject to the behaviour of managers in fostering this approach.

This was supported by the statement from interviewee A:

> "*There are not many training programmes for teaching staff in IPA. Indeed, we look forward to having training programmes that will increase the knowledge and skills of individuals.*"

6.3.2.4 External Knowledge Management

In this section, the interview interpretation is accomplished from the strategic point of view of the top managers in IPA's organisations about the External KM as follows:

6.3.2.4.1 Creating Advantages for the Beneficiaries (Customers and Suppliers):

In IPA, following the total quality management model, initiatives aimed at capturing knowledge from customers include the use of suggestion boxes, face-to-face interviews and a customer's services centre. Acquired customer feedback is subsequently documented and distributed to relevant department so they can take necessary action.

Communications with suppliers is also important in IPA, as they are a source of knowledge in their attempts to promote their products. As Interviewee C stated: "*IPA creates customer surveys to measures our customer satisfaction and obtain their comments.*"

The IPA website has been developed on the internet; the addition of various features makes it easier for the site visitor or candidates to use the website and deal with their requirements. The application of electronic transactions in the IPA for all interaction with other agencies, including nominations for training, require all parties to adopt the concepts and applications of electronic transactions to match the technical sophistication of the procedures of the institute. This has led to the development of procedures and facilities and increases the number of beneficiaries of the services of IPA.

6.3.2.4.2 Continuous Improvement:

IPA periodically reviews its training programmes and curricula to meet the requirements of government agencies and reflect developments in management theory and practice. Interviewee B stated:

> "*Change is not easy ... But IPA stimulates the employees by providing them with some seminars about the benefits of modern systems ... some inside and outside training was also arranged*"

IPA has also improved application processes and provided an online application facility to simplify application admission and query procedures.

The IPA system integrates all sources of data and, by doing so, capitalises on all knowledge in terms of historical data which can be used to improve decision-making in a variety of areas including services development, and strategic planning. It also integrates the results of the assessments of trainees on programmes and of members of the training team from the productivity system and allows many of the relevant parties access to the results of the evaluation, which contributes to the continuous improvement of performance. According to Ahmed et al. (1999), measuring KM is necessary in order to ensure that its envisioned objectives are being attained. According to Interviewee A

> "*I think we are at the stage where we need to formalise our KM approach. It is being addressed in general and informally on the basis of ideas we are linking to corporate objectives*"

6.3.2.4.3 Benchmarking:

All participating organisations strongly agreed that measuring the performance and benchmarking best practices affect KM sharing and implementation. Interviewee C stated:

"There is a need for the strategy of an organisation to be formulated – for a wide formal KM strategy and for programmes to teach best practices and develop new KM projects"
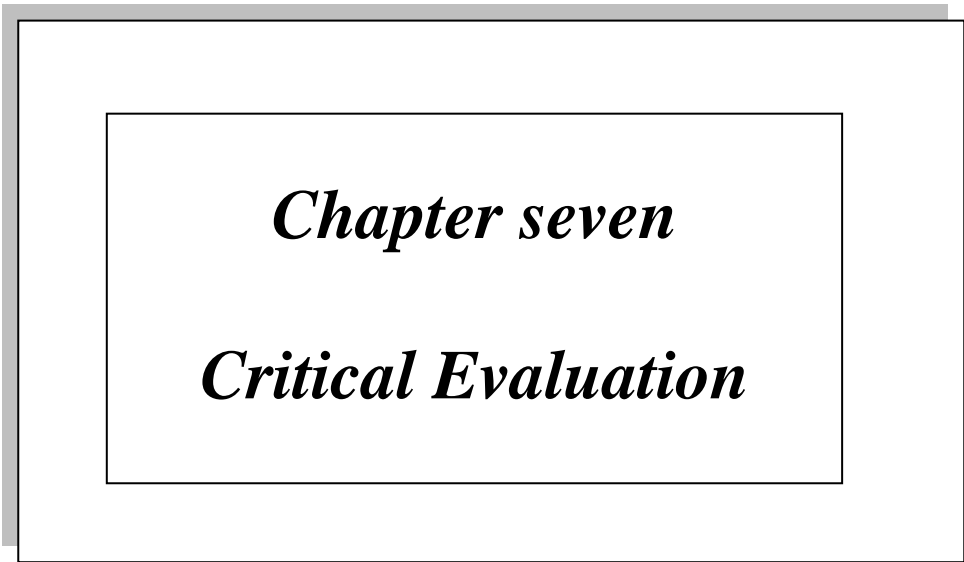
Benchmarking best practices internally and externally was considered very important as a key resource for continuous improvement in IPA. For example, Interviewee B said:

"we keep benchmarking best practices externally by comparing ourselves to other institutions world-wide and getting inspired by the success experience in developments... We are always keen to know where we stand compared to others."

6.4 Summary:

This chapter has presented the results of the empirical case study questionnaire and interviews. The survey findings relating to all parts of the questionnaire instrument were analysed and possible indications from the outcomes were highlighted. The findings on the KM strategies and their factors were ranked according to the mean of each factor. Then a ranking and t-test were conducted to determine the significance of each factor. This chapter also provided a detailed description and discussion of the qualitative data collected. The description of IPA experience of KM strategies and their success factors provided many insights; it remains to be considered how one factor may influence another and the whole KM project. This chapter also offered a cross-analysis. Similarities and differences between respondents' attitudes towards the strategies of the KM project in the four organisations were considered and analysed. This chapter provides an analysis of the quantitative data and qualitative data for this study.

The following chapter provides a comprehensive discussion and interpretation of the analysis of the results, as well as combining the findings of both the quantitative and qualitative studies that have been presented in this chapter in order to obtain triangulation between the quantitative and qualitative date and the relevant literature.

Chapter seven

Critical Evaluation

7.1 Introduction

This chapter provides a comprehensive discussion of the analysis of the results and findings of the quantitative and qualitative data analysis presented in Chapter Six. Moreover, it offers a triangulation between the quantitative and qualitative data, with an investigation of relevant literature. The research design was carefully thought out to answer the following questions:

 (1) 'How does knowledge management strategy fit into the wider strategic management system?' This question was investigated through review of the existing literature, and the results of the qualitative analysis obtained via the interviews data technique and documents which collected from IPA (Addressed in Sections 7.2).

(2) 'What are the success factors for effective KM strategies at IPA?' This question was investigated using the triangulation between the quantitative and qualitative data with scrutiny of relevant literature.   In order to answer this question, KM strategies were studied from four perspectives inside IPA which are as follows: **(a)** What are the success factors for knowledge resource strategy? (Addressed in Section 7.3.1)**; (b)** What are the success factors for knowledge management information technology strategy? (Addressed in Section 7.3.2)**; (c)** What are the success factors for knowledge management learning and innovation strategy? (Addressed in Section 7.3.3)**;   (d)** What are the success factors for knowledge management beneficiaries strategy? (Addressed in Section 7.3.4).

(3) 'What are the significant differences in personnel's responses to the KMBS in IPA according to their demographic (place of work, nature of work, years of experience, years of education?' This question was investigated using the triangulation between the quantitative and qualitative data with scrutiny of relevant literature (Addressed in Section 7.4).

(4) At the end, the results from the previous questions are carried forward to investigate 'How can IPA successfully implement the KMBS model?' (Addressed in Section 7.5 and 7.6)

The findings of the literature review, questionnaire survey, and interviews are presented and analysed in Chapters Three, Four, and Six. This chapter will discuss the result of these findings with an integrating approach, and will validate the results in terms of the literature review. Following from that, a proposed integrated model for the effective KM strategies is suggested, based on a comprehensive perspective.

7.2 The Strategic Management and Knowledge Management Strategies of the Institute of Public Administration (IPA):

As earlier stated in Chapter Four, no previous study had empirically examined KM strategies using the BSC system and tested the effect of success factors in KM projects. With the aims of providing an overview of the existing nature of KM in IPA in KSA, and identifying the nature of the relationship between strategic management and knowledge management in IPA, this research intends to answer the first question of the research stated in Chapter One: **'*How does knowledge management strategy fit into the wider strategic management system?*'** This question was investigated through a review of the existing literature, and the results of a qualitative analysis obtained via the interviews data technique and documents which were collected from IPA (In this section, and further results in Section 7.5 in this chapter).

Based on the analysis of the present study in Chapter Six, the study reveals several elements found to be success to SKM which affect such implementation.

All study findings in this research (Chapters Three, Four, and Six) confirm that existence of a clear mission, vision, and strategy are success factors in KM projects. This result is consistent with findings in previous studies (Davenport et al., 1998; Goh, 2002; Egbu, 2004; Lam and Chua, 2005; Wong and Aspinwall, 2005; Lee, et al., 2010).

In the case of the IPA organisations, top management support would include the strategic planners at the main centre and would flow down to each branch through the directors and heads of departments where power and authority are strongly centralised and controlled by top management and board of directors.

However, the outcome possibilities of strategic plans in IPA can be defined or limited by existing knowledge and the ability of IPA to acquire the required knowledge. Using the existing knowledge can limit strategic plans by restricting what IPA can offer in the way of products and services. Employees in IPA were not involved in policy-making or decision-making. The results showed that few individuals had the chance to take part in, discuss or contribute to any policy decisions. The findings suggested therefore little opportunity for employees to learn through participation and involvement.

The results from the literature review (in Chapters Three and Four), and the interviews in this research strongly confirm that KM strategy and vision is crucial to strategic management in IPA. Therefore, success in implementing strategic knowledge management within an organisation relies on a clear vision, well-designed KM strategy and an implementation approach tailored to the organisation and its components. In essence, the KM strategy must be closely aligned, integrated and linked to the overall strategic management and must produce a tangible result for the organisation as a whole.

By seeing knowledge as a product by separating knowledge from the individual and technology, and capturing and storing knowledge, a clear understanding of an organisation's competence and its ability to scan the external and internal environments can develop strategies which will satisfy corporate objectives, and the organisation's market is redefined. Marr and Adams (2004) emphasise that without a shared understanding of the strategy, executives cannot create alignment around it. Kaplan and Norton (2004b) also believe that without alignment, executives cannot implement their new strategies for the changed environment of global competition, advanced technology, and competitive advantage derived from intangible assets, principally human and information capital.

Over all, the aim of strategic knowledge management is to create a framework which will enable all members of IPA to seamlessly and easily connect to the knowledge they need, whenever they want it, wherever they want it, irrespective of where it resides; and to be able to use it effectively for research, learning and training, and administrative support.

7.3 Knowledge Management Strategies:

One of the main objectives of this study is to follow a comprehensive approach to identify how knowledge is managed at IPA. This study has highlighted a number of elements found to be success to KM strategies. In this section, the study attempt to answer the second question of the research, '***What are the success factors for effective KM strategies at IPA?***' The results of KM strategies and their success factors were studied from four perspectives inside IPA as follows:

7.3.1 Knowledge Management Resources Dimension

In this section, the study attempts to answer the question of the research, '***What are the success factors for knowledge resources strategy?***' All the study findings from the literature review, interviews, and questionnaires confirm that the factor of **top management support** is an important success factor in KM implementation strategies. This result is consistent with previous study findings found in the literature review (Davenport et al., 1998; Egbu, 2004; Yang and Wan, 2004; Hung et al., 2005; Lam and Chua; 2005; Wong and Aspinwall, 2005; Chong, 2006; Yang, 2009). The results from all the study methods used in this research (see Chapters Three, Four, and Six) suggest that the factor of top management support and the success of KM project implementation are positively linked. The result from the survey shows that the employees agreed that this factor was a strong available factor in implementing KM projects. Moreover, the interviews reveal that this factor was considered crucial to achievement of KM success. However, top management support should be ongoing and delivered in practical and public ways (Storey and Barnett, 2000).

In relation to **Organisational Structure**, all of the study findings in this research (in Chapters Three, Four, and Six) confirm that having an enabling structure is an important factor in KM strategy. This result is consistent with previous study findings (Goh, 2002; Walczak, 2005; Chong; 2006; Oliver and Kandadi; 2006). The results (in Chapter Six) from the survey show the employees agreed that this factor was a strong available factor in implementing KM projects. Moreover, the interviews reveal that this factor was considered crucial to achievement of KM success. Based on these findings, in IPA the organisational structure is a hierarchy; in hierarchical organisational structures the employees chiefly communicate with their immediate superiors and with their immediate subordinates. Structuring organisations in this way limits

information flow and hinders sharing and transfer of knowledge through all the different levels of the organisation.

Relating to **storing and retrieving knowledge**, the majority of the study findings in this research confirm that storing and retrieving knowledge is a strong available success factor. This result is consistent with study findings in a few previous studies (Danvenport and Prusak, 2000; Civi, 2000; Grant, 2000; Nonaka et al., 2000; Madhoushi and Sadati, 2010). This factor was ranked number one in terms of level of availability for knowledge resource organisational strategy. In addition, the majority of interviewees reveal that this factor was crucial in implementing KM successfully. This result reveals that documents stored in repositories are very important for IPA and that it is thought that knowledge should be stored somewhere where it can be easily retrieved. Capturing knowledge and lessons learned helps the organisation avoid repeating mistakes and helps it capture expertise before it leaves (Danvenport et al., 1998).

Finally, all of the study findings in this research (in Chapters Three, Four, and Six) confirm that the **KM Human Resource** factor is a success factor in KM project implementation. This result is in agreement with findings in previous studies (Soliman and Spooner, 2000; Chong, 2006; Kong and Cai, 2008; Yahya, 2009). In contrast, the survey suggested that human resources that support knowledge organisational resources in IPA came in as a less available factor in the application of knowledge management inside IPA. The majority of interviewees consider that this factor is crucial in implementing KM successfully, whereas the structure appears to be formal and mechanistic as all the interviewees indicated. Based on these findings, it can be argued that the results indicate that risk-taking is not encouraged so that new possibilities seem unlikely to emerge. Empowering employees is required to encourage the creation and application

of knowledge within an organisation. Empowerment is a driver of knowledge creation. Empowering people gives them a sense of power and authority, thus giving them more room to innovate and explore new possibilities (Wong, 2005; Yahya, 2009).

Based on these findings, it can be argued that it is important to implement **Knowledge Management Resources Strategy** in order to exploit the organisation's existing knowledge.

This reflects a clear picture about the KM resource strategy which suggests that top management support should continuously provide the necessary resources and budget through all KM strategies stages as an important condition of successful knowledge management strategy (Wong, 2005; Chong, 2006). In addition, the hierarchical structure was dominated by the top management and board of directors who retained control and decision-making power. As previously stated in Chapters Three and Four, having a flat or network structure (as opposed to hierarchical or bureaucratic structure) is an important condition for knowledge sharing among employees. Further, a flat or network organisational structures which fosters cross-functional communication and where functional barriers are low, appears to facilitate KM more effectively. In general, over the last decade, it has become increasingly clear that through the forces of globalisation, competition and more demanding customers, the structure of many companies has become flatter, less hierarchical, more fluid and even virtual (Gratton, 2004). Moreover, through empowerment, employers can show they value their employees' expertise and help them communicate their knowledge by creating ways to generate, store and share knowledge. In IPA, employee involvement came in as a less available factor in supporting the implementation of KM. Employee involvement is critical to achieving effective implementation of projects through a sense of ownership amongst employees. Further, organisations must realise that when

employees are involved, they give more commitment during the KM project implementation and begin to think of the best ways of delivering best results in their jobs. Finally, reward systems do not appear to be structured to assist learning and innovation in IPA. The regulation of IPA is achieved through punishment more than reward, which can be a major block to transferring and sharing knowledge.

7.3.2 Knowledge Management Technology Dimension (internal Process)

In this section, the study attempts to answer the question of the research, *'What are the success factors for knowledge management information technology strategy?'* This study clearly shows that **Process Knowledge Transfer** is a success factor in the success of KM project implementation as is supported by Alavi and Leidner (2001), Davenport et al. (1998), Wong and Aspinwall (2005), and Oliver and Kandadi (2006). A review of the survey results shows process knowledge transfer affects the success of the implementation of KM projects with a mean of 4.0406, while the interviews' results show that adopting a KM process is considered crucial to KM strategies. This result indicates that adopting a KM process significantly influences the successful implementation of KM strategies. The internal process of KM should be defined and addressed within the organisation as creating, organising, transferring, and applying knowledge (Alavi and Leidner, 2001; Choi and Lee, 2003; Scholl et al., 2004). In relation to **Information and Communication Technology for KM,** all of the study findings (in Chapters Three, Four, and Six) confirm that building an effective ICT infrastructure is an important factor in supporting KM project implementation. This result is consistent with findings from previous studies (Davenport et al., 1998; Goh, 2002; Wong and Aspinwall, 2005; Chong, 2006). Results from the survey shows the ICT infrastructure is a strong factor with a mean of 4.2500. Moreover, all the

primary interviews reveal that this factor was crucial to the accomplishment of KM. Based on these findings it can be argued that building an effective ICT infrastructure significantly affects the successful implementation of KM projects and requires a full and deliberate communication strategy. Regular communications should be delivered throughout the organisation highlighting the importance and benefits of the KM project, sharing milestones, and informing staff about what will happen next. Many KM strategies fail because the employees cannot see the benefits when they share knowledge (Lam and Chua, 2005). Corresponding to **Organisational Culture** regarding knowledge transfer, it appears that this factor is one of the most significant factors for knowledge management strategies (Wong and Aspinwall, 2005). All of the study findings in this research (Chapters Two, Three, Four, and Six) confirm that the culture of KM is an important factor in KM project implementation. This result is consistent with previous study findings (Davenport et al., 1998; Goh, 2002; Moffett et al., 2003; Yang and Wan, 2004; Hung et al., 2005: Wong and Aspinwall, 2005). This study clearly reveals that the culture of the transfer of knowledge among employees and the success of KM projects are positively linked. Results from the survey shows the mean scores on these statements suggest that the degree of overall culture transferring knowledge is a strong success factor at 3.8158 in the application of knowledge management at IPA. Moreover, all the primary interviews strongly agreed that this factor was crucial to implementation of KM. Moreover, formalisation and centralisation are considered unfavourable to KM transferring. These results indicate the quality of relationships among staff could have a positive impact on the exchange of knowledge and experiences between the employees; the interviews show that this factor was very crucial to achieving success in KM projects.

Based on these findings, it can be argued that there should be specific KM processes to acquire knowledge, store and organise it, and to share and disseminate it in a systematic way to enable employees to access and reuse it easily and effectively. In essence, IPA should therefore set up an adequate information and communication system that would assist access and retrieval of information, and support collaboration and communication between IPA's employees. However, the success of KM initiatives depends more on interpersonal interactions and social relationships than on the technology itself (Yang and Wan, 2004). In effect, a culture of trust and confidence among employees is required to encourage the application and development of knowledge within an organisation. Without a high degree of mutual trust, people will be sceptical about the intentions and behaviours of others and thus they will likely withhold their knowledge (Chong and Choi, 2005).

7.3.3 Knowledge Management Learning and Innovation dimension:

In this section, the study attempts to answer the question of the research, '***What are the success factors for knowledge management learning and innovation strategy?'*** All of the study findings in this research confirm that employee learning and innovation is an important factor in KM project implementation. This result is consistent with findings in previous studies (Goh, 2002; Moffett et al., 2003; Chua and Lam, 2005; Hung et al., 2005; Wong and Aspinwall, 2005; Chong, 2006).

The results from all study methods in this research suggest that the success of KM projects and learning and innovation are positively linked. The results from the survey show the overall mean of **Organisational Learning** 3.556 as an available success factor in the application of KM inside IPA. This result indicates that individuals seem to work together and exchange ideas in a way that

will enable them to quickly and easily obtain the information that they need to understand fully. Basically, the skills and competences of knowledge workers need to be continuously developed in order for them to produce valuable contributions to an organisation (Wong and Aspinwall, 2005). If not, as with other tangible assets, their value will depreciate. Hence, organisations have to provide appropriate professional development and learning activities for their employees through training and education. In relation to **climate learning** KM, as supported by the work of Goh (2002), Egbu (2004), Yang and Wan (2004), Hung et al. (2005), and Chong (2006), this study clearly reveals that organisational climate is a success factor in the success of KM projects. The learning climate in IPA does not seem to be a healthy learning climate with a culture of forgiveness. Anxiety may reduce the level of learning and innovation in IPA because of concern about making mistakes. A learning climate where mistakes and past failures are openly shared and discussed without the fear of punishment is a success condition for success in implementing KM projects. Hence, making mistakes should be viewed as a process of investing in individuals because it can be a key source for the creation of a learning organisation (Yang and Wan, 2004). Relating to **self-development**, it appears that individuals in IPA find it difficult to take the main responsibility and that the managers do not provide appropriate guidance or opportunities for self-development. This is a potential problem because, as Oldham and Gummings (1996) suggests, when managers are highly supportive of their subordinates, it increases the level of individual initiatives at work. An overall mean score of 3.4342 shows this is a less available success factor in the application of KM and offers strong evidence that learning opportunities at IPA do not enable staff to share knowledge across the organisation or to share ideas and experiences.

Based on the findings, it can be argued that **Knowledge Management Learning and Innovation** is an important condition for knowledge transfer to occur between individuals and across a group. This is because knowledge transfer requires individuals to come together to interact, exchange ideas and share knowledge with one to another. Consequently, this will lead to the success of KM projects. The results reflect a clear picture of the learning opportunities in IPA which does not suggest a healthy learning climate, not least because the culture of forgiveness and of learning from mistakes is not widely prevalent. Overall, it should be noted that facilities and resources for self-development in IPA are not accessible to everyone.

7.3.4 Knowledge Management Beneficiaries dimension (external knowledge):

In this section, the study attempt to answer the question of the research, *'What are the success factors for knowledge management beneficiaries strategy?'* This study clearly reveals that **creating advantage for customers and suppliers** is a success factor for the success of KM project implementation as is supported by the work of Greenberg and Baron (2003), Civi (2000), Feng et al. (2001), Kaplan and Norton (2000), Knudsen (2005), Pelaue et al. (2010). The results from all study methods in this research (see Chapters Three, Four, and Six) suggest that factors relating to KM customers and suppliers are positively linked with success of KM projects. The overall mean of creating advantages for customers and suppliers was 3.6418. This result indicates that focusing on customers and suppliers has become an important consideration and an available success factor in the application of KM inside IPA. Moreover, the interviews reveal that this factor was crucial to accomplishment of KM success. Customer-focused knowledge provides knowledge about customer demands in order to justify the internal processes to meet the customer needs; however, it should be taken into consideration that customer needs will undoubtedly change over time. Based on these findings, it can be argued that a complete

understanding of existing customers enables IPA to meet current market challenges which represents a new potential market and source of competitive advantage, as well as being a means of retaining existing customers, and improving customer satisfaction.

In relation to **Performance Evaluation and Continuous Improvement**, all of the study findings in this research (in Chapters Three, Four, and Six) confirm that performance evaluation and continuous improvement is an important factor in KM project implementation. This result is in agreement with findings from previous studies (Ahmed et al, 1999; Bontis, 2001; Yahya and Goh, 2002; Feher, 2004; Niven, 2002). Results from the survey suggested a mean of 3.8361. Moreover, the result from the interviews reveals that this factor was crucial to the accomplishment of KM success. Based on these findings, it can be argued that evaluating performance and outcomes is an important factor in KM project implementation. Further, evaluating them enables organisations to track the progress of KM and to determine its benefits and effectiveness (Yahya and Goh, 2002).

In relation to **External Environment and Benchmarking**, the results of the study revealed that the factor of benchmarking best practices is one of the important success factors in KM project implementation (see Chapters Three, Four and Six). This result is consistent with findings from previous studies (Chong et al., 2000; Cook et al., 2004). The results from all study methods in this research suggest that the factor of benchmarking and the success of KM projects are positively linked. Results from the survey suggested a similar degree of importance. Moreover, the interviews reveal that this factor was indispensable to the achievement of successful KM implementation. Based on these findings, it can be argued that benchmarking best practices significantly influences the successful implementation of KM.

7.4 The significant differences in personnel's responses to the KMS in IPA according to their demographics

This study attempted to answer the research question *'What are the significant differences in personnel's responses to the KMBS in IPA according to their demographic (place of work, nature of work, years of experience, years of education?'* The following is the results showing significant differences in responses of personnel in IPA.

7.4.1 The significant differences in personnel's responses to the KMS in IPA based on place of work

The study results in Chapter Six revealed that there are significant differences in the opinions of respondents in the various IPA places of work on the adoption of **Knowledge Management Strategies** in IPA. Based on these findings, it can be seen that the comparison of personnel at the various work places show some significant differences between personnel in the various IPA organisations in the four dimensions of KM strategies, which comprise knowledge management resources, knowledge management technology, knowledge management learning and innovation, and knowledge management beneficiaries. These results suggest that the knowledge management resource strategy in IPA Riyadh has a better response than in Makkah; this might be because the pattern of organisational structure that operates in an inconsistent way across the physically separate organisations produces this result. It must be taken into consideration that IPA in Riyadh is bigger in size, more level in structure, and has a greater number of employees. The results regarding the learning opportunities could be interpreted as indicating that there are more learning and development opportunities in Riyadh and the Women's Branch than in the Makkah Branch. Organisations are controlled according to their power structure, especially where centralisation of power and direction comes from the top downwards and there is no participation, consultation or involvement on the part of the workforce. Centralisation creates a

more fragmented structure which does not support the sharing and transfer of knowledge, whereas it is to be supposed that a good opportunity for learning occurs in a climate of openness where political behaviour is minimised (Senge, 1990).

7.4.2 The significant differences in personnel's responses to the KMS in IPA based on the positions of respondents

The study results in Chapter Six revealed that there are significant differences in the respondents' opinion on the adoption of **Knowledge Management Strategies** in IPA depending on their position. Based on these findings, a comparison was made between the opinions of respondents in different positions in various IPA organisations regarding the four dimensions of KM strategies, which comprise knowledge management resources, knowledge management technology, knowledge management learning and innovation, and knowledge management beneficiaries show some significant differences.   It appears that there is a pattern of administrative staff having better access to resources and knowledge which is likely to be due to the nature of their work in the IPA. A possible explanation for this may be that the number of administrative staff is less than teaching staff and the nature of jobs of each group is very different. This again raises the issue of the balance between individual motivation and interest and the role of structural forces, particularly those identified in the director's interview as being associated with centralisation. In a hierarchical and centralised organisational structure it would be expected that there would be little difference between these groups in terms of their perceptions of sharing knowledge (Alshareef, 2005). On the other hand, the lack of training programmes for teaching staff could reflect the view that they are not responsible for their own development in IPA because they are fully qualified and educated. Overall, it can be concluded that the results of the questionnaire and the interview imply that teaching staff at IPA seem to

show little interest in sharing knowledge, which might reflect on IPA's activities and in turn on the potential for KM.

7.4.3 The significant differences in personnel's responses to the KMS in IPA based on years of experience

The study results in Chapter Six revealed that there are significant differences in the respondents' opinion on the adoption of **Knowledge Management Strategies** in IPA in relation to their years of experience. Based on these findings, it can be seen that the comparison of the years of experiences show some significant differences between the responses of personnel from the IPA organisations from the four dimensions of KM strategies, which comprise knowledge management resources, knowledge management technology, knowledge management learning and innovation, and knowledge management beneficiaries. One possible explanation is that employees in the first years in their jobs are more likely to share knowledge in order to learn more about their work. The years of experience of managers or individuals in IPA can play a role in creating knowledge and lead to the development of a learning organisation. The possible explanation is that individuals with less experience are encouraged to learn from participation in work groups and to have a sense of belonging and friendship that allow individuals to exchange information, ideas and knowledge. Moreover, talking to and communicating with other staff members about successful practices or experiences are all part of the transfer of knowledge (Alsadhan, 2007).

Based in this result, organisational knowledge resources should enable employees, especially the new ones, to find out what sources of knowledge and what learning opportunities are available in order to allow them to share existing knowledge and to find the right person to ask for help when needed.

7.4.4 The significant differences in personnel's responses to the KMS based on levels of education

The study results in Chapter Six revealed that there are significant differences in the respondents' opinion on the adoption of **Knowledge Management Strategies** in IPA depending on their level of education. Based on the findings, it can be seen that the comparison of the levels of education show some significant differences between the responses of personnel in the various IPA organisations from the four dimensions of KM strategies, which comprise knowledge management resources, knowledge management technology, knowledge management learning and innovation, and knowledge management beneficiaries. The explanation for this result could be that less higher education and learning means that personnel will be more likely to hunt for knowledge from different resources. Learning is a naturally occurring process which takes place through involvement in actions and procedures at work and in practice. A learning relationship may be one in which there is clear and regular openness in the exchange of learning, an encouragement of risk taking, a learning from mistakes and experiences, and also an encouragement of team learning. Thus, continuous education at all levels of an organisation is a requirement for the regular development of knowledge capability in order for personnel to engage in an ongoing process of learning.

On the other hand, this result could be because knowledge resources in IPA are not available at a higher level for those who are already qualified and equipped with a higher level of education; moreover there is a failure to reward knowledge sharing among those who are educated to a Masters or PhD level. There some factors that can influence sharing information such as structure and culture which, in turn, influence the learning process.

7.5 The Possibility of Adopting Knowledge Management Strategies in IPA in KSA

The results from the previous Sections (7.2, 7.3, 7.4 and 7.5) are carried forward to investigate

"How can IPA successfully implement the KMBS model?

The result of the study revealed that the supporting factors for the application of KM strategies are significant. These factors offer the means of evaluating the current state of IPA's system from four dimensions and of providing a systematic platform from which to make judgments about viability.   The following Tables 7.1 show the availability of KM strategies and their success factors.

Table 7.1 The availability of KM strategies and their success factors.

KM strategies (Group)	Success Factors	Agreeing degree mean	Support	Rank
KM Technology	Information and Communication Technology for KM	4.2500	Very strong	1
KM Technology	Processes of KM Transfer	4.0406	Strong	2
KM Resource Strategy	Storing and Retrieving Knowledge	4.0336	Strong	3
KM Resource Strategy	Top Management Support	3.9916	Strong	4
KM Beneficiaries	External Environment and Benchmarking	3.8361	Strong	5
KM Technology	Organisational Culture	3.8158	Strong	6
KM Beneficiaries	Performance Evaluation and Continuous Improvement	3.7941	Strong	7
KM Beneficiaries	Creating Advantage for Customers and Suppliers	3.6418	Strong	8
KM Learning and Innovation	Organisational Learning	3.5567	Strong	9
KM Resource Strategy	Organisational Structure	3.5441	Strong	10
KM Learning and Innovation	Learning Climate	3.4867	Medium	11
KM Learning and Innovation	Self-development Opportunities	3.4342	Medium	12
KM Resource Strategy	KM Human Resources	3.3550	Medium	13

With respect to the overall assessment of these factors, Table 7.1 shows the 10 most success factors ranked in a range between 3.5 and 4.25, representing a considerable level of strong availability. Of those, one variable were rated above 4.2, and can be said to be the very strong factor in applying knowledge strategies; this is Information and Communication Technology for KM. The next 9 factors, ranked between 3.5 and 4.04, are less available, and include Processes of KM Transfer, Storing and Retrieving Knowledge, Top Management Support, External Environment and Benchmarking, Organisational Culture, Performance Evaluation and Continuous Improvement, Creating Advantages for Customers and Suppliers, Organisational Learning, and Organisational Structure. The remaining 3 Factors all ranked less than 3.5 and are the least available, namely Learning Climate, Self-development Opportunities, and KM Human Resources.

The Knowledge Management Technology Strategy (internal system) came first with a mean of 4.0364 and standard deviation of 0.5675. Thus the Internal System for Knowledge Management Strategy is shown to be **an applicable strategy with a strong degree of agreement** inside IPA in KSA. In contrast, the result from the interviews indicated that the internal IT systems do not focus on mechanisms that result in strategic management, and internal system KM strategy does not affect the strategic management performance. This is evident from Interviewee E

> "*As we move into this new computer system and environment, our system compared with other modern organisation is not perfect but is not too bad.*"

Another interviewee (F) stated:

> "*our IT system facilitates everyday work, but it is not helping the employee to know what their benchmarks are, what their targets and objectives are, or their budgets ... and to know what other people do and know in different places in the organisation.*"

These comments above suggest that IPA was expecting that computers would enable information to flow, would focus employees on visions and objectives, and would create transparency and uniformity. More importantly, as the internal system investments do not focus on managing the knowledge, they do not yield strategic management benefits but facilitate business processes, which in turn enhance firm performance. The interview data suggest that internal system technology strategy in IPA is unlikely to provide any strategic management benefits because the activities that are implemented either lack focus or have a misplaced focus. Instead of focusing on knowledge, which engenders strategic management, IT system and process focus directly on quantitative performance and targets.

The Knowledge Management Beneficiaries Strategy came second with a mean of 3.7514 and standard deviation of 0.6446. Thus the Knowledge Management Beneficiaries Strategy for Knowledge Management Strategy is shown to be **an applicable strategy with a strong degree of agreement** inside IPA in KSA.

The Knowledge Management Resource Strategy came third with a mean of 3.6556 and standard deviation of 0.6542. Thus the Knowledge Management Resource Strategy for Knowledge Management Strategy is shown to be **an applicable strategy with a strong degree of agreement** inside IPA in KSA. Knowledge repositories have a high usage initially, which drops quickly. The organisation invests more to make it easy for employees to use the repository but falls into a vicious circle of more resources and lower usage. This is reflected well in the following statement from Interviewee A:

> "*With the databases, the number of users is not increasing according to the number of features and systems you add, and you get to a point where people are only using 20% of what is useful on the site and you are just spending money on technology for technology's sake and so it's quite easy to get into that kind of a vicious circle*".

Employees may not use the repositories after the initial stage because they do not find the information they are looking for or they do not find it easily. These reasons reflect the challenges that IPA face in capturing knowledge and making it accessible. For example, as Interviewee E stated:

> *"Emails and all the tacit knowledge that flows through the emails of employees which is not being captured is one challenge; dealing with experts so that they document and post their knowledge on the intranet is the other. There is still tons of good knowledge sitting on people's C drives ... We need a better way of doing this."*

The interview data presented above highlights the challenges IPA face in capturing knowledge and making it available to employees, which affects the extent to which firms can benefit from knowledge-based strategy. It is possible that this study did not consider how effectively the knowledge was captured and how much of the captured knowledge was utilised. On the other hand, during the interviews, when asked about the strategic management benefits, the interviewees mentioned aspects like "better search", "information availability in small chunks", "easy to reach", and "retain knowledge". They did not, however, mention strategic aspects like employees' satisfaction, better response time and saving cost, and better understanding and quality of the job. However, during the interviews other aspects were brought out about the possibility of retaining and rewarding HRM which would result in indirect benefits such as high employee satisfaction and low employee turnover. Interviewee F said:

> *"we are a government organisation and our compensation strategy is not to be a leader ... let's be honest ... we don't pay the best compared with private sector... the kind of richness of the work that people can get to do at IPA is compelling... I think that you can build a career here which is multi-faceted ... this diversity of work is an advantage for people, and that is why our employees become attractive to other organisation."*

In short, this study highlights that HR knowledge also produces several indirect problems such as low employee satisfaction, high employee turnover, and less working relationships.

Finally, the **Knowledge Management Learning and Innovation Strategy** came fourth with a mean of 3.4988 and standard deviation of 0.7392. Thus the Knowledge Management Learning and Innovation Strategy for Knowledge Management Strategy is shown to be **an applicable strategy with a strong degree of agreement** inside IPA in KSA. These results show that learning and innovation strategy came in at the end of the four strategies. The reason may be reflected in the words of one interviewee (A) from IPA:

> *"Technology has affected human interaction badly; everyone seems to be busy searching for knowledge and information from different sources. We start missing sharing knowledge and having discussions in the corridors or having informal meetings about new methods and applications"*

The above comments indicate the underlying belief that KM resources and an internal KM technology system are likely to send a negative signal to employees.

The development of a common knowledge base helps employees to understand their role in the company as well as the role of others in the whole organisation (Shoham and Leyton-Brown, 2009). As a result, employees in IPA develop a common identity. Consequently, they contribute by performing their own roles effectively and by helping their peers to perform their roles effectively. This is best reflected in the following words:

> *"Learning from other's opinion and experience is very important... so, we encourage our employees to voice their opinions and share their experience ... for example, some teachers volunteer to do a lecture or training session which could benefit the others if there is a new system introduced or a specific need arises in particular area "*

In addition the organisations that follow a learning and innovation KM strategy foster a common identity and develop a common knowledge base while simultaneously encouraging diversity of thought and knowledge. These aspects are necessary for knowledge creation. Common knowledge and diversity develop the absorptive capacity of the organisation (Danvenport et al.,

1998) and identifying them helps to bring ideas together and apply them in a focused manner to create new knowledge (Nonaka, 1994).   Consequently, the organisation derives strategic management focus benefits by creating and exploiting new knowledge.

This research has presented the key findings and has discussed the analysis of results of quantitative and qualitative data presented in Chapter Six. The interpretation of the results has been guided by previous empirical studies in the context of scrutiny of the relevant literature review (see Chapters Three, Four, Six, and Seven). By analysing all the different perspectives of knowledge management strategies with regard to strategic management formulation, it became clear that strategy formulation should be an integrated process, based on the excellence of execution of core competencies. This study has highlighted a number of elements found to be a critical to **the Strategic Knowledge Management Balanced System** (SKMBS) which follows a holistic approach. It is thus appropriate, and beneficial, to combine these elements into a generic model that can provide a description of the role of these elements in strategic management and KM strategy.

7.6 Research Proposal Model

This study is the first of its kind to examine empirically two different approaches from different fields of study, Knowledge Management and the Balanced Scorecard. Equally significant is the investigation of the relationship between strategic management and knowledge management from different approaches of KM strategies. The aim of this section is to propose a holistic approach to a strategy formulation model (see Figure 7.1) capable of incorporating the major principles involved in strategy formulation and of illustrating the interdependency between strategic management and strategic knowledge management that were identified by the survey questionnaire, interviews, and literature reviews as discussed in Chapters Three, Four, and Six. The proposed model, SKMBS, is hypothesised to deliver a comprehensive approach to a successful KM project. The model is expected to be useful to a wide range of organisations, since it provides for a KM implementation plan to suit any business situation. Furthermore, in constructing the KM implementation model, consideration is accorded to the objective of structuring it to be of as great a practical value as possible. Such an objective is best achieved by presenting the components of the model in the form of implementation guidelines, with the critical KM factor superposed as the useful 'checklist'. The success factors for the SKMBS model are derived from the literature review and theory development (Chapters Three and Four). It is thus appropriate and beneficial to combine these factors into an integrated model that can provide a description of the role of these factors in KM projects. These were categorised into a number of subgroups representing various dimensions related to KM strategies. These dimensions are used to build the proposed integrated model for KM project implementation as shown in Figure 7.1. The dimensions with their factors are listed in Table 7.2.

Figure 7.1 Proposal Model for Strategic Knowledge Management Balanced System

Strategic Management

Vision and Objectives

KM STRATEGIES

Communicating
And Linking
Knowledge
Exist

KM Resource	KM Internal System	KM Learning & Innovation	KM Beneficiaries
Top management support	Process for KM	Organisational Learning	KM Customer
Organisational structure	ICT for KM	Learning Climate	Continues Improvement
Storing and Retrieving Knowledge	Culture Transferring	Self- development	External Environment and Benchmarking
KM for HRM			

Feed back and
Learning
Knowledge
Needed

Level two: KM Strategies

Level one: SKM
Within SM

Strategic Plan

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Table 7.2 The Success Factors in each dimension of the SKMBS model

Dimension	Factors
Strategic Knowledge Management	KM strategy and vision
	Communicating and Linking Existing Knowledge
	Strategic Plan
	Feed-Back and Learning Knowledge Needs
Knowledge Management Resource Strategy	Top Management Support
	Organisational Structure
	Storing and Retrieving Information
	KM for HRM
Knowledge Management Information Technology Strategy	Process for KM Transfer
	Information and Communication Technology for KM
	Organisational Culture Knowledge Transfer
Knowledge Management Learning and Innovation Strategy	Organisational Learning
	Learning Climate
	Self-development Opportunities for all
Knowledge Management Beneficiaries Strategy	KM Customer
	Continuous Measurement and Improvement
	External Environment and Benchmarking

OVERVIEW OF THE MODEL:

The model is a map for any organisation thinking about implementing KM by using BSC. The map allows the organisation to focus on all the elements required to make the project a success, and helps avoid expensive pitfalls. The following sections provide detailed discussion of the key elements of the proposed model and guidelines based on the results of this study.

First level: Strategic Knowledge Management within Strategic Management:

It is crucial too for any organisation to identify clearly the direction in which the organisation should be headed. This needs to include identification of relevant knowledge to be managed and its source and nature, in addition to knowledge needs. According to Jeremy i (2009), it can be disastrous to focus on strategy too much and not to pay attention to response. Even though it is important to decide on a strategic direction, it must be possible to change direction quickly in response to any threats or opportunities which may arise. While organisations need a strategy, it should be framed in terms of a direction rather than a destination.

As uncertainty and complexity increase in the future and decisions become more challenging, acquisition and application through a continuous knowledge management programme offer the best capability an organisation can have to change, adapt and influence its environment in a way that maximises its performance over time. Different kinds of knowledge are strategically important to different organisations, making it a crucial initial task to identify what and how knowledge is important in a specific organisation. Strategic management vision and objectives need to be brought into perspective with knowledge – knowledge of all the internal and external forces impacting on the organisation. This involves a comparison between the knowledge needed and the existing knowledge of the organisation. Comparing the knowledge will lead to identifying the strategic knowledge "gap". The vision and mission statement should in essence be based on knowledge strategies relating to how the organisation could be transformed in the future.

SKMBS translates the organisation's strategy into four areas of knowledge strategies together to help managers draw a clear picture of the operations of the business along with strategy. It can

serve to communicate the strategy effectively throughout the organisation. Consequently, it is imperative that these strategies are linked to performance measures. Therefore it can be seen that developing an effective strategy depends on adopting a holistic approach to all aspects of the organisation. This involves strategic alignments between resources, technology, people and organisational aspects in order to create an appropriate KM system.

An organisation needs to conduct a competitive analysis to define and understand its industry, identify its competitors, and determine their strengths and weaknesses in order to anticipate their moves. The demands of the knowledge function can change as quickly and dramatically as do other aspects of the business. That is why knowledge management constantly reviews and evaluates stakeholders' value drivers and their priorities. Apart from analysing the external environment, organisations should also assess the interrelation between strategic business plan functions, and how strategic resources are structured to support these functions (e.g. knowledge resources, knowledge technology, and learning and innovation).

The SKMBS therefore gives managers a way of ensuring that all levels of the organisation understand long-term strategy, and that both departmental and individual goals are aligned with it. This includes aligning departmental business plans to organisation strategy. Enhanced strategic feedback enables the organisation to reflect on its situation, and thereby provides opportunities to adapt or change strategies to fit the current circumstances and needed knowledge.

Strategic management and knowledge management strategy should thus feed upon each other and need to work interdependently. A knowledge management strategy can be formulated when the complementary functions of strategic management and knowledge management allow

knowledge to flow from external or internal sources to the organisation, and from the vision and mission or human resources or knowledge assets of the organisation. An organisation's objectives are shaped by the environment that it operates in, and this will influence the nature of its strategic plans, which in turn influences the other four strategies.

Second level: Knowledge Management Strategies

In an ideal world everybody in the organisation would understand the strategy. The individuals would grasp how their actions benefit the process of achieving the ultimate objective. Knowledge management strategies are KM resource, KM information technology, KM learning and innovation, and KM beneficiaries strategies.

The above four strategies in Figure 8.1 of SKMBS are important, as they focus on the actual deliverables. They incorporate aspects that have an influence on the performance of the organisation. The reason KM performance is studied is to enable the organisation to devise future strategy and development, to deal with the major intended and emergent initiatives involving utilisation of resource taken by top management on behalf of owners to enhance the performance of the organisation in the external environments. The SKMBS model should have a balance between external shareholders and customers and internal business processes. Both the knowledge management technology strategy and knowledge management resource strategy derive from the same belief that employees hold the knowledge, and their knowledge must be extracted and turned into organisational knowledge. In contrast, the learning and innovation strategy emphasises that both employee knowledge and organisational knowledge contribute to each other. Consequently, the learning and innovation strategy considers employees as partners in knowledge management and emphasises contribution from both sides. However, Knowledge

Management Resource and Learning Strategies when combined through knowledge technology, processes and activities create the organisation's capabilities (Grant, 1991). Achieving competitive advantage requires focused attention on consumer trends and the market. KM beneficiaries strategies' role is to ensure that collective learning happens, and is facilitated through the most appropriate knowledge environment. Innovation, a key aspect of competitive advantage, relies on the insight and intuition of an organisation's individual employees.

A comprehensive approach for knowledge management strategy can improve efficiency and effectiveness, along with flexibility and responsiveness to market changes (Zack, 1999b, 2002); it can also be used to improve product development, innovation and quality, and to develop a better understanding of customer and stakeholder relationships (Davenport et al., 1998; Martensson, 2000).

7.7 Summary:

This chapter has presented the findings and has discussed the analysis of the results of quantitative and qualitative data presented in Chapters Three, Four, and Six. The interpretations of the results have been guided by previous empirical studies in the context of the scrutiny of the relevant literature review. In addition, this chapter has identified a series of success issues that must be carefully considered to ensure successful implementation of KM system projects. However, most of these factors are not related to technology and are almost entirely to do with people and business processes, and are highly interdependent. The next chapter will present the overall conclusions drawn from the study; an integrated model will be provided and recommendations will be made to guide the implementation of this model.

Chapter eight

Research Contribution and Recommendations

8.1 Introductions

This chapter presents conclusions about the contribution of the research and some recommendations. It provides an overall summary of the major findings resulting from this study and details the conclusions drawn. The research design was carefully thought out to answer the following questions:

1- How does Knowledge Management strategy fit into the wider strategic management system?

2 - What are the critical factors for effective KM strategies at IPA? KM Strategies were studied from Four Perspectives inside IPA and divided into sub-questions as follows:

   a) What are the critical factors for knowledge resources strategy?

   b) What are the critical factors for knowledge management information technology strategy?

   c) What are the critical factors for knowledge management learning and innovation strategy?

   d) What are the critical factors for knowledge management beneficiaries strategy?

3- What are the significant differences in personnel's responses to the KMBS in IPA according to their demographic (place of work, nature of work, years of experience, level of education)?

4 -How can IPA successfully implement the KMBS model?

The research design and methodology incorporated a systematic study of the literature review which was followed by an empirical case study and extensive data collection, analysis and interpretation. The findings of the literature review, the questionnaire survey, and interviews are presented and analysed in Chapters Four, Six and Seven of this study. This chapter draws summary and conclusions about the study's finding and details the recommendations. It then outlines the study's contribution to research and practice, limitations and suggestions for future research directions that have emerged.

8.2 Summary of the Research Structure:

As has been mentioned before, KM and BSC are new phenomena within management systems and thus strategic implementation methodologies are still developing with experience (see Chapters Three and Four). Consequently, there has not yet been a common comprehensive or integrated approach to KM project implementation using the BSC system. As KM and the BSC are still relatively new and the empirical research related to their implementation is not extensive, there is much to learn. Therefore to truly understand KM strategy projects, one has to profit from organisational experience. Therefore, it is crucial to look at what others have done, their feedback, mistakes, results, and overall approach to KM projects.

This study has sought to contribute to this area of research and practice. It adopts the integrative view and has reviewed a body of literature relevant to SM, KM and BSC strategic systems concerning many issues that an organisation may encounter (Chapters Three and Four). The literature review identified the fact that successful organisations are likely to be those that develop the ability to learn faster and transfer knowledge better than their competitors. A vital point to emerge from this review was the need to provide an overview of the existing nature of the relationship between strategic management and knowledge management. In addition, a further point was to identify knowledge management strategies and the factors that may influence how KM is conducted within the IPA organisations and how they currently deal with obstacles and challenges to the transfer of knowledge.

The initial integrated approach identified was explored in the field through a complementary empirical investigation using case studies and a combination of questionnaire surveys and interviews. The questionnaire has attempted to identify the success factors that constitute the

integrated approach to KM projects in IPA. On the other hand, the use of interviews (with the directors of various IPA organisations, the director of the TQM unit, and the director of planning and development) aimed at investigating how different factors related to the KM strategies initiatives are being applied in the real organisational settings; these methods are presented in Chapter Five.

In order for the researcher to investigate the success factors of KM project, several analyses were conducted. Reliability analysis and factor analysis were firstly used to assess the reliability and construct the validity of the instrument used. By using these methods, the study gathered the empirical data which was presented in Chapter Six. Based on this review, factors that constitute the integrated approach to a successful Strategic Knowledge Management Balanced System were identified and the SKMBS theoretical model was proposed in Chapter seven in section 7.6.

Additionally, looking through various KM-related literatures, 13 strategic factors that contribute to successful SKMBS project implementation have been identified. It is very unlikely that SKMBS implementation will succeed in making significant benefits without taking account of these critical success factors.

Through this type of empirical investigation, the study derived a proposed integrated model for the effective implementation of SKMBS based on comprehensive discussion and interpretation of success factors that were identified through the empirical case study in Chapters Six and Seven. The overall findings, the recommendations, and contributions of this study will be the subject of this chapter.

8.3 Key Findings:

As is the case of the most empirical studies, this research does provide a number of significant finding. The following key findings were summarised from the results in Chapters Six and Seven:

In the context of KSA, power and authority are strongly centralised: this is both a central and a challenging aspect of the model. It is necessary for top managers who hold key power to be willing to make changes to organisation systems that will weaken their power and control. This underpinning part of the model emphasises the role of management responsibility in ensuring the overall success of the developments. The KMBSC shifts the thinking in organisations and their concentration on efforts in a disparate direction to focus on specific themes by producing Balanced Knowledge Management for four KM strategies. This study has provided clear evidence that the SKMBS is applicable in IPA in KSA.

The study identified 13 critical factors that must be considered carefully to secure strategic KM success. The study divided these critical factors into four groups according to points of view from different perspectives on Knowledge Management Strategies. These perspectives adequately capture the focus of an organisation's strategy and provide a balance between external and internal knowledge and explicit and tacit knowledge. These critical factors appear on three levels. The first level is the strong to very strong success factors; the second level is the strong success factor, and the final level, the medium success factors. The following points deal with each level of the components of the SKMBS and summarise how far in general the IPA organisations are in relationship to this model.

The findings indicated the ICT for KM was very strong and the internal exchange of knowledge found a focus in IT process with which departments and individuals communicated formally with each other. The IPA makes available to the employee electronic support systems so that he or she can obtain information. While the process of KM transfer was a strong success factor for the adoption of the strategic KM approach, the lack of structural mechanism for knowledge creation, sharing, and leveraging makes it very difficult for many employees to access specific knowledge. However, IPA encourages the employees to document their knowledge for sharing and retrieving and these documents kept at IPA are considered important sources which can be consulted if needed.

Top Management Support is a strong success factors in adopting the strategic KM approach. The strong commitment of top management to KM and its assumption of active responsibility are fundamental elements in KM strategic success. Their commitment and support must be amply and visibly exhibited and demonstrated to all participants in KM activities.

Organisational Culture is a strong success factor for KM. Despite the fact that the IPA encourages the employees to spread and transfer experiences in different ways such as through the internal newsletter, cross-branch electronic newscasts, and meetings, there appeared to be a lack of a free flow of information within the institutions and a tendency to hold on to information rather than share it, thus obstructing learning by preventing its transfer to others. This was found to apply at the individual, departmental and organisational level. Collaboration and knowledge-sharing among employees exist to a moderate degree. The respondents were not encouraged to engage in regular dialogue with the aim of exchanging information or giving feedback. It was observed that the IPA structures did not reflect a need to learn or to encourage flexibility and

speedy transfer of knowledge and adapting to change. The findings indicated that the learning climate is a medium success factor for the adoption of the strategic KM approach, and the majority of respondents were not encouraged to take risks and were afraid to make mistakes. Moreover, problems were not viewed as opportunities to develop and learn.

External Environment and Benchmarking are strong success factors in the adoption of the strategic KM approach. Benchmarking best practices internally and externally was considered very important as a key resource for continuous improvement in IPA. Capturing knowledge from customers and communication with suppliers are also important in IPA, as they are a source of knowledge in their attempts to promote their products. Performance Evaluation and Continuous Improvement are strong success factors in the adoption of the strategic KM approach. The IPA system integrates all sources of data and, by doing so, capitalises on all knowledge in terms of historical data which can be used to improve decision-making in a variety of areas and the access of many of the relevant parties to the results of evaluations, which contributes to the continuous improvement of performance.

KM Human Resources is a medium success factor in the adoption of the strategic KM approach. The employees at IPA are not encouraged to take the initiative in using new and innovative methods to perform tasks. Also the reward system did not appear to be used to reinforce learning and transfer knowledge. Self-development Opportunities is a medium success factor in the adoption of the strategic KM approach. It was not found that the vast majority of respondents did not have a personal development or learning plan, and few felt that there were good resources for training and learning in IPA.

8.4 The Study Recommendations:

The previous findings indicated that the IPA organisations now face key barriers in moving towards a SKMBS model. On the basis of the diagnostic provided earlier (in Chapters Six and Seven) suggestions can be made to suggest possible ways forward. It is suggested that adopting new strategic management and new structural forms cannot be seen as a process that can be quickly accomplished, especially in the context observed by the present study where the level of the transfer of knowledge and the learning base from which to build is relatively low. For this purpose therefore the model is translated into a road map with a series of roads that can be travelled at different speeds depending on readiness in each case and along which the current research has identified potential points of blockage that will need to be overcome in moving towards the goal of more effective SKMBS projects. The road map to SKMBS in IPA organisations is represented below in Figure 8. 2.

Figure 8.1 The Road Map to the SKMBS Model in IPA
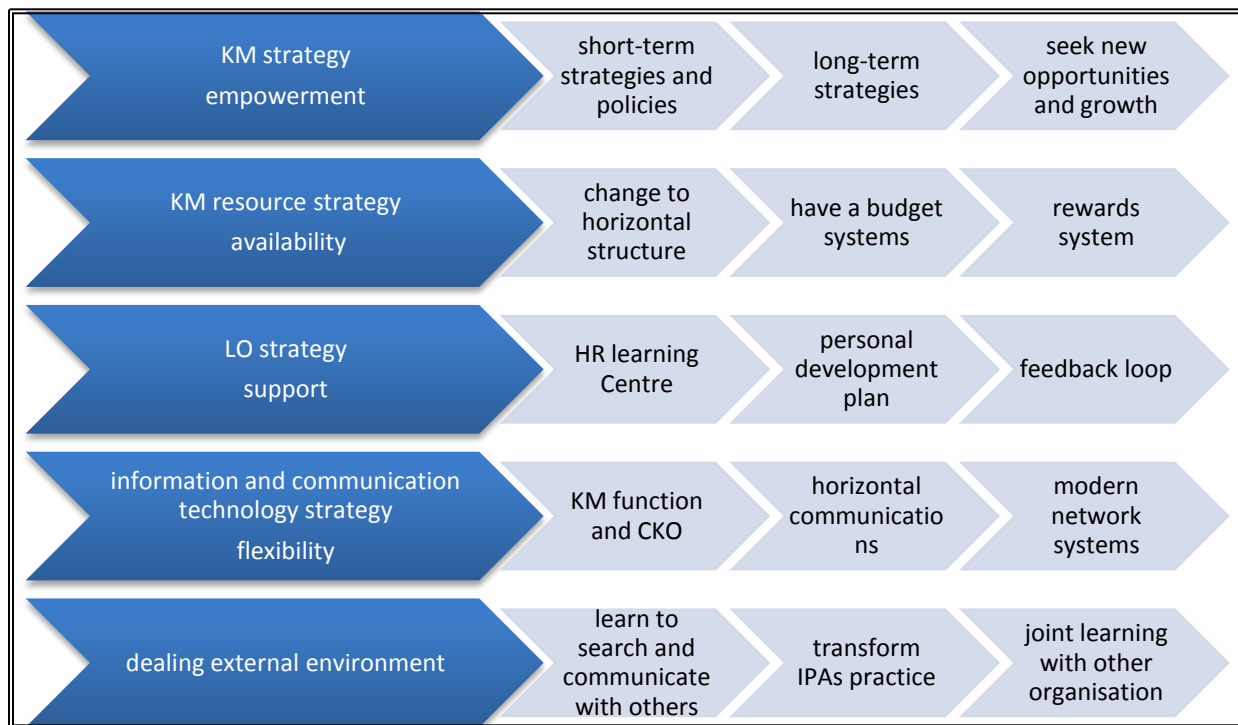
Produced for the purpose of this research

The First Road: Knowledge Management Strategy - "empowerment"

Knowledge policy and strategy are too important for the well-being of organisations to be left to a limited group of people, or developed without close attention from top management and the board of directors. In the case of IPA, the knowledge strategy process should involve everyone who manage resources of knowledge and technology which are essential to IPA in the light of its definition of what it is in business for: the senior managers to whom they are responsible; representatives of 'stakeholders' who use or contribute to the resources; and those who manage the systems and technology which support people in doing things with knowledge. This should be under the aegis of the top management team. This is in line with ideas advanced by Nonaka and Takeuchi (1995) about the value that can be created by diffusion of responsibility for knowledge and decision-making throughout organisations, rather than concentrating it at top.

In this study the results in the previous chapter pointed to the fact that the hierarchical system of authority and decision-making was dominated by the top management of the board of directors who make the primary decisions (e.g. strategy, policy, training, employment and budget…etc), which in turn makes it difficult for employees in IPA to exercise real autonomy and judgement. In order to move towards successful SKBMS implementation, the IPAs could take three steps to integrate "empowerment". Here, the first step aims to give IPA organisations authority to shape their short-term strategies and policies. The second step is to enable them to make long-term strategies to achieve their purposes and goals within their environment. The third step is to encourage them to seek new opportunities and growth by modifying the strategies and policies to respond to the external environment. These three steps are strategic terms, and to be put in

practice, they are linked and communicate with the other roads listed below to follow the SKBMS that helps IPA to move forward.

The Second Road: Knowledge Resource Strategy - "encouragement"

Modern organisations use a variety of resources in order to fulfil their objectives. The knowledge resource strategy is focused on determining what knowledge must be provided in order that the objectives of the business strategy will be realised. The concentration is therefore on determining information and knowledge needs and ensuring that the knowledge resource strategy aligns with the business strategy. The second road represents access to knowledge and information and is labelled "encouragement", as the main theme is to unite the steps. The purpose to this road is to encourage individuals to form stronger bonds and relationships within their organisation in terms of relationships between people and with the overall organisation in terms of access to knowledge and information. The first step in this road is changing the hierarchy vertical structure to a more horizontal structure, the second step is having a financial budget system to support KM, and the third step is establishing a rewards system. These three steps are combined and referred to as "encouragement", which should provide the back-up that helps forward the KM resources.

The Third Road: HR Learning Organisation Strategy - "support"

The human resource management knowledge system supports human resource management (HRM) in organisations. Many organisations have gone beyond these traditional personnel management functions and have developed human resources knowledge systems that support the development of employees to their full potential and control of all personnel policies and

programmes (Davenport et al., 1998; Storey and Barnett, 2000; Hlupic et al., 2002). The main barrier in this road is that of the culture of IPA which does not provide a climate of support and encouragement for individuals in managing their own self-development. Therefore, the third road starts by proposing a Learning Resource Centre as an essential base to provide a focus for all training and development activity in each institution. The second step is personal development plans which are a way of determining and documenting the training and development objectives of individuals and teams. The third step is providing training and education for all staff to help them gain and improve skills and also to turn their plans into real learning opportunities. These three steps are combined as "support", which should provide the energy that drives forward sharing and transfer of KM.

The Fourth Road: Information and Communication Technology Strategy - "Flexibility"

The information and technology strategy is focused on determining what technology and technological systems development are needed in order that the ICT strategy can be realised. The concentration is therefore on how to provide the information, not on what information is required. The strategy will also cover how the knowledge resources and information systems development is to be managed. Therefore, the fourth road starts by proposing a KM function as an important base for managing knowledge resources and information systems. The second step is a horizontal communication between individual, departments and organisations which requires the redefining of roles at the occupational level to encourage team-working. The third step is establishing an information technology system to allow communication and collaboration. These three steps are combined as "flexibility", which should enhance KM sharing and transfer. The findings showed that there was little use of information technology in IPA. As knowledge will

be a key future resource, this suggests the urgent need to establish modern information

technology systems and to create new opportunities for communications and collaboration; it can

be suggested that modern network systems (computer networks and information technology) are

important mechanisms for enabling the free flow of information and for encouraging individuals

to be more open to the transfer of ideas across organisational boundaries, internal and external.

Given the results, which showed a clear lack of such skills, this creates a link to Road 1 and

Road 3.

The Fifth Road: Dealing with External Environment - "Sharing"

An organisation is affected by its environment. Organisations are not isolated entities but are

open systems that build information systems to cope with environmental pressures and

constraints. The success of any organisation depends on how well it integrates with aspects of its

environment. Any organisation contributes value to this environment and receives value from it,

so it is not surprising that changes and forces in the environment influence the direction of

organisational change, and by implication the direction of knowledge system change.

In formulating strategy there are other external factors which the strategists in IPA need to take

into account. One of the factors external to the firm is the forces exerted on it which depends on

the structure of the industry within which it operates. These competitive forces maybe exerted

by suppliers, customers, existing competitors, new entrants or through differentiated products.

An analysis of these forces can provide a guide to strategic knowledge management. Thus, this

road is concerned with learning from the environment and involves three steps involving

integrated knowledge sharing. The first is collecting knowledge in which individuals learn to

search, share and store knowledge in a way that can be communicated to others. The second step

is using such knowledge to transform IPA's practice. The third step is joint learning and sharing knowledge in a way that the IPA organisations can work together and with other organisations in the labour market whose need they serve.

Again this road is connected to other roads: the first step is connected with Roads 1 and 2 to obtain the necessary powers to engage with other bodies and to change strategy in relation to their needs. In addition, it could be possible for an information collecting and processing function to be incorporated into the Learning Centre planned in Roads 3 and 4. The second step is connected with Roads 3 and 4. The third step is connected with Roads 1 and 3.

In summary the use of the idea of the road map is to emphasise diversity (there is not only one single road that has to be followed) and to show that it may be possible for the IPA sector to progress first on one road where changes can be made easily before moving too far along another one where changes may be more difficult to achieve in the short term. Regarding the way of travelling it may be possible to make some progress even in the face of resistance in other areas and to move towards an incremental approach where progress can be made in small steps and where the benefits can be seen.

8.5 Research Contributions

One of the potentially most important contributions of this study is the exposure of data relating different approaches from different fields in strategic management, KM, and BSC to an area that has not previously been explored and documented in detail by researchers. Not only did this study provide an empirical assessment of the essential elements in KM projects, but also assessed the CSFs of importance for implementation of KM distilled from a comprehensive

review of the concepts and practice of KM and BSC. This study is possibly the first attempt to investigate empirically the compatibility in one of the most important Saudi public organisations of key ideas of KM and BSC strategic management. The theoretical body of knowledge as far as KM is concerned is still in its early stages. KM is a new phenomenon within management systems, and thus implementation methodologies are still developing with experience (Chong and Choi, 2005). Also, as KM initiatives, projects and systems are just beginning to appear in organisations, there is little research and field data to guide the successful development of such systems or to predict expectations about the potential benefits (Alavi and Leidner, 1999, Civi, 2000). Moreover, there exist different views among practitioners and even researchers on how a KM programme can be designed and implemented in organisations (Feher, 2004). Even though many organisations worldwide have attempted in various ways to implement KM, most efforts are not based on a specific theoretical foundation. Consequently, there has not yet been a common comprehensive approach to KM strategies and systems. Indeed, this study is the first of its kind to assess empirically the relationship between strategic management and knowledge management strategies using the Balanced Scorecard system. From the academic research perspective, as theory in the field of KM is still not established, this study can be considered a step towards theory building. It has brought a large body of KM and BSC-relevant literature, and unified diverse schools of thought into one integrative perspective. In particular, the study has been uniquely effective in identifying and describing components that make up the integrative approach to strategic management and KM by using BSC.

This study has contributed to the general body of works that have suggested the significance of KM strategies as an influence on organisational strategic management (Kaplan & Norton, 2004b; Walczak, 2005; Wong and Aspinwall, 2005, Harlow, 2008). This has allowed comparisons to be

made with practices in the more documented Western and Far East sectors and will also contribute to the still small but growing number of studies on the sectors of the Middle East and Saudi Arabia in particular. This knowledge should help the Strategic Management professionals in this region to identify ways to improve their practices in order to meet the need many of them have for greater effectiveness and diversity in the face of a need to decrease dependency on oil revenues only. But in particular it has highlighted a number of elements found to be critical to KM Strategies which follow a comprehensive approach. A number of authors and practitioners have carried out many studies examining the KM strategies and critical factors in KM systems (Davenport et al., 1998; Hung et al., 2005; Wong, 2005; Chong, 2006; Oliver and Kandadi, 2006, Alsadhan, 2007). Nevertheless, most of these studies have not taken an integrated approach to KM strategic systems (Welch and Alhamoudi, 2008).

In more specific forms, this study provided insights into four Knowledge Management Strategies, namely KM Resources, KM Technology, KM Learning and Innovation, KM Beneficiaries. By integrating the insights from organisational knowledge, information systems, customer-based knowledge, and organisational learning literatures, this study has demonstrated the need to implement complementary strategies. These strategies are not independent of each other, and each strategy should be used in conjunction with the others. The study identified 13 critical factors that must be considered carefully to secure strategic KM success. This study strengthens therefore the case that the proposed KMSBS framework (see next section) has found the balance between the internal capabilities of the firm and the external environment. This concurs with Zack (1999b), and allows both tacit and explicit knowledge to be created, stored and shared using technology which goes along with Harlow's findings (2008). More particularly, this study suggested that organisational learning-based KM strategy has the

potential to impact the strategic performance of an organisation (Kaplan and Norton, 2004b), not only by creating and exploiting knowledge, but also by developing a shared vision that helps employees to better perform their roles.

This study attempted to fill a gap in the KM literature by focusing on the context of a developing country (KSA). It is important to understand that what might work in a Western or Far East organisational context, might not work in an Arabic organisational context. Therefore, this study has highlighted the significant differences in responses to KM strategies based on demographics which are place of work, position, years of experience and education. These differences raised the issue of the balance between individual motivation and interest in terms of perceptions of sharing knowledge. By drawing attention to the strategic KM approach, it is hoped that lessons can be learned about the factors that influence good practice in specific organisations and the need for sharing information and greater openness to ensure that formal policies are put into effective practice at operating levels. This is an issue of more general theoretical importance in relation to the study of strategic management in the public sector and suggests that it is necessary to treat such sectors not as homogeneous units (even if this is how they formally are presented) but to recognise how different organisational level practices may emerge, even without deliberate intention, to influence the conduct of strategic management practices.

This study is attempting to throw a light into the little documented processes of organisations in the KSA. This reveals a picture of a country that is attempting seriously to develop and diversify its industrial activity and to make itself competitive in a global economy but that remains challenged by a traditional structure of authority and management that limits the extent to which lower level employees are involved in organisational processes. The study has shown that to

succeed in the international environment the use of knowledge and learning will be essential and thus has highlighted a number of issues that will need to be addressed if progress in developing this is going to be made in the future. Given the traditional approach of a more centralised and hierarchical form of management and power and authority in the Kingdom, this will be a major challenge for change. In particular this chapter has demonstrated the usefulness of using the road map to strategic KM and of developing four types of paths that can be use to achieve knowledge management strategies (see next section for suggested road map). By focusing on what is useful and can be retained it is more likely that potentially useful contributions are not needlessly put into the category of ones that will be discarded. The hoped-for end result is a realistic and constructive blending of tradition and modern practices that are fitted most effectively to the context in which they will apply.

Furthermore, this research proposes an integrated model that supports KM strategy project efforts in organisations. It addresses the effective KM strategy projects and their critical factors to improve the experience of many organisations that are undertaking or plan to undertake such efforts to improve performance, and achieve a competitive advantage. The proposed model of the KMSBS can be used as a diagnostic tool to help to understand the readiness with which organisations face the challenge of moving towards KM capabilities and greater learning capacity if this is regarded as a desirable goal in their development. From the practitioners' perspective, it will be of great benefit to organisations that are implementing or plan to implement strategic KM projects. It will provide a better understanding of the benefits of KM and of requirements for knowledge management strategies from an integrated point of view. Also, it will inform management which KM strategies should be employed to achieve organisational objectives, with the most critical factors of KM strategies. This suggested

development will be considered in the following section. This should guide future work to areas where there is a potential for further cumulative and positive research.

The results of the research should be of interest to a number of journals covering the topics of knowledge management or strategic management, including:

Knowledge Management Research and Practice; The International Journal of Knowledge, Culture and Change; Strategic Management Journal; Sloan Management Review; Journal of Knowledge Management; Journal of Knowledge Management Practice; and the Journal of Knowledge and Process Management.

Although it is considered that this study can make a positive contribution to the development of strategic knowledge management in KSA, it has a number of limitations that must be recognised and that could also suggest areas of further research. First, the study relied on using the BSC strategic system, only one model of KM. Although this particular model was chosen because of its adequately captured focus on organisation's strategy and because it provides a balance between external and internal knowledge and explicit and tacit knowledge, this has limited the ability of the thesis to make a comparative theoretical assessment of different models in relation to strategic KM. Future researchers might consider using a combination of models to be able to compare their relative merits as explanation theories and diagnostic tools. This would allow a fuller development of the implementation of strategic KM models. Second, the study focused on only one area of the public sector in KSA. The reasons for choosing this sector on the basis of its relevance for developing strategic KM potential were discussed in the methodology chapter. Although the present study can give some scope for careful generalisation to other areas of the public sector (since the nature of KSA government means that most areas of public sector share similar patterns of management and authority), the results may be less applicable to the private

sector where there is a greater influence from foreign management practices in larger organisation that are often foreign-owned or employ expatriate workers from different cultures, or in smaller family-owned firms where centralised authority will be strong but bureaucracy less formal. For these reasons it is advisable for separate studies of the private sector type of organisation to be conducted and the results compared to the present study before the measures suggested here should be applied. Generally the integrated model proposed by this study should enhance the current practices of KM implementation, which mostly follow narrowly-focused approaches. In essence, the results of this research will help management in making the crucial decisions and the resource allocations that are required to make the SKMBS implementation a success.

As the number of various organisations implementing KM continues to grow, there are several directions in which future research is required. First, it would be useful to empirically test and refine the proposed integrated model, and explore relationships among the various variables by collecting data from organisations that have already implemented KM.

Second, the model also calls for a micro type of research, where each component is examined through exploratory studies that can provide better understanding of the internal working of their elements, and the mechanisms by which the role of each in KM implementation and effectiveness can be improved.

Finally, it is to be hoped that other researchers may be able to use these findings to extend understanding of other important sectors in the KSA economy (and in that of other Arab nations) in both the public and private sectors and to raise the issues identified in the context of the changing international economy and the need for greater transfer of knowledge in all

organisations if these countries and their populations are to flourish. But in particular, it is hoped that the use of the idea of the road map approach with its different routes of emphasis and possibility for different speeds of travel will allow these countries to retain the important aspects of their cultural identity and practices whilst adopting what is useful for them to promote the appropriate development of their people.

8.6 Limitations of study

This study can make a positive contribution to the development of strategic management systems in KSA; as in any research, this study is also subject to certain limitation that must be recognised and that could also suggest areas of further research. However, every care was taken in structuring this research so that these limitations would not significantly affect contributions.

First, the time frame was one of the main constraints. Given the limited time frame, a complete investigation of the phenomena under consideration, especially with case studies, could not be undertaken. Though all possible efforts were made to interview as many people as possible in each organisation, nevertheless lack of time was seen as the main inhibitor to this. With more time given for investigation, more and richer data could be obtained.

Second, other limitations are the difficulties associated with all quantitative and qualitative approaches. There exists no practical way whereby the researcher can ensure the truthfulness and sincerity of the respondents when completing the survey questionnaire or while giving answers during interviews. Given these considerations, it is reasonable to conclude that the respondents may have provided answers that may have deviated from reality. In addition, this research needed to be conducted in an Arabic context; the entire questionnaire and interviews

questions were translated from English into Arabic by an English translation specialist. To establish measurement equivalence, the accuracy of the translation was checked by retranslation into English for the purpose of ensuring that there have not been any changes in the meaning of the original items. According to access limitation, the researcher faced some difficulties when distributing the questionnaires to the male section in IPA (due to cultural restrictions); the researcher assigned assistants who committed themselves to distribute the rest of the questionnaire. The researcher made an initial contact with the IPA gatekeeper to get the permission to carry out the research plan with consideration as to what is practically accessible and ensuring organisational confidentiality, and the questionnaires were distributed based on the research sampling strategy. However, the quantitative study was strengthened by a qualitative study, namely the case studies of the four IPA organisations, in which the researcher conducted lengthy interviews with the participants, as well as using corporate literature available; quantitative and qualitative studies are not without limitations.

Finally, as discussed in previous chapters, KM and BSC are an area of research where theory is still inadequate. This called for an option to follow an exploratory approach in this study. This is particularly the case as the research seeks to develop a holistic and integrative understanding of KM by using BSC, a feature which demands broadening the scope of the study in reviewing a large body of relevant literature and collecting a huge set of appropriate data. However, while the researcher has endeavoured to meet such a requirement by reviewing various bodies of literature and seeking different types of data from both primary and secondary resources, it is not possible to claim that the empirical investigation has come across all issues related to KM management and the BSC strategic system.

8.7 Summary:

This study has presented a holistic review of KM project implementation through a comprehensive scrutiny of the relevant literature, an exploratory survey of IPA's employees, and in-depth interviews for the case studies. It has provided a detailed discussion of critical factors of SKMBS project implementation. These factors culminated in the proposed integrated model depicted in Figure 8.1. The study agreed that the SKMBS project can yield to a wide selection of benefits that are of a tangible and intangible nature.

The proposed model is hypothesised to deliver a comprehensive approach to successful KM project. The model is expected to be useful to a wide range of organisations, since it provides for KM implementation plans to suit any business situation. It is to be hoped that by describing and analysing the major barriers to the IPA organisations in moving towards a SKMBS model and by suggesting some possible and realistic ways of addressing these barriers, this research has contributed to the understanding of an important sector of the KSA economy and to showing how this sector has a potential to be transformed to a state where it will be able to meet the challenges in the KSA in the increasingly global economy of knowledge and high level skills.

Finally, it is hoped that the theory and research findings presented in this research can aid the development of KM, as well as serving as a consultative tool for organisations in their KM projects.

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Appendix – A

Questionnaire

تقييم إدارة المعرفة باستخدام إستراتيجية إدارة الأداء المتوازن

في القطاع العام

حالة تطبيقية على معهد الإدارة العامة

في المملكة العربية السعودية

رسالة دكتوراه مقدمة الى جامعة بورتسموث في المملكة المتحدة

إعداد

سلوى الحمودي

2009

الزميل العزيز / الزميلة العزيزة ....

السلام عليكم ورحمة الله وبركاته:

هذه الاستبانة جزء من مشروع بحث لبرنامج الدكتوراه في تخصص الموارد البشرية والمقدم الى قسم نظم الادارة الاستراتيجية بجامعة بورتسموث بالمملكة المتحدة بعنوان تقييم إدارة المعرفة* باستخدام إستراتيجية إدارة الأداء الـمتوازن** حالة تطبيقية على معهد الإدارة العامة في المملكة العربية السعودية.

إن الهدف الرئيسي من هذه الاستبانة هو معرفة آرائكم واتجاهاتكم حول مفهوم إدارة المعرفة من ناحية إستراتيجية باستخدام إدارة الأداء المتوازن ومن ثم التعرف على إمكانية تطبيق المفهوم بالمع هد من خلال تقييم أنظمة وسياسات المعهد الداعمة لعوامل نجاح مفهوم إدارة المعرفة ومن ثم تقديم تصور مقترح لتبني مفهوم إدارة المعرفة في معهد الإدارة العامة.

لقد صممت الاستبانة لتكون سهلة ومختصرة وقد تستغرق منك 15 دقيقة لإنهائها.

إن إجابتك على الاستبانة والمعلومات التي تقدمها سوف تكون ذات قيمة بالغة في إنجاح أهداف هذه الدراسة، و جميع المعلومات التي تقدمها غير قابلة للنشر بشكل فردي وسوف تعامل بسرية تامة لغرض الدراسة والبحث العلمي فقط علما بان ذكر الاسم غير مطلوب.

الباحثة إذ تقدر تعاونكم تشكركم سلفا على تكرمكم بتعبئة الاستبانة.

<u>آمل منكم بعد الانتهاء منها التكرم بإرسالها إلى إدارة التخطيط والتطوير</u>

الباحثة / سلوى الحمودي

عضو هيئة تدريب، الفرع النسوي

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* أدارة المعرفة : هي خليط من الإجراءات والتطبيقات القائمة على المعلومات والخبرات والقيم والمعتقدات وطرق العمل التي يمتلكها الأفراد أو المتاحة داخل المنظمة والتي يمكن نقلها ومشاركتها مع الآخرين.

**إدارة الأداء المتوازن: هو نظام إداري يركز على ترجمة رؤية وإستراتيجية الإدارة إلى مقاييس أداء فعالة قابلة للتطبيق ، ويوازن بين أربع جوانب: الجانب المالي ، جانب العمليات الداخلية ، جانب التعلم والنمو، وجانب العملاء

الرجاء التكرم بقراءة العبارات ثم وضع علامة (✔) بما تراه مناسبا في المربع الذي يبين درجة موافقتك على كل منها على أن تكون إجابتك على العبارة بإختيار إجابة واحدة فقط.

<u>**الجزء الأول:**</u>

ما هو رأيكم حول مدى توفر موارد المعرفة من مصادرها المختلفة داخل المعهد في العبارات التالية:
الموارد مثل (أجهزة حفظ المستندات والمعلومات، كمبيوتر، انترنت، معدات، آليات، معامل، قاعات دراسية، مكتبات، العاملين المؤهلين والمختصين، وغيرها .....)

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	العبارات	الرقم
					الإدارة العليا تدعم إداريا الجهود المبذولة في توفير موارد المعرفة	1
					توفر الإدارة العليا الدعم المالي لبناء موارد المعرفة وتطورها	2
					يمكن لهيكل المعهد التنظيمي أن يتغير ويتكيف حسب الحاجة	3
					يساعد الهيكل التنظيمي في المعهد على نقل المعلومات بين المستويات الإدارية بسهولة ويسر.	4
					تعتبر المستندات والمعلومات المحفوظة داخل المعهد مصادر مهمة للرجوع إليها وقت الحاجة	5
					يشجع المعهد العاملين على توثيق معارفهم للاستفادة منها على سبيل المثال (عمل استشارات ، أبحاث ، حقائب ، حالات دراسية ، برامج وتطبيقات حاسب ، وغيرها..)	6
					يسعى المعهد للحفاظ على العاملين من خلال توفير فرص التطوير الوظيفي لهم	7
					يتمتع العاملين ذوي المعارف والمهارات العالية بصلاحيات أكبر في أداء الأعمال	8
					تتم مكافأة العاملين عندما يقومون بجهود جيدة في نقل المعرفة أو مساعدة للآخرين على التعلم	9
					يشجع العاملين في القسم الذي اعمل به المبادرة في استخدام طرق جديدة ومبتكرة لأداء الأعمال	10

الجزء الثاني:

ما هو رأيكم حول النظام الداخلي للمعهد القائم على نقل ومشاركة المعلومات في العبارات التالية؟

النظام الداخلي هو(عمليات وإجراءات نقل المعرفة، تقنية المعلومات والاتصالات المتاحة ، الثقافة التنظيمية الداعمة لنقل المعلومات)

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	العبارات	الرقم
					يهتم المعهد بجمع وتوحيد المعلومات الهامة للرجوع إليها وقت الحاجة	1
					يهتم المعهد بتصنيف وترميز المعلومات وحفظها للرجوع إليها وقت الحاجة	2
					يحتفظ المعهد بنظم معلومات الكترونية (قواعد المعلومات الالكترونية، برامج وأنظمة الحاسب الآلي، وغيرها...) بهدف تسهيل عمليات نقل وتوصيل المعارف	3
					يوفر المعهد لجميع العاملين فيه الحصول على المعلومات من جميع مصادرها على حد سواء مثل (معامل، مكتبات ، أجهزة حفظ المعلومات ، آليات، كمبيوتر، وغيرها.....)	4
					يتيح المعهد للعاملين الاستفادة من تقنية الاتصالات والمعلومات في أداء الأعمال (هاتف، فاكس ، المراسلات الكتابية، وغيرها....)	5
					يتيح المعهد لجميع العاملين استخدام شبكة المعلومات الخارجية (الانترنت)	6
					يتيح المعهد لجميع العاملين استخدام نظم الدعم الالكتروني للأداء للحصول على المعلومات من أمثلة ذلك (نظام الإنتاجية، الأنظمة المكتبية وقواعد المعلومات الالكترونية، نظام البريد الالكتروني، وغيرها..)	7
					تؤيد ثقافة المعهد التنظيمية أهمية تبادل المعارف والخبرات بين العاملين وتدعمه	8
					يتبادل العاملين المعلومات المتعلقة بالعمل بثقة تامة داخل المعهد	9
					ينسق المعهد للعاملين رحلات واجتماعات ترفيهية خارج نطاق العمل للمحافظة على التواصل وتبادل الخبرات بينهم	10

الجزء الثالث:

ما هو رأيكم حول مدى إمكانية توفر فرص التعلم المتاحة للعاملين داخل المعهد في العبارات التالية؟

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	العبـــــــــــــارة	م
					في الإدارة الواحدة، يتبادل العاملين المعارف والخبرات اللازمة لأداء الأعمال	1
					تُشكل فرق العمل في المعهد لتبادل المعارف والتجارب المختلفة بين المجموعات والأقسام والإدارات المشاركة	2
					يشجع المعهد العاملين على نشر ونقل الخبرات بطرق مختلفة مثل (نشر الخبرات في النشرة الإخبارية الداخلية والالكترونية، والاجتماعات)	3
					تتبادل الإدارات مع بعضها في المركز الرئيسي والفروع المعارف والخبرات و التجارب العملية بهدف التحسين والتطوير	4
					يشجع المعهد العاملين فيه على التعلم والتطوير المستمر	5
					تنظر الإدارة التي اعمل فيها إلى مشاكل العمل على أنها فرص يستفاد منها في تطوير وتحسين العمل.	6
					يتم التعامل مع الأخطاء في الإدارة التي اعمل فيها كفرص للتعلم الايجابي وليس للوم والعقاب السلبي	7
					يوفر المعهد لكل فرد برنامج تطوير وتعلم ذاتي كجزء من تطوير العناصر البشرية في المعهد.	8
					يتوفر في المعهد موارد وبرامج جيدة للتعلم متاحة لكل الأفراد	9
					تشجع الإدارة التي اعمل فيها العاملين على الاستفادة من تقنية الحاسب والمعومات لتطوير مهاراتهم الفردية	10

الجزء الرابع:

ما هو رأيكم حول مدى أهمية التعرف على احتياجات وطلبات المستفيدين من خدمات المعهد من اجل التحسين والتطوير؟

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	العبــــــــــارة	م
					يوجد تعاون مشترك بين معهد الإدارة العامة والمستفيدين من خدماته من اجل تبادل المعلومات والخبرات	1
					يتم التعرف على احتياجات المستفيدين وطلباتهم من خلال عقد اجتماعات أو مقابلات مع الممثلين لهم مثل (القيادات الإدارية العليا، ومدراء التدريب للقطاعات الأخرى، وغيرهم...)	2
					يضع المعهد في اعتباره قضايا سوق العمل والتعرف على احتياجاته	3
					يشارك المعهد في فعاليات تبادل الفكر والمعرفة مع المؤسسات الأكاديمية والجمعيات المهنية وغيرها من مؤسسات المجتمع ذات العلاقة مثلا(ندوات، محاضرات، مؤتمرات، وغيرها..)	4
					يقوم المعهد بتقويم أداء العاملين بشكل دوري ومستمر.	5
					يقوم المعهد بتقويم خدماته المقدمة للقطاعات الأخرى (على سبيل المثال تقويم البرامج والحلقات، تقويم الندوات والمؤتمرات، وغيرها.....)	6
					يقوم المعهد بتطوير أدائه وخدماته بشكل مستمر وفقا للحاجة	7
					يتابع المعهد التوجهات المستقبلية التي تحدث في محيطه الخارجي على سبيل المثال (أساليب إدارية وتدريبية حديثة أو تقنية معلومات جديدة، وغيرها....)	8
					يسعى المعهد للاستفادة من التجارب الرائدة في مجال التدريب داخل وخارج المملكة (من خلال حضور المؤتمرات، مراجعة البحوث المنشورة، وغيرها...)	9
					يستفيد المعهد من المقارنات مع أفضل الممارسات والتطبيقات في القطاعات الأخرى من أجل تطوير نشاطاته الأساسية	10

	معلومات عامة

1 مقر العمل:	المركز الرئيسي ☐
	فرع منطقة مكة المكرمة (جدة)
	فرع المنطقة الشرقية (الدمام) ☐ ☐
	الفرع النسائي (الرياض) ☐
2 طبيعة العمل الذي تقوم به:	عضو هيئة تدريب ☐ موظف إداري ☐
3 الجنسية:	سعودي ☐ غير سعودي ☐
4 عدد سنوات الخبرة:	اقل من 5 سنوات ☐
	من 5 إلى أقل من 10 سنوات ☐
	من 10الى اقل من 15سنوات ☐
	من 15 إلى اقل من 20 سنة ☐
	أكثر من عشرون سنة ☐
5 المستوى التعليمي:	
	ثانوي ☐ دبلوم بعد الثانوية ☐ جامعي ☐
	دبلوم عالي ☐ ماجستير ☐ دكتوراه ☐

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Appendix – B

Data Analysis

Table 1 Knowledge Management Resources (Financial and Non-Financial) in IPA (N=238)

No	Statements		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Chi-Square	P-value	Mean	Standard deviation
	1-Top Management support										
1-1	Higher administration supports the exerted efforts to provide knowledge sources	F	0	10	21	127	80	149.73	.000*	4.16	0.75
		%	0	4.2	8.8	53.4	33.6				
1-2	Higher administration provides financial support to build and develop the knowledge sources	F	1	18	45	133	41	218.30	.000*	3.81	0.81
		%	0.4	7.6	18.9	55.9	17.2				
	2-The Organisation Structure										
2-1	The institute's organisational structure may change and adapt as needed	F	12	33	73	79	40	66.86	.000*	1.08	3.43
		%	5.1	13.9	30.8	33.3	16.9				
2-2	The institute's organisational structure helps information transfer between the administrative levels to occur easily and smoothly	F	6	34	40	114	44	134.35	.000*	1.01	3.65
		%	2.5	14.3	16.8	47.9	18.5				
	3-Storing and Retrieving Information										
3-1	The documents and information kept at the institute are considered important sources to be consulted if needed	F	1	9	32	109	85	192.22	.000*	4.13	0.81
		%	0.4	3.8	13.6	46.2	36.0				
3-2	The institute encourages the employees to document their knowledge for sharing (e.g. in consultancy reports, researches, portfolios, study cases, computer applications and programmes, etc.)	F	6	15	37	111	68	154.87	.000*	3.92	0.96
		%	2.5	6.3	15.6	46.8	28.7				
	4- KM Human Resources										
4-1	The institute seeks to retain the employees by providing employment development opportunities	F	13	36	48	94	47	73.21	.000*	1.13	3.52
		%	5.5	15.1	20.2	39.5	19.7				
4-2	The highly skilled and highly qualified employees are given greater responsibility and authority	F	20	41	73	68	33	44.21	.000*	1.14	3.22
		%	8.5	17.4	31.1	28.9	14.0				
4-3	The employees are rewarded when they make the effort to transfer knowledge or help others to learn	F	22	56	70	58	32	33.17	.000*	1.17	3.09
		%	9.2	23.5	29.4	24.4	13.4				
4-4	The employees in my section are encouraged to take the initiative in using new and innovative methods to perform tasks	F	11	30	54	97	45	87.28	.000*	1.07	3.56
		%	4.6	12.7	22.8	40.9	19.0				

* Significant level α =0.05

Table 2 Knowledge Management Technology Dimension (Internal Process) in IPA (N=238)

No	Statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Chi-Square	P-value	Mean	Standard deviation
5 - Processes for KM Transfer											
5-1	The institute is concerned about the collection and integration of important information to be referred to as needed	F	0	16	29	133	60	138.23	.000*	3.99	0.80
		%	0	6.7	12.2	55.9	25.2				
5-2	The institute is concerned about the classification and coding and maintenance of the information to be referred to as needed	F	0	13	41	117	66	98.78	.000*	3.99	0.82
		%	0	5.5	17.3	49.4	27.8				
5-3	The institute has electronic information systems (electronic data base, software, computer systems etc.) which aim to make knowledge transfer and communicate easier	F	2	6	32	116	81	207.74	.000*	4.13	0.79
		%	0.8	2.5	13.5	48.9	34.2				
5-4	The institute provides all employees with information from all sources such as laboratories, libraries, information backup systems, computers, archives etc.	F	0	16	38	104	80	79.91	.000*	4.04	0.87
		%	0	6.7	16.0	43.7	33.6				
6 - Information and Communications Technology for KM											
6-1	The institute allows employees to use the office communications equipment (phone, fax, electronic memorandum, Outlook etc.) to facilitate their work	F	2	8	17	111	99	237.24	.000*	4.25	0.79
		%	0.8	3.4	7.2	46.8	41.8				
6-2	The institute makes the internet available to all employees	F	7	17	20	83	110	179.18	.000*	4.14	1.04
		%	3.0	7.2	8.4	35.0	46.4				
6-3	The institute makes available to the employee electronic support systems to obtain information, such as office systems, electronic information databases, email etc.	F	2	8	15	93	120	252.37	.000*	4.34	0.81
		%	0.8	3.4	6.3	39.1	50.4				
7 - Organizational Culture of Knowledge Transfer											
7-1	The institute's organisational culture supports and recognises the importance of exchanging knowledge and experiences between the employees	F	5	13	53	114	52	157.57	.000*	3.82	0.90
		%	2.1	5.5	22.4	48.1	21.9				
7-2	There is mutual trust when employees exchange work-related information within the institute	F	3	29	61	94	50	98.59	.000*	3.67	0.98
		%	1.3	12.2	25.7	39.7	21.1				
7-3	The institute co-ordinate recreational and social activities to maintain good relations among staff	F	2	13	41	120	62	184.22	.000*	3.95	0.85
		%	0.8	5.5	17.2	50.4	26.1				

* Significant level α =0.05

Table 3 Knowledge Management Learning and Innovation dimension in IPA

No	Statements		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Chi-Square	P-value	Mean	Standard deviation
8- Organisational Learning											
8-1	Within a single department, the employees exchange knowledge and experiences required to perform their work	F	1	15	40	136	46	233.38	.000*	3.88	0.80
		%	0.4	6.3	16.8	57.1	19.3				
8-2	Within the whole IPA, the teamwork is arranged to exchange knowledge and experiences between the different groups, sections, and departments	F	2	38	64	106	28	130.99	.000*	3.50	0.92
		%	0.8	16.0	26.9	44.5	11.8				
8-3	The IPA encourages the employees to spread and transfer experiences in different ways such as through the internal newsletter, cross-branch electronic newscast, and meetings	F	9	32	54	116	27	144.47	.000*	3.50	0.98
		%	3.8	13.4	22.7	48.7	11.3				
8-4	The departments in the headquarters and branches exchange knowledge and experiences with the aim of improvement	F	16	34	64	103	21	109.85	.000*	3.33	1.04
		%	6.7	14.3	26.9	43.3	8.8				
9 – Learning Climate											
9-1	The IPA encourage employees to learn and engage in continuous professional development	F	12	28	42	107	49	109.52	.000*	3.64	1.08
		%	5.0	11.8	17.6	45.0	20.6				
9-2	The department in which I work regards problems as opportunities to be benefited from in developing and improving the work	F	12	23	72	99	28	117.32	.000*	3.46	0.99
		%	5.1	9.8	30.8	42.3	12.0				
9-3	The department in which I work regards mistakes as positive learning opportunities and not as cause for reprimand or punishment	F	16	28	80	83	30	84.28	.000*	3.35	1.06
		%	6.8	11.8	33.8	35.0	12.7				
10 – Self development Opportunities											
10-1	The IPA provides optional self-development and training programmes as part of human resources management	F	27	50	70	63	26	34.63	.000*	3.86	0.96
		%	11.4	21.2	29.7	26.7	11.0				
10-2	There are good learning sources available (books, DVDs, CDs etc.) at the institute for each employee	F	15	31	68	94	27	92.12	.000*	3.37	1.05
		%	6.4	13.2	28.9	40.0	11.5				
10-3	The department in which I work encourages the employees to benefit from computer technology and information to develop their individual skills	F	9	16	26	133	54	216.16	.000*	3.04	1.17
		%	3.8	6.7	10.9	55.9	22.7				

* Significant level α =0.05

Table 4 Knowledge Management Beneficiaries Dimension (External Knowledge) in the IPA
(N=238)

No	Statements		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Chi-Square	P-value	Mean	Standard deviation
11- Creating Advantages for Customers and Suppliers											
11-1	There is joint cooperation between the IPA and the beneficiaries of its services in order to exchange information and experience	F	2	24	73	103	36	136.24	.000*	3.61	0.89
		%	0.8	10.1	30.7	43.3	15.1				
11-2	The beneficiaries' requirements are identified by conducting meetings or interviews with their representatives such as higher management leaders, training managers for other sectors etc	F	6	30	63	108	31	130.27	.000*	3.53	0.95
		%	2.5	12.6	26.5	45.4	13.0				
11-3	The IPA is concerned with job market issues and identifying its needs	F	9	22	59	121	26	171.50	.000*	3.56	0.93
		%	3.8	9.3	24.9	51.1	11.0				
11-4	The IPA participates in thought and knowledge exchange with academic organisations and professional societies and related organisations, for example, debates, lectures, conferences	F	4	15	42	129	47	202.97	.000*	3.84	0.87
		%	1.7	6.3	17.7	54.4	19.8				
12- Performance evaluation and Continuous Improvement											
12-1	The IPA evaluates the employees performance periodically and continuously	F	1	13	33	125	64	208.49	.000*	4.00	0.81
		%	0.4	5.5	14.0	53.0	27.1				
12-2	The IPA evaluates the services it provided to other sectors, for example, programmes, symposiums, debates and conferences	F	5	12	43	121	55	181.03	.000*	3.88	0.89
		%	2.1	5.1	18.2	51.3	23.3				
12-3	The IPA develops its own performance and services continuously according to its need	F	6	21	53	112	46	139.01	.000*	3.71	0.95
		%	2.5	8.8	22.3	47.1	19.3				
12-4	The IPA follows the future directions outside its boundaries, for example, new management theories, new training methods and new information technology	F	5	20	44	128	40	192.21	.000*	3.75	0.90
		%	2.1	8.4	18.6	54.0	16.9				
13- External environment knowledge through Benchmarking											
13-1	The IPA actively seek to adopt good practice in training from within the KSA and abroad through attending conferences, reviewing published researches etc	F	6	10	34	127	61	206.16	.000*	3.95	0.89
		%	2.5	4.2	14.3	53.4	25.6				
13-2	The IPA benefits from comparisons with other institutions of best practice and the implementation of fundamental activities	F	10	18	61	109	40	132.29	.000*	3.63	0.98
		%	4.2	7.6	25.6	45.8	16.8				

* Significant level α =0.05

Example of Reliability analysis result (HRM domain)

Case Processing Summary

		N	%
Cases	Valid	234	98.3
	Excluded[a]	4	1.7
	Total	238	100.0

a. Listwise deletion based on all variables in the

procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.819	.818	4

Inter-Item Correlation Matrix

	The institute seeks to maintain the employees by providing employment development opportunities	The high skills employees who enjoys knowledge bigger competences in performing works	The employees are rewarded when they exert good efforts in transferring knowledge or help other to learn	The employees at my section are encourage initiative in using new and innovative methods to perform works
The institute seeks to maintain the employees by providing employment development opportunities	1.000	.488	.519	.457
The high skills employees who enjoys knowledge bigger competences in performing works	.488	1.000	.634	.542
The employees are rewarded when they exert good efforts in transferring knowledge or help other to learn	.519	.634	1.000	.538
The employees at my section are encourage initiative in using new and innovative methods to perform works	.457	.542	.538	1.000

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Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
The institute seeks to maintain the employees by providing employment development opportunities	9.8761	8.315	.578	.335	.800
The high skills employees who enjoys knowledge bigger competences in performing works	10.1795	7.727	.679	.477	.753
The employees are rewarded when they exert good efforts in transferring knowledge or help other to learn	10.3333	7.528	.693	.490	.746
The employees at my section are encourage initiative in using new and innovative methods to perform works	9.8419	8.365	.614	.380	.784

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.4103	13.385	3.65850	4

ANOVA

		Sum of Squares	df	Mean Square	F	Sig
Between People		779.654	233	3.346		
Within People	Between Items	39.868	3	13.289	21.901	.000
	Residual	424.132	699	.607		
	Total	464.000	702	.661		
Total		1243.654	935	1.330		

Grand Mean = 3.3526

Example of Factor analysis results (HRM domain)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.799
Bartlett's Test of Sphericity	Approx. Chi-Square	315.119
	df	6
	Sig.	.000

Communalities

	Initial	Extraction
The institute seeks to maintain the employees by providing employment development opportunities	1.000	.570
The high skills employees who enjoys knowledge bigger competences in performing works	1.000	.696
The employees are rewarded when they exert good efforts in transferring knowledge or help other to learn	1.000	.711
The employees at my section are encourage initiative in using new and innovative methods to perform works	1.000	.617

Extraction Method: Principal Component Analysis.

Total Variance Explained

Compo nent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.593	64.830	64.830	2.593	64.830	64.830
2	.556	13.904	78.734			
3	.487	12.182	90.917			
4	.363	9.083	100.000			

Total Variance Explained

Compo nent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.593	64.830	64.830	2.593	64.830	64.830
2	.556	13.904	78.734			
3	.487	12.182	90.917			
4	.363	9.083	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
The institute seeks to maintain the employees by providing employment development opportunities	.755
The high skills employees who enjoys knowledge bigger competences in performing works	.834
The employees are rewarded when they exert good efforts in transferring knowledge or help other to learn	.843
The employees at my section are encourage initiative in using new and innovative methods to perform works	.785

Extraction Method: Principal Component Analysis.

a. 1 components extracted.