Harnessing Knowledge Management to Improve Performance within Saudi Organisations

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ABSTRACT

The key to understanding the development of competitive advantage is to understand knowledge and how it is managed and shared. Organisations not only need to understand comprehensively the concept of knowledge in order to manage it effectively, but also to create and maintain competitive advantages, especially as the business environment has become increasingly competitive in recent years. The aim of this study is to understand how the knowledge management (KM) concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations. Therefore, grounded theory strategy has been used, providing in-depth information relevant to KM implementation. Data were collected from face-to-face semi-structured interviews with 24 top managers from 19 different top-ranking companies operating in Saudi Arabia.

As a result of constant comparative analysis of the collected data, five major categories emerged: barriers to KM; organisational learning (OL); means of communication; critical successful factors (CSFs); and impacts of KM on organisational performance (OP). The most common barrier to knowledge sharing is the unwillingness of employees to participate and share their knowledge. Moreover, OL is very important. It is considered to be the main goal of KM and it helps organisations to sustain a competitive advantage and improve employees’ performance and efficiency by encouraging them to learn and share knowledge through the creation of a good learning environment. A well-structured communication system is also a crucial factor for KM success because its role is to ensure and facilitate the passing of knowledge to the appropriate people. Furthermore, there are 14 factors that are very important to the successful implementation of KM and these positively influence employees’ willingness to share knowledge. The study found that the most important factor influencing the success of KM implementation is the employees’ willingness to participate in KM activities and share their knowledge. This implies that organisations that want to be knowledge-based by implementing KM activities need to improve the willingness of employees to participate in the project, otherwise it will fail. Therefore, the researcher has labelled this category ‘employees’ willingness’ and has selected it as a core category.

The comparative analysis between knowledge-based and non-knowledge-based organisational performance is presented in this study in order to determine how KM enhances productivity, performance and competitiveness. Therefore, the theoretical and practical contribution was discussed, as well as the findings. The theoretical model illustrates how employees’ willingness can be influenced by the other categories. A theoretical contribution of the model is the determination of the reasons for employees in knowledge-based organisations being more interactive and participating in KM activities by analysing the barriers that impede the adoption of KM activities and, especially, knowledge-sharing activities between employees, as well as the factors that aid the adoption of knowledge-sharing activities. This aided the researcher to determine the conditions that influence employees to share more, or less. The researcher concludes that highlighting the human side of the KM perspective is another of the research’s contribution to knowledge, achieved by covering the current lack of existing empirical studies in the field. Furthermore, the main practical contribution of this study is the presentation of a framework model that demonstrates the process for effective KM implementation. This model is considered to be a summary of the experiences of the organisations participating in this research.

Keywords: Critical successful factors (CSFs), Employees’ willingness, knowledge management (KM), organisational performance (OP).
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In the name of Allah (God) The compassionate, the merciful

Praise be to Allah, the lord of the worlds. And blessings and peace be upon the last messenger of Allah, Mohammed (peace be upon him).

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PUBLICATIONS

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<td>Chief Executive Officer</td>
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<td>CKO</td>
<td>Chief Knowledge Officer</td>
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<td>CRM</td>
<td>Customer Relationship Management</td>
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<td>CSFs</td>
<td>Critical Success Factors</td>
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<td>GM</td>
<td>General Manager</td>
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<td>OJT</td>
<td>On the Job Training</td>
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<td>OL</td>
<td>Organisational Learning</td>
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<td>OP</td>
<td>Organisational Performance</td>
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<td>R&amp;D</td>
<td>Research and Development</td>
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<td>ROI</td>
<td>Return on Investment</td>
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<td>SA</td>
<td>Saudi Arabia</td>
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<td>SOP</td>
<td>Standard Operation Procedure</td>
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<td>SPP</td>
<td>Standard Procedure and Process</td>
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<td>TQM</td>
<td>Total Quality Management</td>
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Chapter 1 Overview of the study

1.1 Introduction

This research set out to understand how the knowledge management (KM) concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations operating in Saudi Arabia (SA). In addition, it is aimed at determining the Critical Success Factors (CSFs) that affect KM implementation in the real world. This chapter presents an overview of the research by summarising its main components. It begins with a discussion of the background to the study and then introduces the research problem. This is followed by a description of the research motivations, aims and questions. Then, it concludes with an outline of the structure of the research.

1.2 Background

For more than a decade, knowledge has been considered to be one of the most important assets of a company and an essential strategic resource to retain a sustainable competitive advantage (Nonaka et al 2000; Choi et al 2008; Chen et al 2012). Competitive advantage no longer relies on tangible assets such as natural resources or material production, but has instead become dependent on intangible assets such as KM, which helps organisations to perform with better productivity and be more competitive (Yang 2009). Many authors have claimed that knowledge is the most important resource (Stam 2007; Chen et al 2012), even more so than physical assets such as land, capital and labour (Chen et al 2012). KM has become a common function in business organisations (Zack et al 2009). Many organisations are concerned with improving their productivity in order to become more competitive in the market, and to do so they should be able to identify sources of productivity (Stam 2007).

Nonaka (1991) states that successful organisations are those that constantly create new knowledge, and thus consider knowledge to be a positive source of lasting competitive advantage. The benefits of new knowledge are a reduction in costs, increased efficiency, and improved return on investment. The most important element influencing productivity, quality and production cost is KM. The main reason for the striking
success of Japanese companies is their ability to create new knowledge. Nonaka (1991: p.96) states that:

“It is found most commonly at highly successful Japanese competitors like Honda, Canon, Matsushita, NEC, Sharp, and Kao. These companies have become famous for their ability to respond quickly to customers, crate new markets, rapidly develop new products, and dominate emergent technologies. The secret of their success is their unique approach to managing the creation of new knowledge”.

Drucker (1993) states knowledge has now become a basic economic resource, now exceeding the value of capital, natural resources, and labour. Drucker (2001) states that the knowledge economy of the current century has led to the creation of a new type of organisation: the knowledge-intensive organisation. These organisations treat knowledge as a core strategic resource. Thus, they need a new approach to help manage this resource effectively, and that approach is KM. The aim of KM is to effectively help employees to create, share and exploit knowledge to improve an organisation’s knowledge base (Jashapara 2004). Moreover, Zack (2003:p.2) defined knowledge-based organisations as:

“Knowledge-based organisations (KBO) are usually considered to be those whose product or service is knowledge-intensive. The characteristics of a KBO, however, go beyond product to include process, purpose and perspective. Process refers to an organization’s knowledge based activities and processes. Purpose refers to its mission and strategy. Perspective refers to the worldview and culture that influences and constrains an organization’s decisions and actions. KBOs exhibit knowledge-intensive processes, purpose, and perspective, regardless of their product”.

Also, knowledge based organisation has been defined in Wikipedia site as:

“A knowledge organization is a management idea, describing an organization in which people use systems and processes to generate, transform, manage, use, and transfer knowledge-based products and services to achieve organizational goals. A knowledge organization also links past, present, and future by capturing and preserving knowledge in the past, sharing and mobilizing knowledge today, and Knowledge organizations can be viewed from a number of perspectives: their general nature, networks, behaviour, human dimensions, communications, intelligence, functions, and services”.

Moreover, KM helps organisations to reduce costs, increase speed and meet customer needs (Grayson and O’Dell 1998; Civi 2000). KM drives organisations to increase profits, identify new markets, improve their market share, improve efficiency and be more effective (Civi 2000). Therefore, organisations should have the capability to understand knowledge and the development of competitive advantage (Yang 2009). KM
is critical to the success of organisations (Walker 2006). KM is a process that helps organisations to generate and gain knowledge, and to select, organise, use, disseminate, and transfer important information and expertise owned by the organisation. This process is necessary for administrative activities, such as making decisions, solving problems, learning, and strategic planning (Gupta et al 2000).

KM can be defined as doing the required things to maximise knowledge resources (Becerra-Fernandez et al 2004). A simple definition of KM is getting the right knowledge to the right people at the right time so that they can make the best decisions (Davenport and Prusak 1998). Moreover, NASA defined KM as:

“Getting the right information to the right people at the right time, and helping people create knowledge and share and act upon information in ways that will measurably improve the performance of an organization and its partners. For NASA this means delivering the systems and services that will help our employees and partners get the information they need to make better decisions.” (Online- NASA web site).

The implementation and use of KM has increased rapidly since 1990. The percentage of the largest global organisations which have KM projects is 80% (Lawton 2001; KPMG 2000). Moreover, a report from the Economist Intelligence Unit states that more than 1,600 senior executives in 100 countries believe KM offers the greatest potential for gains in productivity over the next 15 years (about 43% of the total response). Furthermore, most academics and senior executives believe that KM is the only way for an organisation to be able to meet the challenges of maintaining a continuous competitive advantage (Walker 2006). Moreover, an exploratory quantitative survey study determined that KM practices have a direct relationship with organisational performance (OP) (Zack et al 2009). Stam (2007) states that the knowledge industry is the largest industry and has grown faster than traditional industries. These conclusions indicate that there is a relationship between knowledge, value creation and the growth of the economy.

Drucker (1999) realised that the actual productive power of organisations is the ability of knowledge employees to make knowledge productive. The definition of ‘knowledge workers’ is people who have “high degrees of expertise, education, or experience, and the primary purpose of their jobs involve the creation, distribution, or application of knowledge” (Davenport 2008, p.217). Therefore, organisations need to have a good learning environment in order to improve their knowledge productivity (Stam 2007).
Moreover, Pemberton et al (2002) are of the opinion that knowledge is the foundation of any complex organisation. Also, KM could be enhanced by developments in organisations’ human and cultural infrastructure, leadership and communications that promote the value of knowledge and integrate it within their core business. Technology infrastructure enables companies to work effectively on a daily basis, but longer-term competitive success relies on creating the right organisational situation.

Ellis et al (2012) argue that organisations that use organisational learning (OL) intensively have a better knowledge-sharing environment, and thus the amount of knowledge shared is higher. Also, they have better organisational outcomes. Moreover, organisations intending to implement KM projects need to create a learning environment that encourages their staff to share their knowledge (Senge 2006). Moreover, King (2008) illustrates that OL is complementary to KM and therefore OP is improved by the development of better KM and OL. Whereas OL is concerned with the process of sharing knowledge, KM is concerned with the content of the knowledge that a company acquires through that process, and finally uses. In other words, OL is considered to be the goal of KM through motivating the creation, distribution and application of knowledge and helping the organisation to achieve its goals. From this point of view, OL is considered to be one of the most important ways that organisations can utilise knowledge.

Lehner and Haas (2010) state that the personal development of employees is considered to be a critical successful factor, which means that organisations must qualify their employees through training and coaching in order to secure KM success. Moreover, Mayfield (2010) emphasises that organisations should encourage their employees to share their knowledge and experience with others through training and the promise of rewards. Today, knowledge workers are considered to be the key to organisational growth since they create innovations, and design marketing programmes and strategies that help their organisations to be competitive. Moreover, the fastest-growing and most profitable organisations are those which have the best quality of knowledge workers. For example, Microsoft – which is considered to be one of the most profitable and successful organisations in history – focuses on the hiring of knowledge workers, and lets them work alone. This approach is called the HSPALTA approach (hire smart people and leave them alone) (Davenport 2008).
1.3 Research problem

KM is considered to be relatively new and its implementation methodologies are still under development in parallel with the building of experience (Chong and Choi 2005). Thus, there has been little research into the successful development and implementation, or the potential benefits of such a system (Alavi and Leidner 1999; Civi 2000; Cormican and O'Sullivan 2003; Quaddus and Xu 2005), and there have been no sufficient examinations of the CSFs of KM (Tambyrajah and Al-Shawabkeh 2007).

Oliveira et al (2012, p.17) argue that “the implementation of KM projects continues to be a challenge for many organisations”. A major challenge facing organisations is the management of tacit knowledge through processes attempting to convince, coerce, and direct individuals within organisations to share their knowledge (Gupta et al 2000; Leseure and Brookes 2004). The complex and integrated nature of knowledge has led to a high failure rate of KM implementation (Chua and Lam 2005) and many projects fail as well (Walker 2006) due to a lack of knowledge of the CSFs of KM implementation (Chan and Chau 2005; Lam and Chua 2005). Also, poor planning of KM and its implementation has led to poor organisational knowledge. This in turn has resulted in poor management decisions, strategies and policies (Stewart et al 2000).

Pawlowski and Bick (2012) state that some individual traits cause potential barriers to KM utilisation, such as fear about job security; lack of awareness of KM; lack of time and interaction; poor verbal and written communication and interpersonal skills; age, gender, and cultural differences; lack of networking skills; and lack of trust. Moreover, a recent empirical study performed by Santos et al (2012) – conducted via semi-structured interviews with subjects from six countries: Portugal, Germany, Spain, UK, Finland, and France – listed the following main knowledge-sharing challenges: codification processes; unsuitable IT systems; lack of employees’ initiative and strategy; and, finally, lack of time and resources. Furthermore, individuals realise that knowledge is power (Santos et al 2012) and this attitude is considered to be a barrier prohibiting the development of knowledge sharing in UK police forces (Seba and Rowley 2010). Also, this attitude inhibits knowledge sharing (Reid and Bardzki 2004). In addition, an individual may not be willing to share his tacit knowledge because it may involve risks to him, such as a loss of competitive advantage over peers (Stenmark
2002). This competition between employees is also considered to be a barrier to knowledge sharing (Oliverira et al 2012).

Moreover, researchers and practitioners have considerably different views with respect to how a knowledge management system (KMS) should be designed and implemented in organisations (Feher 2004). Some researchers have investigated the CSFs that affect KM implementation (Davenport et al 1998; Alazmi and Zairi 2003; Wong and Aspinwall 2005; Chong 2006; Oliver and Kandadi 2006), but very little research has been carried out on an integrated approach to KM implementation (Alsadhan et al 2006). Therefore, there is a lack of empirical studies showing how KM makes a difference to OP and there are few studies and articles that examine and investigate the relationship between KM and other factors, as well as KM and OP (Zack et al 2009). Also, there is not yet sufficient research measuring the benefits of motivating employees to participate and share their knowledge in organisations (Kang et al 2007).

1.4  Research motivations

Nowadays, organisations in SA need to understand comprehensively the concept of knowledge not only in order to manage it effectively, but also to create and maintain competitive advantages. The business environment in SA and elsewhere has become increasingly competitive. However, KM is considered to be a new type of management in SA, coming to prominence just a few years ago. Thus, there has been little research into the successful development and implementation of KM in SA, or the potential benefits of such a system, and until today there have been no sufficient examinations of the CSFs for effective KM implementation and how KM can improve performance within Saudi organisations. Moreover, my home country is Saudi Arabia and the people have a certain culture, traditions and ways of doing things. The findings of this research can be used in other places because nine international organisations participated in this research.
1.5 Research scope

The purpose of this grounded theory study was to contribute and examine the relationships between KM implementation and performance within Saudi organisations, which has not been researched to a great extent in the past. Moreover, most of the existing studies in this field are based on content analysis of the process of implementing KM and the CSFs of doing so, and rarely is there any attempt to analyse the affect of employees’ willingness to participate in KM. Therefore, this study aims to demonstrate the most important factors affecting the willingness of employees to participate in KM activities and share their knowledge in SA, as well as to develop theoretical insights that differ from those already existent in this field. Also, this research aims to determine the reasons behind the increased interactivity and participation in KM activities of employees in knowledge-based organisations in SA by analysing the barriers that impede the adoption of KM activities and the factors that aid the adoption of knowledge-sharing activities. In other words, the researcher aims to determine the conditions that influence employees to share more or less in SA and he believes that highlighting the human side of the KM perspective is the research’s contribution to knowledge, achieved by covering the current lack of existing empirical studies in the field.

1.6 Research aims and objectives

The aim of this research is to understand how the KM concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations in Saudi Arabia. The main objectives of this research are:

1. To determine the CSFs of KM implementation in Saudi Arabia and explore the issues affecting its success in organisations.
2. To determine the benefits of implementing KM in organisations in Saudi Arabia.
3. To list the most common barriers to KM implementation in organisations in Saudi Arabia.
4. To determine the relationship between KM implementation and OP within organisations in Saudi Arabia.
5. To determine the difference in performance between two types of organisations: knowledge–based and non knowledge-based – in order to determine the impact of implementing KM on OP

6. To propose a methodology for implementing KM with organisations in Saudi Arabia.

1.7 Research questions

The researcher should answer the following questions in order to achieve the research objectives:

- What are the CSFs for effective KM implementation in SA?
- What are the benefits of KM implementation in organisations in SA?
- What are the most common barriers to KM implementation in SA?
- How can organisations implement KM successfully in SA?
- What is the difference in performance between two types of organisations: knowledge–based and non knowledge-based?
- What is the relationship between KM implementation and OP within Saudi organisations?

1.8 Structure of the report

This thesis is divided into eight chapters as follows:

Chapter 1 Introduction: This chapter provides a brief overview of this research; its background; and the research aims, objectives, and problems. At the end of this chapter, the background for the later chapters of the research is presented.

Chapter 2 Literature review: This chapter presents a general overview of the literature review carried out during this research. It discusses KM issues, fundamentals, KM definitions, the importance of KM, KM benefits, implementation processes and the success factors. This review helped the researcher to identify the gaps in existing literature and subject areas in need of more research.

Chapter 3 Research methodology: This chapter discusses in detail the various research methodologies available, and provides an explanation of how the research methodology for data collection was selected. Also, this chapter presents the design of
this research and explains the processes that were applied by the researcher in order to collect data that met the research objectives.

**Chapter 4 Groundwork and data collection:** This chapter presents the qualitative data collected from the face-to-face interviews. Also, it presents the process of collecting the data in order to meet the research objectives.

**Chapter 5 Overview of coding procedure:** This chapter outlines the data analysis procedure of grounded theory and it provides a detailed explanation of the coding processes used in this study. During the first level of the coding process, 42 codes emerged, and as a result of constant comparative analysis of open coding, five main categories developed.

**Chapter 6 Data Analysis:** This chapter presents the results of the grounded theory analysis of the data. It assesses and evaluates the data gathered in this research to understand KM concepts and issues, and explain how these bodies of knowledge and processes can be applied to enhance productivity, performance and competitiveness within organisations in SA.

**Chapter 7 Discussion of findings:** This chapter describes the final stages of analysis and provides a detailed discussion of the findings of the research derived from open, axial and selective coding of the qualitative data collected.

**Chapter 8 Conclusions and further research:** This chapter presents the conclusions of the research. It also provides a summary of the findings of the research, and details the conclusions drawn. Furthermore, the theoretical and practical contributions of this study are presented in this chapter. Finally, the limitations of this study and recommendations for further research are outlined at the end of this chapter.
Chapter 2 Literature Review

2.1 Introduction

This chapter provides a review of the relevant literature on knowledge management (KM). It begins by clearly defining and explaining knowledge and KM. The chapter then proceeds to examine the key concepts of knowledge, such as knowledge hierarchies, types of knowledge and knowledge assets. This is followed by a discussion of the benefits of KM, the KM lifecycle model, KM challenges, organisational learning (OL) and KM, and improving knowledge worker performance. Then, this chapter presents the CSFs for KM implementation, the relationship between KM practices and OP, the process of KM implementation, and the future of KM.

2.2 The use of literature reviews in grounded theory

The debate around the use of a literature review in grounded theory is complex and each researcher must make an informed and justifiable decision regarding at what point during the research process a literature review should be conducted, and how extensive it should be in a grounded theory study (Dune 2011). The place of a literature review in grounded theory has been disputed and misunderstood for a long time (Charmaz 2006). This debate focuses on the use of a literature review in grounded theory during the early stages of a study (Birks and Mills 2011).

Glaser and Strauss (1967, cited in Charmaz 2006) believe the literature review should be delayed until after data collection and analysis has been completed. Charmaz states that delaying the use of a literature review in this way not only helps to avoid the researcher being influenced by others’ ideas, but also encourages the researcher to articulate his/her own ideas. Moreover, Glaser (1998) pointed out that conducting an early literature review prior to the actual study is a waste of the researcher’s time, because the literature review of a particular area is not related to emergent grounded theory. Also, conducting an early detailed literature review could influence the researcher to impose existing frameworks, ideas and hypotheses on his work. This is against the fundamental premise of grounded theory, which is that theory should emerge from data, not from existing theories in the literature. Furthermore, Glaser (1998, p.67) argues that:
“Grounded theory’s very strong dicta are a) do not do a literature review in the substantive area and related areas where the research is to be done, and b) when the grounded theory is nearly completed during the sorting and writing up, then the literature search in the substantive area can be accomplished and woven into the theory as more data for constant comparison.”

On other hand, there is another point of view that emphasises the importance of a literature review prior to data collection in order to determine existing gaps in knowledge; ensure the subject of study has not already been covered and to reveal how the phenomenon has been studied to date (Chiovitti and Piran 2003). Moreover, Birks and Mills (2011) state that the greatest advantage to using a literature review in grounded theory in the early stages of a study is that it provides examples of how grounded theory methods have been used by other researchers; and thus it helps the researcher to learn from others’ experiences and informs the researcher’s study from a methodological rather than substantive position.

Furthermore, Dune (2011) argues that the idea of delaying the use of a literature review until after data collection and analysis is not workable for many researchers, especially for PhD students because their doctoral progression process is mostly dependent on producing a detailed literature review before they start collecting and analysing the primary data. There are several authors who acknowledge this issue, including McGhee et al (2007), Nathaniel (2006) and Glaser (1998) himself. In addition, it is also stated (Dune 2011, p. 118) that:

“In my own doctoral research, which was a grounded theory study of intercultural relations between students in higher education, having read in depth on grounded theory, [...]. Prior to commencing data collection – in this case qualitative interviews – I engaged extensively with existing empirical studies relating to intercultural relations between students in higher education, as well as literature on the internationalisation of higher education, in order to identify what work had been done, which issues were central to these fields, and what knowledge gaps existed.”

Moreover, Corbin and Strauss (2008) list five reasons why a literature review should be undertaken prior to data collection, as follows:

- To reveal unexplored areas or suggest topics in need of further development.
- To resolve ambiguities in the accumulated studies and writings.
- To suggest a new approach that is needed to solve an old problem, even though it has been well studied in the past.
• To help the researcher to come across a finding that is dissonant with his/her own experience that can lead to a study resolving that dissonance.
• To reconstruct understanding of an ambiguous problem area and the phenomena associated with it.

In this research, engaging with existing literature was adopted before the data collection stage began in order to identify what work had been done and what the existing gaps of knowledge were. However, the researcher tried to avoid being influenced and imposing others’ ideas, hypotheses, and existing frameworks on this study. Also, he encouraged himself to articulate his own ideas allowing the theory to emerge from the collected data, not from existing theories in the literature. Therefore, a broad range of literature was reviewed for this research in order to provide a general background to KM, to identify relationships among the categories that emerged from collected data, and to confirm and support the findings and the theory that developed from this study.

2.3 Knowledge definitions

The economy of this new century is a knowledge economy (Drucker 2001) and thus knowledge is considered to be one of the most important assets for a firm and an essential strategic resource to retain a sustainable competitive advantage (Nonaka et al 2000; Choi et al 2008). Many authors have claimed that knowledge is the most important resource (Stam 2007) and KM has become a common function in business organisations (Zack et al 2009). Moreover, Drucker (1993) emphasises that the most basic economic resource is no longer capital, natural resources, or labour, but it is and always will be knowledge. Rasoulinezhad (2011) argues that the knowledge innovation ability of all a firm’s employees is the key factor leading organisations to be successful in the current competitive environment. It is no longer the investment of capital, labour and raw material. Therefore, organisations should have the capability to understand knowledge, not only so as to be able to understand the development of competitive advantage, but also to manage knowledge effectively (Yang 2009). Moreover, Rasoulinezhad (2011, p. 354) defines a knowledge organisation as:

\[\text{An organisation that realizes the importance of its knowledge, and applies techniques to maximize the use of this knowledge to its employees, shareholders and customers. However, any firm interested in making the transition to become a knowledge organisation has to ensure that its culture is aligned with the requirement for KM success.}\]
However, because of the complex nature of knowledge, defining it is a big challenge (Yang 2009). There are many definitions of knowledge; the following table shows some that have derived from the literature.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Knowledge definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurmi (1998)</td>
<td>Knowledge is something that is acted upon, that has an effect on the way things are. We are not interested in information that lies passive on shelves, in files, or in archives. A knowledge business is created when the know-how inside the firm and the needs of customers outside the firm meet.</td>
</tr>
<tr>
<td>Alavi and Leidner (1999)</td>
<td>Justified personal belief that increases an individual’s capacity to take effective action.</td>
</tr>
<tr>
<td>Bourdreaud and Couillard (1999)</td>
<td>Things that are held to be true and drive people to action.</td>
</tr>
<tr>
<td>Kantner (1999)</td>
<td>The power that enables action and decision making.</td>
</tr>
<tr>
<td>Bollinger and Smith (2001)</td>
<td>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.</td>
</tr>
<tr>
<td>Yang (2009)</td>
<td>Knowledge is about beliefs, commitment, perspective, intention and action. Then knowledge is defined belief that increases an entity’s capacity for effective action.</td>
</tr>
</tbody>
</table>

Table 2.1: Knowledge definitions

### 2.3.1 Data, information, and knowledge

Knowledge is totally different from data and information (Becerra-Fernandez et al 2004). Data, information, and knowledge are not identical concepts (Alavi and Leidner 2001; Grover and Davenport 2001). Table 2.1 shows that knowledge has many interpretations and definitely has more value than information. The knowledge hierarchy is the most common theme in KM literature (Davenport and Prusak 1998; Alavi and Leidner 2001), and it states that data is transformed into information, and information is transformed into knowledge (Wen 2009). It is very important to
distinguish knowledge from data and information in order to ensure the success of managing knowledge (Fahey and Prusak 1998).

Data is the raw material of information, which contains facts, perception and observation out of context and meaning. Data can be defined as primitive descriptions of objects, events or activities which are stored, but not organised and have no meaning (Becerra-Fernandez et al 2004). Moreover, Yang (2009, p.01) states that “data can be classified as raw numbers, images, words, and sound derived from observation or measurement”. Data is a set of objective facts about separate events and it is usefully described as a structured record of transaction. The data says nothing about “why” and “how”, but can only describe a part of what happened. Data has no inherent meaning and does not provide judgment, interpretation or the sustainable basis of action. All organisations need data and there are some industries and sectors that depend on data heavily, such as insurance companies, banks, government agencies and utilities firms. Data is important to organisations because it is the raw material of decision making and for the creation of information (Davenport and Prusak 1998).

Information can be defined as data in context, or it can be considered as the processing of raw data to provide meaningful information (Becerra-Fernandez et al 2004). In addition, Yang (2009, p.01) states that “information represents data arranged in a meaningful pattern”. Moreover, Davenport and Prusak (1998) state that information is a message with a sender and a receiver and it is meant to have an impact on the receiver’s judgment and behaviour, so it should make a difference to the receiver’s outlook and insight. Information is a set of data that contains meaning – its relevance and purpose – and it is organised to achieve some purpose. Data can be transformed into information by adding value in various ways, such as:

- Contextualising: identifying and explaining the purpose of gathering the data.
- Categorising: identifying the units of analysis or explaining key components of the data.
- Calculating: analysing the data mathematically or statistically.
- Correcting: removing the errors from the data.
- Condensing: summarising the data into a more concise form.

Knowledge is information that facilitates action (Becerra-Fernandez et al 2004) and it is broader, richer, and deeper than data and information (Davenport and Prusak 1998).
Moreover, knowledge has been considered to be the most important factor that supports organisations to provide better services and products (Gupta et al 2000).

Therefore, knowledge is a mixture of various elements and it is not simple or neat. It is fluid and formally structured. Knowledge exists in people’s minds and thus it is difficult to capture in words and hard to put in logical terms and understand it completely. Moreover, knowledge is derived from information, and information is derived from data (Davenport and Prusak 1998). Nonaka et al (2000) state that knowledge is created by the context given to information by learners, in that it becomes a useful resource to be interpreted according to the beliefs and commitments of individual receivers. Davenport and Prusak (1998) state that there are some ways to transform information to knowledge, such as:

- Comparison: by comparing the information about this situation to other situations already known.
- Consequences: by identifying the impact of the information on decisions and actions.
- Connections: by explaining the connection between this knowledge to other knowledge.
- Conversation: by knowing what other people think about this information.

Moreover, it is clear that knowledge activities occur between people. While data is found in records or transactions, and information in messages, knowledge can only be obtained from individuals or groups of knower, or from organisational routines. The channel of delivery of knowledge is through structured media; for example, books and documents, and through person-to-person contacts ranging from conversations to practical training (Davenport and Prusak 1998). Finally, knowledge is not only the state of knowing and understanding gained through experience and learning, but it is also the capability to influence action (Alavi and Leidner 2001).

### 2.4 Types of knowledge

Alavi and Leinder (2001) argue that an understanding of the knowledge concept and knowledge types is vital since the developments in the KM field are dependent on the distinction between the different types of knowledge. There are two different types of knowledge: explicit knowledge and tacit knowledge (Nonaka 1994; Nonaka et al 2000;
Alavi and Leinder 2001; Bollinger and Smith 2001; Becerra-Fernandaz et al 2004; Yim et al 2004). The distinction between tacit and explicit knowledge is discussed numerous times in the literature (Nonaka 1994; Nonaka et al 2000; Alavi and Leinder 2001; Bollinger and Smith 2001; Becerra-Fernandaz et al 2004; Yim et al 2004). The following sections will discuss explicit and tacit knowledge.

2.4.1 Explicit knowledge

Explicit knowledge is tangible knowledge that has been expressed in words and numbers, codified and documented. Therefore, it has become easy to post and spread, so it is possible to access it without any direct contact between people. For instance, the basic principles of any organisation, or firm’s manual (Alavi and Leinder 2001; Becerra-Fernandez et al 2004). Moreover, Yim et al (2004) state that explicit knowledge is the knowledge that enables people to manipulate, organise, model and transfer its essences such as logical, sequential, and digital attributes. Explicit knowledge is formal and systematic, and always takes the form of documents, reports, catalogues and presentations, and this explains why it can be simply communicated and shared (Nonaka 1991; Nonaka 1994; Nonaka and Konno 1998) and therefore can be stored in information technology (IT) (Martensson 2000). Explicit knowledge is the kind of knowledge that is always captured in documents, libraries, written policies and procedures, files, manuals and databases (Buckman 1998).

2.4.2 Tacit knowledge

Tacit knowledge is highly personal, hard to formalise and difficult not only to communicate to others, but also to reduce to writing, such as abilities, developed skills, experience and undocumented processes (Nonaka 1991; Nonaka and Konno 1998). Tacit knowledge is not only deeply rooted in an individual’s experience, ideas, and actions and values (Nonaka and Konno 1998; Alavi and Leinder 2001); but it also resides in the human mind, behaviour and perception (Duffy 2000). Moreover, tacit knowledge is perceivable, but because of its complex and unstructured nature it is difficult to locate, model, transfer and share with others (Yim et al 2004). In addition, tacit knowledge is acquired through personal experiences (Yang 2009; Levy et al 2010), and is usually shared and reinforced in groups of people with the same background, experiences and contexts (Levy et al 2010).
Leseure and Brookes (2004) state that this type of knowledge is considered to be a store of the accumulated experience, set of acquired skills, intuition, insight and wisdom of any expert person in the organisation. It is called tacit due to it being hidden, not visible and owned by the expert person – no one can access it unless authorised by the possessor of that knowledge. Tacit knowledge of employees is not only considered an intangible asset owned by the company, but it is also the most valuable asset. The company’s success depends on its employees, and the employees’ success in turn depends on their tacit knowledge. Tacit knowledge plays a crucial role in organisations (Fong and Choi 2009) due to it being related to decision making, time management, quality and competitiveness (Yang 2009).

Tacit knowledge includes insights, intuitions, and hunches. This explains the difficulty of expressing, formalising, sharing and communicating it with others (Nonaka et al 2000). Tacit knowledge is a personal knowledge due to it being based on individual experiences and activities (Becerra-Fernandez et al 2004). Sternberg et al (1995) define tacit knowledge as that which is obtained without the direct help of others and which can be used to perform actions. They go on to say that tacit knowledge is a resource that helps individuals to reach their personal goals. Mayfield (2010) states that it is knowledge held only within the employee’s mind that is not shared with others or documented. Yang (2009) argues that there are two dimensions of tacit knowledge: the cognitive dimension (about beliefs, values and ideas) and the technical dimension (about ‘know-how’, crafts, and skills that apply to specific contexts).

Choo (1998) clarified the difference between tacit and explicit knowledge, explaining that the former is a subjective “know-how” knowledge based on intuitions and observations made during personal experiences, while the latter is shared between people in a formal language, including formulas, specifications and rules.

2.4.3 Modes of conversion between explicit and tacit knowledge

Nonaka and Takeuchi (1995) argue that the existence of a knowledge conversion model depends on the assumption that knowledge is generated through the transformation of tacit to explicit knowledge. This model is divided into four different modes of knowledge conversion (Figure 2.1) as follows: Socialisation (from tacit knowledge to tacit knowledge); Combination (from explicit knowledge to explicit knowledge);
Externalisation (from tacit knowledge to explicit knowledge); Internalisation (from explicit knowledge to tacit knowledge).

Figure 2.1: Modes of knowledge conversion; Source: (Nonaka and Takeuchi 1995:62)

(1) Socialization (from tacit knowledge to tacit knowledge) is the modification of tacit knowledge to other types of tacit knowledge through sharing experiences, technical skills and ideas between individuals. Moreover, an individual can acquire tacit knowledge through observation, imitation and practice rather than verbal and written instructions. An example of this is On-the-Job Training (OJT). The key factor of this process is experience. Socialisation is connected with theories of organisational theory.

(2) Combination (from explicit knowledge to explicit knowledge) is a process of creating new explicit knowledge from existing explicit knowledge. The sorting, merging, categorising, adding and synthesising of existing information can lead to new knowledge. In other words, this mode of knowledge conversion involves interaction between individuals to combine and exchange different bodies of explicit knowledge through such media as meetings and telephone conversations. Combination is rooted in information processing.

(3) Externalisation (from tacit knowledge to explicit knowledge) is the process of converting tacit knowledge to explicit knowledge. This mode is the core of the knowledge creation process, in which tacit knowledge converts to explicit knowledge taking the shape of metaphors and models. It is difficult to convert tacit knowledge to explicit knowledge, but some of individuals’ tacit knowledge could be transformed to explicit knowledge through collaboration with others, such as
engaging in conversation among team members, providing responses to interview questions, or through storytelling.

(4) Internalisation (from explicit knowledge to tacit knowledge) is a type of OL performed through learning by doing, learning by observation, face-to-face meetings, listening to others’ stories and OJT. Explicit knowledge is converted to tacit knowledge when individuals learn from that explicit knowledge. Nonaka (1991) states that new explicit knowledge is shared within the organisation and is internalised and used by other employees in order to extend and reframe their own tacit knowledge “know-how”. Explicit knowledge not only becomes part of an individual’s knowledge, such as technical know-how, but also becomes a valuable asset.

2.5 Knowledge assets

Competitive advantage today no longer relies on natural resources or material production. Instead it depends on intangible assets such as knowledge, which help and support organisations, helping them perform better and become more competitive (Yang 2009). Knowledge is considered to be a valuable strategic asset that leads to increased organisational competitiveness through creating, finding, capturing and sharing knowledge and expertise to help organisations to solve problems (Winter 1987; Drucker 1991; Kogut and Zander 1992). Moreover, Civi (2000) argues that knowledge assets can be divided into two main types: explicit and tacit knowledge assets. The former includes tangible assets such as trademarks, procedures, marketing research, methodologies, business plans and customer information and brands. In contrast, the latter refers to more intangible assets such as sales experience, developed skills, experience and undocumented processes. In fact, not all knowledge is of value to the organisation. Therefore, each organisation must determine which knowledge type meets the requirements for adding value (Civi 2000; Nonaka et al 2000; Bollinger and Smith 2001).
2.6 Definitions of knowledge management (KM)

The importance of knowledge that accompanies the experiences and skills of individuals has enormously increased. KM is critical to the success of organisations (Walker 2006). Therefore, organisations should have the capability to understand knowledge to be able to understand the development of competitive advantage. Competitive advantage no longer relies on tangible assets such as natural resources or material production, but has become dependent on intangible assets such as KM, which helps organisations to perform with better productivity and be more competitive (Yang 2009). Rasoulinezhad (2011) states that KM is considered to be a very important subject in this new era of a competitive business environment. Neto et al (2009, p. 593) state that “KM is a controversial, complex and multifaceted subject. In spite of the fact that the term is not yet stable, there’s been a growing interest worldwide within the past two decades from academics to practitioners”.

There are numerous definitions of KM, not only because they derive from a number of different people who represent an extensive range of interests, perspectives, purposes and issues; but also because authors who attempt to define KM are working within different disciplines, such as economics, management science, sociology, strategy, philosophy, psychology and IT (Wiig et al. 1997; Earl 2001). Moreover, KM can be defined as doing the required things to maximise knowledge resources (Becerra-Fernandez et al 2004). A simple definition of KM is getting the right knowledge to the right people at the right time so that they can make the best decisions (Davenport and Prusak 1998). KM can be defined as improving performance through examining and managing different knowledge layers from individuals, groups and organisations (Nonaka 1994; Davenport 1998). Another definition of KM is “the systematic process of finding, selection, organizing, distilling, and presenting information in a way that improves an employee’s comprehension in a specific area of interest” (KM centre 2003 cited in Yim et al 2004, p.145).

Becerra-Fernandez et al (2004) define KM as a method of enhancing the benefits knowledge brings to goal achievement within companies in a cost-effective manner by ensuring its discovery, capture, distribution and application. Moreover, KM can be defined as a process that helps organisations to generate and gain knowledge; and select, organise, use, disseminate, and transfer important information and expertise owned by
the organisation, which is necessary for administrative activities such as making decisions, solving problems, learning, and strategic planning (Gupta et al. 2000). Moreover, NASA defines KM as:

“Getting the right information to the right people at the right time, and helping people create knowledge and share and act upon information in ways that will measurably improve the performance of an organization and its partners. For NASA this means delivering the systems and services that will help our employees and partners get the information they need to make better decisions.” (Online- NASA web site).

Yim et al. (2004) state that KM involves gathering the knowledge that already exists within an organisation’s employees – and which exists outside of the company – and using OL to share this knowledge among the workforce so that it may be used to improve innovation. Furthermore, Liebowitz and Megbolugbe (2003) state that KM is the way by which companies can convert the intangible knowledge they own into a valuable asset. Grover and Davenport (2001) argue that KM efforts have focused on developing new IT applications to support the capture, storage, retrieval, and distribution of explicit knowledge. Furthermore, Davenport and Prusak (1998) define KM as a set of managerial activities related to the creation, codification and sharing of knowledge. Bollinger and Smith (2001) define KM as the identification and communication of explicit and tacit knowledge residing in people, processes, services and products. Wiig et al. (1997) also put emphasis on the utilisation of knowledge, arguing that KM is more than the simple logging of knowledge, and also includes the facilitation of its transformation, use and creation across organisations. KM includes the planning, implementation, utilisation and monitoring processes of sharing knowledge, whether through IT or otherwise. Plessis (2007, p.22) defines KM as:

“A planned, structured approach to manage creation, sharing, harvesting, and leveraging of knowledge as an organisational asset, to enhance a company’s ability, speed, and effectiveness in delivering products or services for the benefit of clients, in line with business strategy.”

2.7 Benefits of KM

Heisig (2009) points out that the aim of KM is to implement a comprehensive approach to managing organisational knowledge, taking into consideration the limiting conditions of the organisation. Figure 2.2 shows that KM can improve organisational processes, effectiveness, and efficiency, as well as the degree of innovation, by helping organisations to select and perform the most appropriate processes. The effectiveness,
efficiency, and degree of innovation can be characterised as follows: Effectiveness is performing the most suitable processes and making the best possible decisions. Efficiency is performing the processes quickly and in a low-cost way. Innovation is performing the processes in a creative way that will improve effectiveness and efficiency (Becerra-Fernandez *et al* 2004).

The benefits of new knowledge include increased efficiency, lower costs, and improved return on investment (ROI). The most important element influencing productivity, quality and production costs is KM (Nonaka 1991). Moreover, KM helps organisations reduce costs, increase speed and meet customer needs (Civi 2000; Grayson and O’Dell 1998). KM drives organisations to increase profits, identify new markets, improve market share, improve efficiency and be more effective (Civi 2000). Fong and Choi (2009) argue that knowledge is crucial to firms’ success in a competitive and dynamic business environment.

There are many benefits of KM. KM supports organisations in becoming more competitive by using new knowledge to increase efficiency, to reduce costs, improve ROI (Nonaka 1991), increase speed, and meet customer needs (Grayson and O’Dell 1998; Civi 2000). Moreover, KM helps organisations to leverage core business competencies, accelerate innovation, improve cycle times, boost decision making, strengthen organisational commitment, and build a sustainable competitive advantage (Davenport and Prusak 1998). In other words, KM helps organisations to increase profits, identify new markets, improve efficiency, improve market share and be more
effective (Civi 2000) in order to be better suited to competing successfully in a world filled with challenges (Becerra-Fernandez et al 2004).

All projects and business sectors are adopting a project approach to perform a scope of vital operational or innovative activities and become more competitive in the market. Frequently, knowledge is generated within a specific project and then lost because of the organisation’s failure to transfer this knowledge within the organisation or along the supply chain, which leads to wasted activity and reduces OP (Leseure and Brookes 2004). In addition, KM helps an organisation’s employees to learn from each other and from external sources, and to learn about solutions to business problems that have occurred before. KM helps employees to be more flexible, increases their knowledge, improves their market value, enables greater on-the-job performance, and enhances job satisfaction (Becerra-Fernandez et al 2004). Moreover, KM helps employees to utilise their expanding resources immediately and make more intelligent decisions in order to improve their performance, productivity and employability (Bontis et al 2000).

Realising this, organisations have been increasing their amount of spending on intellectual capital. Intellectual capital is considered to be the most valuable enterprise resource. It is composed of both human and structural capital. Human capital refers to the knowledge possessed by the organisation, and it resides in the organisation’s employees, as well as vendors’ and customers’ minds. On the other hand, structural capital includes the things which remain when the employees leave the workplace, such as databases, customer files, software, manuals, trademarks, and organisational structures (Becerra-Fernandez et al 2004). KM helps organisations to reduce the loss of intellectual capital caused when employees leave the organisation (Leseure and Brookes 2004). It can not only help organisations to offer new products or improved products that provide a great deal of additional value as compared with previous products, but it also has a major effect on products that are inherently knowledge based (Becerra-Fernandez et al 2004). Moreover, Stam (2007) argues that the knowledge industry is the largest industry and grows faster than traditional industries. These conclusions indicate that there is a relationship between knowledge, value creation and the growth of the economy. Dalkir (2005) states that organisations are increasingly wasting time by reinventing the wheel because knowledge has not been stored in an accessible way. Worse, some are also losing efficiency when employees use incomplete information to
make decisions. Dalkir (2005) cited a study by the IDC showing that as much as $12 million is lost every year to an organisation with just 1,000 knowledge workers due to these mistakes.

An empirical survey study of 21 small computer services companies in north east Italy found that all participating companies owned a large amount of technical expertise and were capable of applying ‘know-how’, which made those companies able to satisfy their customers through the delivery of highly customised solutions. They explained that the core of their business is not only their ability to identify and analyse the problems their customers face, but also their capability to find and combine suitable solutions according to the available technical tools developed elsewhere. Furthermore, all the managers agreed that the exchange of knowledge with customers is very important, as customers are the end users of services and are considered to be a new source of knowledge that might be further employed in future projects. Finally, most interviewees confirmed that the implementation of KM practices was very important for their business (Scarso and Bolisani 2010).

2.8 Organisational learning and knowledge management

Great progress has been made in KM and OL in the recent past. OL is complementary to KM. Whereas OL is concerned with the process of sharing knowledge, KM is more concerned with the content of that knowledge. In other words, OL is considered to be the goal of KM through motivating the creation, distribution and application of knowledge, thus helping the organisation achieve its goals. From this point of view, OL is considered to be one of the most important ways in which an organisation can utilise knowledge (King 2008).

Becerra-Fernandez et al (2004) cite Kenneth T. Derr, the chairman and CEO of Chevron Corporation, as reporting in 1999 that the implementation and improvement of KM had been one of the most critical changes made within the company in the 1990s. Indeed, he argued that without KM the firm would not have been able to reduce its operation costs by over $2 billion year-on-year over a seven-year period. Harrison and Kessels (2004) define knowledge productivity as concerning the processes by which employees use knowledge to make improvements and innovations across an organisation. So, organisations need to have a good learning
environment in order to improve their knowledge productivity (Stam 2007). Moreover, efforts made to increase knowledge productivity by planning for learn, lead to increased innovation, which companies will see in their profits (Kessels and Van der Werff 2002). Moreover, OL is considered to be the most strategically valuable dynamic capability (Teece et al 1997). It is the continued process of innovation through new knowledge creation (Quinn et al 1996; Nonaka 1991). Learning organisations are the result of effective integration of individuals and OL (Winkelen and McKenzie 2007). Moreover, learning organisations can refer to either an organisation which learns, or an organisation which encourages learning in its employees – and it should mean both (Handy 1995).

Nonaka (1991) states that OL depends on the repetition of a process of articulation and internalisation. Articulation is the process of converting tacit knowledge into explicit knowledge, while internalisation is the process of transforming this captured explicit knowledge into another employee’s tacit knowledge. In fact, OL cannot take place unless the intersection of tacit knowledge and explicit knowledge occurs between different employees, teams and departments. Pemberon and Stonehouse (2000) argue that the key factors for any organisation wishing to sustain a competitive advantage and achieve its objectives and goals are continuing OL and improving KM. Nonaka (1991) states that knowledge is the most important source for obtaining a competitive advantage. In other words, organisations that have the ability to learn more quickly than others will be more effective and provide a better environment for creating and maintaining a competitive edge.

Meso and Smith (2000) argue that KM is considered to be the key to creating competitive advantage during the process of continuing OL. This is due to the fact that the creation of new knowledge occurs during the process of OL. Then, the creation of new knowledge produces innovation. Next, innovation results in a sustainable competitive advantage. Moreover, the most important reason for KM and OL is to ensure individual knowledge transfers to organisational knowledge and it is prepared in such a way that it can be used by other employees in the organisation. Success in OL can only be achieved by combining KM with OL through creating a suitable organisational environment.
2.9 KM challenges

Yang (2009) states that the key to understanding the development of competitive advantage is to understand knowledge and how it is shared. However, defining knowledge is a big challenge due to its complex nature. A major challenge facing organisations is the management of tacit knowledge through processes attempting to convince, coerce, direct or otherwise get individuals within organisations to share their knowledge (Gupta et al 2000; Leseure and Brookes 2004). An individual may not be willing to share his tacit knowledge because it may involve risks to him, such as loss of competitive advantage over peers (Stenmark 2002). In many companies, people feel that their promotion depends on their expertise, and not on the extent to which they share their knowledge and help others (Alavi and Leidner 2001). Pawlowski and Bick (2012) state that traits of individuals within companies can cause some potential barriers towards KM utilisation, such as lack of time; fears about job security; lack of awareness for KM; lack of time and interaction; poor verbal and written communication and interpersonal skills; age, gender and cultural differences; lack of networking skills; and lack of trust. Moreover, Santos et al (2012) point out that the main knowledge sharing barriers are as follows: the codification process, lack of employees’ initiative and strategy, lack of time and resources, and unsuitable IT.

Holste and Fields (2010) argue that increasing investment in IT may facilitate the storage and sharing of explicit knowledge, but it will not result in better sharing and use of tacit knowledge because individuals not only decide whether they will share tacit knowledge, but also decide whether they will use it. However, developments in communication and IT are having a considerable effect on organisations’ ability to acquire or create, refine, store, transfer, share and utilise knowledge because management has developed styles and cultural and structural paradigms. But the most important factor affecting KM is the human factor. Many organisations have introduced new technology before motivating and sensitising their employees to the use of the new system, which leads to failures in the implementation of such systems (Turner and Minonne 2010). Key to the success of tacit knowledge transfer is the willingness and capability of employees to share what they know and to use what they learn (Foos et al 2006; O’Dell et al 1998).
Holste and Fields (2010) argue that the willingness of employees to share and use tacit knowledge may depend on the extent to which co-workers are trusted as receivers and sources. Moreover, trust in co-workers and a good personal relationship with co-workers has the most significant effect on willingness to share tacit knowledge. Time is considered to be one of the main difficulties of sharing tacit knowledge, as this sharing requires a long time to be spent on post-project reviews and on formulating lessons learnt from these projects (Leseure and Brookes 2004; Yang 2009). Another major challenge facing organisations trying to implement KM successfully is organisational culture, which has a significant role in facilitating sharing, learning, and knowledge creation (Gupta et al 2000). One of the most difficult challenges is establishing a KM culture in an organisation (Turner and Minonne 2010; Oliverira et al 2012) and competition between employees is also considered to be a barrier to knowledge sharing (Oliverira et al 2012).

Pawlowski and Bick (2012) state that organisational background can also cause some potential barriers towards KM utilisation, including lack of leadership and managerial direction; a shortage of formal and informal spaces to share, reflect, and generate new knowledge; a lack of transparent rewards and recognition; insufficient corporate culture; a shortage of appropriate infrastructure supporting sharing practices; deficiency of company resources; restriction of communication and knowledge flows; and internal competitiveness between business units. In addition, Pawlowski and Bick (2012) state that organisational culture also causes barriers to KM utilisation, such as an inability to communicate and collaborate; fear and insecurity; lack of awareness and sensitivity; lack of integration skills; language issues; and fear of imitation.

2.10 Improving knowledge worker performance

Drucker (1999) realised that the actual productive power of organisations is based on the ability of knowledge employees to make knowledge productive. Therefore, the biggest challenge of 21st-century management is knowledge-worker productivity. Today, knowledge workers are considered to be the key to organisational growth since they create innovations and design marketing programmes and strategies, which help their organisations to be competitive. Moreover, the fastest-growing and most profitable organisations are those which have the best quality of knowledge workers. For example, Microsoft, considered to be one of the most profitable and successful organisations in
history, focuses on hiring knowledge workers, and then lets them work alone. This approach is called the HSPALTA approach (“hire smart people and leave them to work”). The definition of knowledge worker is one whose job is primarily to create, distribute and apply knowledge, and who has a high standard of education, expertise or experience. (Davenport 2008).

Davenport (2008) argues that there is a difference between process and practice. Process refers to the plan or design concerning the way the work is to be done, and practice is the way the work is actually done. Likewise, analysing the process focuses on its design, which has nothing to do with actual work. On the other hand, analysing the practice means describing the activities of people. For this it is important to observe workers in their jobs over long durations. The most successful approach to improving knowledge performance is by combining process and practice together. Moreover, Managers should be knowledge workers as well, and they should be able to inform other knowledge workers of the big picture. Managers need to be great facilitators of the social networks that characterise the best performers. They should not only work like knowledge workers, but they should also find and recruit knowledge workers, remove any obstacles that may reduce their creative and productive activity, and create an appropriate work environment for them. At the same time, organisations must focus on all the factors that have an impact on work performance.

2.11 Critical success factors (CSFs) of KM implementation

The implementation methodologies of KM are still developing and improving with experience, as KM is a new phenomenon within management systems (Chong and Choi 2005). As yet, insufficient research has been carried out to guide the successful development and implementation of KM systems, and also to guide expectations of the benefits of these systems (Alavi and Leidner 1999; Civi 2000; Cormican and O’Sullivan 2003; Quaddus and Xu 2005). More specifically, around 84% of KM systems globally have failed or provided insignificant benefits due to a lack of consideration of the CSFs of KM implementation (Chan and Chau 2005; Lam and Chua 2005; Walker 2006) and until today there has been no sufficient examination of the CSFs of KM (Lehner and Haas 2010). However, the success of KM depends on certain success factors (Heisig 2009). Pawlowski and Bick (2012) point out the results of recent studies showing that a lot of KM projects continue to fail and it is not clearly understood why this is.
2.11.1 Definition of critical success factors (CSFs)

Critical success factors (CSFs) can be defined as those critical areas of professional planning and action that must be adopted in order to achieve effectiveness (Saraph et al 1989). Moreover, they can be defined as the activities and practices which the organisation should perform and accomplish, such as the examination and categorisation of impacts, in order to achieve its mission (Oakland 2000). In addition, CSFs refer to the minimum level of things that should be done right to ensure success for a manager and organisation (Kanji and Tambi 1999).

2.11.2 Critical success factors (CSFs) of KM

Lehner and Haas (2010) state that not only has empirical research investigated the success factors of KM, but efforts have also been made to compare the results of previous studies on KM success factors (Holsapple and Joshi 2000) in order to integrate them into a frame of reference (Helm et al. 2007). While it is clear that the number of extensive, widely designed and meaningful studies is very small, Lehner and Haas (2010) realise that in most cases the same success factors of KM are named. This suggests, regardless of the size and location of an organisation, that generally valid success factors do exist.

Lehner and Haas (2010) state that a study performed by Helm et al (2007), examined 39 studies relevant to the CSFs of KM, finding that there was a different understanding of KM between them and the examined matter was diverse. Therefore it was found that the possible success factors found by the studies were not structured and it was not clear from the results whether some factors may in fact be dependent on others. Likewise, Lehner et al (2008) came to a similar conclusion after examining over 60 studies based on the work of Helm et al (2007). CSFs can be assigned to three dimensions: human beings, organisation and technology (Lehner and Haas 2010). Effective knowledge-sharing and learning requires cultural change within the organisation, new management practices, senior management commitment and technological support (Gupta 2000).

Pawlowski and Bick (2012) list the success factors for KM in organisations as follows:

- Integrated technical infrastructure.
• Knowledge strategy that identifies users, sources, processes, storage strategy, and knowledge.
• Clear knowledge structure.
• Motivation and commitment.
• Organisational culture supporting sharing and use of knowledge.
• Senior management support including allocation of resources, leadership, and the provision of training.
• Measures are established to assess the impacts.
• Clear goal and purpose for the KMS.
• Search, retrieval, and visualisation functions.
• Work processes incorporate knowledge capture and use.
• Learning organisation.
• Security/protection of knowledge.

Furthermore, Heisig (2009) analysed 160 KM frameworks from science, practice, associations and standardisation bodies which had been collected worldwide regarding KM success factors. Also, Heisig (2009) categorised CSFs into four categories which are human-oriented factors (culture, people, and leadership); organisation (process and structure); technology (infrastructure and applications); and management process (strategy, goals and measurement). The researcher decided to build his discussion on these categories not only because Heisig (2009) analysed a total of 160 KM frameworks worldwide but also because Pawlowski and Bick (2012) listed their success factors for KM in organisations based on Heisig’s (2009) study.

2.11.3 Human factor

Lehner and Haas (2010) argue that the dimension “human being” not only refers to the individual attitude of every single employee facing KM, but also to the support of top management of KM. Top management is not only the initiator, sponsor and promoter of KM, but it also provides sufficient financial resources and time. Also, employees must have the desire to promote it themselves and be open to KM, therefore emotional barriers must be taken away to secure the success of KM. Oliveira et al (2012) state that top management support and commitment is an important factor due to the role of top management being to define priorities and support KM activities. Neto et al (2009) state
that the role of top management is to create an environment that stimulates the creation and sharing of organisational knowledge.

Moreover, Pawlowski and Bick (2012, p. 95) state, “Human work as well as collaboration and communication behaviour is based on culture (both organisational and ethnic such as regional/ national culture). Thus, typical KM activities like knowledge sharing are strongly influenced”. Lehner and Haas (2010) state that the employees must not only be willing to share their knowledge, but there must also be trust between them to secure the acceptance of the available knowledge.

2.11.4 Organisational cultures

The dimension “organisation” includes all factors which are operated and designed by the organisation, such as the development of personnel, the goals of KM, the responsibility for KM, available motivating systems, existing social networks and a knowledge-promoting corporate culture (Lehner and Haas 2010). Gupta et al (2000) argue that KM requires a major change in organisational culture and a commitment at all levels of an organisation to make it work. Companies need to harness knowledge in order to stay competitive and to become innovative. Pawlowski and Bick (2012, p. 100) state that “it is clearly necessary to include dedicated awareness-building and training processes into knowledge processes to facilitate cultural understanding. Cultural factors also influence how and which knowledge is shared”. (Oliveira et al 2012) state that organisational culture is a fundamental factor in the implementation of KM and for some organisations it is a problem that needs to be solved.

Lehner and Haas (2010) state that the personal development of employees is considered to be one of the success factors of KM, which means that organisations must qualify their employees through training and coaching in order to secure KM. Also, employees should be motivated to participate and share their knowledge through motivation and reward systems. Finally, there should be direct social relationships and communication between employees, such as regular face-to-face meetings, in order to facilitate contact between them to find common solutions to problems and to encourage knowledge exchange.

Pawlowski and Bick (2012, p. 95) state that “organisational processes also differ depending on organisational and geographic culture. Obviously, it is necessary to
coordinate KM processes in distributed organisations between organisations with different organisational and ethic culture”. Any organisation that wants to achieve and maintain a competitive advantage must be able to not only always define and integrate knowledge into value-creating strategies, but also develop efficient means for creating, transferring and integrating knowledge. The main factor that affects the integration of knowledge is the interaction between individuals and the knowledge they retain (Roland 2006). Therefore, a healthy corporate culture is very important for success in the implementation of KM because bureaucratic cultures experience a lack of trust and a failure to reward and promote cooperation and collaboration. So, KM organisations not only need to develop a healthy environment and culture that supports the objectives of implementing KM, but they should also consider improving their culture as a top priority in their strategic plans (Liebowitz 1999) because strong cultures have a set of core values and key principles that are understood and followed by all employees (Jones 2006). Organisational culture is very important to enhance OP and competitiveness and it is seen as a core point that affects employees’ perception, motivation, morale and satisfaction (Cameron and Quinn 2006).

In other words, the most important factor for successful KM initiatives in organisations is a knowledge-friendly organisational culture (Davenport and Prusak 1998). An open organisational culture with incentives to integrate individual skills and experiences into organisational knowledge will be more successful. The main reason for the success of organisations is their commitment to individuals. The first proposition is that it is individuals that a company is built from, and the success of the company is ensured from their differing potentials and abilities. In contrast, there are some organisational cultures that prevent employees from sharing knowledge through teaching and mentoring others, or by using their expertise to innovate and improve productivity (Alavi and Leidner 2001).

Moreover, effective knowledge-sharing and learning requires cultural change within the organisation, new management practices, senior management commitment and technological support (Gupta et al 2000). Managers must plan and implement processes and structures that encourage employees and teams to share and use organisational knowledge (Cross and Baird 2000). To enable the company to successfully implement KM, it is necessary to include KM activities within business processes, and to
effectively communicate strong managerial support. Moreover, including KM activities within employees’ daily job routines can raise business process achievements, and improve employee performance and professional development (Levy et al 2010). For an organisation to benefit from its accumulative knowledge, a systematic routine for knowledge capturing is essential (Alavi and Leidner 2001). A major cultural change is required to change employees’ attitudes and behaviour, so that they willingly and consistently share their knowledge and insights (Levy et al 2010). Therefore, tacit knowledge cannot be shared unless it is transferred to all organisational staff through employees sharing their experience (Mayfield 2010; Chen et al 2012). This can be achieved by encouraging them to share by offering a reward system (Chen et al 2012).

There are some techniques for increasing tacit knowledge sharing among employees. For example, web-based and software tools are considered to be one of the best ways in which employees can share their experience by posting information. Holding meetings is another method to support collaborative knowledge sharing. It is helpful to discuss ideas and issues across organisational levels and introduce responsive actions. This will enhance the learning cycle because of the direct interaction of employees and immediate feedback. Organisations should not only set clear meeting objectives, but top management should also support meetings in order for them to be successful. After this, rewards programmes are the most important factor in increasing employees’ tacit knowledge sharing (Mayfield 2010). Oliverira et al (2012) state that a programme rewarding participation in KM provides motivation for people to get involved in the KM project and can be achieved by taking KM participation into consideration in employee performance evaluations. This helps to identify to employees the importance of their participation. Moreover, Oliverira et al (2012) interviewed 17 top managers using semi-structured interviews and found that employees participate in KM activities only in extra time outside of working hours. They also believe that auditing is a fundamental factor in encouraging employees to store documents and share their knowledge. These internal audits reveal the names of employees who have not participated in the KM project. These employees will not receive rewards.

There are many advantages to tacit knowledge sharing. Employee performance will increase, employee morale and commitment will be raised, and this will help organisations to discover previously hidden innovations. Moreover, the process not only
helps organisations to better-manage tacit knowledge and preserve it in organisational memory, but also to enhance productive OL in the face of turnover. Organisations should commit to increasing tacit knowledge sharing through training, rewarding employees, a comprehensive KM strategy, and effective top management participation in order to gain these advantages (Mayfield 2010).

2.11.5 Technology

The dimension “technology” includes all factors related to the products and arrangement of the supporting KM systems (Lehner and Haas 2010). Sedmak (2010) states that most businesses are now unable to operate without IT - which includes any technology employed in the collection, processing, distribution and utilisation of information - and millions is spent on such systems that will be lost if they fail.

Moreover, Pawlowski and Bick (2012, p. 95) state that “technology infrastructures also differ in different countries. The acceptance of applications is also dependent on preference (e.g., how technologies are accepted, which social networks are preferred in a country)”. Moreover, Lehner and Haas (2010) state that organisations must be able to guarantee the usability of their systems, which means that they must be user friendly and have all necessary functions. Therefore, the guidelines for the content of the system must be clearly defined and a verification process must be introduced to assess the quality and actuality of the available knowledge. Chen et al (2012) state that business performance has been considerably increased in terms of measured growth and profitability as a direct result of good compatibility between KM and IT. Therefore, organisations should focus on the widespread use of IT internally among their employees by investing in IT in order to improve the quality and quantity of databases and electronic repositories. Also, one of the aims of IT strategies is to facilitate communication between employees in order to support knowledge sharing between them. Oliveira et al (2012) analysed data collected from 11 organisations operating in Portugal and found that most are focused on technology, but this does not mean that they consider KM to be synonymous with technology. Also, they state that IT is very important to KM projects, especially in large organisations, and it is better to use existing technology systems for KM activities in order to minimise resistance to change among employees. However, if a new IT system is introduced, employees must receive training.
2.11.6 Management (strategy, goals and measurement)

Pawlowski and Bick (2012, p. 95) state that “management practices differ also depending on ethnic and organisational culture. Thus, it is necessary to align KM strategies as well as corresponding management processes”. Lehner and Haas (2010) state that KM’s objectives should not only be in accordance with the objectives of the organisation, but they must also be measurable. Also the process of KM must not only be integrated into current organisational operations, but it must also be clearly defined and integrated into existing processes.

2.12 KM life cycle model

Heisig (2009, p.4) states that “KM has arrived at a new stage of its life cycle”. In addition, Heisig (2009) analysed 160 frameworks of different origins across the world with regard to KM activities, and the six most frequent activities are: identification, creation, acquisition, storage, sharing, and use.

King (2008) argues that great progress has been made in KM and OL over the past decade. He was able to solicit KM and OL manuscripts widely, considering 68 papers from authors in 21 countries, and employing 117 reviewers from 24 nations. Then, he examined the best nine papers that were selected to be published in a management science journal. These articles provided new insights and important empirical findings with respect to various stages of the KM cycle. The number of companies participating in the studies covered by those nine papers was about 3,500 from several different countries around the world; namely 2,464 Spanish companies, 110 American-based multinational companies, 634 US firms, 115 Korean firms and 133 from other countries. Based on this, he created a comprehensive life cycle model of KM (Figure 2.3) that uses parallel paths in order to make important distinctions in six stages, as follows:
1. Knowledge can either be created or acquired by an organisation.
2. The next stage after new knowledge has been created or acquired is the refinement of knowledge.
3. Knowledge is then stored in the organisation's memory.
4. To gain the maximum benefit, knowledge should be either be transferred or shared within the organisation.
5. Utilization of knowledge takes place through a processes of elaboration, infusion, thoroughness, innovation, individual learning, collective learning, embedding knowledge, creating dynamic capabilities and knowledge re use.

6. The improvement of OP is the basic element used by the organisation to evaluate the value of KM.

Moreover, Fong and Choi (2009) argue that it is clear from their empirical research that there are six knowledge processes operating in quantity surveying organisations: knowledge acquisition, knowledge creation, knowledge storage, knowledge distribution, knowledge use and knowledge maintenance. The number of companies participating in the studies covered by this research was 111 organisations in Hong Kong.

However, the researcher compared King’s Approach to KM (2008) to those of Fong and Choi (2009) and Heisig (2009) in Table 2.2. The number of companies participated in the King’s study was about 3,500 from several different countries around the world, the number of companies participated in the Fong’s and Choi’s study were 111 which were based in Hong Kong and Heisig (2009) analysed 160 frameworks of different origins.
across the world. The researcher found that the most comprehensive approach was King’s approach because of the number of companies from various locations participated in the study. Moreover, it seems that King’s (2008) approach had more KM processes and it was linked with the OP (Figure 2.3), which was the main aim of this study.

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Table 2.2: Three Approaches of KM processes

2.12.1 The creation or the acquisition of knowledge

King (2008) argues that the initiation of the KM cycle involves either the creation or acquisition of knowledge by a firm. Knowledge creation includes creating new knowledge or replacing existing knowledge with new knowledge and new content (Nonaka 1994). Fong and Choi (2009) take the view that companies should be interested in the creation of knowledge in order to avoid existing knowledge becoming rapidly outdated. Nonaka (1991) states that the definition of a knowledge-creating company is a firm with the ability to constantly create new knowledge, disseminate it within the company, and represent it in the form of new technologies and products. The main reason for the striking success of Japanese companies such as Honda, NEC, Matsushita, Canon, Kao and Sharp is their own way of creating new knowledge. Therefore, those companies have the ability to respond rapidly to customers, find new markets and develop products and new technology quickly. He demonstrates that it is
employees’ identification with their organisations and the missions of those organisations that drives this process, as it engenders personal commitment to business goals. This means that every employee in the organisation has a sense of the collective identity of the organisation and its main goal, which leads to a common understanding for all staff as to what the core values of the company are, where it is going, what the main objective of the company is, and more importantly, how to achieve that goal. Fong and Choi (2009) state that the two sources of knowledge creation in organisations are: its own experience and others’ experience.

In contrast to internal knowledge creation, King (2008) argues that the acquisition of knowledge includes the search for, recognition of and absorption of valuable knowledge. Its origin is always an external source from outside the organisation. There are three processes involved in knowledge acquisition:

- Searching: such as searching on the internet.
- Sourcing: selecting the best source to use.
- Grafting: adding an individual who possesses the desired knowledge to the organisation.

Moreover, Fong and Choi (2009) state that a quarter of participants in their study admitted that they acquired new knowledge by job rotation, while 18% of them said they acquired it by encouraging experienced employees to document their knowledge. The rest of the participants confirmed that they acquired knowledge through practical experience. Yang (2009) states that tacit knowledge is acquired through experience.

### 2.12.2 Knowledge refinement

The next stage after creating or acquiring new knowledge is knowledge refinement, which prepares and improves knowledge to enter into organisational memory and remain there for a long time. In this stage, the new knowledge should be selected, filtered, purified and optimised to be ready for inclusion in a variety of storage media. Furthermore, tacit knowledge should be explicated, codified, organised into an appropriate format, and evaluated according to a set of criteria in order to save it in organisational memory. Explicit knowledge just needs to be formatted, evaluated and selected (King 2008).
2.12.3 Knowledge storage

The objective of knowledge storage is to ensure that knowledge becomes a part of organisational memory, which includes knowledge that adds to knowledge stores; that is stored in employees’ minds; that is held in E-stores; that is retained by teams and groups; and that is embedded in internal and external relationships, services and products, and business processes (King 2008).

2.12.4 Knowledge transfer and sharing

Organisations should either transfer or share knowledge across the whole organisation in order to take optimum advantage of knowledge. The difference between knowledge transfer and knowledge sharing is the type of receiver. Transfer is concerned with communicating knowledge from a sender to a known receiver, but sharing is usually concerned with distribution, through means such as a repository, to people who are often unknown to the contributor. In both of these processes, either sender or receiver could be individuals, groups or organisations (King 2008).

Moreover, knowledge transfer includes human interactions, specifically mentoring, expert input into exact projects, and daily interaction. These serve best to share tacit knowledge (Fong and Choi, 2009). Knowledge transfer involves two actions: transmission by the sender, and absorption and reception by the receiver (Davenport and Prusak 2000). There is another definition of knowledge transfer, which is the process of transferring knowledge from the source which is the knowledge holder, to the destination. Both source and destination could be a person, place or ownership (Major and Ordey-Hayes 2000, Sayed-Ikhsan and Rowland 2004). Knowledge transfer only moves in one direction from the source to the destination (Sveiby 2001).

Knowledge transfer within an organisation happens every day, whether it is managed or not. Moreover, managing knowledge is mostly used for formal knowledge transfer processes. Unstructured knowledge transfer is vital to an organisation’s success. However, any organisation that wants to grow up and prosper needs to be successful in keeping track of or managing organisational knowledge. Moreover, there are seven main factors that affect effective knowledge transfer. These factors are relationship and trust; culture; availability of common meeting areas; incentives or rewards based on
sharing activity; presence of absorptive capacity in recipients; educating workers that knowledge-sharing sources are all equally important; and finally, tolerance for mistakes (Davenport and Prusak 1998).

On the other hand, knowledge sharing takes place through social interaction (Boyd et al. 2007) and this implies a relationship between two or more parties, who are the possessor of the knowledge and the acquirer of the knowledge (Hendriks 1999). Yang (2009) defines knowledge sharing as transferring information that is specific to the organisation or group and that involves subjective insights, intuitions, hunches, and ‘know-how’ knowledge.

Every organisation has its own unique strategy, culture and practices to share and transfer knowledge to new employees from experienced employees. Therefore, knowledge sharing cannot happen unless knowledge is transmitted among organisational employees and experts as they share their experience. Organisations should encourage their employees to share their knowledge and experience with others by providing training and rewards. In other words, knowledge-sharing behaviour will be the response to a rewards system. (Mayfield 2010).

Keong and Al-Hawamdeh (2002) state that knowledge sharing is an interaction process between two actors or sets of actors. This means it could be a social relationship between two individuals - one as a knowledge owner and the other as knowledge acquirer - such as a conversation between two people over a cup of tea. A second possibility is that interaction happens between one individual as a knowledge owner and many others as knowledge acquirers, such as giving a lecturer or presentation. Thirdly, it may occur in a many-to-one relationship, such as through the co-writing of a book, where the reader will receive information from many authors through their work. Finally, it could happen in a many-to-many relationship, such as when a working team gives a presentation to a panel of judges. Knowledge keeps growing only when it has been used and shared, and it will depreciate if it has not been used (Sveiby 2001).

There are four main factors that influence the knowledge-sharing process. These factors are: the actors who share – and that means both the knowledge owner and acquirer; the knowledge itself which is being shared; the knowledge sharing channel that is used to share knowledge; and the organisational culture (Keong and Al-Hawamdeh 2002).
Moreover, Ipe (2003) states that there are four main factors that affect knowledge-sharing processes. These are: the nature of knowledge itself, the opportunities to share, the motivation to share and finally the organisational culture.

Furthermore, Bartol and Srivastava (2002) state that there are four main approaches to sharing knowledge within an organisation. These approaches are: through databases where employees can participate and share their knowledge by posting their experiences and ideas; formal interaction which occurs between two individuals working in the same team, or between teams or units, or between two individuals working in different teams or departments; informal interaction; and communities of practice. Ipe (2003) states that there are two knowledge-sharing channels: formal and informal. Formal channels – such as training programmes, technology-based systems and teamwork – provide a structured environment for employees to share their knowledge and experiences (Pan and Scarbrough 1999). Holster and Fields (2010) argue that the transfer of tacit knowledge can be divided into two main types, namely formal (resulting from training courses or conferences), and informal (resulting from informal social networks, interdepartmental task forces and employee interactions). According to the study conducted by Fong and Choi (2009), the most effective way of sharing tacit knowledge is through oral conversations or face-to-face sharing. Sharing by electronic means and documentation was less often observed. This is due to the fact that there was relatively less emphasis on explicit knowledge sharing than tacit knowledge sharing.

2.12.5 Knowledge utilisation

Yim et al (2004) state that the utilisation of knowledge in business is very wide and occurs through activities such as learning, strategic planning, solving problems and decision making. King (2008) states that after knowledge has been transferred to or shared with others, it may be used or applied through the following process: elaboration (the development of different interpretations), infusion (the identification of underlying issues), and thoroughness (the development of multiple understanding by different individuals or groups). This is performed in order to facilitate the process of innovation, collective learning, individual learning and collaborative problem solving. It could be embedded in the practices, systems, products and relationships of the organisation through the creation of knowledge-intensive organisational capabilities.
Moreover, Fong and Choi (2009) state that the powerful use of knowledge is very important for the organisation to become more competitive in the market and to be able to defeat rivals. Furthermore, King (2008) states that OL is one of the vital ways in which organisations can utilise knowledge.

### 2.12.6 Organisational Performance (OP)

King (2008) illustrates that on the right-hand side of the KM cycle model in Figure 2.3, knowledge has an impact on OP and thus OP is improved by the improvement of KM and OL. To achieve this, organisations should evaluate and measure the value of KM and OL and then measure the potential impact of KM-OL efforts on OP. Zack et al. (2009) state that there is a direct relationship between KM practices and OP, and OP has a significant and direct relationship with financial performance. Rasoulinezhad (2011) cites results showing that KM has a positive impact on OP. The relationship between KM practices and OP will be discussed in more detail in next section.

### 2.13 The relation between KM practices and OP

Becerra-Fernandez et al. (2004) argue that KM can impact on overall OP either directly or indirectly. Figure 2.4 shows that the direct benefits of KM occur from activities that are directly connected to the organisation’s vision, strategy, revenues, or cost, either when the organisation uses it to create innovative products that generate revenue and profit, or when the KM strategy is associated with business strategy. Therefore, organisations can easily measure the direct impact of KM on performance by observing the improvements in return on investment (ROI). The indirect impact of KM on OP, on the other hand, occurs when organisations use KM to improve their ability to create and influence knowledge associated with products, customers and managerial resources across business units in order to achieve economies of scale and scope. Economy of scale is when the average cost of production per unit decreases with an increase in output. Economy of scope is when a company produces two or more different products, and it is found that the total cost of producing those products is less than the sum of the costs of a different company producing each product separately. Moreover, KM can also impact indirectly on OP by improving the ability of organisations to develop and exploit other tangible and intangible resources better than their competitors in order to provide a sustainable competitive advantage (Becerra-Fernandez et al 2004).
A survey study has been performed by Zack et al (2009) to prove the relationship between KM and OP. The sample size of the study was 88 mid-level managers and senior executives representing ten different industry sectors from Canada, Australia and the USA. Revenues ranged between $2M and $10B and the age of the organisations varied from 2 to 187 years, with numbers of employees ranging from 30 to over 300,000. Zack et al (2009, p.394) define KM practices as “observable organisational activities that are related to KM” and they identify four key dimensions of KM practice from the literature that are associated with performance, and they are: the ability to locate and share existing knowledge, the ability to experiment and create new knowledge, a culture that encourages knowledge creation and sharing, and a regard for the strategic value of knowledge and learning. Moreover, they found that KM practices not only have a direct relationship with OP, but they also have a direct relationship with intermediate measures of strategic OP (customer intimacy, product leadership and operational excellence). Moreover, it was found that there is a significant relationship between KM practices and OP, but not between KM practices and financial performance (Zack et al 2009; Rasoulinezhad 2011).

Also, Zack et al (2009) list many studies linking KM to OP, and the results of those studies indicate that there is a direct relationship between KM practices and OP (as it is shown in Figure 2.5), both qualitative (Davenport and Prusak 1998, Massey et al 2002, Nonaka 1994) and quantitative (Choi and Lee 2003, Simonin 1997, Tanriverdi 2005, Darroch and McNaughton 2003, Lee and Choi 2003, Schulz and Jobe 2001). Accordingly, Lee and Choi (2003) state that a positive financial performance can be expected as a result of enhancing KM practices. Also, Schulz and Jobe (2001) state that there is a link between KM and OP and the creation of competitive advantage. Tracy
and Wiersema (1995) suggest three dimensions of strategic performance capabilities, each one of which is able to lead to competitive advantage. Figure 2.6 illustrates the dimensions of strategic performance capabilities are as follows:

- Product leadership, which refers to competition based primarily on product or service innovation.
- Customer intimacy, which refers to competition based on understanding, satisfying and retaining customers.
- Operational excellence, which refers to competition based on efficient internal operations.

Organisations should implement KM practices in order to improve one or more of the three value disciplines (O’Dell et al 2003).

A new study that covers 161 top-ranked companies in Taiwan shows that KM, IT and HRM are mutually reinforcing. Therefore, Figure 2.7 shows that good proportionality between these aspects has a very important positive and direct effect on business

Figure 2.5: Research model results, Source: Zack et al (2009)

Figure 2.6: Main model effects by value discipline; Source: Zack et al (2009)
performance as far as growth and profitability are concerned. Also, this study indicates that high-performing organisations are successful at aligning IT and HRM with KM (Chen et al 2012).

![Figure 2.7: The relation between IT and HRM with KM, source: Chen et al. (2012).]

### 2.14 KM Processes (KMP)

Heisig (2009) states that the improvement of the systematic management of knowledge and potential knowledge within an organisation is not only the main objective of KM, but it is also the core element of KM. This knowledge management is described in KM frameworks in the form of activities or processes. Rasoulinezhad (2011, p. 361) states that “KM practices and tools provide a set of guidelines and practices integral to competitive advantage. Overall, it is essential to take a more systematic approach in order to clarify the nature of links between KM practices, KM system and OP”.

Davenport and Prusak (1998) argue that KMP need to:

- Make knowledge visible and show the role of knowledge in an organisation.
- Develop a knowledge-intensive culture by encouraging and sharing knowledge.
- Build a knowledge infrastructure- not only a technical system, but also a web of connections to encourage interaction and collaboration.
Based on studies by Heisig (2009) and Pawlowski and Bick (2012), there are three categories of processes. These are business processes, knowledge processes, and external processes.

- **Business processes** are the core processes of an organisation, such as software development and deployment for software businesses; teaching for educational organisations; procurement; human resources; transportation; manufacturing; marketing and sales; and customer service (Pawlowski and Bick 2012). They refer not only to the context of use and creation of specific domain knowledge, but also to the responsibilities that are the central object for analysis and design (Heisig 2009).

- **Knowledge processes** are the systematic management of knowledge activities, such as knowledge identification, sharing, creation, storage, and application. These KM activities should be merged with existing tasks and integrated into core business processes (Heisig 2009; Pawlowski and Bick 2012). Knowledge is considered to be a resource applied in the business process and it can be reused by the same business process either inside or outside the organisation (Heisig 2009).

- **Enabler processes**: there are six key enablers that influence successful and sustainable KM. They are: culture, organisation and roles, strategy and leadership, skills and motivation, control and measurement, and IT. Moreover, practical experiences showed that these six key enablers need to be evaluated via a KM assessment from the beginning of any KM initiative. Each of these enablers requires enough measures in order to support the successful implementation of KM (Heisig 2009).

Pawlowski and Bick (2012) point out that the integration of these processes is considered to be one of the CSFs of KM and it is very important to select the most suitable processes for each setting and consider how they can be most successfully implemented. Moreover, Pawlowski and Bick (2012) state that KM design and development processes require the clear planning of KM activities, and therefore they list four steps as guidance for KM design and development processes:

- **Identifying the context and barriers of stakeholders**: in the first stage, ask stakeholders (society, organisations and individuals) in all organisational units and
partner organisations about their KM context and barriers. Then, identify the potential challenges to knowledge sharing.

- Designing knowledge sharing processes plan and implement knowledge processes and activities for knowledge sharing and make cultural preparations, such as embedding additional activities into employees’ everyday routines.

- Providing a supporting infrastructure: plan supporting interventions and tools based on KM barriers. Then, select tools and accompanying processes based on barriers and context as follows:
  1. Overcome barriers.
  2. Support the combination of business and knowledge processes.
  3. Address culture-specific issues.

- Assessing the success of the project: it is essential to show clear evidence that KM projects have achieved continuous improvements by using indicators.

Oliveira et al (2012) analysed the data collected from seventeen semi-structure interviews with top managers in 11 organisations operating in Portugal and found that there are four stages of KM implementation. In each stage, there are a group of factors associated with this stage. The four stages are: planning, initiation, development, and integration. In the following table shows factors classified in the stages.
### Table 2.3: Factors classified in the four stages; source: Oliveira et al (2012)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Factors</th>
</tr>
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</table>
| First - planning | **Top management support**: is essential and has an important role in defining priorities and supporting KM activities.  
 **Organisational culture**: create a sharing knowledge culture is the fundamental of KM implementation and it is a challenge that organisations have to face.  
 **Organisational structure**: The roles of organisational structure are enabling the horizontal communication (prevent hierarchical impediments), motivate teamwork; sharing is part of daily routine of the employees and integration the different department in the organisation.  
 **Alignment of KM with business objectives**  
 **Objectives**: develop of KM objectives  
 **Budget**: provide the cost of implementing KM such as investment in technology and human resource. |
| Second- initiation | **Explicit knowledge**: is easier to document with the use of repositories.  
 **KM project leader**: create a team from all departments and led by human resource manager.  
 **Process phases**: KM activities such as gathering, storage and dissemination.  
 **Technology**: IT is very important in a KM project, especially in large firms.  
 **Time**: provide extra time for employees to participate in KM activities |
| Third- development | **Training**: whenever a new IT tool is introduces, the workers have to receive training. Also, an integration process for new employees, including KM training.  
 **Rewarding system**: there should be a rewarding system for employees who participate in KM activities.  
 **Communication**: such as meetings, messenger, newsletter and e-mail.  
 **Tacit knowledge**: it is very important to improve the sharing of tacit knowledge such as technical issues.  
 **Benefits of KM**  
 **Core knowledge**: identify the relevant knowledge is very important. |
| Fourth- integration | **Legislation**: the procedures adopted for KM need to be coherent with the organisation’s policy.  
 **Customers**: become the source of information and may even be integrated in the KM activities.  
 **Suppliers**: the integration of the supplier to the KM process can facilitate negotiations between organisations.  
 **Partners**: are organisations that develop services such as in software firms partners are technology suppliers.  
 **Competitors**: the achievement of business intelligence activities frequently mentioned the sense of noticing competition, and associating these activities with KM |
Furthermore, Neto et al (2009) list seven stages of the KM implementation process as follows:

1. Epistemological view: it is necessary that each organisation defines its own understanding of knowledge and information and what the difference is between these two concepts.

2. Creation of a KM committee that directly reports to the CEO: both the full support of top management of KM and the creation of a KM committee is crucial for successfully implementing KM. A KM committee consists of employees from different departments of the organisation with different backgrounds. The role of this team is to make it clear to everybody in the organisation that every worker has a responsibility to make KM a success.

3. Identify and map the organisation’s macro-knowledge (the knowledge map): map out all of the categories of knowledge that are essential to the successful operation of the company and its survival within the market.

4. Distribution of the knowledge map to all organisational departments: The wide categories identified within the knowledge map must be further sub-categorised into more specific fields which can be easily embedded within business processes.

5. Emphasis on definitions: after the knowledge taxonomy has been defined and deployed, the KM team should focus on the specific knowledge type required: retention, sharing or creation.

6. Selection of IT tools, managerial practices/processes and the definition of metrics: after the required knowledge activity is selected, the organisation should choose the most suitable method to approach the required knowledge activity. For example, if the required knowledge activity is sharing; the organisation can select any methods to achieve this goal, such as OJT, the intranet or an information system. Organisations need to define metrics in order to measure KM, but metrics are still not clearly defined.

7. Implementation of a pilot project: it is better to begin KM implementation with a pilot project in a critical area of the organisation in which it is most likely to succeed in order to gain feedback. Following this, the whole process will start all over again.
2.15 Measuring the Impact of KM metrics

KM metrics are a series of tools used to measure the success of KM systems and strategies. There are two main types of tools: benchmarking and the balanced scorecard. Benchmarking can be divided into two further categories, which are internal and external benchmarking. Internal benchmarking is the process of comparing one business to another within the same firm, or comparing the same business with itself during different time periods. External benchmarking refers to comparing the organisation with other industry-leading organisations in order to identify best practices within the industry and then implement these best practices into the organisation itself in order to improve its effectiveness. The second type of tool is the balanced scorecard, which is a flexible and manageable tool. It is a simple way to select and display the business’ key indicators as an easy-to-read report. This report should be complete with simple and easy data presentation formats such as charts (for example trend charts, or Pareto charts) or graphs (histograms) that enable clear comparisons and use colour to clarify and explain data. The main objective of these tools is to measure the progress of KM toward its stated goals (Dalkir 2005).

Pawlowski and Bick (2012) state that measuring communication between stakeholders and the amount of knowledge sharing that has taken place can help to monitor the way cultural differences are influencing KM projects. In addition, they also believe that measuring factors such as communication intensity can identify areas that require intervention to avoid the failure of KM projects. Moreover, Rasoulinezhad (2011) states that metrics could be involved in the monitoring of many facts, including end-user and customer satisfaction, financial performance and an increase in the competencies of the company.

2.16 Future of KM

The implementation and use of KM has increased rapidly since 1990. As many as 80% of the largest global organisations have implemented KM projects (Lawton 2001; KPMG 2000). Moreover, a report from the Economist Intelligence United states that more than 1,600 senior executives in 100 countries believe KM offers the greatest potential for gains in productivity during the next 15 years (about 43% of the total response). Furthermore, most academics and senior executives believe that KM is the
only way for an organisation to be able to meet the challenges of maintaining a continuous competitive advantage (Walker 2006).

Becerra-Fernandez et al (2004) state that the future of KM is expected to make decision makers more effective by forcing them to make more human decisions and be able to deal with problems. Also, it is expected that in the future both human and advanced technology will work together in order to enable knowledge to be integrated across diverse domains, and thereby result in a higher OP. It is impossible that any organisation can have a clear picture of its future and direction without having a clear view of the impact of its knowledge assets on any strategic vision. In order to do this, organisations should determine the connection between their core business processes, the resultant KM choices and policies, and the impact of this on performance (Turner and Minonne 2010).

Moreover, Fong and Choi (2009) state that the powerful use of knowledge is very important for organisations to become more competitive in the market and to be able to defeat rivals. Zack et al (2009) state that there is a significant relationship between KM practices and OP. Therefore, KM has not only become a common function in business organisations (Zack et al 2009), but is also critical to the success of organisations (Walker 2006). This can be illustrated by the fact that organisations spend almost a trillion dollars every year addressing the goal of increasing their capability to analyse, store and reuse knowledge (Lohr 2002).

2.17 Conclusions

This chapter first summarised current views of the definitions of knowledge, and explained the distinction between data, information, and knowledge. Secondly, it presented the different types of knowledge – tacit knowledge and explicit knowledge – and introduced several different definitions of KM.

The importance and benefits of KM have been pointed out in relation to decision making, time management, quality and competitiveness. KM can improve organisational processes, as well as the effectiveness, efficiency, and degree of innovation of these processes. Moreover, KM helps organisations to reduce costs, increase speed, meet customer needs, increase efficiency, improve ROI, increase profits, identify new markets, improve market share, improve efficiency and be more effective.
This was followed by an introduction to a comprehensive model of the KM life cycle (King 2008) in which there are six processes: knowledge creation or knowledge acquisition, knowledge refinement, knowledge storage, knowledge distribution by either transfer or sharing knowledge, knowledge use, and finally OP.

OL is complementary to KM. Whereas OL is concerned with processes, KM is concerned with the content of the knowledge that a company acquires, creates, processes and finally uses. It was found that there is a significant relationship between KM practices and OP, but there was no significant relationship between KM practices and financial performance.

However, a major challenge facing organisations is the management of tacit knowledge through convincing, coercing, directing or otherwise getting individuals within organisations to share their knowledge. Key to the success of tacit knowledge transfer is the willingness and capability of employees to share what they know and to use what they learn. Another major challenge facing organisations trying to implement KM successfully is organisational culture, which plays a significant role in facilitating sharing, learning, and knowledge creation. An open organisational culture provides incentives for the integration of individual skills and experiences into organisational knowledge, and will be more successful. There are some techniques for increasing the tacit knowledge sharing of employees; for example, implementing web-based and software tools and providing rewards programmes.

Moreover, the fastest-growing and most profitable organisations are those which have the best quality of knowledge workers. Finally, CSFs can be assigned to three dimensions: human beings, organisation and technology. In the next chapter, the rationale behind the selection of the research methodology will be presented. Also, the researcher explains why the research methodology that has been selected to be used in this research is the most appropriate one.
Chapter 3 Research Methodology

3.1 Introduction

There are many definitions of the term research: it can be defined as a systematic method of gaining new knowledge or a way to answer questions (Gliner and Morgan 2000); it can also be defined as a process of enquiry and investigation. It is systematic and methodical, and research increases knowledge (Collis and Hussey 2003). A further definition is “something that people undertake in order to find out things in a systematic way, thereby increasing their knowledge” (Saunders et al 2009, p.5). Wilson (2010, p.3) defines the term research as “a step-by-step process that involves the collecting, recording, analyzing and interpreting of information”.

Wilson (2010) states that clear research questions are the main focus of any research project, and that these questions hold the research together. In other words, the researcher must improve his knowledge and understanding of his topic by generating answers to the research questions. In addition to research, the researcher should be able to differentiate the two terms: methods and methodology. The term methods refers to techniques and procedures used to collect and analyse data, including interviews, observation, questionnaires, and both quantitative and qualitative analysis techniques (Saunders et al 2009). Wilson (2010) defines method as the different ways by which data can be collected and analysed. On the other hand, methodology refers to the approach and strategy used to conduct research, including everything from theoretical application to the collection and analysis of the data.

This chapter presents the rationale behind the selection of the chosen research design and explains why the research methodology selected is the most appropriate one for this research. This chapter is divided into many sections. It begins by presenting different research philosophical viewpoints and methodological approaches. There are two main ways of thinking about research philosophy: ontology and epistemology. Also, there are two main types of research approach: inductive and deductive. Both types of research approach will be explored in more detail and the major differences between deductive and inductive approaches are presented in Table 3.1. The inductive approach was determined as the perfect approach for this research because it leads to a better understanding of the topic undertaken.
This is followed by the research design. There are three main types of research design: qualitative research, quantitative research and mixed methods research. The reasons for the selection of qualitative research for this study are also presented. Grounded theory was selected as the most appropriate methodology for this research, and semi-structured interviews were conducted to collect data for the grounded theory methodology.

### 3.2 Research philosophies

Saunders *et al* (2009, p. 107) define research philosophy as the “overarching term relating to the development of knowledge and the nature of that knowledge in relation to research”. The importance of research philosophy is the way it influences the researcher’s thinking about the research process. There are two main ways of thinking about research philosophy: ontology and epistemology. “Ontology is concerned with the nature of reality. This raises questions of the assumptions researchers have about the way the world operates and the commitment held to particular views” (Saunders *et al* 2009, p. 110). On the other hand, epistemology is concerned with knowledge and what is acceptable knowledge in a field of study (Saunders *et al* 2009). In other words, epistemological studies concern themselves with knowledge from all perspectives, as well as the definition of knowledge, the foundation of knowledge, how knowledge is produced, what can be known, and what knowledge is acceptable (Girod-Seville and Perret 2001). Therefore, the philosophy of this research is epistemological, as it is concerned with knowledge and what is acceptable knowledge.

Moreover, the two main philosophical views of epistemology are positivism and interpretivism. Positivism is usually adopted by natural scientists in order to develop hypotheses through the use of existing theory. These hypotheses will be either be tested and confirmed, or refuted, which leads to the further development of theory. Then, the development of theory is tested through further research. However, interpretivism is preferred in the social sciences, and includes interpreting the social roles of others in accordance with the individual’s own sets of meaning. In other words, interpretivism advocates that there is a difference between conducting research among people and research among objects such as computers and trucks. The researcher needs to develop different procedures and methods and he/she needs to take the human factor into account (Saunders *et al* 2009).
Moreover, this study aims to demonstrate the most important factors affecting the willingness of employees to participate in KM activities and share their knowledge; as well as develop theoretical insights that differ from those already existent in this field. Also, this research aims to determine the reasons behind the increased interactivity and participation in KM activities of employees in knowledge-based organisations by analysing the barriers that impede the adoption of KM activities and the factors that aid the adoption of knowledge-sharing activities. In other words, the researcher aims to determine the conditions that influence employees to share more, or less. Furthermore, Magnini (2008) states that knowledge sharing is considered to be a social process via interaction between individuals. Therefore, the researcher needs to better understand the issues and subjective reality of the informants by examining and analysing their interactions, intentions, actions, and motives according to the way that is meaningful for these research participants. Thus, the philosophical foundation of this research is interpretivism.

3.3 Research approaches

There are two main types of research approach: deduction and induction (Saunders et al 2009; Wilson 2010). Easterby-Smith et al (2008) state that choosing the correct research approach is important for three main reasons. Firstly, it allows for a more informed decision to be made about the research design, which includes the techniques used to collect data and the procedures used to analyse that data. In other words, providing strongly evidenced answers to the initial research question. Secondly, it supports the researcher in choosing which research strategies will work for their research and which will not. Thirdly, knowledge of different research traditions guides the researcher in adopting the most appropriate research design to overcome research limitations, such as limited access to data, practical limitations, and lack of researcher knowledge and understanding of the research subject.

The deductive approach is useful in scientific research in order to develop a theory and hypothesis, then test the hypothesis by designing a research strategy (Saunders et al 2009; Wilson 2010). This type of research is often related to quantitative research (Wilson 2010). Saunders et al (2009) state that deduction has several important characteristics: it explains the causal relationship between variables; facts are measured
quantitatively; it theorises the operationalisation of concepts; and generalises through the use of large samples.

The main goal of the inductive approach is to provide a better understanding of the problem’s nature by collecting data and analysing it. As a result of this analysis a theory will develop (Saunders et al 2009; Wilson 2010). This type of research is often related to qualitative research (Wilson 2010). Saunders et al (2009) state that induction has three steps. First, a sample of employees and their supervisors is interviewed, then the collected data is analysed, and finally a theory is formulated depending on the results of the analysis.

There are four criteria that facilitate the identification of the most suitable approach for research. The most important of these is the emphasis of the research and the nature of the research topic. If there is a considerable amount of existing literature on the research topic, which can be used to define a theoretical structure and hypothesis, the appropriate approach is deduction. Research into a new topic with little existing literature is better suited to induction because the aim of the research needs to be on generating and analysing new data, and reflecting on those data with theoretical themes (Creswell 2002). The second criteria take into account time limitations. Deductive research takes less time to complete and it is possible to predict time schedules. Most of the researcher’s time is spent on setting up the study before the data collection and analysis, and data collection is often based on ‘one take’. However, inductive research takes a long time to complete, as often a longer amount of time is required for data collection and analysis.

The third criteria to consider when choosing a research approach is what risk factors are involved in the research, and how far the researcher is prepared to indulge in risk. Deductive research is considered a lower-risk strategy, as it minimises issues such as the non-return of questionnaires; but with inductive research the researcher must take the chance that no useful data will be collected and thus no theory will emerge. Fourthly, the researcher should consider the preferences of the person using his research report. Deductive research is more familiar to most managers and they are much more likely to believe in the conclusions resulting from this approach (Saunders et al 2009).
Table 3.1 shows the major differences between deductive and inductive approaches to research:

<table>
<thead>
<tr>
<th>Deduction emphasises</th>
<th>Induction emphasises</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Scientific principles</td>
<td>• Gaining an understanding of the meanings humans attach to events</td>
</tr>
<tr>
<td>• Moving from theory to data</td>
<td>• A close understanding of the research context</td>
</tr>
<tr>
<td>• The need to explain causal relationships between variables</td>
<td>• The collection of qualitative data</td>
</tr>
<tr>
<td>• The collection of quantitative data</td>
<td>• A more flexible structure to permit changes of research progression</td>
</tr>
<tr>
<td>• The application of controls to ensure validity of data</td>
<td>• A realisation that the researcher is part of the process</td>
</tr>
<tr>
<td>• The operationalisation of concepts to ensure clarity of definition</td>
<td>• Less concern with the need to generalise</td>
</tr>
<tr>
<td>• A highly structured approach</td>
<td></td>
</tr>
<tr>
<td>• Researcher independence from what is being researched</td>
<td></td>
</tr>
<tr>
<td>• The necessity to select samples of sufficient size in order to generalise conclusion.</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.1: Major differences between deductive and inductive approaches to research; Source: Saunders et al (2009)

The deductive approach is not applicable to this study for the following reasons: it is a structured approach and is always related to quantitative research; and it would limit the researcher in his aim to learn more about the subject and determine the relationships between KM and OP, how to overcome the barriers preventing the implementation of KM, find out what influences the willingness of employees to post and share their knowledge. On the other hand, the inductive approach was determined as an ideal approach for this research because it not only offers a better understanding of the topic undertaken, but it also helps the researcher to determine the relationship between OP and KM. Additionally, it aids the researcher to gain a better understanding of the different perspectives of employees involved in KM activities, thus enabling the researcher to understand their behaviour toward KM activities. Furthermore, there is little existing literature examining the CSFs for effective KM implementation and the researcher would like to generate theory from the collecting of data. Saunders et al (2009) state that one disadvantage of inductive research is that the researcher has to be aware of the possibility that no useful data will be collected, and thus no theory will emerge. Therefore, the researcher collected data from 19 different organisations to help
overcome this drawback, and to ensure the credibility of the data collected, thereby enhancing research outcomes.

3.4 Research purpose

Collis and Hussey (2003) state that the purpose of research can be summarised as follows: to review and synthesise existing knowledge; to investigate some existing situation or problem; to provide solutions to a problem; to explore and analyse more general issues; to construct or create a new procedure or system; to explain a new phenomenon; to generate new knowledge; and a combination of any of the above. Moreover, many authors agreed that there are three different purposes of a research project and they are: exploratory, descriptive and explanatory (Robson 2002; Saunders et al 2009). As the research questions can be both descriptive and explanatory, so the research project may include more than one purpose (Saunders et al 2009) and the purpose of the researchers’ enquiry may change over time (Robson 2002).

The objective of descriptive study is to describe existing or past phenomena by using observation. It can be either qualitative or quantitative (Wilson 2010). This may be an extension of a piece of explanatory research. The researcher must have a clear picture of the phenomena on which he wishes to collect data prior to the collection of the data (Saunders et al 2009). Moreover, descriptive research is determined to answer what, how, who, where or when questions in order to provide accurate information and to help decision making (Wilson 2010). The objective of explanatory studies is explaining causal relationships between variables (Saunders et al 2009). Moreover, it is only concerned with learning why in order to determine cause-and-effect relationships (Wilson 2010).

An exploratory study is “a valuable means of finding out what is happening; to seek new insights; to ask questions and assess phenomena in a new light” (Robson 2002). The objective of exploratory study is not only to develop a better insight into a particular topic, but also it can lead to the development of set of hypotheses (Wilson 2010). In other words, it is not only helpful for the researcher who wants to clarify his understanding of a problem, but also it is flexible and adaptable to change. It can be performed by using a literature search, interviewing experts in the subject, and conducting focus group interviews (Saunders et al 2009). Therefore, this research is
consider to be an exploratory study due it aims to explore and develop better understanding of how KM can harness and improve the OP, the barriers to KM implementation, and the CSFs for effective KM implementation within Saudi organisations.

3.5 Research design

The research design refers to the general plan of how the researcher is going to go about answering the research questions. This includes how data will be collected, with consideration of the constraints that may be faced in this area, such as access to data and location, the availability of money and time, and the discussion of ethical issues. Moreover, the research design should have clear objectives derived from the research questions (Saunders et al 2009). In other words, the research design is a plan or framework for collection and analysis of data (Wilson 2010). There are three main types of research design: qualitative research, quantitative research and mixed methods research (Creswell 2009; Saunders et al 2009; Wilson 2010). The distinction between qualitative research and quantitative research is that qualitative research uses words and quantitative research uses numbers. In addition, qualitative interview questions are open-ended questions, whereas quantitative hypotheses use close-ended questions (Creswell 2009). In other words, quantitative research examines numerical data, while qualitative inquiries examine narrative data (Wilson 2010). The three main types of research design will be explored in the following sections by determining their strengths and weaknesses in order to help the researcher select which research design type is most suitable for this study.

3.5.1 Qualitative research

A qualitative research project is usually associated with an inductive approach, which aims to provide insights that allow for the generation of theoretical frameworks that illustrate the relationship between cultural values and project performance (Wilson 2010). Qualitative research contains a range of interpretations and material practices that aim to make identifiable phenomena clear and visible, and transform it into a set of representations containing interviews, recordings, conversations, memos and field notes. Therefore, qualitative research is an attempt to help the researcher get a better understanding of the subject under study by deploying a considerable series of coherent
interpretive practices (Denzin and Lincoln 2011). Qualitative research is a method that involves creating questions and procedures; and collecting, analysing, and interpreting data. The final written report has a flexible structure (Creswell 2009).

It is clear that research conducted using a qualitative approach is more concerned with the context in which each event happened. Therefore, this approach will be more appropriate for small sample studies. This can be explained by the fact that inductive researchers are working more with qualitative data (Easterby-Smith et al 2002).

Qualitative research questions usually start with how or what in order to get into the topic and describe what is going on. Data collection in qualitative research is not considered to be time-consuming and complicated, as only a small number of interviews need to be conducted; but typing and analysing interview transcripts can be extremely time-consuming (Wilson 2010). Moreover, qualitative research is usually used for any data collection technique such as an interview, or data analysis procedure such as categorising data that generates or uses non-numerical data (Saunders et al 2009).

Denzin and Lincoln, (2011, p.8) state that:

“The word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity, or frequency. Qualitative research stresses the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. They seek answers to questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasize the measurement and analysis of causal relationships between variables, not processes. Proponents claim that their work is done from within a value-free framework”.

3.5.2 Quantitative research

Quantitative research is focused on testing objective theories by examining the relationship between variables. These variables can be measured and numbered, and then this numbered data can be analysed using statistical procedures (Creswell 2009). Quantitative research is more appropriate for a large data sample (Easterby-Smith et al 2002); therefore, it is often related to a deductive approach (Wilson 2010). In other words, quantitative research is a method that involves the process of collecting data, analysing the data statistically, interpreting it, and writing up the results of the study (Creswell 2009; Wilson 2010). The structure of the final written report consists of an introduction, and a description of relevant literature and theory, methods, results, and
discussion (Creswell 2009). Instead of generating a theoretical framework as a possible outcome, the researcher can apply an existing theory that may help interpret their findings (Wilson 2010).

Quantitative research questions usually start with *why*, in order to determine the relationship between variables. The data collection of quantitative research is considered to be time-consuming and problematic, but the analysis of data is straightforward (Wilson 2010). Moreover, quantitative research is usually suited to data collection techniques like questionnaires; and data analysis procedures like graphs or statistics that generate or use numerical data (Saunders *et al* 2009).

### 3.5.3 Mixed methods research

The researcher does not need to follow either a qualitative or quantitative design. In fact, using mixed methods for data collection adds more value to the research. Therefore, mixed methods research has increased in popularity in recent years (Wilson 2010). Mixed methods research combines both types of research design - qualitative and quantitative - in the same piece of research. It involves not only collecting and analysing both types of data, but also using both approaches in tandem, which adds to the overall strength of study and makes it stronger than conducting either quantitative or qualitative research individually (Creswell 2009).

Taskakkori and Teddlie (2003) state that mixed methods research is useful because it not only provides better opportunities for the researcher to answer the research questions, but also allows the researcher to better evaluate the extent to which their findings can be trusted and inferred from. Saunders *et al* (2009) argue that there are two advantages of using the mixed method: different methods can be used for different purposes in a study, and it increases the researcher's confidence in his findings.

### 3.6 Why qualitative research has been selected in this study

This section aims to present the reasons behind the selection of qualitative research for this study. It does not attempt to prove which approach is better, as each has its distinct purposes and is useful when employed in the right setting. Wilson (2010) states that the researcher will adopt qualitative research because he/she wants to get closer to the participants’ perspective through detailed interviewing and observation; to confront the
constraints of daily life; and to get rich and deep descriptions which he/she believes are valuable. Bryman (2004) lists five reasons why researchers may need to select a qualitative approach. These are:

- Qualitative research is focused on observing behaviour.
- Qualitative research is focused on building concepts, hypotheses, and theories from data.
- Qualitative research is focused on gaining a greater understanding of non-calculative data through the researcher get more involved with the participants.
- Qualitative research is focused on investigating participants in a natural environment.
- Qualitative research is focused on gaining deep understanding of individual’s behaviour, values and beliefs.

Also, Bryman (2004) states that the quantitative research approach is different from the qualitative research approach in terms of stages. In the quantitative research approach, the theory and research questions not only emerge from the literature review, but also guide the research, data collection and analysis. However, in the qualitative research approach, the theory emerges from the data collection and analysis. Corbin and Strauss (2008) argue that the qualitative approach, conducted through interview or observation, is the best way to gain a deep understanding of social behaviour and cultural values.

<table>
<thead>
<tr>
<th>Quantitative data</th>
<th>Qualitative data</th>
</tr>
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<tbody>
<tr>
<td>• Based on meanings derived from numbers</td>
<td>• Based on meanings expressed through words</td>
</tr>
<tr>
<td>• Collection of results in numerical and standardised data</td>
<td>• Collection of results in non-standardised data requiring classification into categories</td>
</tr>
<tr>
<td>• Analysis conducted through the use of diagrams and statistics</td>
<td>• Analysis conducted through the use of conceptualisation</td>
</tr>
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Table 3.2: Distinctions between quantitative and qualitative data; Source: Saunders et al (2009)

It is clear from the reasons given above that the qualitative approach is more suitable for this research, as it aims to provide an understanding of the relationship between the implementation of KM and the performance of organisations within Saudi organisations, which has not been researched to a great extent in the past. Also, it aims to build a theory of the process of implementing KM. Qualitative research design will provide the researcher with a more comprehensive view of the participants’ actions in a natural environment. It will also help the researcher to get more involved with the
participants and the environment under study, which gives the researcher a close
descriptive picture and deep understanding of individuals' behaviour, intentions, values,
needs, feelings, desires and beliefs.

3.7 Research methodology selection

The research methodology used in this research is grounded theory. This section
presents a description and definition of case study; action research and grounded theory,
and a justification of why the grounded theory research methodology is appropriate for
this study.

3.7.1 Case study

Robson (2002) defines a case study as “a strategy for doing research which involves an
empirical investigation of a particular contemporary phenomenon within its real life
context using multiple sources of evidence”. The case study strategy is usually used in
explanatory and exploratory research because the researcher has the ability during the
case study strategy to determine the answer to the questions why, what, and how
(Saunders et al 2009). Case studies can be divided into two main types: a single case
study which can be viewed as single experiment; and multiple case studies which can be
viewed as multiple experiments (Wilson 2010).

There are different case study data collection techniques, such as interviews, surveys,
questionnaires and observation, and most often case study strategy combines more than
one technique (which is called triangulation). Triangulation refers to the use of different
approaches, data collection techniques and methods in the same study (Collis and Hussy
2003; Saunders et al 2009) in order to obtain greater validity and reliability than a single
methodological approach could achieve (Collis and Hussy 2003). The case study
strategy can not only be considered a very useful way of exploring existing theory, but
can also give the researcher the ability to challenge an existing theory and generate new
research questions (Saunders et al 2009). However, the nature of the case study means
that it may influence the conclusions or emphasise a particular viewpoint (Robson
2002). In addition, case studies have been criticised for taking too long to carry out,
delaying the completion of the study (Yin 2009).
3.7.2 Action research

Action research is a methodology whereby the researcher actively observes a situation and is engaged with the phenomenon being studied in order to bring about change (Wilson 2010). Action research is research in action rather than research about action. It aims for the resolution of important organizational or social issues by using a scientific approach with people who experience those issues directly (Coghlan and Brannick 2010). It is clear from these purposes that the main goal of action research is not only to determine the solution to existing problems but also to learn from the results (both intended and unintended) and to contribute to scientific knowledge and theory (Saunders et al 2009). Action research comprises iterative cycles of three steps; planning action, taking action, and evaluating the action which leads to repeating the whole cycle again and so on (Coghlan and Brannick 2010).

Easterby-Smith et al (2008) state that if social phenomena are constantly changing instead of static, the researchers within action research are usually part of the change process itself. The following two factors are engaged in the research action:

- An attempt to change an organization or social system and make that the objective of the action researcher is the best way of learning about it.
- The people should involve in the research process those affected by, or involved in implementing these changes.

3.7.3 Grounded Theory

Grounded theory is a research methodology primarily associated with qualitative research (Dunne 2011), which was developed by Glaser and Strauss in 1967 (Charmaz 2006; Corbin and Strauss 2008; Easterby-Smith et al 2008; Saunders et al 2009; Dunne 2011) for the purpose of building theory from data (Corbin and Strauss 2008). According to Dunne (2011), the researcher engaged in grounded theory does not concentrate on testing existing theoretical hypotheses from the same field of study, but rather focuses on developing a new theory from the collection of empirical data. Therefore, grounded theory has become very popular in qualitative research over the last two decades (Payne 2007). The grounded theory method is used by qualitative researchers to strengthen the research analysis because it commences with inductive logic, uses emergent strategies, and depends on comparative analysis. These properties
of grounded theory help researchers to refine and identify their analyses, and thus strengthen the effect of their work at the same time as accelerating the research process. Also, grounded theory supports researchers to develop innovative analyses and retest existing ideas (Charmaz 2011).

Grounded theory is a qualitative strategy that helps the researcher derives a theory from the participants’ perspective in the study (Creswell 2009). Wilson (2010, p.303) defines grounded theory as “a qualitative research method that involves generating theory from data collected in a particular study”. Glaser and Strauss clarified the issue for the researcher intending to develop theory by using a ‘comparative method’; in other words, observing the same process and event in different situations or departments or organisations at the same time (Easterby-Smith et al 2008). Grounded theory is useful for researchers to explain and predict people’s behaviour as far as business and management are concerned. For instance, grounded theory can be used to explore a broad range of business and management issues, such as those related to consumers and employees (Goulding 2002).

Moreover, Charmaz (2006, p.187) states that “grounded theory is a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through building inductive analysis from the data”. In grounded theory, the researcher is involved in data analysis during the collection of data, since he uses this data analysis to inform further data collection. Dunne (2011) states that grounded theory differs from other research methodologies because it contains a number of unique methodological factors, such as theoretical sampling and constant comparison. While in most strategies data collection and analysis occur in a linear sequence, grounded theory demands that data collection and analysis occur at the same time. Payne (2007) states that grounded theory have a unique feature, which is the dynamic interaction between data collection and analysis. As Charmaz (2006) points out, researchers in grounded theory studies always collect several types of data and may include different data-gathering strategies. More importantly, they shape and reshape data collection, then refine collected data. The logic of grounded theory guides not only the researcher’s methods of data-gathering, but also theoretical development.

The advantage of using grounded theory strategies is that the researcher learns about gaps in his data from the first stages of research. Then, the researcher will be able to
locate and gather sources of required data. Hence, simultaneous data collection and analysis will help the researcher to further understand research problems, while engaging in developing categories (Charmaz 2006). However, Easterby-Smith et al (2008) state that there are also disadvantages to grounded theory, as follows: to develop grounded theory the researchers should have easy and flexible access to data and cases, but access is quite difficult among commercial organisations and most researchers do not have the freedom to select their samples; the researchers have to accept the interviewees selected for them by top management; and there are limits imposed in terms of timing, topics and the use of data, which usually requires a number of compromises to be made in terms of research design.

3.7.4 Why grounded theory methodology is appropriate for this study

Grounded theory has been selected for the conduction of this study in order to fulfil the aims of the research. This inquiry aims to understand the issues and activities involved with KM concepts, and to investigate how these bodies of knowledge and processes can be applied to enhance productivity, performance and competitiveness within organisations in SA. The grounded theory strategy will provide in-depth information relevant to KM implementation and answer the central questions (such as: ‘How is the process of KM implementation disseminated in organisations?’; ‘How can organisations implement KM successfully?’; ‘What are the critical successful factors for effective KM implementation?’; ‘What are the benefits of KM implementation?’; ‘What are the most common challenges involved in KM implementation?’; and ‘What is the relationship between KM implementation and organisation performance?’). Birks and Mills (2011, p.17) state that “grounded theory is the preferred choice when the intent is to generate theory that explains a phenomenon of interest to the research”. Grounded theory helps researchers to understand and explain what is going on in the empirical world, and provide analysis that describes how and why it is happening (Charmaz 2011).

Secondly, there is a lack of empirical studies showing how KM makes a difference to OP and there are few studies and articles that examine and investigate the relationship between KM and other factors, as well as KM and OP (Zack et al 2009). Grounded theory aims to develop a theory from data and around certain issues with little existing literature to inform it. Birks and Mills (2011, p.16) state that “Grounded theory results
in the generation of new knowledge in the form of theory; therefore, areas where little is known about a particular topic are most deserving of research effort”. In addition, they also state, “All researchers should be able to demonstrate that their proposed study will generate knowledge that is relevant and significant. In employing grounded theory, you should also be satisfied that it is new and unique” (Birks and Mills 2011, p.17). There is a need to develop empirically grounded theories in KM, which motivates the researcher to develop a theory in this field. Charmaz (2011) states that researchers can determine the conditions that affect the emergence of theory and identify the relations between categories, and then determine the consequences of the key elements identified. Therefore, researchers can challenge the traditional interpretations of the subject studied. Grounded theory does not focus on testing existing theoretical hypotheses from the same field, but concentrates on developing a new theory from the data itself (Dunne 2011). Furthermore, many authors have recommended using grounded theory when there is a lack of empirical studies about certain issues in a specific field, especially when these issues concentrate on the experiences of the participants and their interaction (Glaser 1998; Pauleen et al 2007).

Thirdly, grounded theory is useful for researchers to explain and predict people’s behaviour and business management (Goulding 2002). Moreover, it is useful to discover the main points of an issue through direct contact with the social world, a characteristic which helps the researcher to a better understanding of the subject (Glasser 1998; Pauleen et al 2007). Grounded theory helps researchers to clarify the tacit meanings and actions of the participants, and it also helps them to select only reasonable meanings and actions in order to produce a theory (Charmaz 2011). In this study, the issue of human interaction, including perceptions, experiences and points of view of participants, is very important to help the researcher gain a better understanding of KM and the CSFs for effective KM implementation; as well as the most common challenges of KM implementation, and the relationship between KM implementation and OP. Grounded theory provides the researcher with a descriptive picture and a more comprehensive vision of the reality of the informants’ behaviour, activities, intentions, desires, needs, and feelings. Therefore, the researcher has decided to adopt grounded theory in this study because it is the most appropriate research methodology for the research at hand.
3.8 Primary data collection

Primary data can be defined as new data that needs to be collected by the researcher for the research project being undertaken in order to answer the research questions and to meet the objectives of the study (Saunders et al 2009). Wilson (2010) states that primary data is the data that needs to be collected by the researcher himself using a variety of collection tools such as interviews, observation and questionnaires. There are different strategies for collecting primary data, such as observation, interviews, experiments and questionnaires (Saunders et al 2009). The grounded theory methodology was adopted in this research through the use of semi-structured interviews to collect qualitative data.

3.8.1 Questionnaires

The questionnaire is a data collection method that includes a set of questions designed to produce data suitable for achieving the research objectives. It can be associated with both qualitative and quantitative data (Wilson 2010). There are several advantages of the questionnaire data collection method: it allows the researcher to obtain accurate information, it is relatively economical in terms of both time and money, it is easy to get a reasonable quantity of data, and it is easy to analyse the feedback. However, there are several disadvantages: data may be inaccurate or the respondent may fail to answer the question so that the response cannot be included in the final analysis, there may be a low response rate, data may be missing, questions need to be brief and simple, respondents may have difficulty with reading, and questions may be unclear (Wilson 2010).

3.8.2 Observations

The observation strategy is suitable for research that focuses on people’s behaviour and what they do. This strategy is always associated with a qualitative research strategy and involves the systematic observation, recording, description, analysis and interpretation of people’s behaviour (Saunders et al 2009; Wilson 2010). There are two main types of observation: participant observation and structured observation (Saunders et al 2009).
Participant observation is useful for the researcher whose aim is to know ‘what is going on’ in a broad range of social settings. In other words, it is where the researcher attempts to participate fully in the lives and activities of subjects and thus becomes a member of their group, organisation or community. This enables researchers to share their experiences by not merely observing what is happening but also feeling it (Saunders et al 2009). There are several advantages of the participant observation collection method: it is excellent at explaining ‘what is going on’ in particular social situations; it increases the awareness of the researcher regarding significant social processes; it is particularly helpful for researchers working within their own organisations; and most of collected data are useful (Saunders et al 2009). However, a disadvantage is it can be very time consuming. Another drawback is it can pose difficult ethical dilemmas for the researcher. Other problems, it can lead to significant observer bias and it may be difficult to access organisations. Finally, it is often very difficult for the researcher to record data (Saunders et al 2009).

Structured observation is used by the researcher whose aims are to quantify behaviours and the frequency of events to tell the researcher how things happen. In contrast, participant observation is concerned with why things happen (Saunders et al 2009). There are several advantages of the structured observation collection method: it can be used by any person after appropriate training in the use of the measuring instrument; it can present the opportunity of comparison between locations by carrying out observations simultaneously in different locations; and it is possible to record the relationships between events. However, the drawbacks of structured observation are: the observer must be in the research setting when the phenomena under study are taking place; and collecting data is slow and expensive.

3.8.3 Interviews

An interview is the best method of collecting information (Easterby-Smith et al 2008) and it is more commonly associated with a qualitative research strategy (Wilson 2010). An interview is a discussion between two or more people. Interviews can not only help the researcher to collect valid and reliable data that is relevant to the research questions and objectives, but can also help the researcher to formulate research questions and objectives (Saunders et al 2009). In addition, interviews help the researcher to get a better picture of a person’s beliefs and attitudes towards the research subject (Wilson
There are two main factors making interviews successful and they are that the researcher should have a minimum understanding of the research topic before the interview, and also that he should have some key questions prepared (Easterby-Smith et al 2008). Any interview should be related to the research questions and objectives, the purpose of the research and the research strategy (Saunders et al 2009).

Interviews can be divided into three main types: structured interviews using standardised questions for each interviewee; semi-structured interviews using non-standardised questions, but with a list of prepared questions to be covered; and unstructured interviews using informal conversation where the interviewee is free to talk about events, behaviour and beliefs which are related to the research topic (Saunders et al 2009; Wilson 2010).

3.8.3.1 Structured interviews

Structured interviews are used in survey researches to collect quantifiable data, and they are called quantitative research interviews. This data will be subjected to quantitative analysis. In this type of interview, the researcher usually uses questionnaires based on an identical and rigid set of piloted, refined and prepared interview questions. (Easterby-Smith et al 2008; Saunders et al 2009; Wilson 2010). One of the disadvantages of this type of interview can be that it does not provide any opportunity to the participants to elaborate on one’s answer, and also they will not be able to include their own point of views regarding the selected topic (Wilson 2010).

3.8.3.2 Unstructured interviews

When the research is an exploratory study or includes an exploratory element, then the researcher should include semi-structured or unstructured interviews in the research design. The research is designed to help the researcher to determine the causal relationships between variables, and also understand and determine the research questions and objectives (Blumberg et al 2005). Usually, the interviewer records the interview by audio-recording or by taking notes (Saunders et al 2009). An Unstructured interview is informal and also sometimes referred to as an in-depth interview. There is no predetermined and prepared set of question for interview. The interviewer does not ask direct questions and he often begins the interview with a general question. Then, the participant is given the chance to elaborate on their answer and to introduce their own
point of views regarding the selected topic. Unstructured questions for interview are always dependent on the answers given by the participant (Saunders et al 2009; Wilson 2010). The main disadvantage of the unstructured interviews is that it does not control the interview from drifting away from the subject undertaken because of the nature of the unstructured interview (Wilson 2010).

3.8.3.3 Semi-structured interviews

A semi-structured interview is based on a list of themes and questions to be asked, and the participant is given the opportunity to elaborate on certain points. The questions and themes may vary from interview to interview and this gives the researcher a great deal of flexibility and he/she can ask certain questions depending on the participant’s answer. Moreover, the order of questions may also be different from interview to interview depending on the flow of conversation. It allows the researcher to add more questions to the interview in order to explore particular area which has not been covered in the previous interviews. This combination of set questions and flexibility makes the semi-structure approach a favourable selection of interview (Saunders et al 2009; Wilson 2010).

Furthermore, there are several advantages of the interview data collection method such as the ability to engage in verbal and non-verbal communication (body language); the ability to obtain highly accurate information due to the fact that the respondent’s feedback can be recorded; the greater flexibility in terms of delivering of questions; and the possibility of instant access to the information (Wilson 2010). However, there are several disadvantages as well: technical problems may occur during the interview, such as the failure of audio recording equipment; the relationship between interviewee and interviewer may be negatively affected due to audio-recording; the reliability of some interviewee responses may be reduced; transcribing the audio-recording is an extremely time-consuming process, taking between six and ten hours to transcribe only one hour of audio-recording (Saunders et al 2009) and between 5,000 to 6,000 words (Wilson 2010); it is costly (if travel is needed); and interviewer bias may occur (Robson 2002).

Therefore, the research strategies that have been selected for use in this project are semi-structured interviews to collect qualitative data for the grounded theory strategy, which has been used in many previous research projects, such as Leseure and Brookes (2004), Parboteeah et al (2010), Mvungi and Jay (2010), and Scarso and Bolisani
Semi-structured interviews are used in qualitative research in order to conduct discussions not only to understand the what and how, but also to place more emphasis on exploring why (Saunders et al. 2009), and for this reason it has been selected for use in this research in order to get a feel for the key issues.

3.9 Data validation

Saunders et al. (2009, p.157) state that “validity is concerned with whether the findings are really about what they appear to be about” and Wilson (2010, p.308) defines validity as “the extent to which accurately reflects the concept that it is proposed to measure”. Corbin and Strauss (2008) state that there are two main ways of validating the scheme. The first way is by comparing and doing a high level comparative analysis of the scheme against the raw data. The second way is by going back to the participants and asking them about their comment about the scheme. Moreover, the final stage is the integration of literature with an emerged theory. Therefore, a numerous excerpts from different interviews transcripts have been presented in this research in order to prove that the research findings are derived from informants’ statements. Also, at the end of each interview the researcher summarised the main points that had been learned in the interview and he reviewed the information with the informant himself to be sure he did not miss out any important information.

The last stage of the process is to validate the findings and theory by sending those to three of the participants of the study for their comments in order to ensure the validity of the theory and to make it easier to understand. Also, the researcher compared the findings against the raw data by going back to the written versions of the transcripts, written memos and by doing a high level of comparative analysis. In the end a cross-comparison of written transcripts and written memos was conducted by the researcher in order to compare the findings against the raw data.

3.10 Conclusions

This chapter highlighted the methodology of this research. There are two main ways of thinking about research philosophy: ontology and epistemology. The philosophy of this research is epistemological, as it is concerned with knowledge and what is acceptable knowledge. Moreover, the two main philosophical views of epistemology are positivism and interpretivism. The philosophical foundation of this research is interpretivism due
to the researcher needs to better understand the issues and subjective reality of the informants by examining and analysing their interactions, intentions, actions, and motives according to the way that is meaningful for these research participants.

There are two main types of the research approach are inductive and deductive approach. The deductive approach is useful in a scientific research in order to develop a theory and hypothesis and test the hypothesis by designing a research strategy (Saunders et al 2009; Wilson 2010). The main goal of the inductive approach is to give a better understanding of the problem’s nature by collecting data and analysing these data, and as a result of the data analysis a theory will develop (Saunders et al 2009; Wilson 2010). The inductive approach was selected to be used in this research due it is most perfect approach that suitable to this research. It helps the researcher to get better understanding of the undertaking topic, and it helps him to determine the relationship between OP and KM.

There are three different purposes of a research project and they are: exploratory, descriptive and explanatory (Robson 2002; Saunders et al 2009). The objective of exploratory study is to develop a better insight into a particular topic and to lead to the development of set of hypotheses (Wilson 2010). In other words, it is helpful for the researcher who wants to clarify his understanding of a problem and it is flexible and adaptable to change. It can be performed by using a literature search, interviewing experts in the subject, and conducting focus group interviews (Saunders et al 2009). Therefore, this research is consider to be an exploratory study due it aims to develop better understanding of how KM can harness and improve the OP, the barriers of KM implementation, and the CSFs of KM implementation.

The Research design refers to the general plan of how the researcher going to answering the research questions, collecting data with considering to the constraints that the researcher might have such as access to data and location, money and time and discussing ethical issues (Saunders et al 2009). Research design is divided into three main types as: qualitative research, quantitative research and mixed methods research (Creswell 2009; Saunders et al 2009; Wilson 2010). The distinction between qualitative research and quantitative research is that qualitative research uses words and quantitative research uses numbers. In addition, qualitative interview questions are open-ended-questions, whereas quantitative hypotheses use close-end-questions.
(Creswell 2009). The qualitative approach is more suitable for this research due to this research aims to understand the relationship between the implementation of KM and the performance of organisations within Saudi organisation, which has not been researched to a great extent in the past. Qualitative research design helps the researcher to get more involved with the participants and the environment under study which give the researcher a descriptive picture and deep understanding of individual’s behaviour, intentions, values, need feelings, desire and beliefs.

As a result, the grounded theory has been selected to be used in this research because it is the most appropriate methodology as it aims to develop a theory from data, and around certain issue with little literature review and documents. Moreover, the research strategies that have been selected to be used in this project are semi-structured interviews to collect qualitative data for the grounded theory. The researcher will present in the next chapter the qualitative data collected method from the interviews. Also, he will provide the initial findings of data collected from the pilot study and he will present the main fieldwork interviews conducted in this study.
Chapter 4 Groundwork and Data Collection

4.1 Introduction

This chapter presents the qualitative data collection method and processes for the face-to-face interviews. These interviews were conducted with 24 managers from 19 different companies in different sectors in order to enhance understanding, develop theory and to overcome the risk of failing to collect reliable data. Those companies represented the following sectors: manufacturing, oilfield services, telecommunications, aviation, wealth and real estate management, IT outsourcing services, software products services, mineral exploration, chemicals and petroleum, banking, higher education, and marketing communications. Of those organisations, 11 are knowledge-based and 8 are non-knowledge-based. The main reason behind this selection was to determine the difference between those types of organisations and thus to determine the impacts of implementing KM in OP. Drucker (2001) states that the knowledge-intensive organisations are those which treat knowledge as a core strategic resource and they manage their knowledge effectively by using KM. Moreover, Zack (2003:p.88) defined knowledge-based organisations as:

“Knowledge-based organisations (KBO) are usually considered to be those whose product or service is knowledge-intensive. The characteristics of a KBO, however, go beyond product to include process, purpose and perspective. Process refers to an organization’s knowledge based activities and processes. Purpose refers to its mission and strategy. Perspective refers to the worldview and culture that influences and constrains an organization’s decisions and actions. KBOs exhibit knowledge-intensive processes, purpose, and perspective, regardless of their product”.

Also, knowledge based organisation has been defined in Wikipedia site as:

“A knowledge organization is a management idea, describing an organization in which people use systems and processes to generate, transform, manage, use, and transfer knowledge-based products and services to achieve organizational goals. A knowledge organization also links past, present, and future by capturing and preserving knowledge in the past, sharing and mobilizing knowledge today, and Knowledge organizations can be viewed from a number of perspectives: their general nature, networks, behaviour, human dimensions, communications, intelligence, functions, and services”.

The grounded theory methodology was adopted in this research by using semi-structured interviews to collect qualitative data – a method which has been used in many previous research projects, such as Leseure and Brookes (2004), Parboteeah et al (2010), Mvungi and Jay (2010), and Scarso and Bolisani (2010). Semi-structured
interviews are used in qualitative research in order to conduct discussions, understand what and how, and to place more emphasis on exploring why (Saunders et al 2009), and for this reason it has been selected to be used in this research.

This chapter is divided into two main sections. The first section presents the pilot study data collection process conducted through semi-structured interviews with six managers in order to help the researcher to confirm that he has selected the most appropriate methodology approach. Additionally, this part presents the initial findings of the data collected from the pilot study. Then, it ends by presenting the limitations faced while conducting the interviews for the pilot study. The second section presents the main fieldwork interviews and an overview of the participating organisations.

4.2 The Pilot study data collection process

A pilot study is a model of a full research study but on a smaller scale. The purpose of a pilot study is to help to increase levels of reliability and validity prior to the conducting of the full research by providing data needed to plan the larger study, and by identifying areas where things may go wrong (Wilson 2010). Lancaster et al (2004) argue that to conduct a good pilot study, the researcher must have a clear list of aims and objectives within a formal framework. Pilot studies assess the research to ensure it is scientifically valid and publishable, which will lead to an increase in the quality of the work.

The pilot study was successfully conducted through semi-structured interviews with six managers in five different organisations in different sectors in SA. The five organisations are all considered be large organisations. Table 4.1 shows the organisations which participated in the pilot study. There are two types of participating organisations in the pilot study: knowledge-based and non-knowledge-based. Three of the participating organisations in the pilot study – SG, SL and STC – are knowledge-based organisations, and two of the organisations – BHC and BNGF – are non-knowledge-based organisations. The researcher decided to adopt this selection of organisations in order to be able to determine the difference between knowledge-based and non-knowledge-based organisations.

The researcher contacted the interviewees by phone to explain the aim of the research and to arrange for a meeting. All interviews were tape recorded with interviewees’ approval- Informed Consent Form (Appendix II), and the duration of interviews varied
from one interview to another depending on interviewees’ availability, but the average was one hour for each interview. The face-to-face interviews were conducted with the Knowledge Manager or equivalent with each organisation participating in the pilot study. The interview questions covered important topics such as the participants’ experiences; the participants’ perspectives and ideas about KM; the role of top management and the organisation’s culture; the CSFs of implementing KM; and the process and benefits of implementing KM in the organisation [see Appendix I]. Meanwhile, interviewees were also given a chance to talk about their behaviour and beliefs, which are related to the research topic.

Furthermore, as all the six interviewees are native Arabic speakers, 5 interviews were conducted in Arabic and only one interview was in English. Then all interviews were transcribed. The transcriptions of interviews were verified by listening to a replay of the original recording while the transcription was read line by line. The researcher found a few minor grammatical differences between the original recording and the transcription with no impact on the meaning of the data. Those interviews conducted in Arabic were transcribed in Arabic and then translated and analysed in English by the researcher. Afterwards the researcher asked one bilingual speaker of Arabic and English to perform a double check of the accuracy of the translation. The coding processes commenced immediately after the researcher finished transcribing the interviews.

The aim of the pilot study was not only to explore the responses of the participants to the open-ended questions in order to discover unpredicted issues and problems with the research questions, but also to determine possible ways to avoid them. Therefore, a pilot study was conducted in order to validate and ensure the reliability of the relevant data to the research questions and objectives. Based on feedback from the pilot study’s participants, minor amendments to the interview questions were made. Some questions were found to be unclear and thus made the participants feel a little bit confused. These amendments did not change the context of the questions, but simply improved their clarity by replacing a few words. These small changes helped to avoid confusion in the rest of the interviews. In addition, some questions were identified and added to the interviews that would help to improve the research findings. Wilson (2010) states that any research deals with human subjects need ethics approval for the following reasons:
• To protect the rights and welfare of participants and minimize the risk of physical and mental discomfort, harm and danger from research procedures.
• To protect the researcher’s rights to continue legitimate investigation as well as the reputation of the University for Research conducted and sponsored by it.
• To minimize the potential for claims of negligence made against the researcher, the university and any collaborating individual or organisation.

All interviews were tape recorded with interviewees’ approval (Informed Consent Form- Appendix II) for the purpose of analysis. The interviews transcribed verbatim, and saved as encrypted files in the researcher’s computer. No data was disclosed to any third party under any circumstance and all information was treated with the strictest of confidence. Data was only used in academic publications. Moreover, direct quotations selected were based on how typical and generic these can be, gleaned from the transcripts. The code names for actual participating organisations and interviewees in the pilot study were suggested by the authors for ethical reasons. Therefore, the researcher had created a code in order to facilitate analysing the interviews as follows: (company - level of management - interview number - paragraph number).

<table>
<thead>
<tr>
<th>Organisation name</th>
<th>Number of interviews in each organisation</th>
<th>Sector</th>
<th>KM practices</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>2</td>
<td>Manufacturing-Food</td>
<td>Yes</td>
<td>16,000 employees</td>
</tr>
<tr>
<td>SL</td>
<td>1</td>
<td>Oilfield services company</td>
<td>Yes</td>
<td>105,000 employees</td>
</tr>
<tr>
<td>BHC</td>
<td>1</td>
<td>Oilfield services company</td>
<td>No</td>
<td>35,000 employees</td>
</tr>
<tr>
<td>STC</td>
<td>1</td>
<td>Telecommunication</td>
<td>Yes</td>
<td>15 million customers</td>
</tr>
<tr>
<td>BNGF</td>
<td>1</td>
<td>Manufacturing</td>
<td>No</td>
<td>3000 employees</td>
</tr>
<tr>
<td>Total number of interviews</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Table 4.1: Organisations participated in the pilot study
4.2.1 Profiles of the participant organisations in the pilot study

4.2.1.1 SG Company

SG CO. was established in 1979. The first business of SG Co. was in the edible oil industry in SA with an initial capital of $15 million and a small capacity of production (40,000 tons annually). Today, it is considered to be one of the most successful and fastest growing multinational food groups in the Gulf and the Middle East Region, North African and Central Asian countries, with SR5 billion in revenue, a total production capacity of 422,000 tons annually, and 16,000 employees. In addition, SG Co. has a wide portfolio of businesses, including edible oils, sugar, noodles/pasta, retail, packaging, real estate and franchising. SG CO. owns six edible oil manufacturing plants, as follows: one in SA, two in Iran, two in Egypt and one in Algeria. SG CO. ranked number 12 among the top 100 Saudi companies in 2010.

The SG Group is divided into four main sectors: SG Foods Sector, including edible oils, foods and sugar; SG Retail Sector, including retail (Panda - and Hyper Panda); Real Estate Sector (Kinan International); and SG Plastics Sector. Today, SG Co. not only has a market share of 62% in the edible oils market and 68% in the sugar market in SA, but it also has 113 retail outlets. SG CO. owns the following percentage of shares of the following companies: 30% of Al Marai Dairy Company, 47% of Herfy Foods Company, and 5% of Jordanian Tameer Company. Moreover, SG CO. is considered to be one of the founding shareholders of the Knowledge Economic City in Madinah and King Abdullah Economic City in Rabigh, SA.

Interview number 1: An interview was conducted at the head office in Jeddah with the Chief Executive Officer of the Established Oils Market in SG CO. Group. The interview lasted about 40 minutes. The researcher coded this interview (SG-GM-01).

Interview number 2: An interview was conducted at the head office in Jeddah with the Manager of the Development and Training Department. The interview lasted about 40 minutes. The researcher coded this interview (SG-M-02).
4.2.1.2 SL Company

SL was established in 1926 by the two SL brothers, who invented wire line logging as a technique for obtaining downhole data in oil and gas. Today, SL services and solutions combine domain expertise, best practices, safe and environmentally sound well site operations, innovative technologies, and high-quality support. Its operations are aimed at helping its customers increase oilfield efficiency, lower exploration and production costs, improve productivity, maximise reserve recovery, and increase asset value in a safe, environmentally sound manner. SL consists of ten companies as follows: a geological survey services company; a drilling services company; a well services company; a wire line company (the function of which is to down a cable including high-tech devices to the bottom of the oilfield in order to collect data, perform studies and explore the oilfield); a well completion services company; a well testing company; an artificial lift company; an interpretation and consulting services company (DCS); a software services company and an integrated project management company. SL is the world’s leading oilfield services company with $22.7 billion in revenue in 2010 and more than 105,000 employees of over 140 nationalities working in approximately 80 countries. SL has principal offices in Houston, Paris and The Hague.

**Interview number 1**: An interview was conducted in Jeddah with the General Manager of the Worldwide Training Department, which is based in Paris. The interview lasted about one hour. The researcher coded this interview (SL-GM-01).

4.2.1.3 BHC Company

BHC Company is the third largest oilfield service company globally with $5 billion in revenue and more than 35,000 employees over 90 countries. BHC CO. delivers solutions that help oil and gas operators make the most of their reservoirs by managing operating expenses, maximising reserve recovery, and boosting overall return on investment throughout the life of an oil or gas asset.

BHC CO. geomarket teams work around the world with customers in order to expand the limits of oil, gas and alternative energy drilling, completion and production through innovative problem solving. Local teams are supported by global centres of excellence in finding solutions for more complex technical challenges.
**Interview number 1**: An interview was conducted in Dammam with the General Manager of the SA branch. The interview lasted about 45 minutes. The researcher coded this interview (BHC-GM-01). The interviewee began by speaking about his experience in company SL, where he had previously worked for 12 years. He moved to BHC Company three years ago as General Manager of the Saudi Arabian branch.

### 4.2.1.4 STC Company

STC Co. was established in 1998 and it is the leading national provider of telecommunication services in SA. STC Co. serves over 15 million customers, which makes it the largest service provider in the Middle East, providing multiple communications services: mobile and landline, voice and data services. STC Co. uses a variety of transmission systems such as fibre optic, microwave and satellite.

In the last few years, STC Co. has expanded and exceeded the domestic market to reach international markets via investments in a number of countries in the Arab Gulf, Asia and Africa. The company now provides services in Kuwait, India, Indonesia, Malaysia, Turkey and South Africa, which has enabled STC Co. to serve a greater number of customers. The company seeks to increase its customer base internationally through the study and evaluation of potential investment opportunities in the future.

**Interview number 1**: An interview was conducted with the Chief Knowledge Officer (CKO) in Jeddah, and it lasted about 45 minutes. The researcher coded this interview (STC-M-01).

### 4.2.1.5 BNGF Company

BNGF Carpets Factory is the main factory of the group and is considered the foremost factory for tufted and woven carpets. It was established in SA in 1978. Today, BNGF is composed of the following factories: BNC Carpets Factory (BNCF), Printing Carpets Factory (BPCF), Spinning Yarn Factory (BSYF), and Synthetic Yarn Factory (BSYF).

BNGF manufactures different types, designs and sizes of tufted and woven carpets. The factory started with an annual production capacity of 3.5 million square meters. Currently, productive and operational capacity for carpets has reached 45 million square meters, and for synthetic and spinning yarn, 21,000 tons.
Interview number 1: An interview was conducted in Jeddah with the Production Manager of BNGF Carpets Factory. The interview lasted about 35 minutes. The researcher coded this interview (BNGF-M-01).

4.2.2 Initial data collected from the pilot study

All the six interviewees are native Arabic speakers, and only one interview was conducted in English while the others were conducted in Arabic. The Arabic interviews were transcribed in Arabic and then they were translated and analysed in English. The first step of the grounded theory approach to analysis is open coding. Corbin and Strauss (2008, p.195) define open coding as “breaking data apart and delineating concepts to stand for blocks of raw data”. Once the six interviews were completely transcribed, each transcript was read line by line several times in order to be coded. The idea of open coding is to establish as many categories as possible. The researcher derived text data from the interview transcripts, and examined and sorted it into unique categories or paired it with similar categories. The researcher identified codes and concepts based the incidence of those concepts in the data.

4.2.3 Initial analysis of pilot study data

The initial open coding of the data collected from the pilot study is presented in table 4.2, which shows the main codes and categories that emerged from the six interviews from the five organisations. Table 4.2 contains two columns. The left-hand column lists the emerging categories and the right-hand column provides a short summary of the codes based on the informants’ statements. The initial coding of data is categorised into five main categories as follows: barriers to KM, OL, communication, CSFs and the use of knowledge to encourage a more open corporate culture.
All participating interviewees strongly agreed that top management commitment and support is the most important critical successful factor for effective KM implementation, and they strongly agreed that having such a top management was an important factor for success. In essence, top management is the initiator, sponsor and promoter of KM. It not only provides necessary and sufficient resources — including financial, human, and technological resources — but it also ensures time is made available for successful KM implementation. However, the ways in which top management were involved in KM implementation in the participating organisations varied from organisation to organisation.

According to the following informant, the most important factor for the success of implementing KM is the full commitment of top management to KM.

“The most important factor for the success of implementing KM in SG is the full commitment of the executive management and top management to KM and OL. Any organisation is the shadow of its leadership; if the top management is not committed to ensuring the company becomes a knowledge company...nothing can work” (SG-GM-01-09).

As the following informant indicates, the most vital factor is that top management fully supports and provides whatever is necessary to ensure the success of KM and organisation learning.
“The most vital factor for the success of implementing KM in SL is that the top management fully supports the objective, and provides whatever is necessary to ensure the success of KM and OL” (SL-GM-01-06).

The pilot study found that having a good communication system is a vital factor for KM success. There has to be direct communication and contact in order to find common solutions to problems. Examples of the best communication practices are newsletters, websites, meetings, presentations, e-mail, and magazines. The following statement shows how STC Company adopted several methods of communication.

“The company has adopted several methods of communication: a weekly newsletter that contains news, events, and articles in different subjects related to the STC business; and a monthly magazine containing articles, essays and projects. It is all about STC and it is written by STC employees, and an annual report that contains the achievements and progress of the company” (STC-M-01-06).

A supporting system such as an information and communication technology (ICT) system raises the success of KM by integrating the KMS with other information systems, using software tools in order to facilitate KM. The system must be easy to use and have all the necessary functions, such as an intranet (which is an internal information system based on web technologies). Employees can easily locate specific information by searching the knowledge base, which saves employees’ time, and therefore company expenditure. Also, an intranet not only improves productivity by enabling quick access to widely-shared information, but also facilitates higher team productivity by creating a collaborative working environment, which means it facilitates solving recurring problems and issues by allowing the repeated implementation of previously successful solutions. In addition, it is clear that suitable technology will facilitate access to employees with the necessary knowledge and information, which in turn will increase and encourage knowledge sharing. The following informant explained the importance of having a supporting system such as an ICT system to support and facilitate the KM process.

“SG has built an effective ICT infrastructure, integrated with other systems including all necessary databases such as the production database, supplier database, support database, best practices database and customer database, in order to support and facilitate KM processes. This system is considered to be a powerful search engine and it helps staff to find the necessary knowledge or the best practices. By using this system, employees are able to perform keyword searches to locate the relevant knowledge, solutions to problems or best practice” (SG-M-02-11).
Moreover, the pilot study found that employees must be qualified through training and coaching to ensure the success of KM implementation. Also, every employee must be open to KM and have the desire to develop and promote it himself. Otherwise, he will find himself out of step with the rest of the team and he will not be able to compete with other employees, which means either he will leave the company or he will never be promoted. Moreover, employees should be motivated to participate through reward systems, such as offering promotions or bonuses. The following two statements explained the importance of qualifying employees through training courses.

“We consider qualifying employees through training and coaching to be one of the most critical success factors of KM implementation. Therefore, SG Co. has two types of training program: management training called “Jamahat” (which is divided into four main classes of training as follows: Jamahat 1, Jamahat 2, Jamahat 3 and Jamahat 4), and a supply chain functional training programme (OJT)” (SG-M-02-04).

“Generally speaking we have a training investment budget for each employee of approximately $20,000 per year, including training courses, accommodation, and flight tickets. We consider the training of staff to be one of our most important priorities, and therefore the company has five training centres, as follows: one training centre in Russia, one training centre in France, one training centre in the UAE and two training centres in the USA. These training centres have prepared an intensive training programme for employees from when they join the company until they are ready to be a manager in a maximum of four years. Then, there are three training programmes for managers called Management Essential. These programmes aim to give more information about project management, people management, change management, leadership, strategies and vision” (SL-GM-01-02).

The following informants mentioned that the company should support and motivate employees to participate and contribute their knowledge by giving rewards to the most active employees, such as promotions or bonuses.

“We do reward the most active employees who share the most information either by giving them money or recognition from the top management” (SG-GM-01-04).

Furthermore, having a knowledge culture is one of the CSFs of KM implementation. This kind of culture involves building trust, cooperation and collaboration between co-workers. A knowledge culture encourages employees to share their knowledge and ideas. Without this kind of culture, it is very difficult to make employees share their knowledge, because human nature does not naturally share knowledge, nor does it like change. According to this informant, organisational culture is a very important factor to facilitate the sharing of knowledge between people.
“The second most important factor is the organisational culture. If the organisation adopts knowledge and KM as its system, that will make sharing knowledge much easier - otherwise, everybody will hide knowledge and keep whatever he knows, without sharing anything” (SG-GM-01-05).

The following informant emphasised that the most important role of organisational culture is to create an environment that encourages KM activities and knowledge sharing between people.

“SL’s learning system and culture increased the speed of employee learning, as they acquired a lot of knowledge from the numerous courses, which in turn increased and improved employees’ efficiency” (BHC-GM-01-03).

Knowledge workers will be happy and wish to remain within a knowledge organisation because there is a great deal of knowledge sharing, learning, development and innovation. Also, the work environment will be good in such an organisation, which encourages employees to work harder because they like what they are doing. Thus, the company will earn the loyalty and commitment of its employees, which in turn will lead to an increase in the employees’ productivity, performance and morale. The eventual result of this is that the company will achieve its goal and maximise profits, achieve better-quality service, increase revenue, and increase performance. As an informant from company SG argued:

“The knowledge worker will be happy and wish to remain in knowledge organisations such as SG, because there is a lot of sharing of knowledge, learning, development and innovation. The work environment will be good in such an organisation, in which employees do extra work because they like what they are doing. Thus, the company will earn the loyalty and commitment of its employees, which in turn increases the productivity, performance and morale of employees. In the end, the company will achieve its goals and maximise profits” (SG-M-02-05).

The most common barrier to KM is managing tacit knowledge so that people are willing to share and use it. People know that knowledge is power, and many people do not want to share what they know, as they think this helps them keep a competitive advantage over their peers. In addition, increasing spending on IT will not necessarily lead to increased sharing and use of knowledge, because this also depends on the willingness of individuals to share and use tacit knowledge. Tacit knowledge only exists in people’s minds, and they cannot be forced to share and use this knowledge. In other words, KM implementation cannot be successful unless organisations increase their employees’
trust and willingness to share and use tacit knowledge. The following two statements explain this barrier.

“The most common challenge of KM is managing tacit knowledge to keep people excited about ensuring the information has been shared or transferred from their brain to paper or the intranet system. Because people know that knowledge is power, many do not want to share it so that they can maintain a power monopoly – and you cannot force people to share their knowledge” (SG-GM-01-05).

“The greatest challenge facing the implementation of KM is employees’ culture and how you can make employees share their knowledge, because human nature doesn’t like sharing knowledge and doesn’t like change either” (BHC-GM-01-06).

Finally, there are some techniques to encourage and motivate employees to share their knowledge, such as applying a reward system linked to promotion or bonuses. Moreover, the company should reassure expert employees that the company will not abandon them because they have shared their knowledge, but that this activity will in fact increase their value and the company will keep them because the success of the company derives from the success and effectiveness of their staff. An informant from the company SG stated:

“We should reassure the knowledge-possessing employees that the company will not abandon them because they have shared their knowledge, but that sharing knowledge will increase their value and the company will keep them because the success of the company depends on the success of its effective staff” (SG-GM-01-07).

4.3 Main fieldwork of grounded theory study

The main aim of this research is to determine the difference in performance between two types of companies – knowledge-based and non-knowledge-based – in order to find out the impact of implementing KM on OP. Therefore, the criteria used to choose sample organisations was that some should have already implemented KM and others not. In other words, knowledge-based companies and non-knowledge-based companies.

Birks and Mills (2011, p. 70) state that “Theoretical sampling provides direction for your next stages of data collection in a process of concurrent analysis that continues cyclically until categories are fully developed or ‘saturated’”. Moreover, Teddlie and Tashakkori (2009) state that the estimated minimum sample size required for grounded theory is between 20 and 50 interviews. The face-to-face interviews were conducted with 24 managers from 19 different companies in different sectors in order to enhance
understanding, develop theory and to overcome the risk of failing to collect reliable data. Moreover, there was no need to conduct more interviews as the saturation point was approached and gathering more data would not have revealed any new unidentified codes. Wilson (2010, p.176) states that “Theoretical saturation occurs when no new codes are identified pertaining to particular category. Categories are clearly articulated with sharply defined and dimensionalized”.

Those companies represented the following sectors: manufacturing, oilfield services, telecommunications, aviation, wealth and real estate management, IT outsourcing services, software products services, mineral exploration, chemicals and petroleum, banking, education, and marketing communications. Of those organisations, 11 are knowledge-based and 8 are non-knowledge-based. The main reason behind this selection was to determine the difference between those types of organisations and thus to determine the impacts of implementing KM in OP. The researcher decided to conduct interviews among more knowledge-based organisations than non-knowledge-based organisations in order to benefit from their experiences of implementing KM and to learn from them what challenges they faced, how they overcame those challenges, what they have learned from this experience, and what the impact was on their OP. The interviews were divided into two stages. Six interviews were conducted for the pilot study. In the second stage, 18 interviews were conducted.

All interviews were tape recorded with interviewees’ approval (Informed Consent Form- Appendix II) for the purpose of analysis. The interviews transcribed verbatim, and saved as encrypted files in the researcher’s computer. No data was disclosed to any third party under any circumstance and all information was treated with the strictest of confidence. Data was only used in academic publications. Moreover, direct quotations selected were based on how typical and generic these can be, gleaned from the transcripts. The code names for actual participating organisations and interviewees in the pilot study were suggested by the authors for ethical reasons. Therefore, the researcher had created a code in order to facilitate analysing the interviews as follows: (company - level of management - interview number - paragraph number). Table 4.3 shows the participating organisations, sectors, and the number of interviews conducted in each organisation.
<table>
<thead>
<tr>
<th>Company</th>
<th>Sector</th>
<th>Directors</th>
<th>General Managers</th>
<th>Managers</th>
<th>Total interviews in each company</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>Manufacturing-Food</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SL</td>
<td>Oilfield services</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BHC</td>
<td>Oilfield services</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>STC</td>
<td>Telecommunication</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BNGF</td>
<td>Manufacturing</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Airlines Co.</td>
<td>Aviation industry</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>HAC</td>
<td>Real estate management</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F- Services</td>
<td>IT outsourcing services</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>O- Corporation</td>
<td>Software products and services</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>M- Company</td>
<td>Mineral exploration</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A-Company</td>
<td>Chemicals/ Petroleum</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>S- Bank</td>
<td>Banking</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>H- Bank</td>
<td>Banking</td>
<td>1</td>
<td></td>
<td>1</td>
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<tr>
<td>CBA</td>
<td>Education</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>S- Company</td>
<td>Wealth management</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>U- Company</td>
<td>Manufacturing-Consumer products</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AACC</td>
<td>Aviation industry</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
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<tr>
<td>SE- Company</td>
<td>Manufacturing-Electrical equipments</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>TS-Company</td>
<td>Marketing communications</td>
<td>1</td>
<td></td>
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<tr>
<td>Total</td>
<td></td>
<td>4</td>
<td>7</td>
<td>13</td>
<td>24</td>
</tr>
</tbody>
</table>

Table 4.3: Number of interviews in the participating companies (Pilot and Main study)

4.4 Interview strategies

The researcher contacted the interviewees by phone to explain the aims of the research and to arrange for a meeting. The interviews were used to develop a better and deeper understanding of KM; the process of KM implementation in organisations; and the relationship between KM implementation and OP from informants’ experience. Informants completed informed consent forms and signed them prior to the interview [Appendix II]. Birks and Mills (2011, p.75) state that researchers should “make sure that you secure consent form your informants to follow up with them (for example, via telephone or email) any seemingly innocuous comments made in the interview that may later prove significant”.

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Moreover, all interviews were audio-tape recorded with interviewee approval using a
digital recorder. The duration of interviews varied from one interview to another
depending on interviewees’ availability, but the average was 45 minutes for each
interview. The total time of all the interviews was 18 hours of audio transcribed on to
over 280 pages over a period of 12 weeks. Recording the interviews enabled the
researcher to transfer the interviews from the recorder to a computer and this file was
used as a backup as well as to adjust the speed of the interviews in order to facilitate
their transcription. Also, recording the interviews allows the researcher to achieve better
interaction with the informants and to focus on the conversation instead of
concentrating on writing the conversation. Birks and Mills (2011, p.76) state that:

“We recommend the taping of interviews where possible in grounded theory
research, particularly for the novice researcher. Whether you choose to
transcribe for the purpose of coding, or retain it only as a backup for later
reference, having an audio recording provides additional security for your
valuable data.”

The face-to-face interviews were conducted with 4 Directors, 7 General Managers, and
13 Managers of the participating organisations in this study. The researcher adopted the
semi-structured interview technique and he had prepared a list of questions, but those
questions varied from one interview to another. Most of the questions were about the
CSFs that affect KM implementation and the processes and benefits of implementing
KM in the organisation. Meanwhile, interviewees were given a chance to talk about
their behaviour and beliefs, which are related to the research topic.

The number of interviews that could be conducted was limited due to lack of time and
resources, but the researcher made follow up phone calls or e-mailed the interviewees in
order to cover some areas that were not covered in the interviews.

4.5 An overview of the participating companies in main fieldwork

4.5.1 Airlines Co.

Airlines Co. started in 1945 with a single twin-engine DC-3. Today, Airlines Co. is
among the world’s largest airlines with 139 aircraft and $10 billion in revenue in 2010.
The workforce consists of about 20,000 employees around the world, and its
headquarters are in Jeddah. It operates domestic and international scheduled flights to
over 90 destinations in the Middle East, Africa, Asia, Europe and North America. Domestic and international charter flights are operated.

**Interview number 1:** An interview was conducted in Jeddah with the General Manager of the Airports Services Department. The interview lasted about 45 minutes. The researcher coded this interview (Airlines-GM-01).

**Interview number 2:** An interview was conducted in Jeddah with the Manager of the Materials Management Services Department. The interview lasted about 40 minutes. The researcher coded this interview (Airlines-M-02).

### 4.5.2 HAC Company

HAC Company is one of the largest property development and real estate companies in Jeddah, with £10 million in revenue and 100 employees. Established in 1980, the company specialises in property management, construction, and operating and maintaining buildings.

**Interview number 1:** An interview was conducted in Jeddah with the Chief Operating Officer. The interview lasted about 30 minutes. The researcher coded this interview (HAC-D-01).

### 4.5.3 F-Services Company

F-Services Company, headquartered in Tokyo, is a leading provider of ICT-based business solutions globally, with $55 billion in revenue in 2011 and approximately 172,000 employees supporting clients in 70 countries around the world. The main areas of expertise of F-Services Company are:

- Combining a worldwide network of systems and services experts with highly reliable computing and communications products and advanced microelectronics to deliver added value to customers.
- Consulting on, designing, building and operating IT systems.

**Interview number 1:** An interview was conducted with the General Manager of SA branch. The interview lasted about half an hour. The researcher coded this interview (F-GM-01).
4.5.4 O-Corporation

O-Corporation was established in 1977. Nowadays, O-Corporation is the world’s leading supplier of software for information management, and the second largest independent software company in the world, with $25 billion in revenue in 2010 and more than 40,000 employees of different nationalities working across more than 100 countries. Moreover, O-Corporation was the first software company to develop and deploy 100% internet-enabled enterprise software across its entire product line: business applications, database and application development, and decision support tools. It is considered a pioneer company for making its business applications available through the internet.

Interview number 1: An interview was conducted at the regional office in Jeddah with the Manager of Support Engineer Department. The interview lasted about one hour. The researcher coded this interview (O-M-01).

4.5.5 M-Company

M-Company was established in 1997 by the Saudi Ministry of Petroleum and Mineral Resources. The goal of establishing this company was to support the development of SA’s non-petroleum mineral resources and to diversify the sources of the Saudi economy, so as not to be dependent only on the petroleum and petrochemical sectors. The government of SA hopes to make this sector an important source of income for the country during the next few years. The main business for M-Company is the improvement, advancement and development of all aspects of the mineral industry and mineral products in SA. In 2010, its revenue was $8 billion, and the company employs around 2,000 people.

Interview number 1: An interview was conducted at the head office in Jeddah with the Manager of the Information System Department. The interview lasted about 30 minutes. The researcher coded this interview (M-M-01).

4.5.6 A-Company

The A-Company was established in 1930. It is not only considered SA’s national oil company, but is also a fully integrated global petroleum enterprise and a world leader in
exploration, production, refining, distribution, shipping and marketing. The A-Company manages the world’s largest proven crude oil reserves of 260 billion barrels (roughly one fifth of the global total), and the world’s fourth largest gas reserves of 279 trillion cubic feet. The A-Company’s workforce contains more than 55,000 workers from 70 nations.

**Interview number 1:** An interview was conducted at the headquarters in Dhahran with the Manager of the Management Consultant Department. The interview lasted about one hour. The researcher coded this interview (A-M-01).

### 4.5.7 S-Bank

The S-Bank was established in 1980 in order to take over the existing branches of Citibank in Riyadh and Jeddah, which were opened in 1955. The primary business of the S-Bank is banking, customer services, sales, and some products and services such as loans, accounts, credit cards, foreign exchange currency, safety deposit boxes and investments. In 2005, an extraordinary shareholders’ meeting decided to increase the share capital of the bank from $1 billion to $2 billion. Three years later, another extraordinary shareholders’ meeting decided to increase the share capital of the bank again from $2 billion to $3 billion. S-Bank is considered to be the pioneer of Saudi banks that offer priority banking (gold and diamond banking), phone banking, credit shields, savings-linked insurance, cash deposits through Automatic Teller Machines (ATMs), speed cash remittance services, and automated signature verification. The S-Bank is the second largest bank in SA. The annual revenue in 2010 was over $1billion, and the bank has 3,000 employees. Currently, the number of S-Bank customers is around 1.5 million.

**Interview number 1:** An interview was conducted with the Branch Manager at his office in Jeddah. The interview lasted about one hour and 40 minutes. The researcher coded this interview (S-M-01).

### 4.5.8 H-Bank

The H-Bank was the first Saudi bank, established in 1953. In 1999, the majority holding of the bank was acquired by the government of SA through the Ministry of Finance’s public investment fund. Moreover, the H-Bank is the largest bank in the Middle East,
with capital of $4 billion. The bank’s total assets at the end of 2010 were $76 million, and the net profit for the fiscal year 2010 was $1,260 million. At the end of 2010, the H-Bank not only operated around 284 branches, but also operated 1,626 ATMs around SA. The bank’s customers numbered around 2.3 million at the end of year 2010, and the workforce had reached about 5,500 employees.

**Interview number 1**: An interview was conducted with the Manager of Reliability Products and Basic Banking at his office in Jeddah. The interview lasted about 40 minutes. The researcher coded this interview (H-M-01).

### 4.5.9 CBA University

The CBA University is a pioneering private university in SA, established in 2005. It has 2,300 students of 32 nationalities and 123 faculty members of 20 nationalities. The university mission is to fill the gap between education and job opportunities and the skills that are required by organisations.

**Interview number 1**: An interview was conducted with the Dean of the Engineering and Information Technology College at his office in Jeddah. The interview lasted about 30 minutes. The researcher coded this interview (CBA-GM-01).

### 4.5.10 SE-Company

The SE-Company was founded in 1976 as a small trading and construction contracting business, and it is based in Jeddah. In 1996, the company was restructured and reorganised as a private wealth management organisation. Nowadays, the company is a leading private wealth management organisation in SA. SE’s vision is “to be the global leader in Islamic wealth management and business creation”. Wealth management as an investment-advisory discipline incorporates financial planning, investment portfolio management and a number of aggregated financial services. It manages considerable and diversified real estate investments, investments in equities, and other businesses in SA and globally. Moreover, the company is divided into three business groups: real estate, financial investments, and direct investments. The company employs more than 1,500 people.
Interview number 1: An interview was conducted with the General Manager of the Human Resources Department at his office in Jeddah. The interview lasted about one hour. The researcher coded this interview (SE-GM-01).

Interview number 2: An interview was conducted with the Manager of the Human Resources/Planning Department at his office in Jeddah. The interview lasted about 40 minutes. The researcher coded this interview (SE-M-02).

4.5.11 U-Company

The U-Company was founded in 1890 and it is a multinational consumer goods company. Its products include foods, beverages, cleaning agents and personal care products. It has more than 400 brands, 12 of which alone make sales of more than $1.5 billion a year. Moreover, the U-Company has not only invested approximately $1.3 billion in R&D each year, but it has also built its own laboratories around the world, where the company’s scientists explore and discover new thinking and techniques, and apply their expertise to the company’s products. Furthermore, the company’s manpower was 167,000 employees at the end of 2010, comprising 22 nationalities across 180 countries around the world and it was the third largest consumer goods company in the world in 2011.

Interview number 1: An interview was conducted with the Manager of Customer Service at his office in Jeddah. The interview lasted about one hour. The researcher coded this interview (U-M-01).

4.5.12 AACC- Company

AACC-Company was established in 1988 by the Ministry of Defence and Aviation. The company performs aircraft components overhaul on a wide range of mechanical, hydraulic, pneumatic, electrical and fuel system components. AACC-Company is the leading components maintenance organisation in SA, and it is based in Jeddah. Moreover, the company has sophisticated facilities and an enormous range of capabilities that help its team to provide world-class technical expertise. The company provides support for all aircraft component maintenance requirements, whether for a flag carrier, commuter airline, an owner-operator, or a corporate or military
establishment. The annual revenue in 2010 was $30 million, with manpower of 300 employees.

**Interview number 1**: An interview was conducted with the Director of the Contracts and Purchasing Department at his office in Jeddah. The interview lasted about one hour. The researcher coded this interview (AACC-D-01).

**Interview number 2**: An interview was conducted with the Director of the Quality Assurance Department at his office in Jeddah. The interview lasted about one hour and 35 minutes. The researcher coded this interview (AACC-D-02).

### 4.5.13 SC-Company

Since the SC-Company was established by the SC brothers in 1836, it has become the leader in energy management with $24 billion sales in 2010 and more than 114,000 employees in over 100 countries. The company is regarded as a solution provider and a global specialist in energy management, offering integrated solutions that make energy safer, more reliable, more efficient and more productive for the energy and infrastructure, industry, IT, building and residential markets. The company has 620 marketing facilities, 13,000 sales outlets and more than 200 manufacturing sites close to customers.

**Interview number 1**: An interview was conducted with the Manager of the Sales Engineer Department at his office in Jeddah. The interview lasted about 25 minutes. The researcher coded this interview (SC-M-01).

**Interview number 2**: An interview was conducted with the Project Manager at his office in Jeddah. The interview lasted about 30 minutes. The researcher coded this interview (SC-M-02).

### 4.5.14 TS-Company

TS-Company was established in 2000. The primary business of the company is marketing communications, focused on advertising, branding, marketing, direct marketing, promotion, sponsorship, sales, brand language, graphic design, packaging, publicity and public relations. TS-Company has 400 employees and the annual revenue in 2010 was $1 million.
Interview number 1: An interview was conducted with the Owner and President of the company at his office in Jeddah. The interview lasted about 50 minutes. The researcher coded this interview (TS-D-01).

4.6 Conclusions

This chapter presented the processes of collecting data in order to meet the research objectives. The researcher was very careful while he was selecting the data collection methods to ensure that the data gathered would be suitable for the research, and would help the researcher to answer the research questions. The pilot study was conducted through semi-structured interviews with six managers in five different organisations in different sectors in SA. The purpose of the pilot study was to explore the responses of the informants to the open-ended questions in order to discover unpredicted issues and problems and to determine possible ways to avoid them. A pilot study was conducted in order to ensure the visibility of the main study. Also, it helped the researcher to ensure that the methodology that had been selected to conduct the research was working well and was appropriate to the subject undertaken. Based on feedback from the pilot study informants, minor amendments to the interview questions were made. Some questions were unclear and made the informants feel a little bit confused. These amendments did not change the context of the questions, but simply clarified some questions by replacing a few words. These small changes helped to avoid confusion in the rest of interviews. In addition, some questions were identified and added to the interviews that would help to improve the research findings.

Moreover, the researcher collected qualitative primary data and analysed these organisations’ experiences of implementing KM. The discussion of the participating interviewees of the pilot study provided many insights: a clear list of aims and objectives; a clear picture of the CSFs of KM implementation, and of how one factor can have an influence on another and on the whole organisation; and what the most common challenges of implementing KM are.

Initial findings that emerged from the data in the pilot study identified the CSFs for effective KM implementation, which are: top management must give their commitment and support; employees must be qualified through training and coaching; the goals of KM must be compatible with the company’s goals and must be measurable; the process
of KM should be clearly defined and be integrated into the existing organisational operations in order to save time for employees; and a good communication system must be in place to facilitate KM. Also, they all strongly agreed that having a knowledge culture is one of the CSFs of KM implementation. This kind of culture involves building trust, cooperation and collaboration between co-workers. Moreover, all participating interviewees strongly agreed that the system must be easy to use and have all the necessary functions (reference to table 4.2).

However, the pilot study found that the most common challenge of KM is managing tacit knowledge so that people are willing to share and use it. In other words, KM implementation cannot be successful unless organisations can increase employees’ trust and willingness to share and use tacit knowledge. All participating interviewees stated that there are some techniques which can be employed to encourage and motivate employees to share their knowledge, such as applying a reward system linked to promotion or bonuses.

Birks and Mills (2011, p. 70) state that “Theoretical sampling provides direction for your next stages of data collection in a process of concurrent analysis that continues cyclically until categories are fully developed or ‘saturated’”. The criteria used to choose the sample organisations was knowledge-based and non-knowledge based companies. In this chapter, the researcher collected qualitative data from 24 interviews. Those interviews were conducted with 4 Directors, 7 General Managers and 13 Managers from 19 different companies in different sectors in order to enhance understanding, develop theory, and to overcome the risk of failing to collect reliable data. Therefore, the number of interviews that could be conducted was limited not only by the saturation of all emerging categories, but also by lack of time and resources. The researcher made follow up phone calls or e-mailed the informants in order to cover some areas that were not covered in the interviews. The researcher suggested a code name for actual companies that participated in this research and the name of interviewees is not mentioned in this research for ethical reasons.

Prior to the interviews the researcher contacted the informants by phone to explain the aims of the research and to arrange for a meeting. All interviews were audio-tape recorded with interviewee approval using a digital recorder. Moreover, the total time of all the interviews is 18 hours of audio, transcribed on to over 280 pages over a period of
12 weeks. In chapter 5, the data analysis procedure of grounded theory will be outlined and a detailed explanation of the coding process will be presented.
Chapter 5 Overview of Coding Procedure

5.1 Introduction

This chapter outlines the data analysis procedure of grounded theory and it provides a detailed explanation of the coding process used in this study. The first part of this chapter presents an overview of the coding procedure. Then, it describes the first level of coding and the results of the open coding stage. In this stage, the text data was not only extracted from the interview transcripts, but it was also examined and sorted into categories. Codes and concepts were labelled based on incidents occurring in the data. There were 42 codes emerging during this stage. Then, eight initial categories were developed from data grouping and organising. They were: competitive advantages of KM; OL; technology; barriers to KM; important factors; knowledge sharing; strategic necessity; and knowledge is power.

Next, this chapter explains the second level of coding and presents the categories that emerged from the axial coding stage. The researcher combines data differently from the open coding stage and groups ideas into five main categories. These categories are: barriers to KM; OL; means of communication; CSFs of the implementation of KM; and the impact of KM on OP. Each category consists of several concepts, as will be discussed in detail later on in this chapter.

Afterwards, this chapter describes the third level of coding, which is selective coding. Strauss and Corbin (1998) state that in the selective coding stage, the researcher uses the data collected from the interviews as the fundamental basis for the relationships and stories which helped him/her to link categories to each other. Then, the researcher undertakes the integration and refinement of the developed theory. He/she uses the integration process to link main categories to the core category and uses the refinement process to better develop poorly saturated categories, and to remove any excess from other categories. The selective coding process will end when theoretical saturation is reached. The core category was selected and other categories and concepts that emerged from the data will provide the context around the core category.
5.2 Data analysis procedures

Word Processing Software has been used to organise and manage the collected data from different sources such as interviews transcripts, memos, file notes and organisation documents. These sources can be very crucial in developing grounded theory because they helped the researcher to analyse his data and codes at an early stage in his research process. It also helped him to engage in materials and to develop his ideas. Moreover, it helped the researcher to analyse the data and to discover his new ideas. Memos helped the researcher to form comparisons between different data, data and codes, codes of data and other codes, codes and categories, and categories and concepts, in order to illustrate his conjectures about these comparisons.

The researcher applied the ideas of *Nvivo*8 programme to sort and organise data using word software. The researcher created word files for each code and collected all excerpts related to each code in the relevant word file. Then, he created a folder for each category and grouped all related code files under each related category folder and so on.

The total time of all of the interviews was 18 hours of audio transcribed on to over 280 pages. Furthermore, as all the interviewees are native Arabic speakers, 21 interviews were conducted in Arabic and only three interviews were in English. Then all interviews were transcribed. The transcriptions of interviews were verified by listening to a replay of the original recording while the transcription was read line by line. The researcher found a few minor grammatical differences between the original recording and the transcription with no impact on the meaning of the data. Those interviews conducted in Arabic were transcribed in Arabic and then translated and analysed in English by the researcher. Afterwards the researcher asked one bilingual speaker of Arabic and English to perform a double check of the accuracy of the translation. The coding processes commenced immediately after the researcher finished transcribing the interviews.

5.3 Coding procedures

Many authors define the term *coding* in different ways. Birks and Mills (2011, p.93) define coding as follows: “Codes are a form of shorthand that researchers repeatedly use to identify conceptual reoccurrences and similarities in the patterns of informants’ experiences”. Charmaz (2006, p.43) defines coding as “the process of defining what the data are about…Coding means naming segments of data with a label that
simultaneously categorises, summarises, and accounts for each piece of data”. Birks and Mills (2011) state that the coding process of grounded theory is not a linear process, but is rather a retrieval process. That means even the researcher in the advanced stage of developing the theory will need to go back to the initial stage of coding activities at different stages in order to ensure that his theory remains grounded.

Corbin and Strauss (2008, p.159) define concepts as “Words that stand for ideas contained in data. Concepts are interpretations, the products of analysis”. Birks and Mills (2011, p.173) define concept as “an idea or notion that encapsulates a descriptive explanation of a phenomenon or characteristic of a phenomenon”. Moreover, concepts are not only derived from data, but they also represent the researcher’s impression of the interviews and understanding of the expression of informants’ experiences, problems, actions, interactions and spoken words. Also, concepts help the researcher to group and organise his data (Corbin and Strauss 2008).

Corbin and Strauss (2008, p.159) define categories as “higher-level concepts under which researchers group lower-level concepts according to shared properties. Categories are sometimes referred to as themes. They represent relevant phenomena and enable the researcher to reduce and combine data”. Birks and Mills (2011, p.173) define a category as “a higher level concept that represents a group of codes”. Moreover, most authors agree to divide the phases of coding into three phases, but they differ in the way they name these phases, as shown in table 5.1.

<table>
<thead>
<tr>
<th>Reference</th>
<th>First level</th>
<th>Second level</th>
<th>Third level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaser and Strauss (1967)</td>
<td>Coding and comparing incidents</td>
<td>Integrating categories and properties</td>
<td>Delimiting the theory</td>
</tr>
<tr>
<td>Glaser (1978)</td>
<td>Open coding</td>
<td>Selective coding</td>
<td>Theoretical coding</td>
</tr>
<tr>
<td>Strauss and Corbin (1990; 1998)</td>
<td>Open coding</td>
<td>Axial coding</td>
<td>Selective coding</td>
</tr>
<tr>
<td>Charmaz (2006)</td>
<td>Initial coding</td>
<td>Focused coding</td>
<td>Theoretical coding</td>
</tr>
<tr>
<td>Birks and Mills (2011)</td>
<td>Initial coding</td>
<td>Intermediate coding</td>
<td>Advanced coding</td>
</tr>
</tbody>
</table>

Table 5.1: Phases of coding; source: Birks and Mills (2011)

The coding process not only turns raw data from all participant interviews into theoretical concepts, but also facilitates the emergence of categories from the
interviews. Moreover, during the repeated process of coding the transcripts of all the interviews, each review fragments the data collected from the interviews into concepts, and common threads materialise. The interviews in this study not only helped the researcher to identify the categories and codes of each category, but also helped the researcher to saturate those categories. Therefore, the next step was to begin labelling segments of data. The researcher labelled each interview and each paragraph of written text in order to facilitate the analysis of the interviews and to ensure that each excerpt referenced the relevant interviewee. So, each excerpt was coded as follows: (company code - the level of management or position of the interviewee, such as Director (D), General Manager (GM) and Manager (M) - interview number - paragraph number). For example, an excerpt drawn from paragraph number six of the interview transcript from the second interview with the Director from organisation AACC could be coded as (AACC-D-02-06). This task was time-consuming, difficult and laborious. The coding phases in this research will be referred to as the coding levels suggested by Corbin and Strauss (1998), which are open, axial and selective coding (see table 5.1).

5.4 The first level of coding: open coding

The first step of the grounded theory approach is open coding. In this process, the researcher not only derives text data from the interview transcripts, but he also examines and sorts it into unique categories or combines it with similar categories. Birks and Mills (2011) state that the first stage of the coding process in grounded theory analysis is the initial coding of data. This stage has been named by Charmaz (2006) as initial coding and it is named as open coding by Glaser (1978), and Strauss and Corbin (1998). Corbin and Strauss (2008, p.195) define open coding as “breaking data apart and delineating concepts to stand for blocks of raw data”. Birks and Mills (2011, p.174) define initial coding as “the process of fracturing the data in order to compare incident with incident, name apparent phenomena or beginning patterns, and begin the process of comparison between the codes applied. Also referred to as open coding”. Saunders et al (2009) define open coding as the process of disaggregating collected data into units and providing them with a label. The researcher will give similar units of data the same label or name.
Corbin and Strauss (2008) suggest that there are two main sources from which to derive names for these categories: by utilising terms that emerge from the data; or by using terms used in existing theory and literature. However, Corbin and Strauss are against names being derived from existing theory and literature in a grounded theory approach because this could confuse the reader to interpret these names and codes according to his prior understanding of such theoretical concepts rather than the particular meaning now being placed on such terms. Moreover, the categorisation that is derived from data indicates significant categories and issues and helps the researcher to consider where data collection should be focused in the future. This will not only help the researcher to develop a sharper focus in relation to his research questions, but it will also help him to refine and limit the scope of his research questions.

In this study, the researcher began with the examination of each data fragment and he made an initial effort to sort the data collected from the interviews through the categorising and labelling process. Once the researcher had finished transcribing interviews, he read each transcript line by line several times in order to code it. Open coding involves the in-depth reading and re-reading of interview transcripts and written notes. It is very important to review all the data collected and not to overlook any information or collected data. The idea of open coding is to establish as many codes as possible. Then, the researcher disaggregated data into units and provided them with a name, giving similar units of data the same name. He named codes and concepts based on incidents of these concepts happening in the data. The researcher undertook and captured the coding by using language from the data wherever possible. Additionally, the researcher used word processing software to aid him in the organisation of data into files by creating a new folder for each category and grouping all codes files related to this category in the same file. After labelling each concept, the researcher wrote memos reflecting his insights on the relevant data.

Birks and Mills (2011, p.40) define memos as “records of thoughts, feeling, insights and ideas in relation to a research project”. Also, Corbin and Strauss (2008, p.117) define memos as “written records of analysis”. In addition they also state that “memos are the running logs of analytic thinking. They are the storehouses of ideas generated through interaction with the data”. Charmaz (2006, p.72) states that “memo-writing is the pivotal intermediate step between data collection and writing drafts of papers”. Also, he
says that memos are very crucial in developing grounded theory because they not only help the researcher to analyse his data and codes early in the research process, but also help him to engage in his materials and to develop his ideas. They help the researcher to think about the data and to discover his ideas about them. Memos help the researcher to make comparisons between different data, data and codes, codes of data and other codes, codes and categories, and categories and concepts, in order to illustrate his conjectures about these comparisons.

Categories were developed through the open coding process. Then, the data were reviewed, compared and categorised. Once the saturation point approaches, no further reading is necessary due to there only being a few new codes to be found. This process of refining the codes and constantly comparing the concepts and coded data with new data continued until all of the transcripts were coded. Open coding continued until all categories were saturated. There was no need to conduct more interviews as the saturation point was approached and gathering more data would not have revealed any new unidentified codes. Categories began to emerge as a result of grouping similar concepts together.

5.4.1 Findings from open coding

This section outlines the findings from the open coding of informant interviews. During the first level of the coding process, 42 codes emerged. Table 5.2 summarises these codes and the distribution of incidents of these codes across all sources of data.
<table>
<thead>
<tr>
<th>Open codes</th>
<th>Number of Informants identified code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training courses</td>
<td>12</td>
</tr>
<tr>
<td>On-the-job training (OJT)</td>
<td>10</td>
</tr>
<tr>
<td>E-learning activities</td>
<td>2</td>
</tr>
<tr>
<td>Investment in research and development (R&amp;D)</td>
<td>1</td>
</tr>
<tr>
<td>Data base/ web based software</td>
<td>16</td>
</tr>
<tr>
<td>Standard operation procedure (SOP)</td>
<td>5</td>
</tr>
<tr>
<td>Submit daily report</td>
<td>4</td>
</tr>
<tr>
<td>Frequent meeting/ networking</td>
<td>5</td>
</tr>
<tr>
<td>Frequent newsletters</td>
<td>3</td>
</tr>
<tr>
<td>Public lecture and special training courses</td>
<td>1</td>
</tr>
<tr>
<td>Direct phone calls/ help desk</td>
<td>1</td>
</tr>
<tr>
<td>Type of knowledge that need to be documented</td>
<td>4</td>
</tr>
<tr>
<td>Top management commitment</td>
<td>14</td>
</tr>
<tr>
<td>Organisational culture</td>
<td>10</td>
</tr>
<tr>
<td>User -friendly software system</td>
<td>18</td>
</tr>
<tr>
<td>Awareness /Educate people as to the benefits of implementing KM</td>
<td>7</td>
</tr>
<tr>
<td>Reward programmes</td>
<td>20</td>
</tr>
<tr>
<td>Good managers</td>
<td>1</td>
</tr>
<tr>
<td>Accuracy of shared information</td>
<td>2</td>
</tr>
<tr>
<td>Follow up</td>
<td>2</td>
</tr>
<tr>
<td>Free time</td>
<td>3</td>
</tr>
<tr>
<td>Job rotation</td>
<td>3</td>
</tr>
<tr>
<td>Involve employees in taking decision</td>
<td>1</td>
</tr>
<tr>
<td>Loyalty</td>
<td>1</td>
</tr>
<tr>
<td>Reassure the knowledge-possessing employees-Job security</td>
<td>7</td>
</tr>
<tr>
<td>Teamwork</td>
<td>3</td>
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<td>Lack of trust</td>
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<td>Resistance to change</td>
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<td>Knowledge is important to retain a sustainable competitive advantage</td>
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<td>Increase learning curve</td>
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<td>Improve OP and efficiency</td>
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Table 5.2: Finding from Open Coding
5.5 Initial Categories

The researcher followed the steps of the grounded theory approach in order to analyse the qualitative data collected from the interviews. The first step of analysing collected data is open coding the data as mentioned in the previous section. The initial stage of coding is very important in order to learn more about each organisation’s characteristics, which helped the researcher to determine the similarities and differences between participating organisations in this study. The interactive process of learning from the data is considered a vital stage of the analysis process because it helps the researcher to make sense of the collected data while he is looking for new interpretations of the data.

Initial findings which emerged during data grouping were organised into two levels – categories and concepts – before the researcher reduced their numbers by combining and integrating any similar concepts into certain categories. Concepts were developed from raw data and categories were developed from concepts. The aim of this stage is to establish a broad range of concepts that helps the researcher to understand the subject undertaken in detail before organising concepts into categories. The next step was to link codes, which helped the researcher to refine them into main categories. Therefore, eight initial categories were developed and they are: impact of KM on OP; OL; barriers to KM; technology; CSFs of KM; means of communication; strategic necessity of KM; and knowledge is power. Table 5.3 lists the initial categories and their concepts.
The first category is ‘impact of KM on OP’. Many informants emphasised that KM helped their organisations to improve their processes, effectiveness, and efficiency. Moreover, KM helped organisations to reduce costs, increase speed, meet customer needs, improve return on investment (ROI), increase profits, identify new markets, improve market share, improve efficiency and be more effective. Also, many informants
explained that KM helped their organisation to solve recurring issues and problems instead of reinventing the wheel from the beginning. In addition, KM has a positive influence on the employees themselves by encouraging them to work harder because there are a lot of learning and development opportunities. KM facilitates sharing and transferring knowledge from one place to another, as the informant from Airlines Co. explained:

“KM helps us to transfer knowledge from one place to another. For example, if there are two production lines producing the same product in two different cities or even countries – and let’s say the production line in city A has knowledge that helps to increase production, reduce costs and increase profits – the production line in the other city will never know about this knowledge unless there is KM” (Airlines-M-02-14).

Many informants stated that OL is very important to ensure the successful implementation of KM by qualifying people through training, coaching, investing in R&D, and by encouraging people to develop and promote themselves by using E-learning activities. The following excerpt explains:

“SG considers organisational learning to be the goal of KM through distribution and application of knowledge, and it helps the organisation to achieve its goals and to sustain a competitive advantage” (SG-M-02-01).

Moreover, a supporting system such as an information and communication technology (ICT) system raises the success of KM by integrating the KMS with other information systems. Many informants stated that the system must not only be integrated into the available IT infrastructure in order to save time and money, but it should also be easy to use and have all the necessary functions, such as an intranet. This kind of system helps employees to easily locate specific information by searching the knowledge base, which saves employee time, and therefore company expenditure. Many informants said that it is clear suitable technology and user-friendly systems facilitate employees’ access to necessary knowledge and information, which in turn increases and encourages knowledge sharing. The following informant argued:

“The system should be user-friendly in order to encourage employees to use it, which helps in the dissemination of knowledge” (A-M-01-06).

The fourth category of the initial findings is ‘barriers to KM’. All informants emphasised that the main barrier of implementing KM is making people willing to share and use knowledge. The real problem is employees believe that knowledge is power and the only way to keep their value and power is by keeping their knowledge for
themselves and not sharing it with others. In addition, knowledge exists in people’s minds, and you cannot force them to share and use this knowledge. In other words, organisations cannot be successful in implementing KM unless they are successful in increasing their employees’ trust and willingness to share and use tacit knowledge.

“The biggest challenge facing implementing KM is creating willingness among employees to share, manage and transfer knowledge, because there are a great number of employees who do not like to share their knowledge because they consider it a source of power and they do not want to give up this source to anyone else. They want to keep knowledge to themselves to keep their power and value” (A-M-01-14).

There are a number of CSFs for effective KM implementation. First, top management commitment and support is the most important CSF for effective KM implementation. Top management is the initiator, sponsor and promoter of KM. It not only provides necessary and sufficient resources, including financial, human, and technological resources, but it also makes time available for successful KM implementation. The following statement illustrates this.

“The most vital condition for the success of implementing KM in SL is that the top management fully support the objective, and provide whatever is necessary to ensure the success of KM and organisational learning” (SL-GM-01-06).

Secondly, having a knowledge culture that encourages employees to share their knowledge and ideas is considered one of the main CSFs of implementing KM. Without this kind of culture, it is extremely difficult to make employees share their knowledge. The following statement explains the importance of organisational culture in facilitating the sharing of knowledge and ensuring the success of KM implementation.

“If the organisation adopts knowledge and KM as its system, that will make sharing knowledge much easier – otherwise, everybody will hide knowledge and keep whatever he knows, without sharing anything” (SG-GM-01-05).

There are some techniques to encourage and motivate employees to share their knowledge, such as applying a reward system linked to promotion or bonuses; reassuring expert employees that the company will not abandon them (providing job security) because they have shared their knowledge; frequent meetings and newsletters; educating people; and teamwork culture. The following excerpt emphasises this.

“We have to encourage employees to share their knowledge either by giving bonuses or recognition...Also, we give people morale certificates and recognition and it is associated with promotion because it is one part of the
employee’s competency that the employee is willing to coach and teach others. And this is considered to be the best mode of encouragement because financial encouragement is difficult to implement because the principle of the company is cost saving” (U-M-01-20).

According to the following excerpts, the disadvantages of not implementing KM are that new employees get lost and do not know what to do and they find it very difficult to obtain information and knowledge; reinventing the wheel from the beginning when recurring problems and issues occur; and thus reduced efficiency and performance of organisations.

“New employees get lost and do not know what to do for a period of time. Furthermore, it is very difficult for them to obtain information” (BNGF-M-01-01).

“In the past, before A-company implemented KM, new employees took around three months to be ready to take over the work because it was very difficult to obtain the required information and knowledge, but now after the company has implemented KM new employees can be ready within ten working days because obtaining knowledge has become very easy and clear, and all the information related to how to do the work from A to Z is documented” (A-M-01-09).

5.6 Constant comparative analysis

Constant comparative analysis was developed by Glaser and Strauss (1967) in order to develop a theory around core variables using systematic procedures. Birks and Mills (2011) state that the initial generation of codes is produced through the use of constant comparison of incidents in the data. Then, the researcher compares future incidents with previous codes. Codes are being compared with codes. Next, the researcher groups the codes into categories, and categories are compared with categories. Theoretical sampling and the continuous collecting of data is derived through the constant comparison of data. Corbin and Strauss (2008, p.65) define constant comparisons as “the analytic process of comparing different pieces of data for similarities and differences”. Birks and Mills (2011, p.174) define incident as “an umbrella term for recurring actions, characteristics, experiences, phrases, explanations, images and/or sounds. Incidents are analysed for underlying concepts that can be coded”. Moreover, Corbin and Strauss (2008, p.195) define comparative analysis as:

“Comparing incident against incident for similarities and differences. Incidents that are found to be conceptually similar to previously coded incidents are given the same conceptual label and put under the same code.”
In the open coding stage, the researcher produced many concepts which helped him to develop the initial categories. As it is shown in table 5.4, the initial categories were produced as a result of the constant comparison of incidents, and then codes, across the participating organisations in the study. Then, the researcher compared these initial categories to each other again across the participating organisations.

Therefore, the number of concepts that emerged in the open coding stage was reduced from 42 to 40. Also, the number of initial categories was reduced from eight major categories to five major categories. Some categories were integrated and accompanied by other categories because they have the same conceptual label. For instance, a technology category was integrated into the CSFs category, because technology is considered to be one of the main CSFs that help organisations to implement KM.

Another example is that the ‘knowledge is power category’ was integrated into the ‘barriers to KM’ category. People know that knowledge is power, and many people do not want to share what they know, as they think this helps them to keep a competitive advantage over their peers. So, this category is considered to be one of the main barriers to knowledge and implementing KM in an organisation. On the other hand, some codes were moved from their former categories to others, and some categories were removed altogether.

**5.7 The second level of coding: axial coding**

The second level of coding is also given different names by different authors, as shown in Table 5.1. Glaser (1978) names this stage *selective coding* and focuses on generating codes around an identified core variable. It was also named *Axial coding* by Corbin and Strauss (2008, p.195) and defined as “crosscutting or relating concepts/categories to each other”. Charmaz (2006, p.57) terms it ‘focused coding’ and she defines it as:

> “Focused coding means using the most significant and/or frequent earlier codes to sift through large amounts of data. Focused coding requires decisions about which initial codes make the most analytic sense to categorise your data incisively and completely.”

The distinction between open coding and axial coding is artificial and for explanatory reason only. It means that the idea of breaking data apart is to identify concepts to stand for the data, then to group it again by relating those concepts to each other. In addition, Birks and Mills (2011) state that this level of coding is about grouping codes, which
leads to the formation of categories as the researcher commences to identify explanatory and conceptual patterns in his analysis. Corbin and Strauss (2008) state that axial coding aims to group ideas into fewer categories than initially existed in open coding and present them in a more abstract framework.

Axial coding focuses on disaggregating categories into subcategories and reassembling the data that have been fractured during initial coding in order to give coherence to the emerging analysis. The aims of axial coding are to sort, combine, and organise chunk amounts of data and reassemble them in new ways after open coding (Creswell 1998).
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Table 5.4: Initial comparative analysis across cases
Moreover, Saunders et al (2009, p.511) describe axial coding as such:

“This stage refers to the process of looking for the relationships between the categories of data that have emerged from open coding. It indicates a process of theoretical development. As relationships between categories are recognised, they are rearranged into a hierarchical form, with the emergence of subcategories.”

The purpose of this coding is to explore and explain a phenomenon, such as the subject of the research project or one of its parts, by understanding what is going on in the data; what are the reasons behind that; how it is being managed within the context being examined; and what the outcomes are of the action that has been taken. At the end of the day, the purpose of analysis is to explain the relationship between these aspects, or categories. After the researcher identifies these relationships, he will search for validation by comparing them against actual data collected.

5.7.1 Findings from axial coding

The researcher focused the axial coding analysis on relating categories to subcategories emerging from the 24 participant interviews through constant comparative analysis. Then, the data that had been fractured during open coding were grouped in order to give coherence to the emerging analysis. In other words, axial coding not only combines data differently from the open coding process, but also groups ideas into fewer categories than initially emerged in open coding. As a result of the constant comparative analysis of open coding, five categories emerged:

- Barriers to KM
- Organizational learning
- Means of Communication
- CSFs of KM implementation
- Impacts of KM on OP

Each category was sub-divided into several codes as shown in table 5.5. These categories and their codes will be discussed in detail in Chapter 6.

The first category formed was ‘barriers to KM’. All codes relating to challenges and barriers were gathered together in this category. All informants strongly emphasised that the most common challenge of KM is managing tacit knowledge so that people are willing to share and use it because many people do not want to share what they know, as they think this helps them keep a competitive advantage over their peers. In addition,
the participating interviewees stated that increasing spending on IT will not necessarily lead to increased sharing and use of knowledge, because this also depends on the willingness of individuals to share and use tacit knowledge. Nine codes group together to form this category and those concepts are: knowledge is power; the unwillingness of employees to share knowledge; employees’ culture; lack of trust; resistance to change; time consuming and costly; lack of money; poor verbal and written communication; and some types of knowledge are difficult to document.

The second main category is ‘OL’. Many informants argued that focusing on processes and technology while ignoring the employees’ development could lead to the failure of KM implementation. Also, many informants emphasised that employees must be qualified through training and coaching to ensure the success of implementing KM. Moreover, they stated that people must be open to KM and they should have the desire to develop and promote themselves through self learning or E-learning. Six codes related to this subject and they are: training courses (teaching); On-the-Job training - OJT (learning by doing); E-learning (self learning); investment in R&D; knowledge worker recruitment; and SOP.

The third category is ‘means of communication’. A number of informants argued that having a good communication system is a vital factor for KM success. There has to be direct communication and contact in order to find common solutions to problems. Examples of the communication practices are newsletters, websites, meetings, presentations, e-mail, and magazines. Also, all participating interviewees noted that a good communication system can ensure that a particular message will be passed to the right person.

The fourth category is ‘CSFs for effective KM implementation’. The study named 14 CSFs that are considered to be vital and which must be provided to achieve successful KM implementation. This suggests, regardless of the size and location of an organisation, that generally valid success factors do exist. The CSFs are: top management commitment and support; awareness campaigns; KM project team; organisational culture; organisational structure; teamwork; technology; time; roles of managers; reward and punishment system; job security; involvement in decision making; job rotation; and follow up and audit.
The fifth category is ‘impact of KM on OP’. Many informants emphasised that KM helped their organisations to improve their processes, effectiveness, and efficiency. Moreover, KM helped organisations to reduce costs, increase speed, meet customer needs, improve return on investment (ROI), increase profits, identify new markets, improve market share, improve efficiency and be more effective. Also, many informants explained that KM helped their organisation to solve recurring issues and problems instead of reinventing the wheel from the beginning. In addition, KM has a positive influence on the employees themselves by encouraging them to work harder because there are a lot of learning and development opportunities.

<table>
<thead>
<tr>
<th>Category</th>
<th>Concepts</th>
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<tbody>
<tr>
<td>Barriers to KM</td>
<td>• Knowledge is power-unwillingness of employees to share knowledge.</td>
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<td>• Lack of job security and trust.</td>
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<td>• Resistance to change.</td>
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<td>• Lack of time and time consuming.</td>
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<td>• Costly</td>
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<td>• Poor verbal and written communication.</td>
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<td>• Type of knowledge that are difficult to be document.</td>
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<td>OL</td>
<td>• Training programmes (Teaching).</td>
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<td>• Learning by doing (OJT).</td>
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<td></td>
<td>• E-learning activities (Self learning).</td>
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<td>• Investment in R&amp;D</td>
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<td>• Knowledge worker recruitment.</td>
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<td>• Standard operation procedure manual (SOP).</td>
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<td>Means of Communication</td>
<td>• Meeting/ networking</td>
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<td>• Newsletters.</td>
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<td>• Public lectures and presentations.</td>
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<td>• Directly-phone calls/help desk.</td>
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<td>CSFs of implementation KM</td>
<td>• Top management commitment and support.</td>
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<td>• Awareness campaigns.</td>
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<td>• KM project team.</td>
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<td>• Organisational culture.</td>
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<td>• Organisational structure.</td>
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<td>• Teamwork.</td>
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<td>• Technology</td>
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<td>• Roles of managers</td>
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<td>• Reward and punishment system.</td>
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<td>• Job security.</td>
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<td>• Job rotation.</td>
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<td>• Follow- ups and auditing</td>
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<td>Impacts of KM on OP</td>
<td>• Retain a sustainable competitive advantages</td>
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<td>• Makes the information available, obtainable and accessible</td>
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<td>• Increase employees’ learning curve, commitment and loyalty</td>
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<td>• The relationship between KM and OP</td>
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Table 5.5: Axial Coding Categories
5.8 The third level of coding: Selective coding

The third level of coding is the final coding step and, as with the previous levels, it is given different names according to the author. It is named ‘theoretical coding’ by Glaser (1978) and Charmaz (2006).

Birks and Mills (2011, p.171) name this stage of coding ‘advanced coding’ and they define it as “techniques used to facilitate integration of the final grounded theory”. Saunders et al (2009, p.600) define selective coding as “the process of integrating categories to produce theory in grounded theory”. Moreover, Strauss and Corbin (1998) state that the researcher in the selective coding stage uses the data collected from the interviews as the fundamental basis for the relationships and stories which help the researcher to link categories to each other. Also, the researcher undertakes the integration and refinement of the developed theory in this stage. The researcher uses integration processes to link main categories to the core category and he or she uses the refinement process to better develop poorly saturated categories and remove any excess from other categories. The selective coding process will end when theoretical saturation is reached.

Corbin and Strauss (2008) suggest that after the researcher selects the core category, he will tell a story around the core category by using the other categories and concepts that emerged from the data. Birks and Mills (2011) propose three necessary factors for the integration of a grounded theory. These are: an identified core category; theoretical saturation of main categories; and an accumulated bank of analytical memos.

A number of definitions of theory exist, such as Birks and Mills’ (2011, p.176) description of it as “an explanatory scheme comprising a set of concepts related to each other through logical patterns of connectivity”. Wilson (2010, p.308) defines theory as “a set of principles on which an activity is based”. Another definition of theory by Saunders et al (2009, p.602) describes it as a “formulation regarding the cause and effect relationships between two or more variables, which may or may not have been tested”. Corbin and Strauss (2008) argue that the researcher needs to refine the theory after outlining the overarching theoretical scheme by reviewing the scheme for internal consistency and gaps in logic, filling in poorly developed categories, and trimming excess; and validating the scheme.
Birks and Mills (2011, p.173) define the core category as “a concept that encapsulates a phenomenon apparent in the categories and sub-categories constructed and the relationships between these”. Corbin and Strauss (2008) argue that the first step of the integration process is that the researcher must select and identify the central category or core category. Also, Corbin and Strauss (2008, p.104) define a core category as:

“The category that appears to have the greatest explanatory relevance and highest potential for linking all of the other categories together. A central category has analytical power. What gives it that power is the category’s ability to explain or convey ‘theoretically’ what the research is all about.”

Birks and Mills (2011, p.176) state that “theoretical saturation occurs when no new codes are identified pertaining to a particular category. Categories are clearly articulated with sharply defined and dimensionalized properties”. Moreover, theoretical saturation is reached when the compilation of the data collected ceases, and that not only means there is no new data to be yielded from the interviews, but also all categories are saturated, well-developed, easy to understand, and relationships between categories have been confirmed (Corbin and Strauss 2008).

5.8.1 Findings from Selective Coding

The third level of coding came after the open and axial coding. This level of coding focused on integrating categories in order to produce theory by linking categories to each other and linking main categories to the core category. The data collected from the interviews was used in this stage to determine the relationships between data and the story told by the data, which helped the researcher to link categories. The core category was not only selected by the researcher in this stage of coding, but it was also linked to main categories, while poor categories were better developed and saturated through the refinement process, and some categories were removed. The researcher finished the selective coding process when he reached the theoretical saturation point, i.e. once he completed the collection of the data, and there was no more new data emerging from the interviews. Moreover, all categories were saturated, well-developed, easy to understand, and the relationships between categories were confirmed. The final core category selection was the employees’ willingness and it has been linked to the other main categories. This will be discussed in more detail in Chapter 7.
5.9 Conclusions

This chapter presented the overview of the coding procedure for the data collected from 24 interviews conducted with the informants selected for the study. It also provided a detailed explanation of the coding process used in this study. The chapter began with a detailed discussion of the coding process. Charmaz (2006, p.43) defines coding as “the process of defining what the data are about…Coding means naming segments of data with a label that simultaneously categorises, summarises, and accounts for each piece of data”. The coding process turned the raw data from all the informant interviews into theoretical concepts and categories that emerged through the interviews. Most authors agree on the division of the phases of coding into three levels, but they differ in the naming of these levels, as shown in Table 5.1. The levels will be referred to in this research as open, axial and selective coding.

The first step of the grounded theory approach is open coding. In this process, the researcher derived text data from the interview transcripts and examined and sorted it into unique categories or combined it with similar categories. He named codes and concepts based on incidents of these concepts happening in the data. The researcher undertook and captured coding by using language from the data wherever possible and also by using word processing software. During the first level of the coding process, 42 codes emerged (see Table 5.2). Axial coding combines data differently from the open coding process and groups ideas into fewer categories than initially emerged in open coding. As a result of the constant comparative analysis of open coding, five categories emerged: barriers to KM; OL; means of communication; CSFs of the implementation of KM; and impacts of KM on OP. Each category is sub-divided into several concepts as shown in Table 5.5. These categories and their concepts will be discussed in more detail in Chapter 6.

The third level of coding is selective coding. Saunders et al (2009, p.600) define selective coding as “the process of integrating categories to produce theory in grounded theory”. This level of coding focuses on integrating categories in order to produce theory by linking categories to each other and linking main categories to the core category. The selective coding process ended when theoretical saturation was reached. The final core category selection was ‘employees’ willingness’. It will be discussed in more detail in Chapter 7. In the next chapter, the results of the grounded theory analysis of data and the five main categories will be presented in detail.
Chapter 6 Data Analysis

6.1 Introduction

This chapter presents the results of the grounded theory analysis of the data. It assesses and evaluates the data gathered in this research to understand KM concepts and issues, and explain how these bodies of knowledge and processes can be applied to enhance productivity, performance and competitiveness within organisations in SA. This research studied the implementation of KM projects in 19 organisations operating in different business sectors in SA in order to enhance understanding, develop theory and to determine the CSFs associated with KM implementation. Of those organisations, 11 are considered to be knowledge-based, and 8 are non-knowledge-based. The main reason behind this selection was to determine the difference between these two types of organisations and thus to determine the impacts of implementing KM on OP. The informants shared a range of experiences and perspectives on KM.

Axial coding began emerging during the open coding process. The researcher focused in the axial coding analysis on relating categories to concepts through constant comparative analysis. Then, the data that were fractured during open coding were grouped in order to give coherence to the emerging analysis. As a result of constant comparative analysis of open coding, five categories emerged:

- Barriers to KM.
- Organisational learning.
- Means of communication.
- CSFs of implementation KM.
- Impacts of KM on OP.

Each category is sub-divided into several concepts, which will be discussed in detail in the following sections.

6.2 Barriers to KM

Implementing KM in any organisation is a hard task and a lot of barriers and challenges will be faced. Those barriers emerged from the informants’ statements as they experience them in the real world. Some of the informants experienced challenges during the implementation of KM in knowledge-based organisations, while some
informants still experience such barriers in non-knowledge-based organisations. This section introduces the barriers of KM implementation and each barrier will be discussed in detail. Also, all these barriers are important and emerged from data. This category is sub-divided into seven concepts as follows:

- Knowledge is power- unwillingness of employees to share knowledge.
- Lack of job security and trust.
- Resistance to change.
- Lack of time and time consuming.
- Costly.
- Poor verbal and written communication.
- Type of knowledge that are difficult to be document.

### 6.2.1 Knowledge is power- Unwillingness of employees to share knowledge

A number of informants argued that the main reason employees do not share their knowledge is because they believe that knowledge is power. That is, they believe that knowledge makes them valuable to the organisation and protects their position. Most employees think they will lose their power by sharing their knowledge. Some of the informants from knowledge-based organisations said that the most difficult challenge they faced during implementing KM in their companies was making employees willing to share their knowledge, because you cannot just enforce them to do so. Meanwhile, non-knowledge-based companies still face this barrier. The four following statements explain this problem.

“The most common challenge of KM is managing tacit knowledge to keep people excited about ensuring the information has been shared or transferred from their brain to paper or to the intranet system. Because people know that knowledge is power, many do not want to share it so that they can maintain a power monopoly – and you cannot force people to share their knowledge” (SG-GM-01-05).

“The biggest challenge facing the implementation of KM is creating willingness among employees to share, manage and transfer knowledge, because there are a great number of employees who do not like to share their knowledge because they consider it to be a source of power and they do not want to give up this source to anyone else. They want to keep knowledge for themselves to keep their power and value” (A-M-01-14).
“The biggest problem is that there are expert employees unwilling to share their knowledge because they believe that their knowledge gives them power and encourages the company to keep them on, and also they think if they share their knowledge the company will abandon them” (U-M-01-15).

“Unfortunately, we do have some expert employees who dislike sharing their knowledge because they think that by passing their knowledge on they will lose their value and thus their job, and this is not true at all. But on the contrary, every time they pass their knowledge on, their value will increase” (AACC-D-01-04).

The following informants emphasised another reason that discourages people from sharing knowledge: their culture. There are some employees who come from a culture that does not promote the sharing of knowledge and they like to keep their knowledge for themselves.

“In the A-Company there are more than 55,000 employees from 70 nations with different cultures. Some employees come from cultures that do not like sharing knowledge, because they see knowledge as a source of power and they do not want to lose this power, especially those who have no higher qualifications” (A-M-01-07).

“The greatest challenge facing the implementation of KM is the employees’ culture and how you can make employees share their knowledge, because human nature doesn’t like sharing knowledge and doesn’t like change either” (BHC-GM-01-06).

“The biggest challenge of KM implementation is the unwillingness of expert employees to share their knowledge with others, and this problem exists and will exist forever because this is the culture of some people and we can’t change it” (Airlines-GM-01-15).

The following informant emphasised that the biggest mistake that occurs is that most organisations consider KM as purely an IT challenge, without focusing on the human factor, which has led most of those companies to fail in the implementation of KM. KM cannot work without the willingness of people.

“Most companies consider KM pure IT and this is not true. IT is only one side of KM, and it is not everything. Therefore, those companies only focus on the IT aspect and they do not pay attention to other factors such as human factors, which has led to the failure of implementing KM in those companies. Any company can have a fancy IT infrastructure, but it could be useless without the human factor – in other words, without the willingness of employees to use it and post their knowledge on it” (A-M-01-06).
6.2.2 Lack of job security and trust

Many informants argued that the second issue making people unwilling to share their knowledge is lack of job security and trust. Some employees believe that if they share their knowledge they will be abandoned by their organisation or they will lose their power and value. However, building a strong trust environment is not an easy issue and a lot of work is needed to overcome this barrier.

“But the real problem is there are employees who do not like to share their knowledge or to coach other people because they are afraid if they do so the company will abandon them. Therefore, one of the obstacles of implementing KM is job security and the sense of fear of losing the job” (AACC-D-02-06).

“Some of them do not like to share their knowledge and I believe the reason for this is lack of trust in the company not to abandon them if they give up their knowledge; or in their colleagues not to take over their position. Trust is a very important factor of sharing knowledge” (SC-M-02-05).

This informant explained that one reason people are unwilling to share their knowledge is because they are afraid to lose their value and power.

“Besides this, people are afraid that if they have shared all their knowledge, they will lose the value and the power of that knowledge and therefore they will lose their own value” (BHC-GM-01-06).

6.2.3 Resistance to change

The third barrier facing the implementation of KM projects is there are some employees, who resist changing for different reasons, such as they are uncomfortable with the concept of change, or they have performed their work in the same routine every day for decades and they do not want to change it. Some employees do not like to learn anything new or learn how to use new systems. One of the informants interviewed pointed out that getting people to change is the hardest thing to do, especially after a long period of time doing the same job in the same routine.

“There is one employee that has been doing his work in the old way for more than 25 years. It is hard for him to change now after a long period of time doing the same work in the same style. It is really hard to change people. Actually, it is the hardest thing getting people to change” (HAC-D-01-15).
The same idea is emphasised by these three managers:

“When you apply any new system the biggest challenge is resistance to change, and if you can overcome this obstacle it will be launched, and if you can’t overcome this obstacle it will not be launched” (S-M-01-10).

“In the beginning of implementing KM, it will be difficult to implement KM, especially the process of inserting information into the system and also the employees’ resistance to using any new system or resistance to change, and this is the biggest challenge of implanting KM” (SC-M-01-07).

“The biggest obstacle to implementing any new system is the employees themselves and their opposition and resistance to anything new…especially when it is comes to sharing knowledge” (TS-D-01-04).

The same point is emphasised from a different angle: that people resist learning anything new or learning how to use new systems because it will take so much time to learn.

“There was a difficulty at the beginning of implementing KM due to the staff not accepting the new system because they said the new system was complicated and takes too much time to learn how to deal with it...Actually, the new system is user-friendly and is unlike the old system, which was difficult to use, but the people were used to the old system and they did not like to change, and this was the biggest challenge of KM implementation” (U-M-01-08).

6.2.4 Lack of time and time consuming

A number of informants stated that sharing or posting knowledge requires enough free time to do it. Most employees are overloaded and too busy with their daily work and they have no time to participate in knowledge-sharing practices. Lack of time is considered one of the main barriers to sharing knowledge. The following two statements show how the time issue could be a barrier to sharing knowledge.

“In order to apply and implement KM correctly and efficiently it will take considerable time” (Airlines-M-02-08).

“Also, sharing knowledge is considered to be time consuming either if the employees coach one another or if they want to post information or knowledge in the system it will take time and they already have a lot of things to do...Ah, and also they think ‘why should I waste my time in order to coach someone else or to post knowledge in the system in order to share my knowledge with someone else and what benefit do I get from that?’” (U-M-01-16).
According to this informant, lack of time is considered to be a barrier to sharing knowledge.

“The lack of time…Ah…there are some employees willing to share their knowledge, but they are very loaded and they have no time to coach other people and they said ‘either I do my work or I will be an instructor’” (AACC-D-01-05).

6.2.5 Costly

A number of informants have argued the beginning of implementing KM in some organisations will be costly, particularly if those organisations need new systems, because they will need to train their employees on how to use the new system.

“At the beginning of implementing KM in any company it will be costly due to the need for an efficient system that helps and supports the deployment of knowledge within the company” (Airlines-M-02-08).

“I believe there will be several challenges and, first of all, at the beginning of implementing KM it will be costly because you have to pay for systems and pay for training and I think you have to create a KM department because it will affect employees so you will need someone to run business” (S-M-01-10).

“KM in the initial stage will be costly because it is going to be taking a lot of time from HR...Ah...If done correctly you will need development from IT, software development, and it needs a lot of development from different areas of the business itself and from an IT perspective and it will take a lot of time from the core business” (H-M-01-06).

6.2.6 Poor verbal and written communication

Poor verbal and written communication and interpersonal skills is considered to be one of the barriers to KM utilisation. According to an informant from company H:

“All some employees are willing to share their knowledge and have no problem with the time issue, but they do not know how to communicate with people or do not communicate well” (H-M-01-08).

6.2.7 Types of knowledge that are difficult to document

Some informants said that there are types of knowledge that are too difficult to document, such as technical knowledge, experience and skills. Also, in some departments or types of business it is hard to record all knowledge and practice due to
there being hundreds of scenarios, such as sales and service businesses and customer service. The following informant emphasised that KM is used in sophisticated departments, such as the treasury or engineering departments, but in sales and customer service it is impossible to record everything due to there being hundreds of scenarios of problems, and information may regard how to deal with people.

“In the banking business there are some departments where information is very important, such as the treasury and investment departments; those departments need a KM system containing all relevant information. But in terms of branches and dealing with people, it is too hard to build a system for how we can deal with people and contain all the scenarios and how they can be solved, because we have hundreds of scenarios of problems and you can’t insert all those scenarios in the system and, as I said, we have a new scenario every day. But regarding how employees can do the work and the steps and procedures, there is a manual containing everything. For example, how they can open an account – they can find it in the manual. This manual is available as a hardcopy and softcopy” (S-M-01-03).

Moreover, “I believe that KM can be used in sophisticated departments, such as the treasury department or engineering department to solve a problem...yes you need recorded knowledge, but in sales and service businesses you can’t record all knowledge and practice because it does not have the effective value in this kind of business because there are no complicated issues” (S-M-01-08).

The two following managers have emphasised the same point that there is a type of knowledge, especially technical knowledge and experience, that is difficult to document, and no one can learn a technical thing or skill from reading.

“The company size and sector...some companies find it very difficult to document knowledge, especially technical knowledge. For example, an NDT specialist or any technical expert finds it very difficult to put his experience in words and document it and no one can learn from reading how to do the technical things; it should be through practical application and exercises for technical things in order to pass on the knowledge” (AACC-D-01-07).

“There is some knowledge that is hard to document, especially technical knowledge, which requires certain skills to do the job professionally and some people keep these skills for themselves. But in order to document the technical knowledge, there is something called best practice that could exist in the company, or you can attract it from external sources or from other companies better than you and you can benchmark yourself and see which companies are better than you” (AACC-D-02-03).
6.3 Organisational learning (OL)

A number of informants have pointed out that OL is very important and it is considered to be the main goal of KM, and it helps the organisation to sustain a competitive advantage and improve the employees’ performance and efficiency. OL encourages employees to learn by creating a good learning environment.

“SG considers OL to be the goal of KM through distribution and application of knowledge, and it helps the organisation to achieve its goals and to sustain a competitive advantage” (SG-M-02-01).

The OL category can be sub-divided into six concepts as follows:

- Training programmes (teaching)
- Learning by doing (OJT)
- E-learning activities (self learning)
- Investing in R&D
- Knowledge worker recruitment
- Standard Operation Procedure (SOP)

6.3.1 Training programmes(teaching)

A number of informants stated that training programmes are the most important priority and a very important issue. Their organisations have adopted training programmes in order to train employees and give them a great deal of important knowledge that improves employees’ performance. Also, they said the training programmes are designed depending on the job requirements or the skills required to perform the job efficiently. Organisations must encourage people to share their knowledge through teaching others. This informant explained that the main goal of adopting a training programme is to transfer and share knowledge between people and to improve employees’ performance and efficiency.

“SG has adopted different ways to ensure that knowledge has been transferred and shared among all employees by adopting a special training programme to train employees and give them a great deal of important knowledge that improves employees’ performance and efficiency” (SG-M-02-01).

Moreover, the same informant said, “There are two types of training programme in SG: course training, which aims to give the new employee a big picture of the whole company from A to Z, including all important information from strategies, vision and values. In other words, new employees will know
everything about the company. The second type is On-the-Job Training” (SG-M-02-02).

This informant emphasised that his organisation considers the training of staff to be one of the most important priorities and thus there are five training centres training employees from the time they join the company until they become managers.

“SL considers the training of staff to be one of the most important priorities, and therefore the company has five training centres. These training centres have prepared an intensive training programme for employees from the time they join the company until they are ready to be a manager in a maximum of four years. Then, there are three training programmes for managers called Management Essential. These programmes aim to give more information about project management, people management, change management, leadership, strategies and vision” (SL-GM-01-04).

The following two statements show that there is a training department, the role of which is to ensure the training of all employees every year depending on the job requirement or skills required to perform their jobs efficiently.

“All new employees and transfer employees in Airlines Company are provided with orientation and familiarisation programmes. Moreover, there is a training department in SA Airlines, the role of which is to ensure the training and coaching of all employees every year as per the work requirements. The training department issues a training handbook, which includes all training courses with dates and requirements at the beginning of every year” (Airlines-GM-01-04).

“The second way is course training...Ah there are two types of course training, which are E-learning courses and Capability Building Plans (CBP)...Ah, the CBP is focused on seeking the weaknesses in each employee and then giving him training courses to improve and develop the employee. For example, as customer service is part of my job, I should have good communication and negotiation skills...Ah, so I must take courses in this part to improve my skills and so on...I mean CBP designs training courses for each employee depending on their job requirements or the skills required to perform their job efficiently” (U-M-01-14).

Another informant brought up the same point. He used the phrase ‘part of our culture’ to emphasise the importance of training programmes in his organisation.

“Training courses are part of our culture, and every year there should be a certain number of training courses for each employee depending on his career path and job requirements” (HAC-D-01-07).
The same point is emphasised by the following two managers. Training programmes were adopted in their organisations to develop employees’ skills and job performance, and to encourage them to share their knowledge.

“We have also continuously developed the employees’ skills and job performance through courses within the company and external courses according to work needs” (AACC-D-01-01).

“We are talking about the behaviour of humans differing from person to person and it is hard to enforce people to share their knowledge and document it, but if it is to come from themselves it will be easier. Also, training and coaching is a very important factor, or way to encourage people to share their knowledge” (AACC-D-02-05).

The following informant emphasised that if there is a new system, employees have to receive training on the system before it is implemented.

“...and to overcome this obstacle you need to convince employees by encouraging and promoting them, but also by making them aware what the advantages of implementing KM in the company are...Ah...also you should train them on the system before applying it and this is what our company has done in the process of implementing KM systems” (SC-M-01-07).

6.3.2 Learning by doing (OJT)

A number of informants have debated that the OJT is the best way to transfer and share knowledge, and it is the best way to learn something new, especially technical issues and ‘functional training’. They all agreed that organisations must provide all new employees with OJT by selecting the most experienced employees to coach new employees for a period of time, until those new employees are ready to do their jobs.

“The most experienced employees are selected to coach new employees for a period of time, until those employees are ready to do their jobs” (Airlines-GM-01-04).

“All newly hired employees get On-the-Job Training (OJT)....I mean every new employee has to be trained by an expert employee in the branch” (S-M-01-01).

“...the best way to share knowledge is OJT in order to train the newly hired employees” (SE-GM-01-08).

Another informant brought up the same point. He said the development and training department designs OJT programmes by selecting the most experienced supervisors to coach new employees for three months, and at the end of this programme the new
employees will be examined. Once they have passed the exam, both the supervisors and the new employees get a reward.

“SG has an On-the-Job Training (OJT) course called the Supply Chain Functional Training Programme. It is designed for technical people, mechanics, factory workers, marketing, brand management, quality, finance, accounting, and production line staff. The development and training department selects the most experienced supervisors to coach the new employees through the specific programme approved by the quality department for three months, at the end of which the new employees are examined by performing certain tasks or answering questions related to this programme. Both the supervisors and the new employees will get a reward if the new employees pass the exam” (SG-M-02-03).

This informant emphasised the same issue, noting that newly hired employees get an induction programme for one week and then OJT for a period of time until they become qualified. He also said there is a training scheme called Training Man Hours, which includes selecting the best person in each field to coach people for ten Training Man Hours, after which he receives a money reward.

“We have an induction programme for any newly hired employee for one week and we give him an induction booklet as well...Ah, in this week the newly hired employee will visit and become familiarised with all departments and he will visit each department for one day...I mean he will go on the first day to the HR department and on the second day he will go to the production department and on the third day he will go to logistics and so on. And after he finishes the induction week he will be hired on a certain job and there will be OJT for a period of time until the new employee is ready to do his duties by himself” (U-M-01-14).

Moreover, the same informant argued that “...also we have a training scheme called Training Man Hours and we choose the best person in each field to coach people and newly hired employees, such as the best mechanical and electrical technician to coach people, and we ask him to do ten Training Man Hours, and after he finishes this he will get a money reward” (U-M-01-15).

One of the informants interviewed highlighted a very important point, that people are different in the manner in which they like to share their knowledge or their preferred method of sharing their knowledge. Some people prefer to share their knowledge in words, some people prefer to give presentations, and some prefer to coach other people.

“Moreover, there are some people who like to write down their experiences and knowledge in words, and there are some people who like to give presentations, and there are some who like to coach other people, but I think the best way to share knowledge is coaching people through OJT” (AACC-D-02-05).
6.3.3 E-learning activities (self learning)

Some organisations provide their staff with E-learning websites that consist of a considerable number of courses and presentations. This kind of learning is a type of self learning and it depends on the willingness of people to improve and develop themselves and learn something new.

“F-Services Company creates and attaches a web-based virtual classroom to the knowledge portal in order to allow all employees to be able to access various courses and learning materials that support e-learning activities” (F-GM-01-04).

“Also, another practice of KM in our company, we do have something called e-learning in our company portal...Ah...the e-learning includes a lot of courses and presentations and the aim of this is instead of each employee learning and training individually, we have united our training, because at the end of the day we all have the same purpose, which is to reach customer satisfaction. For example, if I have a problem in time management I can easily log into the system and look for time management courses and take this course and at the end of any course the employee will receive a certificate that certifies he has passed this course training and it will be recorded in the employee’s training file...And your manager can see the training courses that you have passed and he can see what training courses you need in order to improve your performance or to promote you” (U-M-01-02).

6.3.4 Investment in R&D

One of the informants interviewed pointed out that his organisation focused on R&D and there is a special department for this. Investment in R&D increases every year and in 2011 his company invested $802 million in R&D for oilfield activities. He said this is the main reason why his company is number one in the world in the oilfield services sector.

“SL has always invested a significant amount of time and money on research and engineering as a long-term strategy to support and grow its technology leadership. The most notable factor in the company’s competitive advantage is that it is investing more each year in research and development than all other oilfield services companies combined. In 2011, SL invested $802 million in research and development for oilfield activities” (SL-GM-01-01).
6.3.5 Knowledge worker recruitment

This informant explained knowledgeable people are the key to the success and growth of any organisation.

“SG believes that knowledge employees are the key to its success and growth, since they create new ideas, and design marketing programmes and strategies” (SG-GM-01-01).

The same idea is emphasised by these two managers, who said they have a lack of knowledge in some areas so they have attracted knowledgeable people to their company and placed them in the right departments and positions and assigned them to coach other people, and in this way they have transferred their knowledge and experience to the organisation.

“In the technical field, some work needs to be done by an authorised person who has a Non-Destructive Test certificate (NDT) from an American Association...Ah those people are limited here in Saudi Arabia – they may not exceed more than five people – and because we do not have people authorised in our company we have to make a contract with an authorised person from outside the company in order to utilise his certificate and knowledge. Unfortunately, I can’t support myself because I do not have this kind of knowledge but I’m developing internally by using his knowledge to develop my own people, so after some time I will be able to stand on my feet by myself and get my people certified also. In other words, if we have a lack of knowledge in some fields we depend on attracting expert and competent people to work with us and at the same time we let those people coach our staff through OJT according to the contract. The direct supervisor or the direct manager follows up with the expert to coach people” (AACC-D-01-02).

“...distribution of knowledge is based on the type of sector and type of knowledge possessed by the person such as know-how or technical expertise. For example, we attracted an expert person from Saudi Airlines who has a big background and we placed them in the right place associated with their experience and therefore we have transferred their knowledge and experience to our company because they will utilise their knowledge in the same field” (AACC-D-02-01).

6.3.6 Standard Operation Procedure (SOP)

Many of the informants have debated that it is very important to record the process of all transactions of business in a certain manual or system in order to sustain the quality of the job and support people on how to perform their job according to the standards of the company. This manual or system should be accessible and easy to
use. This manual has different names; some call it a Standard Operation Procedure (SOP) and others call it a Standard Procedure and Process (SPP). The following three informants believe that the process of all transactions should be documented in the SOP in order to facilitate people in performing their jobs.

“...Also, I believe you need to do a Standard Operation Procedure (SOP) for everything and, at the end of the day, you need to document the process of all transactions, because if any employee wants to know how he can perform any job he can easily get this information by looking into the SOP” (SE-GM-01-08).

“Also we have SOP (Standard Operation Procedures)...we have factories around the world and our business is we take raw materials and we produce a product such as shampoo or soap and we eventually sell it to the customer. But at the end of the day, we have to manage all the information from A-Z through the SOP system...Therefore, in order to avoid all these things we have applied an SOP system which contains content in all modules, such as HR, production, warehouses, IT, planning...Ah...in other words, all the information exists in this system” (U-M-01-03).

“...we have SPP (Standard Procedure and Process) and it includes all processes to do any job and it is easy to use, easy to follow and accessible for everybody...so right away you can get the information, you do not have to go and look for the information” (AACC-D-01-03).

From the quality assurance perspective, the Director of the Quality Assurance Department in AACC Company stated that organisations have to document the processes and steps for all transactions in order to sustain the quality of the work and for the provided service to be of the same quality everywhere, especially in international or global organisations, such as Pizza Hut.

“From my experience in quality management and ISO, I can tell you that you must document all processes and transactions...Ah, any work to be done has to have several steps in a row; you have to document all those steps in order to sustain the quality of the work...Ah, you can document in hardcopy or software or both...it depends on the company size and the number of branches, because if the company is of a small size and it has only one branch it will not need software, only hardcopy will do” (AACC-D-02-04).

Moreover, he stated that “knowledge comes in two types; facts which exist in books, references and documents. The second type is the experience which is the knowledge in the expert’s mind, and if you do not document this knowledge it will be lost, and therefore ISO tried to solve this issue by enforcing the company to document all processes so the provided service would be on the same level everywhere, such as Pizza Hut must provide the same service, same taste, same quality in all Pizza Hut branches everywhere because they follow the same processes to do anything everywhere” (AACC-D-02-02).
The following informant pointed out that they have a workflow manual containing all the processes of all transactions and it is available in hard and soft copy.

“We do have a workflow manual that demonstrates the process and steps to perform any job in our company and it is available as hard copy and soft copy” (TS-D-01-02).

6.4 Means of communication

A number of informants have stated that a well-structured communication system is a very vital factor for KM success, because its role is to ensure and facilitate the passing of knowledge to the appropriate people. There has to be direct communication and contact in order to share knowledge and find common solutions to problems. Examples of the best communication practices are meetings, newsletters, magazines, public lectures, presentations, direct phone calls, help desks and emails. The communication category can be sub-divided into four concepts as follows:

- Meetings/ networking
- Newsletters
- Public lectures and presentations.
- Directly-phone calls/help desk

6.4.1 Meetings and networking

The following informants mentioned that they all have frequent meetings for several purposes. First, it is a very good way to increase knowledge sharing between people. Second, it is a way to meet with the top management to present the latest developments. The third purpose is to discuss together how to solve problems or to share best practice. Finally, the main aim is to increase the level of networking.

“The method SG has adopted to increase sharing is a monthly meeting called ‘Learning Hour’. Every month, the company selects an expert person and asks him to choose a topic from his experience and present this topic within one hour by explaining briefly about his experience or about the topic” (SG-M-02-04).

“There are frequent meetings with top management in Airlines Co. in order to present the latest developments, problems, solutions, and suggestions about ways to prevent those problems from happening again” (Airlines-GM-01-13).
“There are weekly meetings called ‘Lesson Learnt Sessions’. After any project or during the project if any obstacles or problems happen, these are discussed together alongside ways of solving these problems” (HAC-D-01-06).

“Each consultant is required to present each quarter a best practice on KM from his experience” (F-GM-01-07).

“We do have benchmarking and we do have meetings every two months in order to share our knowledge and achievements and learn from each other... The main benefit of meeting is to increase the level of networking...networking is very important because you must know the people who are working in the same field and try to learn from them...Ah, almost 80% of problems in the same field are the same” (SE-GM-01-06).

6.4.2 Newsletters

The following informants pointed out that newsletters are considered a good channel of sharing knowledge. Organisations can publish various articles on different subjects related to the business sector, such as business, self-development, manufacturing and sales. Also, newsletters could contain news, events, essays, achievements and projects.

“There is a quarterly newsletter called the ‘Learning Letter’. The development and training department selects different articles on different subjects such as business, self-development, manufacturing, sales, or any subject related to SG business, place it in the learning letter, and distribute it to all staff” (SG-M-02-04).

“In STC, there are frequent newsletters, magazines and reports as follows:
• A weekly newsletter containing news, events, and articles on different subject related to STC’s business.
• A monthly magazine containing articles, essays and projects. They are all about STC, and are written by STC employees.
• An annual report containing the achievements and progress of the company” (STC-M-01-06).

“We do have other channels to obtain knowledge. For example...there are monthly brochures and magazines” (S-M-01-01).

6.4.3 Public lectures and presentations

One of the informants interviewed pointed out that public lectures and presentations are considered to be a channel for sharing knowledge.

“Employees in STC are given a public lecture and presentations to extend their knowledge and keep their skills up to date” (STC-M-01-05).
6.4.4 Directly-phone calls and help desks

One of the informants interviewed mentioned that help desks are a good method of communication to obtain knowledge.

“We do have other channels to obtain knowledge. For example, we have the help desk... Also there is a direct phone number for all departments available for all staff; any employee at any time can call and ask for any information” (S-M-01-01).

6.5 Critical Successful Factors (CSFs)

The study identified 14 important factors that aid the implementation of KM successfully. Also, all these CSFs are important and emerged from data.

6.5.1 Top management commitment and support

Many informants stated that top management commitment and support is the most important factor in order to achieve the success of KM implementation in any organisation. Top management are not only the initiator of implementing KM, but they provide all necessary budget, manpower, time and systems. In other words, they will provide whatever is necessary to ensure the success of KM. According to the following informant, the most important factor for the success of implementing KM is the full commitment of the top management to KM.

“The most important factor for the success of implementing KM in SG is the full commitment of the executive management and top management to KM and organisational learning. Any organisation is the shadow of its leadership; if the top management is not committed to ensuring the company becomes a knowledge company...nothing can work” (SG-GM-01-09).

As the following informant indicates, the most vital factor is that the top management fully supports and provides whatever is necessary to ensure the success of KM and organisational learning.

“The most vital factor for the success of implementing KM in SL is that the top management fully supports the objective, and provides whatever is necessary to ensure the success of KM and organisational learning” (SL-GM-01-06).

The following two informants explained that the top management have to believe in KM in order to provide the necessary financial and administrative support, and without top management support the implementation of KM will never be a success.
“To implement KM in an organisation it should come from the top down. Top management should believe in it...I mean believe in KM; they should see the long-term impact where the company becomes richer so they should have support for it” (H-M-01-12).

“First of all, the full support of the top management...full conviction of the top management over the needs of the company to implement KM, because if they are not convinced by the implementation of KM, you will face difficulty in its success and its application because if you have not got the necessary financial and administrative support from top management, you will never succeed” (AACC-D-01-09).

According to the following two informants, top management support is a very important factor because they provide all necessary funds, budget, employees, time and systems.

“Top management are the initiator of implementing KM and they provide all necessary funds, budget, employees, time and systems” (U-M-01-07).

Moreover, the informant emphasised that “...But there was enforcement from the top management to implement the new system by terminating the opposed staff of implementing the new system, because the aim of the company is to implement the new system and we will all apply it” (U-M-01-08).

“I believe KM implementation starts from the top management, who will provide all necessary budget and training and employees and time to ensure the successful implementation of KM” (TS-D-01-03).

The following two examples show how top management has a very important role in achieving successful KM implementation.

“In 2001, the CEO of the O-Corporation was the initiator, sponsor and promoter of implementing KM in the company. He provided sufficient financial resources and time to ensure the success of KM” (O-M-01-02).

“In 2003, the president of A-Company was the initiator, and provided sufficient financial and time resources” (A-M-01-01).

Moreover, “any company wanting to implement KM should start with full top management support, because they can not only provide the necessary funding and budget, but also the time needed to ensure the success of KM” (A-M-01-11).

6.5.2 Awareness campaigns

The second important factor is running an awareness campaign in order to get employees’ attention and to indicate the importance of implementing KM. Also, awareness campaigns aim to ask them to personally commit to the KM project. A
number of informants argued that any organisation intending to implement KM should educate their employees by explaining to them what KM is, the reasons why they need to apply KM and what the advantages of applying KM are. This campaign is supposed to have occurred before the organisation commences the implementation of KM in order to prepare the employees to accept it and use it. Otherwise, if the organisation doesn’t prepare the people before beginning to implement KM, it will struggle a great deal to convince them to change and accept it. This informant explained the importance of awareness campaigns in helping to educate people of the aims and benefits of implementing KM.

“…the awareness campaign is very important to create an environment that knows the benefits of implementing KM in the company, what KM is, what the aim of KM is, before you commence the implementation of KM, because when you begin implementing KM the people are already prepared to accept it and use it…Ah, because if you don’t prepare the people before beginning to implement KM you will face opposition from people” (AACC-D-01-10).

Another informant brought up the same point. He said that it is very important to raise the awareness of employees as to the needs and advantages of implementing KM in the organisation.

“We should convince them of the benefits of sharing knowledge by telling them sharing knowledge will increase our sales, which will increase bonuses for everyone, but if anyone keeps information for himself and he does not share it with others in the company, it will not achieve its goals and will not achieve the required profit and therefore there will be no bonuses for everyone, and to overcome this obstacle you need to convince employees by encouraging and promoting them, also by raising their awareness as to what the advantages of implementing KM in the company are...Ah...also you should train them on the system before applying it and this is what our company did in the process of implementing the KM system” (SC-M-01-07).

As the following informant argued, raising awareness of employees will help to prepare them to accept implementing KM and to create a sharing environment in the organisation.

“Oh...also the awareness of employees of the value and benefits of knowledge will help share knowledge across the company” (AACC-D-02-05).

Moreover, “To overcome this obstacle you have to create an environment by spreading awareness among employees of the role and importance of sharing knowledge and the benefits to the company and to the employee himself” (AACC-D-02-06).
The following two examples show the importance of performing awareness campaigns prior to commencing the implementation of KM and both examples indicate that both organisations struggled with implementing KM because they did not care about the human factor and they almost failed.

“At the start of implementing KM in the A-Company, the company made a very big mistake in focusing only on the IT side and not paying any attention to the human factor. The result was that KM implementation almost failed. The top management realised that and started a big campaign to make employees aware of the importance of implementing KM in the company, and what the benefits are for the company and the employees themselves. In 2003, the president of A-Company assigned the IT department to be in charge of a big campaign to introduce KM to the company’s employees and to raise their awareness about what the benefits of implementing KM are for the company and the employees themselves” (A-M-01-05).

“First of all, we have to begin with preparing the employees to accept the idea or the new system we intend to implement in the company. Ah...you should prepare them for change, you cannot change people overnight...Ah, you must convince them of the benefits of applying the new system rather than forcing them to use it and this is what we did at the beginning of implementing the new system in order to implement KM...Ah, we did not prepare the employees when we decided to implement the new system in the factory in Jeddah and we enforced them to use it and therefore we faced opposition and resistance from the employees and a lot of obstacles and challenges in the beginning of implementing the new system in Jeddah...Ah, we considered this to be a big lesson learnt that we must prepare and convince the employees before you begin to implement any new system, and what we did when we decided to implement the new system in the factory in Dammam...Ah, we started with preparing and convincing people of the new system...Ah, we told them what the advantages of implementing the new system are and what the disadvantages of not implementing the new system are, and that it will help them to do their job in a better way and also it will improve and develop them...Ah, we gave them examples of some companies that had implemented the new system and how it affected the performance of those companies...Ah...also, we sent a clear message that whether they like it or not, we are going to implement the new system and so on...Ah, and the result is the people are accepting of the idea of the new system and we have faced very little opposition and resistance from people to using the new system” (U-M-01-18).

One of the informants interviewed pointed out that the message from the top management was clear and that is they have to implement KM.

“Our general manager said that we have to implement KM in our organisation...this is our last chance...we can’t survive unless we implement KM. Unfortunately, we will have to shut it down if we don’t do something” (BNGF-M-01-08).
6.5.3 KM project teams

Many informants believe that there should be one team who is responsible for coordinating and obtaining knowledge from expert employees. The KM team should include experts from the human resources department, not only because they understand the regulations, policies and procedures of the company, but also because they can help to create a culture that encourages knowledge creation and sharing. Also, there should be experts from the IT department involved in the KM team because technology and the software system is considered to be the most important tool to support the collecting and sharing of knowledge. Also, they believe that the KM team should include employees from different departments of the organisation with different backgrounds.

This team should be managed by the Chief Knowledge Officer (CKO), who should know and understand the internal and external functions of the organisation in order to coordinate the core business knowledge effectively. Moreover, the main role of the CKO is to create a knowledge and teamwork culture by optimising knowledge and encouraging employees to share knowledge. According to the following informants, it is very important that prior to posting, any information in the system should be reviewed and validated by an expert team to avoid spreading any incorrect information among people, which will have a negative effect.

“There should be an expert team to review and approve any posted information because if we let anyone post any information and if someone posts the wrong information and this information spreads and becomes accessible for anyone, it will affect us negatively” (AACC-D-01-12).

“I believe the accuracy of inserted information in the system ensures the success of KM. Therefore, before any information is posted in the system it should go to specialist people to review and validate it and after that they disseminate this information by posts in the system” (SC-M-02-04).

“There is a special team called Team Space for each department; there is Team Space for HR, supply chain and etc...The roles of Team Space are to post information, or if someone has posted documents or information to check it and validate it and then they post it in the system” (SE-GM-01-09).

“... The HR department is in charge of uploading all the courses in the portal. Also, anyone who wants to share any documents or courses can upload it to the system, and then the training team in the HR department will review it and validate it then post it in the portal for everyone. Moreover, we have a special team called SAPT, which is the department responsible for coordinating the application of KM” (U-M-01-17).
Three of the informants interviewed pointed out that the KM team should include employees from both HR and IT departments and the CKO should report directly to the CEO. Moreover, the main role of this team is to encourage people to share their knowledge.

“The intranet is managed by the HR department in co-ordination with the information technology (IT) team” (SG-GM-01-04).

“Any organisation that wants to manage its knowledge successfully should have a special team to coordinate and manage the knowledge...Ah...this team should consist of employees from both HR and IT departments and...Ah...the CKO is the manager of this team, who should report directly to the CEO” (STC-M-01-08).

“The KM team should deal on a daily basis with knowledge: employees possessing knowledge and encouraging workers to share their knowledge. Both IT and HR departments must be members of the team” (BNGF-M-01-05).

This informant emphasised that the CKO should have authority to cross all organisational boundaries and he should report directly to the top management.

“I believe that the CKO should report directly to the top management and he should be able to cross all organisational boundaries. Moreover, I believe that the KM team should consist of an HR manager and an IT manager” (Airlines-GM-01-08).

According to this informant, the CKO has to understand the function of all departments in the organisation and he should enable the creation of a knowledge-sharing and teamwork culture in the organisation.

“The CKO must understand all the organisation's operations and communicate effectively with all departments in order to encourage the knowledge-sharing process. The roles of the CKO are creating a learning culture, encouraging employees to share their knowledge, encouraging teamwork, and encouraging learning interaction between employees. Actually, he should be the Head of Operations and both IT and HR managers should work under him” (HAC-D-01-16).

### 6.5.4 Organisational culture

Organisational culture is a very important factor in facilitating knowledge sharing and education. According to this informant, organisational culture is a very important factor in facilitating knowledge sharing between people.
“The second-most important factor is the organisational culture. If the organisation adopts knowledge and KM as its system, that will make sharing knowledge much easier – otherwise, everybody will hide knowledge and keep whatever he knows, without sharing anything” (SG-GM-01-05).

The following statements show the impacts of organisational culture on the implementation of KM, which are that it has a big impact on the speed of the learning curve of the employees, improves the efficiency of the employees, and increases the sharing of knowledge between people. Moreover, without a proper organisational culture, the implementation of KM will never succeed. The most important role of the organisational culture is to create an environment that encourages KM activities and knowledge sharing between people.

“SL’s learning system and culture have increased the speed of employee learning, as they acquired a lot of knowledge from the numerous courses, which in turn increased and improved employees’ efficiency” (BHC-GM-01-03).

“The company has adopted an open culture and people have to share information and knowledge and no one can hide knowledge because this is our culture” (HAC-D-01-05).

“The A-Company’s culture is helping and supporting sharing knowledge, the employees have no problem with sharing knowledge and they sometimes share knowledge while they drink coffee – ‘coffee chat’” (A-M-01-07).

“The organisation’s culture is very important. If the company does not believe in the value and importance of knowledge it will be hard to implement KM” (AACC-D-02-06).

One of the informants interviewed pointed out that his organisation’s culture is a knowledge-sharing culture and it supports KM activities.

“Organisational culture is what people do on daily basis, people’s attitude, how those people think and how they react. So it is very important to be able as an organisation to create a knowledge-sharing environment by supporting KM practices and activities through changing the organisational culture to a knowledge-sharing culture” (H-M-01-10).

This informant explained the importance of organisational culture and its role in creating the strategic framework of the company, its influence on structure, and on management style.

“In fact, organisational culture is a very important factor because its role is to establish the strategic framework of the organisation, affecting the organisation’s structure, HR management and the management style. Also, a
learning organisational culture makes KM implementation easier because it has a big role in motivating people and making them willing to share their knowledge in the organisation. Also, organisational culture helps to promote trust between people, teamwork culture, the involvement of people in decision making and it stimulates people to commit to KM practice through a rewards system” (F-GM-01-07).

6.5.5 Organisational structure

There are two managers who said that organisational structure has a big impact on the distribution of ideas and removes all barriers that inhibit the diffusion of ideas and allow them to flow across the whole organisation.

“The organisational structure enables the ideas to get into and across the organisation. It aids the diffusion of new ideas to flow across the whole organisation without the rejection of any new things or the rejection of change. The organisational structure is considered to be a framework that enables the effective distribution of ideas to the maximum number of people. Also, it influences the organisational culture by making the organisation willing to take risks and adopt new ideas” (F-GM-01-08).

“The organisational structure could either support and facilitate the implementation of KM in the organisation, or it could make it hard and difficult. It helps individuals to participate in sharing their ideas or knowledge with others. It creates a communication network between employees to enable the knowledge to flow across the organisation” (TS-D-01-05).

The following informant explained how organisational structure can make the diffusion of ideas difficult by rejecting new ideas if the organisational structure is not one which supports and encourages new ideas.

“Organisational structure could become a barrier for any new ideas. For example, I have tried to give an idea one time, two times, three times and every time it is rejected. I may not come up with any ideas anymore. There should be a way for ideas to go through more than one person as a barrier. Currently, the process of management is one person who can decide, and he approves yes or no” (H-M-01-09).

6.5.6 Teamwork

A number of informants argued that the principal of teamwork is a very effective tool to get people together to solve problems or to increase the level of trust among them and thus increase knowledge sharing. Some organisations measure the success of managers on the success of their teams and the success of an individual depends on his participation in teamwork. Some organisations measure the success of their employees
on the success of the organisation at achieving its goals and making profit, and thus everyone can benefit. According to the following informant, his company measures the success of managers or supervisors on team performance and success.

“The company has made the success of mangers or supervisors dependent on the success of their team. The performance management report includes a section about team development, which means that managers will need to share knowledge to develop the team” (SG-GM-01-08).

This informant explained that teamwork supports the growth of trust between people and thus knowledge sharing will increase. The policy of his organisation is that everyone will benefit if the organisation makes a profit.

“Trust is a very important factor of sharing knowledge and to increase the trust between employees in the same team or in the same department…each employee has to understand he is working with a group of staff and he and his group have the same goals and the most important goal is for the company to achieve its goals and make a profit….if the company makes a profit, that means there are bonuses for everyone…but if I don’t trust anyone and I don’t share my knowledge, the company will not achieve its goals and this will reflect on the performance of the company” (SC-M-02-05).

This informant emphasised that smart people share their knowledge, especially if they are working in a crowded branch. In retail businesses, employees have to share their knowledge with their colleagues because they have to work together as a team.

“Of course, in the banking business, smart people share their knowledge because you as an employee need help and assistance, especially if you are working in a crowded branch and there are a lot of customers. If you keep your knowledge to yourself and you do not share it with others, that means all customers will be served through you and you will be busy and under pressure all the time. Therefore, in retail businesses you have to share your knowledge with your colleagues in order to work together as a team, and the supervisors and managers are forced to share their knowledge with the staff because this is considered to be one of their obligations, and if they are not sharing their knowledge, the service in general will be affected...you want all of your staff to have the same knowledge and to do so I always share my knowledge with my staff” (S-M-01-05).

According to this informant, teamwork is the best method of making people share their knowledge, especially if the organisation associates the bonuses of each member of the team to the team performance.

“Teamwork is the best way to ensure knowledge sharing among the team, not only by putting the employees in teams and giving them tasks, but also by motivating the whole team by rewarding all the team members when they do the task given successfully. In this way, all team members will work together
and share their knowledge, and no one will hide any knowledge that can be helpful to do the task” (CBA-GM-01-05).

Another informant brought up the same point. He said his organisation is a global organisation and it has branches everywhere. The organisational strategy is encouraging people to work as a team not only on the branch level, but across the entire region.

“We have enhanced them with the teamwork...I mean we have made the annual bonus for all employees dependent on the performance of the entire region...Ah, here in Saudi Arabia we follow the regions of North Africa and the Middle East and our performance is associated with the performance of the entire region...Ah, therefore I’m concerned with all the factories in the region because if only one factory does not achieve the target that will affect the performance of the region and, thus, will affect us in Saudi Arabia...Ah, therefore we are very concerned not only with our performance in Jeddah, or the performance in Saudi Arabia, but with the performance of the entire region, and that makes us work as one team and provide help and support to each other...we have one goal, that is the entire region must achieve the required performance and profit” (U-M-01-20).

This informant mentioned that teamwork has a big impact on solving problems.

“We work as team. If we have a problem we work together and try to find out how we can solve this problem and what we should do to prevent this problem happening again. This is the aim of our teamwork: to work together to get the job done” (F-GM-01-09).

6.5.7 Technology

Many organisations use databases as a channel for transferring knowledge. These systems support the collection, storage, transference, and sharing of the organisation’s knowledge, such as operation data and other organisational documents. All informants agreed that an easy-to-use, accessible and efficient system is very important to support the success of implementing KM. According to the following informants, a user-friendly system encourages employees to make use of it, and thus helps knowledge sharing.

“An easy-to-use system is very important to support the success of implementing KM. If the system helps and supports any employee to obtain the desired information within five minutes, it will significantly improve organisational performance. Having an efficient system will facilitate the implementation of KM” (Airlines-GM-01-12).

“A standard and user-friendly web interface makes it easier to get information and solutions quickly and conveniently. The system should be easy to use, accessible and not complicated” (O-M-01-09).
“The system should be user-friendly in order to encourage employees to use it, which helps in the dissemination of knowledge. Such a system is a very important supportive factor that helps to disseminate, review, share, transfer, or document knowledge” (A-M-01-10).

The following two statements show how an easy-to-use system saves time and encourages people to use it.

“Efficient recording and an easy-to-use system. For example, we have an old system that has been used for over 15 years for private services and the idea of this system is to record and insert all information about all private customers. That means any private services employee has to record and insert everything about his customers, but it is a very old system and hard to use and it takes time. Therefore, private services employees cannot implement it perfectly because they have other tasks to do, but if the system is easy to use, such as our care system, employees like to use it and they insert and record everything in no time” (S-M-01-09).

“Actually, the new system is user-friendly and unlike the old system, which was difficult to use, and the new system saves our time...there is no wasting time...Ah...no wasting information. The system must be applicable, accessible, easy to use and easy to implement’ (U-M-01-08).

This informant explained how a user-friendly and accessible system can help top managers and middle managers to get the required information in no time in order to make a decision.

“...and of course the system should be user-friendly and accessible. I mean, each business leader can log into the system and get any information he is looking for, such as budget, spending, and he can see the financial situation of his department” (SE-GM-01-04).

Many organisations use database systems for posting, editing and storing reports, best practices, and all important documents.

“Our intranet is a web-based software tool on which every department at SG opens a session, and permits linkage, allowing employees to post knowledge and edit each other’s entries. Also, the intranet includes all SG’s daily reports, business reports, management reports and all important documents, such as best practices, methodologies and discussions on solving problems to be shared. It is considered a communication media between the different multi-national operations, and all employees can use it for sharing knowledge, learning, discussing issues and solving problems. All employees have to submit their daily report and do their work through the intranet” (SG-GM-01-03).

“The core KM initiative at M-Company is the knowledge base, which is intranet-based. Each employee can access, use and post knowledge. The type of knowledge entries that are posted and archived are daily reports, business
reports, management reports, presentation slides, best practice reports, success stories, methodologies and discussions on solving problems and all important documents related to the mineral mining domain” (M-M-01-03).

“We have a NARP system that links all the data in the company and everyone has to use it in order to obtain any information. All information related to the projects, administration, procurements and HR are accessible, and we have access to our vendors’ systems as well” (HAC-D-01-04).

One of the informants interviewed pointed out that his organisation’s website provides on-the-spot communication with experts at any time in order to solve problems.

“The technology system supports knowledge sharing. The company has a strong technical and operational support website called ‘In Touch Support’. It aims to provide real-time linkage with world-class experts and knowledge, delivering the latest and best problem-solving capabilities – anywhere, at any time. The company’s InTouchsupport.com KM tool improves field access to SL technology centres through the most advanced IT tools, 24 hours a day, seven days a week. Any employee can access the website and post knowledge or new ideas, and these will be sent to an expert committee that reviews and refines this knowledge, after which it will be posted on the web for everyone” (SL-GM-01-05).

6.5.8 Time

A number of informants stated that companies should allocate special time or extra time for each employee in order to post knowledge of best practice, and thus ensure the success of KM implementation.

“All employees are required to spend about 10-15% of their working time developing best practice KM value-adding activities” (F-GM-01-07).

“…we decided in our organisation that 80% of our employees’ time goes to whatever the work demands, and 20% of their time they can do any project they like that helps to improve the organisation” (H-M-01-10).

“We always have 20% of our time to spend on innovation. Actually, in our business we have a creative department in order to create ideas and perform an analysis for each project” (TS-D-01-01).

“To ensure the success of implementing KM, the company should allocate special time between half an hour to one hour everyday for each employee, in order for them to post knowledge or post best practice…Ah, if there is a will there is a way…Or, we could allocate this time as overtime for posting information…Ah, but before we do that we have to determine what knowledge is required to be posted or shared, not just any information” (AACC-D-01-11).
6.5.9 Roles of managers

The main roles of managers are planning and implementing the processes that help and support employees to share their knowledge and use KMS to post their knowledge. The following two informants explained the most important role of the manager is to motivate and develop the employees.

“But at the end of the day, when you see your top managers in any organisation the best managers are the managers who are able to motivate their staff and to develop them. If these people can’t develop their staff...Ah...part of that development is how they interact with them, how they share information with them...those are the best managers” (H-M-01-08).

“A good manager is one who can handle people, treats them well, encourages them, helps them and develops them, because then he can rely on them to do their work perfectly” (F-GM-01-11).

6.5.10 Reward and punishment systems

The following three managers emphasised that reward programmes are a very important factor in motivating and encouraging people to participate in KM and share their knowledge. The reward could be a promotion to a higher level with more influence and responsibility; a bonus or financial reward; or it could be any kind of recognition.

“There are employees who had participated and played a big role in implementing the KM project in the organisation, and they were promoted to higher positions and levels with more influence and responsibility. This kind of promotion has a big impact on people by encouraging them to participate and share their knowledge” (F-GM-01-10).

“By default, an employee who shares knowledge has more chance of being promoted and rewarded than an employee who doesn’t share his knowledge” (HAC-D-01-11).

“Therefore, you have to do intensive training and give clear direction: this is one of our goals and I want this system to be highly effective in order to support employees to perform their job in a better way and I believe it comes from how you can enforce it, and I believe it will be hard in the beginning but because this system will be very highly effective and will help them to perform their job in a better way, they will not resist for a long time, especially if you encourage them by giving them rewards or any kind of recognition and you convince them of the benefits of applying such a system and how it will help them to do their job” (S-M-01-10).
A number of informants said that there should be a punishment system beside the reward system. A clear message should be sent to all employees that everyone has to participate in this project and share his knowledge and in this way he will be promoted. Otherwise, those who are against implementing KM and who do not share their knowledge will be punished, either by the termination of their contract or by demoting them to a lower position and level with less influence and responsibility.

“...but there was enforcement from the top management to implement the new system by terminating the staff opposed to implementing the new system, because the aim of the company is to implement the new system and we must all apply it” (U-M-01-08).

“After creating this culture, we told people that if anyone doesn’t follow this culture, he will not be a part of this company. That makes the employees understand that if they don’t engage or cooperate in KM, they will be left behind” (HAC-D-01-09).

“There was an expert employee close to retirement, within two years. It was clear that he was not willing to implement KM and he did not put a lot of time and effort into this project. He liked the old system and the way the work used to be. He did not encourage himself to share his knowledge and he did not encourage his people to do so. Therefore, we tried several times to persuade him to change his mind and participate with KM but nothing happened. Thus, we forced him to retire early because we did not want him to negatively influence other people and we considered it as a message being sent to other employees who were not participating in a KM project and who will face the same fate. It is a clear message: either it can be my way, or the highway” (O-M-01-05).

6.5.11 Job security

Many informants have argued that job security is a very important factor and that organisations should reassure knowledge-possessing people by promising them they will never be abandoned, and their positions, value and salaries will never be decreased. They should understand that sharing knowledge will increase their value and the company will keep them because the success of the organisation depends on the success of its effective staff. Moreover, organisations should reward them and encourage them to continue sharing their knowledge.

“We should reassure knowledge-possessing employees that the company will not abandon them because they have shared their knowledge, but that sharing knowledge will increase their value and the company will keep them because the success of the company depends on the success of its effective staff” (SG-GM-01-07).
“Every company has to encourage and reassure their knowledge-possessing staff and experienced employees that the company will never abandon them, and that their positions, value and salaries will never be reduced, but in contrast, their value will increase if they share knowledge and it will be a good opportunity for them to be promoted to a higher position” (Airlines-GM-01-15).

“The company has to reassure knowledgeable employees that their positions and jobs will not be affected if they share their knowledge. The company should reward them and encourage them to continue sharing their knowledge” (Airlines-M-02-13).

“One of the most important factors is job security, which is an integral part of knowledge sharing. We need to connect job security to knowledge sharing in that if the employee shares his knowledge, the company will never abandon him, but the company will promote or reward him” (HAC-D-01-20).

“...To solve this problem we sat with them and we assured them we will never abandon them because they are excellent employees, but if they continued refusing to share their knowledge we would have to dismiss them from work” (U-M-01-15).

“Of course we have tried several ways to encourage our people. First, we assure them that they will not lose their job because the work needs them...We consider ourselves to have succeeded in reassuring expert employees and they started passing their knowledge on” (AACC-D-01-08).

“Therefore, job security is a very important issue, thus the company must...assure expert employees that the company will never abandon them if they share their knowledge” (AACC-D-02-05).

6.5.12 Involvement in decision making

One of the directors interviewed stated that employees should be involved in decision making in the things related to them. In this way, the loyalty and commitment of people will increase and they will support decisions.

“You cannot enforce people to share their knowledge; you have to persuade them of the importance of sharing knowledge, thus you have to share and involve them in decision making because once they are involved in taking decisions their loyalty and commitment will be high. But sometimes the top management takes decisions related to employees without asking and allowing employees to contribute themselves, thus the top management will face difficulty, opposition and unwillingness from employees to implement these decisions. You do not have to involve employees in strategic decisions, but at least involve them in decisions that affect them. But if you sit with them and persuade them of the benefits of implementing KM or any decision, and let them be involved in making decisions, they will support these decisions because they participated in taking these decisions, thus they will adopt these decisions and apply them” (AACC-D-02-06).
6.5.13 Job rotation

The following three informants pointed out that job rotation is very helpful in sharing knowledge. They do job rotation between people after a certain period of time and in this way employees have to hand over all knowledge they have to the person taking over their position.

“I think rotation is a serious aid to solving this problem...Ah, I mean that you do rotation for employees between departments for example every three years because if you do rotation between employees they will hand over the information. But you cannot do it in a small company that only has 20 employees and everyone does different functions, it will be difficult to do rotation between them” (SE-GM-01-08).

“Also, we do have job rotation every three years, which helps to share knowledge and we do not have so much of a problem when any employee is absent or leaves the company for any reason because there is always someone who will do his job” (SE-M-02-02).

“Moreover, there are expert employees that have a great deal of knowledge and if they leave work for any reason the performance of the company will be affected, and to solve this problem we do rotation...I mean, if there is an employee – let’s say employee A – who does certain tasks and there is another – employee B – who does certain tasks...we do rotation between them so employee A does the tasks of employee B and employee B does the tasks of employee A, and by this way they will exchange and share their knowledge” (SC-M-01-03).

6.5.14 Follow-ups and auditing

The following three statements show that organisations should do internal audits and follow-up with expert people to share their knowledge. Those people who are not participating in KM should be punished.

“There should be internal audits and follow-ups with expert people and those people who are not sharing their knowledge should be punished or demoted. The direct supervisor or the direct manager follows up with the expert to coach people” (AACC-D-01-08).

“But the most important thing is we concern ourselves with time. That means when the customer submits a complaint or suggestion or request, this request will be inserted into the system and it will give the concerned department a certain time to respond to this request, and if the concerned department does not respond within this time it will automatically go to senior management and the same thing happens – it should be replied to within a certain time otherwise it will escalate to executive management, and so on until it could be escalated to
the Chief Officer (CO). And in this way all the departments try to respond before it escalates to higher management” (S-M-01-02).

A number of informants argued that enforcing people to submit their daily report related to their job in the system is considered one of the following-up methods.

“All employees have to submit their daily report and do their work through the intranet” (SG-GM-01-03).

“It is mandatory for all employees to log in to the system and submit their daily report” (HAC-D-01-04).

“All employees have to access the knowledge portal on a daily basis in order to submit their report and share knowledge or post ideas” (A-M-01-10).

“It is very important that all employees submit their daily report or post any new beneficial knowledge on the system” (CBA-GM-01-03).

6.6 The impact of KM on OP

The final category of the axial coding process was the impact of KM on OP. This category is sub-divided into nine main concepts, as follows:

- Retaining a sustainable competitive advantage.
- Making information available, obtainable and accessible.
- Increasing employees’ learning curve, commitment and loyalty.
- Making decisions.
- Sustain critical knowledge of losing/ avoid losing mission critical knowledge.
- Lessons learnt and solve recurring issues and problems.
- Benchmarking.
- Improve organisation’s performance and efficiency
- The relationship between KM and OP.

6.6.1 Retaining a sustainable competitive advantage

Nowadays, the most important capital is intellectual capital and knowledge assets, because it helps organisations to manage knowledge effectively and thus retain a sustainable competitive advantage. A number of the informants stated that knowledge is the most important asset that any organisation needs to retain a sustainable competitive advantage. Here, three informants describe the importance of knowledge:
“The top management in SG considers knowledge to be power and the most important asset that the company needs to retain a sustainable competitive advantage, which no longer only depends on tangible assets, but is becoming increasingly dependent on knowledge and KM” (SG-GM-01-01).

“KM is very important and vital for the success of any company, especially airlines companies” (Airlines-GM-01-09).

“Knowledge is very important to be able to run and manage the business efficiently” (SC-M-01-01).

According to the following informant, knowledge is the key factor of any success, and KM has a big future in SA.

“Of course, knowledge is the foundation of any success and the deployment of knowledge is the key factor of achieving any success, and KM has a big future in SA because nowadays to be able to compete in the market you have to be able to get the knowledge, manage it and deploy it properly or otherwise you will lose to the competition” (AACC-D-01-14).

6.6.2 Making the information available, obtainable and accessible

The following informant stated that the process of obtaining knowledge before implanting KM in his organisation was very difficult and consumed a lot of time in finding the required knowledge. But after implementing KM, obtaining information became very easy and fast.

“It was very difficult to obtain the correct information before the implementation of the intranet system, but after the implementation of KM systems and the introduction of the intranet, obtaining information became very easy and fast. Moreover, all departments’ manuals and procedures can be accessed on the system by all employees” (SC-M-01-07).

The same idea is emphasised by the following two managers. The required information or knowledge could exist somewhere with someone, but no one knows about it. Thus it will be hard to find it directly and it will take time, which will negatively affect the work.

“All information is available but sometimes you can’t find it directly, but it is there with someone around you. Therefore, sharing knowledge is a very important factor of success in any organisation” (S-M-01-07).

“In other words, the knowledge could exist somewhere, but it could exist in the wrong place or it has not been used in the right way and this will negatively affect any department, any company and any sector” (AACC-D-01-01).
This informant emphasised the same point. He said that in the past before implementing KM it was very difficult to obtain the required knowledge and very time consuming to do so, but after implementing KM it has become much easier to obtain the required knowledge. He gave an example of when he wanted to make a production plan, it used to take him at least two days because he needed to collect information by contacting other people, but now all the required information is available and accessible in the system and he can create a production plan within an hour.

“It has become easier to obtain the information. In the past, to do a production plan it was taking me around two days at least, because in order to do the plan you should collect some information and to collect this information I had to email the warehouses to provide me with how much stock we have, and also I had to email the warehouses of finished goods to provide me with how many goods they have, and I also emailed or contacted the production manager to provide me with the quantity of raw materials, and this is considered to be time consuming. But now with the new system, I can get any information in no time and I can do the production plan within an hour” (U-M-01-09).

The following two statements show how a user-friendly system supports KM activities and saves time. In the first statement, the informant said that they have an old, unfriendly system that is hard to use. This system takes a lot of time to insert all the required information and thus most of the employees cannot implement the process well because they have other tasks to do. Also, he compares this system with their care system, which is user-friendly and all the employees like to use it and they insert and record everything in no time. In the second statement, the informant states that the new system is easy to use and saves time and it is unlike the old system, which is difficult to use and wastes time.

“Efficient recording and an easy-to-use system. For example, we have an old system that has been used for over 15 years for private services and the idea of this system is to record and insert all information about all private customers. That means any private services employee has to record and insert everything about his customers, but it is a very old system and hard to use and it takes time. Therefore, private services employees cannot implement it perfectly because they have other tasks to do, but if the system is easy to use, such as our care system, employees like to use it and they insert and record everything in no time” (S-M-01-09).

“Actually, the new system is user-friendly and unlike the old system, which was difficult to use, and the new system saves our time...there is no wasting time...Ah...no wasting information. The system must be applicable, accessible, easy to use and easy to implement” (U-M-01-08).
6.6.3 Increasing employees’ learning curve, commitment and loyalty

A number of informants argued that one of the benefits of implementing KM is that the learning curve of employees will increase rapidly and this will affect the learning process of the employees, especially newly hired workers, because it will be easy for them to obtain any information and they can learn how to perform the work and be ready to take on their jobs in a short period of time in such an organisation. In contrast, those who work in non-knowledge-based organisations need a long time to learn how to do the work and to be ready to take over their jobs because it is very difficult for them to obtain the required information and the learning curve is slow. Moreover, it was argued that a knowledge-based environment will make knowledge employees happy and wish to remain in the organisation because there is a great deal of learning involved. This will increase the employees’ commitment and loyalty, which will in turn increase the employees’ productivity, performance and morale.

The following informant described his experience when he worked for company SL for 12 years before moving to BHC Company three years ago as General Manager of the Saudi Arabian branch. He claimed that KM is helping to increase the learning curve of the employees. He learned a lot in a short period of time at SL Company, which is considered to be a knowledge company. But at BHC the learning curve is very slow and there are no training courses, which leads new employees to get lost for a period of time because it is very difficult to obtain information. Also, he said that in SL Company any employee can be a good manager within four years, but in BHC employees need more than 14 years just to become a manager.

“This in BHC there were no training courses at all, which caused new employees to get lost, not knowing what to do for a period of time. Even when employees became managers, they did not know how to be good managers.” Moreover, “it was very difficult to obtain information in BHC. In SL an employee can be a good manager within four years, but in BHC the employee needs more than 14 years just to be a manager” (BHC-GM-01-02).

He also stated: “A good website or intranet helps in the sharing of knowledge – such as the inTouchsupport.com website” (BHC-GM-01-10).

“I had acquired a great deal of useful knowledge not only from learning about the organisational system in SL, but also from the inTouchsupport.com KM website that helped me to be able to find any wanted knowledge on the spot, and enabled me to share my knowledge as well” (BHC-GM-01-01).
The following informant compared the situation before and after implementing KM in his organisation. He said that before implementing KM, it was very difficult to obtain information and knowledge and thus new employees needed at least three months to be ready to take over their jobs. But after implementing KM, the obtaining of knowledge is easy and the employees’ learning curve has increased in speed, thus new employees now only need ten working days to be ready to take over their jobs.

“In the past, before A-company implemented KM, new employees took around three months to be ready to take over the work because it was very difficult to obtain the required information and knowledge. But now, after the company has implemented KM, new employees can be ready within ten working days because obtaining knowledge has become very easy and clear, and all the information related to how to do the work from A to Z is documented” (A-M-01-09).

According to the following informant, the learning curve at his organisation is slow and it is very difficult to obtain knowledge because there is no KM. Also, new employees will learn whatever they are taught by the person who is coaching him. So, if the person who is coaching them teaches them something incorrect, that is what they will learn.

“New employees get lost and do not know what to do for a period of time. Furthermore, it is very difficult for them to obtain information” (BNGF-M-01-01).

“Also, the major problem we have – because we don’t have KM – is basically any new employee will do whatever he was taught by the person who was teaching him. So, if the person who was teaching him taught him something wrong, that’s what he is going to learn. But if you have documented and approved information then the information that you give him is solid and he can build it up from there” (BNGF-M-01-05).

The following informant explained the importance of the open door strategy and how good treatment from the top can encourage the work environment to operate as one family.

“Because the company is considerate of the staff and there is good treatment from the top management...Ah, the principle of the open door...Ah, any employee can easily meet the top management or the chief of the company in Saudi Arabia and discuss any issue or problem, and also the work environment is like we are one family. For example, if one day I’m not well or I have a problem and my manager asks what is wrong with me, he will try to help me to solve my problem...Ah, I have never called my manager telling him I’m sick or I have problem for him to tell me I have to go to the office. I feel we are like one family...Ah, also as long as you are working hard and achieving the required goals, you will be rewarded either by promotion, bonus or recognition.
I start working with U-company seven years ago as a supervisor, and now I’m Senior Manager of Customer Service in Saudi Arabia” (U-M-01-21).

The following informant emphasised that knowledge workers will be happy and wish to remain in knowledge organisations because the work environment is good and there is a lot of learning. The organisation will earn its employees’ commitment and loyalty.

“Knowledge workers will be happy and wish to remain in a knowledge organisation such as SG, because there is a lot of sharing of knowledge, learning, development and innovation. The work environment will be good in such an organisation, in which employees do extra work because they like what they are doing. Thus, the company will earn the loyalty and commitment of its employees, which in turn increases the productivity, performance and morale of employees. In the end, the company will achieve its goals and maximise profits” (SG-M-02-05).

The following three statements argue that KM has a big impact on employees’ learning curve, performance, morale and commitment.

“KM is effective at achieving improved service quality, increased revenue and increased speed of performance, and also KM has increased employee performance and increased employee morale and commitment” (SL-GM-01-06).

“KM not only helps to increase the performance and productivity of employees, and increase revenue, but it also helps to increase the learning curve of employees, thereby increasing employees’ morale and commitment” (BHC-GM-01-11).

“Well, it saves time, saves money, improves performance, and increases loyalty, because if you are an employee in the company and you feel that you can get any information when you want it besides whatever you need being there….that will increase your loyalty and improve you psychologically to work…Ah, and it gives you confidence in yourself and in your work” (AACC-D-01-13).

6.6.4 Making the best decisions

Many informants brought up the following point. They stated that it is very clear that there are a great deal of connections between making decisions and implementing KM. Making the right decision at the right time requires the correct information, facts and knowledge. Also they demonstrated that the real advantage of implementing KM is having the information available on hand, which makes taking the right decision much easier based on the right facts and information. Here, five informants describe the importance of having information available on hand in order
to make decisions. They said KM helps employees to make decisions and saves them time. Instead of employees wasting their time trying to find the required information, KM provides information, facts and knowledge more immediately. Thus, they can refer to and rely on the system and take a decision.

“It is very difficult to obtain the required knowledge in order to make a decision in a company with poor KM” (HAC-D-01-18).

“Also, any manager who wants to make a decision must have figures, facts and knowledge in order to make the right decision. In other words, KM helps managers to make the right decisions” (AACC-D-02-09).

“…also there are a lot of benefits, such as it helps make decisions, and increases performance and efficiency” (SC-M-02-03).

“The main benefit of KM is having the information available on hand. So instead of an employee wasting his time trying to find information relevant to the product or the service, if the information is on hand he can refer to the product and he can take a decision” (H-M-01-15).

“In other words, all information exists in report form and it is not raw data, it is information because it is in a standard format and a standard system and each business leader can easily get that information and make his decision...so, the benefits of KM are saving time and decision making” (SE-GM-01-05).

The following informant explained that KM helps people to make the right decisions based on the right facts and knowledge. It makes the information and facts easily available and accessible and thus it saves time. He said that in the past, it was very difficult and time consuming to obtain the required knowledge, but now he can get that information at the push of a button.

“The real advantage of KM is being able to take the right decision using the right facts and information and being able to get any information easily and in no time...so it will save time...in the past, before we applied KM, it was very difficult to get any information, such as if I wanted to know any information about my department’s budget, it was taking a long time because I should contact the financial department to provide me with this information or to provide me with a report...Ah...so it was taking a long time to get any important information. But now I can get any information that I want at the push of a button by just logging into the system and searching for the required information, and I can make decisions at the same time...Ah...for top management, they can find out how the work is running and they can make any decisions based on facts and valid information” (SE-M-02-04).

The following informant emphasised the same point. He said after his organisation implemented KM it became much easier for the top management to run the company...
effectively, especially for a global company. The top management at his office can get
the required information and can make a decision based on that information within no
time. Also, he compared the situation now with the past, before the organisation
implemented KM. He said in the past, top management used to send out Excel files to
the factories to fill in the required information and it could be filled in with the wrong
information or there may be misunderstandings over precisely what was required. That
caused a delay in the required report and thus the top management could not take a
decision or they had to delay making a decision.

“Also, the administration of all those factories around the world became much
easier for the top management. For example, the General Manager of shampoo
factories from his office in Singapore can check any information such as the
quantity of the production, productivity and any information of any factory
around the world. In the past, he was sending Excel files to the factories to fill
out, such as productivity or problems, and it could be filled in with wrong
information or there may have been a lack of understanding as to what is
precisely required, or sometimes there was a delay in the required report and
thus he could not take a decision or he had to delay his decision. But now he
can easily log into the system and review all the required information and he
can make a decision with no delay” (U-M-01-06).

In addition, “the new system helped us a lot in making decisions and helped the
top management in strategy development and decision making...for example,
when the revolution happened in Egypt at the beginning of last year we
enforced the closure of our factory over there for safety reasons and the top
management decided within half an hour that our factory in Jeddah should
cover the production of the Egypt factory after they checked the information
and made a new production plan, but if we were on the old system, the top
management would have needed at least two days to make that decision
because they would have needed to collect the data by sending emails or by
calling the people concerned in order to provide them with the required
information...Ah, they would take time to make a decision, but with the new
system everything...all the information exists in the system” (U-M-01-09).

The same point is emphasised by the following informant. He said that in the past, all
work had been recorded by Excel sheet, which was filled manually. It was time
consuming and a lot of mistakes occurred. Also, he said in the past it was difficult to
obtain required information and there were some decisions that had been made based on
incorrect information. But now it is very easy to obtain the required information and
making decisions is much easier and more accurate.

“In the past, everything was done by Excel spreadsheet, papers and files and it
was time consuming and there were a lot of mistakes that happened. Ah...also
every department had its own system and each system was separate from the
other systems and there was no link between all the systems...it was unprofessional...For example, there was a special system for the warehouse totally separate from the production system, and as a production manager I have a production line plan and I need to know how much raw material I have in the warehouse...In the past, I had to contact the warehouse manager to provide me with this information or I could prepare the production line for production but then find there was too little raw material to continue with the production plan because of misleading information and gaps in communication. Therefore, in order to avoid all these things we have applied an SOP system, which contains all modules such as HR, production, warehouses, IT, planning...Ah...in other words, all the information exists in this system...Ah...for example, if I want to make a production plan I can do a production plan based on the raw materials that exist in our warehouses; with just a click of a button I can know how much raw materials are in the warehouses...I mean, all the required information exists in the system and in this way there has become a transparency of information and transference of information...Ah...from my office in the headquarters I can know what the speed of the production line is, the waste of raw material and the factory production...Ah...this was the first stage of implementing KM in our company...we have linked all the departments with each other in the same country” (U-M-01-03).

### 6.6.5 Avoiding losing mission critical knowledge

Many informants argued that the most important advantage of KM implementation is transferring tacit knowledge to explicit knowledge, which helps to avoid losing mission critical knowledge. It is very vital to transfer the tacit knowledge of expert employees to explicit knowledge, because if those employees left the company for any reason, the company would then not lose their experience and know-how knowledge. According to the two following informants, their organisations have tried to transfer tacit knowledge to explicit knowledge by documenting all critical knowledge, so that if any employees left the company it would not affect the performance of the company. But if the organisation fails to do so and the expert people leave the company, all their knowledge will be lost. OP will be negatively affected because the new employee who takes over the job will struggle to obtain the knowledge to do his work.

“If the company failed to transfer their knowledge to explicit knowledge, and they moved from one department to another or retired, then the company would lose all their know-how knowledge and other values that have grown with that person” (SG-GM-01-02).

Moreover, “SG has tried to maximise the number of opportunities to transfer tacit knowledge to explicit knowledge in documents or in the system (intranet). So when people move to a new job or leave the company, SG will not lose their knowledge” (SG-GM-01-04).
Furthermore, “the company must try to ensure that the best people in the function are given responsibility and authority to really teach, learn, and coach the other people in the same function in other markets, to transfer the maximum possible tacit knowledge to explicit knowledge or to other people” (SG-GM-01-05).

“If the company failed to transfer tacit knowledge to explicit knowledge and the employees moved or retired from the company, the knowledge would travel out of the company. This would affect the performance of the company, because new employees taking over the job would struggle to obtain the knowledge of how to do the work” (Airlines-M-02-07).

The following informant brought the same point. He said his organisation has documented all procedures and information in order to transfer tacit knowledge to explicit knowledge and to make it available and accessible to everyone.

“STC has adopted the documentation of all procedures and information in order to transfer knowledge from tacit to explicit, and to allow this knowledge to be available to anyone in need of it, which in turn facilitates the transfer of work from one employee to another, or allows any employee to take over the job of the concerned employee who is absent” (STC-M-01-04).

The same idea is mentioned by the following two informants. They adopted KM in their organisations in order to never have to rely on one person so that if someone were to leave the company it would not affect OP.

“We have applied KM in our company because we don’t want to rely on people; we need to rely on systems. So, if someone considers leaving the company that will never affect the company’s performance” (HAC-D-01-18).

“In the banking business, the work never depends on one person because it is so built and the system is so built that it is impossible for the work to rely on one person, and if that person is not around the work will not be affected because our system is built to deal with the new hire of people and it is not hard to obtain the required knowledge to run the business and there is a process and a checklist and a manual for all transactions and it is available for everyone” (S-M-01-04).

According to this informant, the organisation will need to hire an external expert employee if an expert employee has left the organisation and there is no one qualified to take over the job.

“Ah...what happens in some companies is if an expert employee has left the company and there is no qualified employee to take over his job, the work will be affected. So, the only solution for this company is hiring an external expert employee with a high salary to do the job and that will be expensive for the company” (SE-M-02-02).
The same idea is mentioned from a different angle. He said the organisation will lose the knowledge of expert employees once they have left the organisation and this knowledge is considered to be the property of the company and, thus, it must be documented.

“In other words, there are some employees who have experience of more than 20 years, and if all this experience is not documented and saved, once they have left the work all of this experience and knowledge will go with them. And this knowledge that they have is considered to be the property of the company and thus this knowledge must be documented in order for it not to be lost by the company. So, everything must be documented and this is considered to be a basic pillar of quality assurance...Ah, if the knowledge is not documented, it will be difficult to inherit and transfer it from one generation to another, or even from one employee to another” (AACC-D-02-01).

6.6.6 Lessons learnt and solving recurring issues and problems

A number of informants argued that there is no doubt that sharing best practices and lessons learnt has a great deal of impact on OP because it helps to solve recurring problems and issues within a short period of time. Sharing best practices and lessons learnt has helped to reduce and avoid recurring problems by learning from mistakes that have happened before. Also, it helps to increase the speed of problem solving instead of reinventing the wheel each time. Therefore, sharing best practices helps organisations to save costs and time; avoid and reduce safety incidents; and improve performance and efficiency. As the following informants explain, KM has a big role in solving recurring problems within a short period of time by allowing the sharing of information on who has had the same problem before, so that they may be contacted to see how they solved the problem, instead of reinventing the wheel from the beginning. The organisation will save time and effort.

“KM has the advantage of helping to solve recurring issues and problems; instead of having to reinvent the wheel from the beginning, they can just search the intranet and check with the people who have had the same problem before and contact them to find out how they solved the problem. For example, certain problems have occurred in production or marketing or sales in Egypt around six months ago, and these same problems have happened again in Saudi Arabia. Instead of having to reinvent the wheel from the beginning, they can just search the intranet and check with the people who have had the same problem before and contact them to find out how they solved the problem” (SG-GM-01-04).

Moreover, “an intranet has the advantage of helping to solve recurring issues and problems. Instead of having to reinvent the wheel from the beginning, they
can just search the intranet and check with people who have had the same problem before and contact them to find out how they solved the problem” (SG-GM-01-04).

“The knowledge portal intranet is helping to solve recurring issues and problems. Instead of having to reinvent the wheel from the beginning, they can just search the intranet and check with the people who have had the same problem before and contact them to find out how they solved the problem. Because such lessons learnt are available for all employees, that will lead to a faster response and greater efficiency, savings and minimising of cost and time” (A-M-01-04).

“This system is helping us to solve recurring problems and issues by posting those problems and issues in the system, as well as how we can solve it...if there is a problem that occurred in a Jeddah factory and they solved it, they will post it in the system...so if it occurs again in another factory – for example our factory in Dubai...the first thing they will do is they will search the system and see if this problem has occurred before and if it has....they will find the solution to this problem...and in this way they save their time in trying to figure out how they can solve it. And for further information they can contact the concerned person who has solved this problem before, as his contact details are available in the system as well” (SC-M-01-01).

“KM started in the engineering department (core business) by using an intranet portal called Knowledge Way. This portal has the advantage of helping to solve recurring issues and problems. Instead of having to reinvent the wheel from the beginning, they can just search the intranet and check with the people who have had the same problem before and contact them to find out how they solved the problem” (A-M-01-04).

Three of the informants interviewed pointed out that sharing best practices and lessons learnt have helped to reduce and avoid recurring problems by learning from mistakes that have happened before.

“We do not need to design; what we do...we do deployment and analysis and we learn from our mistakes and problems, I mean lessons learnt” (SE-GM-01-06).

“...Also, we also have a best practice and lessons learnt manual, which includes all recurring problems, reasons and solutions and this is very important because the time and money spent the first time solving this problem means I should learn from this mistake and how to avoid it to not let it happen again and how to solve it if it does happen. I do not need to spend time to find out how I can solve it” (AACC-D-01-03).

“We do have branches and factories around the world and in order to not reinvent the wheel from the beginning we always try to learn from our mistakes, and therefore we have something called VLVS (Value Life Value Safety) and as well as that we have practice learning. For example, if an accident happens in our factory in Jeddah that led to a stop in production that
day and this factory had 12 production lines producing home care and personal care. So, that will affect us and we will lose a large amount of money due to there being no production...Ah...and in order to avoid this problem happening again we share the details of this accident in the form of one of the learning lessons, including the reasons for the accident, the solutions, how to avoid this happening again...Ah...we send this form to the safety coordinator and he has all safety manager contacts in all our factories around the world...Ah...so he will share it by email to all our factories around the world and then he will post it in the system. This is one practice of KM in our company, which is to share and deploy lessons learnt. Also, we do not have to reinvent the wheel from the beginning and therefore we have something in the system called One Point Lesson (OPL) and it includes all the recurring problems and issues and the cause, the solution, attached with pictures and the contact details of the person who solved the problem” (U-M-01-01).

The following informant pointed out that every consultant has to submit a comprehensive report after conducting a project. This report should include the requirements of the project, key solutions, and key lessons learnt, and consultant details and contacts.

“Every consultant is required to provide comprehensive feedback after conducting a project, such as closing a contract with a customer or solving a problem for a client, including the requirements of this project, key solutions, and key lessons learnt, and consultant details and contacts. Then, this document is sent to all employees working on similar tasks or projects. Moreover, it will be stored and indexed in the organisation’s knowledge library and any employee can access it and contact the consultant concerned for more details” (F-GM-01-06).

Another informant brought up the same point. He said project managers have to submit a full report after conducting a project. This report should include the problems, solutions, and lessons learnt and best practices. This report will be posted in the system after it has been reviewed and approved by the department manager.

“In our department, the biggest benefit is that after each project there are lessons learnt and each project manager has to write a report about...what he has learnt from this project. What are the problems that he faced? How did he solve those problems? What are the best practices? And other technical details and information....Ah...then he posts this report in the system, which goes to the department manager...he reads the report and after he approves the report it will be posted in the system for everyone...that will help to solve recurring problems within less time because if this problem occurs again we will know how we can solve it; we don’t have to start from the beginning and reinvent the wheel...that will save considerable time and effort” (SC-M-02-03).
This informant brought up the same idea. He said any problems that have occurred and been solved will be added to the database. If this problem happens again in the future, the employee concerned searches the database and locates the solution. In this way, the organisation saves time and effort.

“Within knowledge repository ownership, if the support engineer discovers a problem (bug) within a product when resolving a technical assistant request (TAR), he will send a request to the developers and programmers to correct it with a patch. A report will be generated and added to a database (the bug’s knowledge base) including the module, the version and all other details. If this problem happens again in the future, a support engineer can search the bug’s knowledge base and find the solution and close the TAR, saving effort and time” (O-M-01-08).

The following two informants explained their experience in their organisation, which is not implementing KM. They said that when recurring problems and issues happen, they need to reinvent the wheel from the beginning because there is no cooperation, no sharing of knowledge, and there are no reliable sources of know-how. That will cause the organisation to waste time and duplicate effort.

“In BHC, when recurring problems and issues happen, you need to reinvent the wheel from the beginning because there is no cooperation, no sharing of knowledge. Learning curves are very slow, and there are no reliable sources of know-how. For example, some problems have occurred before in Europe, and now they are occurring again in Saudi Arabia. The team in Saudi Arabia has to start from the beginning to try to find solutions to these problems. Sometimes, there are the same problems happening in two or more different locations at the same time, but no one knows about the other. Hence, it is causing the company to lose a lot of time and therefore a lot of money” (BHC-GM-01-03).

Moreover, “KM helps to increase the speed of solving problems through contact with those who have the know-how, or by surfing the intranet to see how the problem has been solved before” (BHC-GM-01-11).

“In BNGF, when recurring problems and issues take place, they need to reinvent the wheel from the beginning because there is no reliable source of know-how. Hence, the company loses a lot of time and therefore a lot of money” (BNGF-M-01-01).

6.6.7 Benchmarking

A number of the informants argued that benchmarking is an important component of KM, and plays a key role in OP. This informant argued that the main advantage of KM is benchmarking from different angles in order to enable the making of decisions.
Organisations need to benchmark themselves with competitors in order to answer the following questions: ‘Who are the competitors?’, ‘What are they doing?’, ‘What are the best and latest experiences?’, ‘What are the reasons for their progress and their development?’, and ‘What are the strengths and weaknesses of the organisation itself and its competitors?’. So the organisation will work to improve its performance to be able to rival its competitors. Also, he said organisations can benchmark between their branches, so if there is one branch that is performing better than the others, the organisation can determine the reasons for that and transfer best practice to other branches in order to improve their performance.

“KM is a benchmark, you don’t always redesign every thing...actually you see people or other competitors and you do benchmark...Ah, what are the best practices. In other words, you don’t need to redesign...you need to do market research and study to understand...Ah...Who are your comparatives? What are they doing? What are the best and latest experiences? And you develop it and improve it...Ah, you don’t need new knowledge unless you are designing a very special thing” (SE-GM-01-01).

Moreover, “...so it is very easy to benchmark and then make a decision...Okay, let me put it this way...Ah...the main benefit of KM is to benchmark from a different point of view in order to enable the making of decisions” (SE-GM-01-02).

In addition, “The benefit to generating a report is to benchmark your organisation with competitor companies, or to benchmark your branch against other branches if your company is an international company and it has a lot of branches...so you can benchmark your branch with others, and if they do better than you...Ah...you can contact the other branch manager and ask him for support and help in order to improve your branch performance. This is very important because if you don’t benchmark your company you will isolate yourself from the world and think you are the best. So each company needs to benchmark itself with other competitive companies and if there is another company performing better and making more profit you have to compare your company with those companies and you need to figure out the reason for their progress and their development. At the end of the day, if you always benchmark yourself...Ah...definitely your performance will get better and therefore the sharing of knowledge will increase” (SE-GM-01-05).

This informant brought up the same point. He said the main benefit of KM is to learn from each other and to remove all the barriers between the different departments, branches and factories within the same organisation. And thus everything becomes clear and obvious and this will make the work easier and encourage further development. The following example will show how benchmarking between branches or factories of the same organisation will return a great deal of improved performance for the organisation.
In addition, top management can determine which factory is best and which is worst and why, and thus he can exchange knowledge between them, such as by sending an expert from the best one to the other, in order to transfer knowledge and improve the performance of the worst one.

“Also we can now learn from each other and benchmark our productivity with others, such as we have a production line in the factory in Saudi Arabia and there is the same production line in the factory in Indonesia I can log into the system and I can see their productivity and benchmark my productivity with them and if I find that their productivity is higher than our productivity...Ah...I can check the reason for that and, for example, I found the reason is their changeover from one product to another takes less time than our changeover...I mean that each production line produces more than one product and when we change over production from one product to another product it takes time. For example, in my factory in Saudi Arabia the changeover time is eight hours, but the changeover time in the factory in Indonesia is three hours and that leads them to have better productivity than us...so I contacted them in order to find out how they conduct their changeovers and I learned from them and applied their practices in my factory in Jeddah...Ah...in this way I developed and improved our production and we have removed all the barriers between the factories and everything has become clear and obvious and this makes the job become easier and more developed” (U-M-01-05).

Moreover, “...Ah, also the General Manager can compare and benchmark the productivity of all his factories and he can figure out which factory is the worst and which one is the best...Ah...he can find out the reasons that make, for example, factory A the worst and make factory B the best...Ah, and he can exchange the knowledge between those two factories by sending expert people from factory B to factory A to coach them and teach them in order to improve the productivity in factory A” (U-M-01-06).

The following informant emphasised the same point that organisations need to benchmark themselves against competitors and determine their strengths and weaknesses and the reasons for them in order to learn and improve their performance to avoid losing their place in the market and sustain their competitive advantage.

“...But in order to document the technical knowledge there is something called best practice that could exist in the company or that you can attract from external sources or from other companies better than you and you can benchmark yourself and see which companies are better than you. Especially in the aviation sector, there is a best practice manual containing the best practice and lesson learnt from all airlines companies around the world. This manual includes experiences, events and incidents that have happened before and are documented to avoid them occurring again” (AACC-D-02-03).

In addition, he said “The most important thing is to benchmark your performance against other competitive companies and determine what is wrong
with your company or why they are better than you and try to learn and improve your performance so as not to lose your place in the market and ensure you can compete with others” (AACC-D-02-08).

The following informant pointed out that organisations need to measure their performance on a regular basis by using key performance indicators (KPI) in order to determine their strength and weakness points.

“You must have key performance indicators (KPI) and objectives to indicate that are you are on the right track and you should review your performance at the end of each year and try to do better next year and improve your performance. Therefore, in quality management anything you cannot measure means you cannot manage it” (AACC-D-02-10).

### 6.6.8 Improve OP and efficiency

Most of the informants argued that the most important impacts of KM on OP are increasing efficiency and effectiveness, reducing costs and capital expenditure, improving return investment, meeting customer needs and satisfaction, identifying new markets and market plans, and increasing profit and OP.

“SG has implemented KM in order to increase efficiency, be more effective, reduce costs, improve return on investment, increase speed, meet customer needs, identify new markets and increase profits” (SG-GM-01-02).

“SL’s real-time technology services and solutions enable customers to benefit from improved decision making anytime, anywhere by translating acquired data into useful information, and then transforming this information into knowledge, which in turn is used to enhance efficiency and productivity” (SL-GM-01-02).

Moreover, KM has the following benefits: “Increasing speed of production, increasing efficiency and reducing capital expenditure” (SL-GM-01-03).

“KM helped the company to improve decision making, marketing plans, product and service usage, and product development” (STC-M-01-02).

Furthermore, “STC strives to enhance customer-centric culture in all its business aspects and thus it has enabled the delivery of better service to more customers” (STC-M-01-03).

“The benefits of KM are an increase in customer satisfaction, a decrease in the discrepancy rate, an increase in performance and efficiency and an increase in profit” (Airlines-GM-01-10).

“Increased efficiency, increased profit, reduced costs, increased performance and competitive advantage for any company” (Airlines-M-02-06).
Moreover “KM helps us to transfer knowledge from one place to another. For example, if there are two production lines producing the same product in two different cities or even countries and let’s say the production line in city A has knowledge that helps to increase production, reduce costs and increase profits. The production line in the other city will never know about this knowledge unless there is KM” (Airlines-M-02-14).

In addition, “Not implementing KM in the company will definitely have an effect on company efficiency and performance” (Airlines-M-02-12).

“The support for O-Corporation products was originally local in each country. This reduced the efficiency and effectiveness of support staff time, minimised the utilisation of support staff experiences and capabilities, did not meet customer satisfaction and expectation, and increased costs and overheads. For example, if a customer had a problem in Saudi Arabia that could not be solved by the Saudi Arabian office, we had to contact the head office in the UK to resolve it, or if a customer had a problem after working hours, he had to wait until the office opening hours the next day” (O-M-01-01).

“KM has improved and increased the organisation’s performance and efficiency, increased production, increased the cycle of knowledge in the company and increased return investment”. Moreover, “KM increases the efficiency of the employees, increasing employee commitment” (A-M-01-12).

The following informant pointed out that implementing KM will increase the level of awareness and encourage a knowledge culture and this will improve performance and efficiency.

“There will be a lot of benefits. First, the awareness level and culture will be very high in the company and that will facilitate work being done in the proper way, and thus improve performance and efficiency. Also, it will reduce the time spent to perform the job and save resources and cost. For example, if you are a buyer in a company and you want to place an order to buy an item, but if you do not have the right figures – how much quantity you have in stock or how much you consume of this item per month – you will definitely make an inaccurate decision and you will buy the wrong quantity” (AACC-D-02-07).

The following informant highlighted that one of the benefits of KM is the company will not rely on one person, as anyone can do his job if he is not around and the work will not be affected by his absence.

“There are a lot of benefits, such as if an employee is not around...let’s say he is absent or he has a training course...whatever...he is not in that day...any other employee can do his job by logging into the system and obtaining all the required information. So the work will not be affected by any employee absence. Moreover, it increases efficiency, saves time and increases profit. It also increases employee efficiency and that is because they can easily find the
information, which saves their time and effort in searching for information” (SC-M-01-06).

The same point is emphasised by the next three managers. KM has a big role in solving recurring issues and problems and speeds up the rate of problem solving, improving lessons learnt, helping the company to foresee and avoid future problems, and saving time and money by eliminating the costs associated with duplicated effort and wasted time.

“KM has a lot of advantages, such as increasing the speed of solving problems through contact with sources of “know-how” or by surfing the intranet to see how the problem has been solved, and increasing revenue” (BNGF-M-01-03).

“KM has so many benefits, such as eliminating the costs associated with duplicated effort and wasted time; reducing risk; improving speed and quality of service; spurring innovation; and increasing value creation for the business” (F-GM-01-01).

“KM helps the company to find answers to most problems, increasing the speed of problem solving, improving lessons learnt, and helping the company to foresee and avoid future problems, saving time and money. Finally, KM is related to efficiency, and efficiency is related to performance” (HAC-D-01-14).

“KM facilitates the communication and sharing of knowledge among all departments in the company, which has made the sharing of information and knowledge flow freely across divisional boundaries” (M-M-01-05).

This informant stated that KM helps people to obtain information in a better and faster way, which facilitates and speeds up the work at the best quality and best efficiency.

“First of all, knowledge is power. It facilitates and speeds up the work at the best quality and best efficiency. It will help employees to obtain information in a better and faster way. The role of KM is to collect and organise knowledge related to the core business of the company and put that knowledge in one box, so that any employee can obtain the required knowledge at the right time” (S-M-01-11).

The following informant mentioned that KM is very important, especially for sectors where changes to and development of technology and knowledge is happening at an extremely fast rate.

“There is no doubt that KM has a lot of benefits, especially in some sectors where changes to and development of technology and knowledge is happening extremely quickly. Companies in those sectors have to be knowledgeable companies to be able to remain competitive” (CBA-GM-01-06).
6.6.9 The relationship between KM and OP

Most of the informants stated that there is a clear relationship between KM and OP, productivity and efficiency.

“There is a clear relationship between KM practices and organisational performance and productivity” (SG-M-02-05).

“KM is related to efficiency, and efficiency is related to company performance” (HAC-D-01-14).

“…KM has a big impact on our performance because our employees are happy with this environment and they like to share their knowledge and we can get information easily” (SE-M-02-04).

“Well, it saves time, saves money, improves performance” (AACC-D-01-13).

“...It increases the performance and efficiency of the organisation” (SC-M-01-06).

“We are considered to be a pioneer of this business in Saudi Arabia and now we are at the stage of expansion and we need to implement KM in our company because I believe that KM has a big role in solving problems, innovation and helping us to do good assessments of our staff, which will increase the efficiency and performance of our staff and therefore increase our company performance” (TS-D-01-02).

The following two examples will show the relationship between implementing KM and OP. The first example is a comparison between SL Company and BHC Company by the General Manager of the Saudi Arabian branch of BHC Company. The interviewee began by speaking about his experience in knowledge-based organisation SL Co., where he had previously worked for 12 years. He moved to non-knowledge-based organisation BHC Co. three years ago as General Manager of the Saudi Arabian branch. He believes that the successful implementation of KM in SL Company is the main reason that SL Company is the largest worldwide company in the oilfield services sector, and BHC is the third largest worldwide company in oilfield services. He claims that KM is helping to increase the learning curve of employees in SL Company, which is considered to be a knowledge company, and he had learned a lot in a short period of time while he was there. However, the learning curve is very slow in BHC and there are no training courses, which leads new employees to get lost for a period of time when they first join the company because it is very difficult to obtain information. Also, he said in SL
Company, any employee can be a good manager within four years, but in BHC employees need more than 14 years just to become managers.

“In BHC there were no training courses at all, which caused new employees to get lost, not knowing what to do for a period of time. Even when the employee became a manager, he did not know how to be a good manager. It was very difficult to obtain information in BHC. In SL, an employee can be a good manager within four years, but in BHC the employee needs more than 14 years just to be a manager” (BHC-GM-01-02).

Furthermore, “A good website or intranet helps in the sharing of knowledge – such as the inTouchsupport.com website” (BHC-GM-01-10).

In addition, “I had acquired a great deal of useful knowledge, not only from learning about the organisational system in SL, but also from the inTouchsupport.com KM website, which helped me to find any knowledge I wanted on the spot, and enabled me to share my knowledge as well” (BHC-GM-01-01).

“A very good example of this is SL and BHC companies – because of the successful implementation of KM, SL is the largest worldwide company in the oilfield services sector, with revenues of $22.7 billion in 2009; whereas BHC is the third largest worldwide company in oilfield services, with revenues of $5 billion in 2009” (BHC-GM-01-04).

The following informant argued that KM enables his organisation to double its productivity and decrease the manpower by half. To that end, it improved OP.

“…now, with the new system, I can get any information within no time and I can do the production plan within an hour...Ah, we had 460 employees and only six production lines in the factory in Jeddah, but now after implementing KM and the new system we have 214 employees and 13 production lines...I mean, we doubled our productivity and decreased the manpower by half...Ah, we have made the system more efficient, which has improved the efficiency of the staff and thus improved the performance of the company” (U-M-01-09).

6.7 Cross-case comparative analysis

This section presents a cross-case comparative analysis between the two types of organisations that participated in this study: knowledge-based and non-knowledge-based. There were 11 knowledge-based organisations (SG, SL, STC, HAC, F, A, S-Bank, CBA, U, SC, and O) and eight non-knowledge-based organisations (H-Bank, BHC, BNGF, Airlines Co., M, SE, AACC, and TS) participating in this study. Drucker (2001) states that the knowledge-intensive organisations are those which treat
knowledge as a core strategic resource and they manage their knowledge effectively by using KM. Moreover, Zack (2003:p.88) defined knowledge-based organisations as:

“Knowledge-based organisations (KBO) are usually considered to be those whose product or service is knowledge-intensive. The characteristics of a KBO, however, go beyond product to include process, purpose and perspective. Process refers to an organization’s knowledge based activities and processes. Purpose refers to its mission and strategy. Perspective refers to the worldview and culture that influences and constrains an organization’s decisions and actions. KBOs exhibit knowledge-intensive processes, purpose, and perspective, regardless of their product”.

Also, knowledge based organisation has been defined in Wikipedia site as:

“A knowledge organization is a management idea, describing an organization in which people use systems and processes to generate, transform, manage, use, and transfer knowledge-based products and services to achieve organizational goals. A knowledge organization also links past, present, and future by capturing and preserving knowledge in the past, sharing and mobilizing knowledge today, and Knowledge organizations can be viewed from a number of perspectives: their general nature, networks, behaviour, human dimensions, communications, intelligence, functions, and services”.

The researcher grouped participating companies into two groups, as previously mentioned. That helped the researcher to perform a comparative analysis across all companies, by considering all the companies in one group as one case study. Therefore, the researcher considered all companies participating in this study to be two case studies: knowledge-based and non-knowledge-based organisations. The aim of this comparison was to identify the similarities and differences between the two types of organisations and thus facilitate the determination of the impact of implementing KM on OP, as this was the main aim of conducting this study. Also, the comparative analysis aided the researcher in organising and representing the findings in a better way and to select the core categories that link all other main categories that developed through axial coding. Table 6.1 demonstrates the cross-case comparison and presents the differences and similarities between the two case studies. The two case studies are presented in columns, and the five developed categories presented in rows, further divided into concepts. The researcher used ticks to show the existence of similar concepts amongst companies and crosses to indicate a lack of similar concepts amongst companies.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Concepts</th>
<th>Knowledge-based organisation</th>
<th>Non knowledge-based organisations</th>
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<tr>
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<td></td>
<td>Lack of job security and trust</td>
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<td>√</td>
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<tr>
<td></td>
<td>Resistance to change</td>
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<td></td>
<td>Lack of time</td>
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<td>Poor variable and written communication</td>
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<td>Types of knowledge that are difficult to document</td>
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<tr>
<td>Organisational learning</td>
<td>Training program (teaching)</td>
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<td></td>
<td>Learning by doing (OJT)</td>
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<td>E-learning activities (Self learning)</td>
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<td></td>
<td>Investment in R&amp;D</td>
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<td></td>
<td>Knowledge worker recruitment</td>
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<td>SOP manual SOP</td>
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<td>Communication</td>
<td>Meetings and networking</td>
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<td>Newsletters</td>
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<td></td>
<td>Public lectures and presentations</td>
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<td>Directly-phone calls and help desks</td>
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<td>X</td>
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<tr>
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<td>Top management commitment and support</td>
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<td>KM project teams</td>
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<td>Organisational culture aids to creation of knowledge sharing culture</td>
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<td>Organisational structure supports deployment of knowledge and new ideas</td>
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<td>Teamwork culture</td>
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<td>Technology and user-friendly system aids knowledge - sharing activities</td>
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<td>Free time for knowledge sharing activities</td>
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<td></td>
<td>Managers encourage employees to share knowledge</td>
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<td></td>
<td>Reward and punishment systems</td>
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<td>Job security</td>
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<td>Involvement in decision making</td>
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<td></td>
<td>Job rotation</td>
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<td></td>
<td>Follow- ups and auditing</td>
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<td>X</td>
</tr>
<tr>
<td>Impacts of KM on OP</td>
<td>Retain a sustainable competitive advantages</td>
<td>√</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Making information available, obtainable and accessible</td>
<td>√</td>
<td>X</td>
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<tr>
<td></td>
<td>Increasing employees’ learning curve, commitment and loyalty</td>
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<td></td>
<td>Making better decisions based on required information in the shortest time</td>
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<td>Sustaining critical knowledge of losing and avoiding losing mission critical knowledge</td>
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<td>Lessons learnt and solve recurring issues and problems</td>
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<tr>
<td></td>
<td>Benchmarking</td>
<td>√</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Improving organisational performance and efficiency</td>
<td>√</td>
<td>X</td>
</tr>
</tbody>
</table>

Table 6.1: Comparative analysis
6.7.1 Barriers to KM

The study found that both types of organisation face several elements that are barriers to knowledge sharing. The most common challenge is the unwillingness of employees to participate in the new system – KMS – due to a number of reasons. People do not like sharing their knowledge because they believe that what they know is their knowledge and no one else has the right to this knowledge. Also, people like to keep their knowledge for themselves due to their belief that knowledge gives them power and value over their peers, and if they gave up this knowledge they would lose their power and value. Moreover, there are other reasons influencing the willingness of employees to share their knowledge, such as a lack of trust, resistance to change, lack of time, poor verbal and written communication, and the existence of types of knowledge that are difficult to document.

The knowledge-based organisations faced the above barriers during the implementation process of KM in their organisations, but they overcame those barriers by adopting several factors that helped them to change their culture to a knowledge culture. Those factors are represented in the following three categories: OL, means of communication, and CSFs. Those factors will be discussed in more detail in the following parts of this section. As for the non-knowledge-based organisations, they are still facing barriers to knowledge sharing and thus they have poor knowledge sharing between their employees and they are not actively encouraging a rise in the sharing of knowledge, which means in time they will lose mission critical knowledge and no lessons will be learnt, which will eventually affect negatively on OP.

6.7.2 Organisational learning

The study found that knowledge-based organisations are interested in creating the right environment for employees to learn and train, and there are several methods provided by those companies to encourage this, as follows: training courses (teaching); OJT; e-learning activities (self learning); and investment in R&D. These methods encourage and support employees to learn the required knowledge to perform their work more professionally and thus it will increase the learning curve of employees. Moreover, knowledge-based companies document all their processes of performing transactions in a SOP manual. In other words, if an employee needs to complete a task and he does not
know how to do it, he can learn the process from the SOP by following the procedure related to the required task. Also, these companies are very interested in recruiting knowledge workers in order to take advantage of their knowledge and experience.

However, the study found that some non-knowledge-based organisations adopt training courses and OJT to train their employees and some only adopt OJT. Therefore, the learning curve is very slow and most newly hired employees get lost and do not know what to do. Also, some of the non-knowledge-based organisations participating in this study adopted a SOP manual.

6.7.3 Means of communication

The knowledge-based organisations are very interested in using means of effective communication to ensure the transference of knowledge to all employees, and there are several ways they do this, such as through meetings, newsletters, public lectures, presentations, and help desks. However, non-knowledge-based organisations only adopt meetings as their main means of communication and sharing knowledge.

6.7.4 Critical successful factors (CSFs)

The study listed 14 CSFs for the effective implementation of KM. Those factors have been adopted by the 11 knowledge-based organisations that participated in the study and they include: top management commitment and support, awareness campaigns, KM project teams, organisational culture, organisational structure, teamwork, technology, time, the roles of managers, reward and punishment systems, reassuring knowledge possessing employees (job security), involvement in decision making, job rotation, and follow-ups and auditing. Moreover, CSFs have a significant influence on creating an appropriate environment that encourages and helps employees to adopt KM and participate in its activities and the dissemination of knowledge, and thus these factors affect positively on the willingness of employees to share their knowledge. On the other hand, non-knowledge-based organisations only adopt job rotation as their main means of transferring knowledge, and therefore knowledge-sharing activity is very poor in these organisations.
6.7.5 Impacts of KM on OP

There are eight main benefits achieved by knowledge-based organisations due to the implementation of KM, as follows: retaining a sustainable competitive advantage; making information available, obtainable and accessible; increasing employees’ learning curve, commitment and loyalty; making better decisions based on required information; sustaining critical knowledge of losing and avoiding losing mission critical knowledge; lessons learnt and solving recurring issues and problems; benchmarking; and thus improving OP and efficiency. In contrast, non-knowledge-based organisations suffer from losing mission critical knowledge, reinventing the wheel when recurring problems and issues occur, duplicating effort and wasting time, reducing employees’ loyalty and morale, and thus negatively affecting OP and competitive advantage. The impacts of KM on OP will be discussed in more detail in the next chapter.

6.8 Selection of core category for the research

The researcher continuously studied the data collected from the interviews and the five main categories that emerged through axial coding in order to select the core category. Corbin and Strauss (2008) state that the first step of the integration process is identifying the core category. Moreover, it has been found that the most important factor that influences the successful implementation of KM is employees’ willingness to participate in KM activities and share their knowledge. This implies that organisations that want to be knowledge-based through implementing KM activities need to ensure employees are willing to participate in the project, otherwise it will fail. The researcher labelled this category ‘employees’ willingness’ and he believes this can provide new insights into implementing KM successfully.

After the researcher studied the five main categories once again, he found the ‘employees’ willingness’ category has the highest potential for linking all the five main categories together. In brief, the unwillingness of employees to participate and share their knowledge is the largest barrier to implementing KM and all other barriers affect employees’ willingness. Moreover, the main aim of OL, good communication, and CSFs is to have a positive impact on employees’ willingness to participate in knowledge activities by encouraging them to do so and by facilitating the means of sharing. Then, high employee willingness to participate in knowledge activities leads to the successful
implementation of KM, which impacts positively on OP. In the next chapter, the researcher will discuss in further detail the core category and the links between it and other categories.

6.9 Conclusions

This chapter provided a detailed analysis of the qualitative data collected from the 24 interviews conducted in this study from 19 different companies within different sectors in order to enhance understanding, develop theory, and to overcome the risk of failing to collect reliable data. Moreover, it presented the findings of the axial coding process. Five main categories emerged from the data as a result of constant comparative analysis of open coding: (1) Barriers to KM, (2) OL, (3) Means of communication, (4) CSFs of KM implementation, and (5) impacts of KM on OP.

The first category is barriers to KM and it is sub-divided into six concepts: (1) knowledge is power – unwillingness of employees to share knowledge, (2) lack of job security and trust, (3) resistance to change, (4) lack of time and time consuming, (5) poor verbal and written communication, (6) types of knowledge that are difficult to document.

The most common barrier of KM is managing tacit knowledge so that people are willing to share and use it. People know that knowledge is power, and many people do not want to share what they know, as they think this helps them to keep a competitive advantage over their peers. In addition, increasing spending on IT will not necessarily lead to increased sharing and use of knowledge, because this also depends on the willingness of individuals to share and use tacit knowledge. Tacit knowledge only exists in people’s minds, and they cannot be forced to share and use this knowledge. In other words, KM implementation cannot be successful unless organisations can increase their employees’ trust and willingness to share and use tacit knowledge.

Another common barrier is lack of time. Most employees are overloaded and too busy with their daily work, so they have no time to participate in knowledge-sharing practices. Also, a number of informants posited that at the beginning of KM implementation in some organisations, it will be costly, particularly if those organisations need new systems; they will need to train their employees on how to use the new system.
Finally, the poor verbal and written communication skills of employees could cause some further potential barriers towards KM utilisation. Some informants highlighted there are types of knowledge that are difficult to document, such as technical knowledge, experience and skills. Also, in some departments or types of business it is difficult to record all knowledge and practice, due to there being hundreds of scenarios, such as in sales and service businesses and customer service.

The second category is OL, and it is sub-divided into six concepts: (1) training programmes (Teaching), (2) learning by doing (OJT), (3) e-learning activities (self learning), (4) investment in R&D, (5) knowledge worker recruitment, (6) SOP manual.

A number of informants agreed that OL is very important and it is considered to be the main goal of KM in that it helps the organisation to sustain a competitive advantage and to improve the employees’ performance and efficiency. OL encourages employees to learn by creating a good learning environment. Moreover, the study found that employees must be qualified through training and coaching to ensure the success of implementing KM. Also, every employee must be open to KM and have the willingness to develop and promote it himself. Many of the informants argued that it is very important to record the process of all transactions of the business in a certain manual or system in order to sustain the quality of the job and support people on how to perform their job according to the standards of the company. This manual or system should be accessible and easy to use.

The third category is means of communication and it is sub-divided into four concepts: (1) meetings/networking, (2) newsletters, (3) public lectures and presentations, (4) direct phone calls/help desks. The study found that a well-structured communication system is a very vital factor for KM success because its role is to ensure and facilitate the passing of knowledge to the appropriate people. There has to be direct communication and contact in order to share knowledge and find common solutions to problems. Examples of the best communication practices are meetings, newsletters, magazines, public lectures, presentations, direct phone calls, help desks and emails.

The fourth category is CSFs of KM implementation and it is sub-divided into 14 concepts: (1) top management commitment and support, (2) awareness campaigns, (3) KM project team, (4) organisational culture, (5) organisational structure, (6) teamwork,
The study found that there are several factors for effective KM implementation. First, top management commitment and support is the most important CSF for effective KM implementation. The second factor is awareness campaigns, which should be performed in order to get employees’ attention, to indicate the importance of implementing KM and to ask them to personally commit to the project.

The third factor is KM project teams. Many informants believe that there should be one team who is responsible for coordinating and obtaining knowledge from expert’s employees. The KM team should include experts from the human resources department, not only because they understand the regulations, policies and procedures of the company, but also because they can help to create a culture that encourages knowledge creation and sharing. Fourth, having a knowledge culture is one of the CSFs of KM implementation. The role of organisational culture is creating an environment that encourages KM activities and knowledge sharing between people. Fifth, the organisational structure must facilitate communication between employees and motivate teamwork. The study found that organisational structure has an impact on the distribution of ideas and removes all barriers that inhibit the diffusion of ideas, allowing them to flow across the whole organisation. Sixth, a number of informants said that the principal of teamwork is a very effective tool to get people together to solve problems or to increase the level of trust among them, and thus increase knowledge sharing.

Seventh, a supporting system, such as an intranet, must be easy to use and have all the necessary functions. Employees must be able to easily locate specific information by searching the knowledge base, which saves employee time, and therefore company expenditure. Eighth, the study found that to ensure the success of implementing KM, special time or extra time for each employee should be allocated for them to post knowledge or best practice. Ninth, managers must plan and implement processes and structures that encourage employees and teams to share and use organisational knowledge.
Furthermore, there are some techniques which can be used to encourage and motivate employees to share their knowledge, such as applying a reward system linked to promotion or bonuses. The company should reassure expert employees that the company will not abandon them because they have shared their knowledge, but that this activity will in fact increase their value and the company will keep them on because the success of the company derives from the success and effectiveness of its staff. Also, the study found that employees should be involved in making decisions about the things that are related to them. In this way, the loyalty and commitment of people will increase and they will support the decisions that are made. Moreover, job rotation is a great deal of help in sharing knowledge. Job rotation is conducted between people after a certain, regular period of time, and in this way employees have to hand over all the knowledge they have about their job to another person. Finally, the organisations should do internal audits and follow-up with expert people to share their knowledge. Those people who are not participating in KM should be punished.

The fifth category is impacts of KM on OP. There are eight main benefits achieved by knowledge-based organisations due to the implementation of KM, as follows: retaining a sustainable competitive advantage; making information available, obtainable and accessible; increasing employees’ learning curve, commitment and loyalty; making better decisions based on required information; sustaining critical knowledge of losing and avoiding losing mission critical knowledge; lessons learnt and solving recurring issues and problems; benchmarking; and thus improving OP and efficiency. Most informants stated that there is a clear relationship between KM and OP, productivity and efficiency.

This chapter presented a cross-case comparative analysis between the two types of organisations that participated in this study: knowledge-based and non-knowledge-based. The researcher grouped participating companies into these two groups in order to aid the researcher in his comparative analysis across companies. The aims of this comparison are to identify the similarities and differences between the two types of organisations, and thus facilitate the determination of the impact of implementing KM on OP. It also helps the researcher to organise and represent the findings in a better way and to select the core categories that link all other main categories that developed through axial coding.
The researcher found that the most important factor that influences the success of implementing KM is employees’ willingness to participate in KM activities and share their knowledge. This category was labelled ‘employees’ willingness’. Moreover, the employees’ willingness category was found to be the highest potential category for linking all five other categories together. In the next chapter, the researcher will discuss in detail the core category and the links between it and other categories. Moreover, the next chapter will discuss the relationship between KM and OP in more detail. Therefore, the discussion of the findings in this chapter will describe and explain how the successful implantation of KM in each organisation is dependent on employees’ willingness to participate in knowledge activities.
Chapter 7 Discussion of Findings

7.1 Introduction

This chapter presents the final stage of analysis and provides a detailed discussion of the findings derived from open, axial and selective coding of the qualitative data collected. The five main categories that developed from the collected data are: barriers to KM; OL; means of communication; CSFs of KM implementation; and the impacts of KM on OP. Employees’ willingness was selected as the core category in Chapter Six, as it is linked to all five main categories. Also, this study shows that the willingness of employees to participate and share their knowledge differs depending on the knowledge-type of organisations and the work environment. This implies that employees’ willingness varies between knowledge-based and non-knowledge-based organisations. Thus, this chapter demonstrates the difference in employees’ willingness between knowledge-based and non-knowledge based-organisations by comparing employees’ sharing behaviour, barriers to sharing, OL, means of communication, and the CSFs that affect employees’ willingness by encouraging them to participate and share their knowledge. Next, this chapter presents how this phenomenon affects the success of implementing KM and thus the impacts of successful KM implementation on OP.

Moreover, the findings of this research are examined in the light of existing studies in the field in order to support the conclusions drawn. The final part of this chapter presents the models developed from this study, which represent the findings of the research.

7.2 Interpretation of major research finding: employees’ willingness

This section will discuss the final level of coding focused on integrating categories in order to produce theory by linking categories to each other and linking main categories to the core category. The selective coding process ends when theoretical saturation is reached. The core category selection is ‘employees’ willingness’. Most of the existing studies in this field are based on content analysis of the process of implementing KM and the CSFs of doing so, and rarely is there any attempt to analyse the affect of employees’ willingness to participate in KM. Therefore, this study not only demonstrates the most important factors affecting the willingness of employees to
participate in KM activities and share their knowledge, but also develops theoretical insights that differ from those already existent in this field. Accordingly, the study’s findings are new and relevant.

The main distinguishing factor of this study compared with previous studies in the field is that it found employees’ willingness to be the most important factor affecting the successful implementation of KM. Unless employees are willing to participate and share their knowledge, the implementation of KM inevitably ends in failure. The explanations behind this phenomenon emerged from the data collected from the grounded theory study and the researcher’s proposition is based on the empirical evidence in the previous chapters, which presented that the key to implementing KM successfully is the willingness of employees to participate and share their knowledge. Cabrera et al. (2006) argue that intentional actions that depend on human beings’ nature is the main factor affecting employees’ knowledge-sharing behaviour, and thus sharing behaviour is associated with and depends on employee’s willingness to participate.

### 7.2.1 The impact of sharing barriers on employees willingness

This study found that the most common challenge of KM implementation is the unwillingness of employees to participate in KM due a number of reasons: the belief that knowledge is power; lack of trust; resistance to change; lack of time; poor verbal and written communication; and the existence of types of knowledge that are difficult to document. All of these reasons negatively affect employees’ willingness to participate and share their knowledge. Also, the study found that employees do not share their knowledge because they believe that knowledge makes them valuable and powerful.

“The biggest challenge facing the implementation of KM is creating willingness among employees to share, manage and transfer knowledge, because there are a great number of employees who do not like to share their knowledge because they consider it to be a source of power and they do not want to give up this source to anyone else. They want to keep knowledge for themselves to keep their power and value” (A-M-01-14).

“Most companies consider KM pure IT and this is not true. IT is only one side of KM, and it is not everything. Therefore, those companies only focus on the IT aspect and they do not pay attention to other factors such as human factors, which has led to the failure of implementing KM in those companies. Any company can have a fancy IT infrastructure, but it could be useless without the human factor – in other words, without the willingness of employees to use it and post their knowledge on it” (A-M-01-06).
Oliveira et al (2012, p.17) argue that “the implementation of KM projects continues to be a challenge for many organisations”. A major challenge facing organisations is the management of tacit knowledge through processes attempting to convince, coerce, direct or otherwise get individuals within organisations to share their knowledge (Gupta et al 2000; Leseure and Brookes 2004). Pawlowski and Bick (2012) state that some individual traits cause potential barriers to KM utilisation, such as fear about job security; lack of awareness of KM; lack of time and interaction; poor verbal and written communication and interpersonal skills; age, gender, and cultural differences; lack of networking skills; and lack of trust. Moreover, a recent empirical study performed by Santos et al (2012) – conducted via semi-structured interviews with subjects from six countries: Portugal, Germany, Spain, UK, Finland, and France – listed the following main knowledge-sharing challenges: codification processes; unsuitable IT systems; lack of employees’ initiative and strategy; and, finally, lack of time and resources.

Moreover, individuals realise that knowledge is power (Santos et al 2012) and this attitude is considered to be a barrier prohibiting the development of knowledge sharing in UK police forces (Seba and Rowley 2010). Also, this attitude inhibits knowledge sharing (Reid and Bardzki 2004). In addition, an individual may not be willing to share his tacit knowledge because it may involve risks to him, such as a loss of competitive advantage over peers (Stenmark 2002). This competition between employees is also considered to be a barrier to knowledge sharing (Oliverira et al 2012), but in many companies, people feel that promotion depends on their expertise, and not on the extent to which they share their knowledge and help others (Alavi and Leidner 2001).

This study found that the second factor that negatively affects employees’ willingness to share is a lack of trust. People are unwilling to share their knowledge because they are afraid to do so in case they are abandoned by the company or lose their value and power. Therefore, job security and the sense of fear of losing the job is consider one of the obstacles of sharing knowledge and thus that affect negatively on the process of implementing KM.

“Some of them do not like to share their knowledge and I believe the reason for this is lack of trust in the company not to abandon them if they give up their knowledge; or in their colleagues not to take over their position. Trust is a very important factor of sharing knowledge” (SC-M-02-05).

In line with this, Reid and Bardzki (2004) found that a lack of trust between employees led to the inhibition of knowledge sharing. Several studies have revealed that trust
among individuals has a positive impact on knowledge sharing (Al-Alawi et al. 2007; Rhodes et al. 2008). Pawlowski and Bick (2012) state that individual traits cause potential barriers towards KM utilisation, such as fears about job security and a lack of trust. Santos et al. (2012) point out that difficulty in building trust is one of the barriers to knowledge sharing. Also, they argue that strong trust and commitment is considered to be one of the main factors that encourages employees to share their knowledge with their peers, leading to successful knowledge-sharing activities.

Furthermore, it has been found that one of the biggest challenges is employees’ resistance to change or to using any new system, and this is one of the most common barriers to the implementation of a KM project. Employees resist change for different reasons, such as that they do not like the concept of change, or they have been performing their work in the same routine every day for decades and they do not want to change now. Some employees also do not like learning anything new, including learning how to use a new system.

“When you apply any new system the biggest challenge is resistance to change, and if you can overcome this obstacle it will be launched, and if you can’t overcome this obstacle it will not be launched” (S-M-01-10).

“There was a difficulty at the beginning of implementing KM due to the staff not accepting the new system because they said the new system was complicated and takes too much time to learn how to deal with it...Actually, the new system is user-friendly and is unlike the old system, which was difficult to use, but the people were used to the old system and they did not like to change, and this was the biggest challenge of KM implementation” (U-M-01-08).

Moreover, lack of time is another common barrier has been found in this study. Most employees are overloaded and too busy with their daily work to participate in knowledge-sharing practices. The following statement shows how this time issue could be a barrier to sharing knowledge and could negatively affect employees’ willingness to participate and share their knowledge.

“The lack of time…Ah…there are some employees willing to share their knowledge, but they are very loaded and they have no time to coach other people and they said ‘either I do my work or I will be an instructor’” (AACC-D-01-05).

With the same context, time is considered to be one of the main difficulties of sharing tacit knowledge, as this sharing requires a long time to be spent on post-project reviews and on formulating lessons learnt from these projects (Leseure and Brookes 2004; Yang 2009). Pawlowski and Bick (2012) state that individual traits cause potential barriers
towards KM deployment, such as a lack of time and interaction. Santos et al (2012) state that lack of time and resources is considered to be one of the knowledge-sharing barriers because documenting knowledge in an appropriate format takes a lot of time.

Also, the study found that it is necessary to create a common, understandable language and format to achieve strong and clear communication due there are some employees willing to share knowledge but they have poor communication skills with others.

“Some employees are willing to share their knowledge and have no problem with the time issue, but they do not know how to communicate with people or do not communicate well” (H-M-01-08).

Pawlowski and Bick (2012) state that the poor verbal and written communication and interpersonal skills of an individual could cause potential barriers towards KM utilisation. Santos et al (2012) state that poor communication skills and keeping information in a format that is not understandable for all employees are considered to be some of the barriers to effective communication.

Furthermore, the study found that there are types of knowledge that are difficult to document, such as technical knowledge, experience and skills. Also, in some departments or types of business it is hard to record all knowledge and practice due to there being hundreds of scenarios to record, such as in sales and service businesses and customer service. Moreover, the difficulty of documenting this knowledge negatively affects employees’ willingness to participate and share their knowledge.

“The company size and sector...some companies find it very difficult to document knowledge, especially technical knowledge. For example, an NDT specialist or any technical expert finds it very difficult to put his experience in words and document it and no one can learn from reading how to do the technical things; it should be through practical application and exercises for technical things in order to pass on the knowledge” (AACC-D-01-07).

Santos et al (2012) state that there is a kind of knowledge which is acquired from interaction with others, solving problems and experience, which makes it difficult to codify and thus document, because it only exists and is maintained in the expert employee’s mind.
7.2.2 The impact of OL on employees’ willingness

This subsection will discuss how OL helps employees and encourages them to participate in knowledge-sharing activities. Moreover, the researcher found that OL is very important and it is considered to be the main goal of KM. It helps organisations to sustain a competitive advantage and improve employees’ performance and efficiency. OL also encourages employees to learn by creating a good learning environment.

“SG considers OL to be the goal of KM through distribution and application of knowledge, and it helps the organisation to achieve its goals and to sustain a competitive advantage” (SG-M-02-01).

Ellis et al (2012) argue that organisations that use OL intensively have a better knowledge-sharing environment and thus the amount of knowledge shared is higher. Also, they have better organisational outcomes. Moreover, organisations intending to implement KM projects need to create a learning environment that encourages their staff to share their knowledge (Senge 2006). Moreover, King (2008) illustrates that OL is complementary to KM and therefore OP is improved by the development of better KM and OL. Whereas OL is concerned with the process, KM is concerned with the content of the knowledge that a company acquires through such processes, and finally uses. In other words, OL is considered to be the goal of KM through motivating the creation, distribution and application of knowledge; helping the organisation to achieve its goals. From this point of view, OL is considered to be one of the most important ways that organisations can utilise knowledge. Moreover, Handy (1995) asserts that OL could mean either what the organisation has learnt, or how the organisation has encouraged its employees to learn. Pemberon and Stonehouse (2000) argue that the key factors for any organisation to sustain a competitive advantage and to achieve their objectives and goals are continuing OL and improving KM. So, organisations need to have a good learning environment in order to improve their knowledge productivity (Stam 2007).

It has been found in this study that training programmes are considered to be one of the best methods of sharing knowledge. Knowledge-based organisations are adopting training programmes in order to train people and give them a great deal of important knowledge that improves employees’ performance. Also, organisations participating in the study said training programmes should be designed specifically for different job requirements, or the skills required to perform individual jobs efficiently. In addition,
the main aim of adopting training programmes is to transfer and share knowledge between people and to improve employees’ performance and efficiency. This will increase employees’ willingness to participate and share their knowledge.

“SG has adopted different ways to ensure that knowledge has been transferred and shared among all employees by adopting a special training programme to train employees and give them a great deal of important knowledge that improves employees’ performance and efficiency” (SG-M-02-01).

“Training and coaching is a very important factor, or way to encourage people to share their knowledge” (AACC-D-02-05).

Lehner and Haas (2010) state that the personal development of employees is considered to be a critical successful factor, which means that organisations must qualify their employees through training and coaching in order to secure KM success. Moreover, Mayfield (2010) emphasises that organisations should encourage their employees to share their knowledge and experience with others through training and the promise of rewards. Furthermore, Davenport and Prusak (1998) state that the channel through which knowledge is delivered should be through structured media – for example, books and documents – as well as through person-to-person contact, ranging from conversations to practical training. Also, Oliveira et al (2012) state that whenever a new IT tool is introduced, workers have to receive training.

Nonaka and Takeuchi (1995) state that an individual can acquire tacit knowledge through observation, imitation and practice rather than verbal and written instructions. One type of OL is learning by doing. A number of informants argued that the OJT is the best way to transfer and share knowledge, and it is the best way to learn something new, especially technical issues and ‘functional training’. They all emphasised that organisations must provide all new employees OJT by selecting the most experienced employees to coach new employees for a period of time, until those employees are ready to do their jobs.

“The most experienced employees are selected to coach new employees for a period of time, until those employees are ready to do their jobs” (Airlines-GM-01-04).

“...the best way to share knowledge is OJT in order to train the newly hired employees” (SE-GM-01-08).

Also, it has been found that knowledge-based organisations provide their staff with e-learning websites that consist of a considerable number of courses and presentations.
This kind of learning is a self-learning technique and its success depends on the willingness of people to improve and develop themselves and learn something new.

“Also, another practice of KM in our company, we do have something called e-learning in our company portal...Ah...the e-learning includes a lot of courses and presentations and the aim of this is instead of each employee learning and training individually, we have united our training, because at the end of the day we all have the same purpose, which is to reach customer satisfaction....And your manager can see the training courses that you have passed and he can see what training courses you need in order to improve your performance or to promote you” (U-M-01-02).

Moreover, it was also found that the learning curve of employees is very high in knowledge-based organisations compared with that of employees in non-knowledge-based organisations, which is very slow. Employees in knowledge-based organisations can easily find the information they require and can learn how to perform their work in a short period of time because all the information they need is on hand.

“KM not only helps to increase the performance and productivity of employees, and increase revenue, but it also helps to increase the learning curve of employees, thereby increasing employees’ morale and commitment” (BHC-GM-01-11).

On the other hand, employees in non-knowledge-based organisations need a long time to learn how to perform their jobs because it is very difficult to obtain the required information. According to the following participant, the learning curve in these organisations is slow and it is very difficult to obtain knowledge because there is no KM. Also, new employees will learn whatever they are taught by the person coaching them. So, if the person who is coaching them teaches them something incorrect, that is what they will learn.

“New employees get lost and do not know what to do for a period of time. Furthermore, it is very difficult for them to obtain information” (BNGF-M-01-01).

“Also, the major problem we have – because we don’t have KM – is basically any new employee will do whatever he was taught by the person who was teaching him. So, if the person who was teaching him taught him something wrong, that's what he is going to learn. But if you have documented and approved information then the information that you give him is solid and he can build it up from there” (BNGF-M-01-05).

The following informant describes his experience of working for a knowledge-based organisation (SL Company) for 12 years and then moving to a non-knowledge-based organisation (BHC Company) three years ago as General Manager of the Saudi Arabian branch. He claimed that KM helps to increase the learning curve of employees and he
compared the situation between both the organisations for which he has worked. He stated that the learning curve in SL Company was very high and he had learned a lot in a short period of time. However, the learning curve at BHC Company is very slow and there are no training courses, which has led new employees to get lost for a period of time because it is very difficult to obtain information. Also, he said that in SL Company any employee can be a good manager within four years, but in BHC employees need more than 14 years just to become a manager. Davenport (2008) states that good managers are knowledge workers who should be able to inform their team about the broader picture. Managers need to be great facilitators of the social networks which characterise the best performers. They should not only work as knowledge workers, but they should also hunt and recruit knowledge workers, remove any obstacles that may affect their creativity and productivity negatively, and create a suitable work environment for them. It is very important that organisations must focus on all the other factors those have an impact on work performance.

In addition, “I had acquired a great deal of useful knowledge, not only from learning about the organisational system in SL, but also from the inTouchsupport.com KM website, which helped me to find any knowledge I wanted on the spot, and enabled me to share my knowledge as well” (BHC-GM-01-01). In addition, he said, “In BHC there were no training courses at all, which caused new employees to get lost, not knowing what to do for a period of time. Even when the employee became a manager, he did not know how to be a good manager. It was very difficult to obtain information in BHC. In SL, an employee can be a good manager within four years, but in BHC the employee needs more than 14 years just to be a manager” (BHC-GM-01-02).

Parallel to this viewpoint, the following informant compared the situation before and after implementing KM in his organisation. He said that before implementing KM it was very difficult to obtain information and knowledge and thus new employees needed at least three months to be ready to take over their work unsupervised, but after implementing KM, obtaining knowledge became easy and the learning curve of employees increased. Thus, new employees only need ten working days to be ready to take over their jobs.

“In the past, before A-company implemented KM, new employees took around three months to be ready to take over the work because it was very difficult to obtain the required information and knowledge. But now, after the company has implementing KM, new employees can be ready within ten working days because obtaining knowledge has become very easy and clear, and all the information related to how to do the work from A to Z is documented” (A-M-01-09).
Therefore, knowledge workers will be happy and wish to remain in knowledge-based organisations due to the good working environment and the range of opportunities for further learning. The organisation will earn employees’ commitment and loyalty, and thus employees’ willingness to commit to KM.

“Knowledge workers will be happy and wish to remain in a knowledge organisation such as SG, because there is a lot of sharing of knowledge, learning, development and innovation. The work environment will be good in such an organisation, in which employees do extra work because they like what they are doing. Thus, the company will earn the loyalty and commitment of its employees, which in turn increases the productivity, performance and morale of employees. In the end, the company will achieve its goals and maximise profits” (SG-M-02-05).

### 7.2.3 The impact of means of communication on employees’ willingness

The study found that a well-structured communication system is a very vital factor for KM success because its role is to ensure and facilitate the passing of knowledge to the appropriate people. There has to be direct communication and contact in order for knowledge to be shared and common solutions to problems to be found. Examples of the best communication practices highlighted by participating experts in this study are meetings, newsletters, magazines, public lectures, presentations, direct phone calls, help desks and emails.

It has been found that having frequent meetings is very effective means of communication for several purposes. Firstly, it is a very good way to increase knowledge sharing between people. Secondly, it provides an opportunity to meet with top management to present the latest developments. The third purpose is to discuss together how to solve problems or to share best practice. Finally, the main aim is to increase the level of networking throughout the organisation. Therefore, providing good means of communication supports and facilitates KM activities and especially knowledge-sharing activities. Thus it will increase employees’ willingness to share their knowledge.

“We do have meetings every two months in order to share our knowledge and achievements and learn from each other... The main benefit of meeting is to increase the level of networking...networking is very important because you must know the people who are working in the same field and try to learn from them...Ah, almost 80% of problems in the same field are the same” (SE-GM-01-06).
Lehner and Haas (2010) state that there should be a direct social relationship and communication between employees, such as regular face-to-face meetings in order to facilitate contact between them to find common solutions to problems and to encourage knowledge exchange. Communication is a very important issue and supports sharing knowledge through meetings, internet messenger, newsletters and e-mail (Oliveira et al 2012). It is very important that organisations establish a common communication language that is understandable by all workforces for successful knowledge-sharing activities (Santos et al 2012). Moreover, there are some techniques for increasing the tacit knowledge-sharing of employees. For example, holding meetings is a method that supports collaborative knowledge sharing. It is helpful to discuss ideas and issues across organisational levels and introduce responsive actions. This will enhance the learning cycle due to direct employee interactions and immediate feedback. Organisations should not only set clear meeting objectives, but top management should also support meetings in order for them to be successful (Mayfield 2010). Santos et al (2012) state that it is critical to have regular meetings in order to overcome difficulties in building trust between employees.

7.2.4 The impact of CSFs on employees’ willingness

This subsection identifies the impact of CSFs on employees’ willingness. First of all, it has been found that top management commitment and support is the most important factor in achieving the success of KM implementation in any organisation. Top management are not only the initiator of KM implementation, but they are also the providers of all necessary budget, manpower, time and systems. In other words, they will provide whatever is necessary to ensure the success of KM.

"Top management are the initiator of implementing KM and they provide all necessary funds, budget, employees, time and systems” (U-M-01-07).

Parallel to this viewpoint, Lehner and Haas (2010) argue that top management are the initiator, sponsor and promoter of KM and they provide sufficient financial resources and time. Oliveira et al (2012) state that top management support and commitment is an important factor in KM implementation because the role of top management is to define priorities and support KM activities. Moreover, Neto et al (2009) state that the role of top management is to create an environment that stimulates the creation and sharing of organisational knowledge.
The second factor affecting employees’ willingness to participate in KM is the provision of awareness campaigns designed to get employees’ attention, to indicate the importance of implementing KM, and to ask them to personally commit to the project. A number of informants argued that any organisation intending to implement KM should educate their employees by explaining to them what KM is, the reasons why KM needs to be applied, and what the advantages of applying KM are. This campaign should be run before the organisation commences with the implementation of KM in order to prepare the employees to accept and use it. If the organisation fails to prepare people before beginning to implement KM it will struggle to convince them to change and accept it. This informant explained the importance of awareness campaigns in increasing the willingness of employees to participate by educating people with the aims and benefits of implementing KM.

“The awareness campaign is very important to create an environment that knows the benefits of implementing KM in the company, what KM is, what the aim of KM is, before you commence the implementation of KM, because when you begin implementing KM the people are already prepared to accept it and use it…Ah, because if you don’t prepare the people before beginning to implement KM you will face opposition from people” (AACC-D-01-10).

The following example will show the importance of performing awareness campaigns prior to the commencement of KM implementation in order to increase employees’ willingness. The example indicates that the organisation struggled with implementing KM because they did not give enough thought to the human factor and the willingness of people to participate. As a result, their KM project almost failed.

“At the start of implementing KM in the A-Company, the company made a very big mistake in focusing only on the IT side and not paying any attention to the human factor. The result was that KM implementation almost failed. The top management realised that and started a big campaign to make employees aware of the importance of implementing KM in the company, and what the benefits are for the company and the employees themselves. In 2003, the president of A-Company assigned the IT department to be in charge of a big campaign to introduce KM to the company’s employees and to raise their awareness about what the benefits of implementing KM are for the company and the employees themselves” (A-M-01-05).

Moreover, Turner and Minonne (2010) state that the most important factor affecting KM is the human factor. Many organisations have introduced new technology before motivating and sensitising their employees to use the new system, which leads to failure in the implementation of such systems.
The third factor has been found that there should be one team who is responsible for coordinating and obtaining knowledge from expert employees. The KM team should include experts from the human resources department, not only because they understand the regulations, policies and procedures of the company, but also because they can help to create a culture that encourages knowledge creation and sharing. Also, there should be experts from the IT department involved in the KM team because technology and the software system is considered to be the most important tool to support the collecting and sharing of knowledge. Also, they believe that the KM team should include employees from different departments of the organisation with different backgrounds. This team should be managed by the CKO, who should know and understand the internal and external functions of the organisation in order to coordinate the core business knowledge effectively. Moreover, the main role of the CKO is to create a knowledge and teamwork culture by optimising knowledge and encouraging employees to share knowledge. Moreover, it is very important that prior to posting, any information in the system should be reviewed and validated by an expert team to avoid spreading any incorrect information among people, which will have a negative effect.

“Any organisation that wants to manage its knowledge successfully should have a special team to coordinate and manage the knowledge...Ah...this team should consist of employees from both HR and IT departments and...Ah...the CKO is the manager of this team, who should report directly to the CEO” (STC-M-01-08).

“The KM team should deal on a daily basis with knowledge: employees possessing knowledge and encouraging workers to share their knowledge. Both IT and HR departments must be members of the team” (BNGF-M-01-05).

In line with this, Neto et al (2009, p.598) state that the “constitution of a multidisciplinary committee for the governance of the KM process with direct report to the organisation’s CEO is vital”. Top management being in full support of KM and the creation of a KM committee is crucial for implementing KM successfully. A KM committee should consist of employees from different departments of the organisation, each with different backgrounds. The role of this team is “to involve and delegate the organisation as a whole, communicating that it’s everyone’s responsibility to make KM a successful process in the organisation” (Neto et al 2009, p.598). Moreover, Oliveira et al (2012) state that creating a KM team from personnel of all departments and having a human resource manager lead it is an important factor for implementing KM successfully in any firm. Groff and Jones (2003) identify the role of CKO as being the
person responsible for the development of a learning culture, managerial and organisational change, and the facilitation of the creation and implementation of KM initiatives.

Moreover, the study found that KM-promoting organisational cultures increase employees’ learning curve and willingness to share their knowledge. Without such a culture, the implementation of KM will never be a success. The main role of a knowledge-promoting organisational culture is the creation of an environment that encourages KM activities and knowledge-sharing between employees.

“In fact, organisational culture is a very important factor because its role is to establish the strategic framework of the organisation, affecting the organisation's structure, HR management and the management style. Also, a learning organisational culture makes KM implementation easier because it has a big role in motivating people and making them willing to share their knowledge in the organisation. Also, organisational culture helps to promote trust between people, teamwork culture, the involvement of people in decision making and it stimulates people to commit to KM practice through a rewards system” (F-GM-01-07).

With the same context, Oliveira et al (2012) state that organisational culture is considered to be a fundamental factor in the successful implementation of KM. The role of organisational culture is to create a knowledge-sharing culture; and for some organisations creating this culture is a problem that needs to be solved. Deverell and Burnett (2012) argue that organisational culture is a very important factor that influences the effectiveness of knowledge sharing because it has a large effect on people, who are considered to be the most vital component of knowledge sharing. Gupta et al (2000) state that organisational culture has a significant role in facilitating sharing, learning, and the creation of knowledge. Santos et al (2012) argue that it is not only necessary to have an excellent IT infrastructure to improve and promote knowledge sharing between individuals, but also to create a knowledge-sharing culture by training and motivating people to work in the right way. Al-Alawi et al (2007) state that organisational culture issues such as trust, leadership, communication and reward systems have a positive impact on the sharing of knowledge between employees. Gupta et al (2000) argue that KM requires a major change in organisational culture and a commitment at all levels of an organisation to make it workable. Companies need to harness knowledge in order to stay competitive and to become innovative. Davenport et al (1998) state that promoting the right organisational culture facilitates the implementation of KM through establishing a shared organisational vision, teamwork,
involvement of employees in decision making and the provision of a rewards system. Donate and Guadamillas (2010) argue that organisational culture can either facilitate the effectiveness of the implementation of KM or make it very difficult. One of the most difficult challenges is establishing a KM culture in an organisation (Turner and Minonne 2010; Oliverira et al 2012).

Therefore, a healthy corporate culture is very important for the successful implementation of KM because bureaucratic cultures experience a lack of trust and suffer from a failure to reward and promote cooperation and collaboration. So, KM organisations not only need to develop a healthy environment and culture that supports the objectives of implementing KM, but they should also consider improving their culture as a top priority in their organisation’s strategic plans (Liebowitz 1999) because a strong culture has a set of core values and key principles that are understood and followed by all employees (Jones 2006). Organisational culture is very important to enhance OP and competitiveness and it is seen to be the core factor affecting employees’ perceptions, motivation, morale, and satisfaction (Cameron and Quinn 2006).

The fifth factor of CSFs is the organisational structure. The main role of organisational structure is to facilitate the distribution of ideas and remove all barriers that inhibit the diffusion of ideas, allowing them to flow across the whole organisation. Employees’ willingness to participate and share their knowledge will increase in such an organisational structure.

“The organisational structure enables the ideas to get into and across the organisation. It aids the diffusion of new ideas to flow across the whole organisation without the rejection of any new things or the rejection of change. The organisational structure is considered to be a framework that enables the effective distribution of ideas to the maximum number of people. Also, it influences the organisational culture by making the organisation willing to take risks and adopt new ideas” (F-GM-01-08).

The same idea is emphasised by Oliveira et al (2012). He states that the role of organisational structure is enabling horizontal communication (preventing hierarchical impediments); motivating teamwork; making sharing part of the daily routine of employees; and integrating the different departments of the organisation. Moreover, Becerra-Fernandez et al (2004) argue that structural capital includes the things that remain when employees leave the workplace, such as databases, customer files, software, manuals, trademarks, and organisational structures.
Sixth, it has been found that the principal of teamwork is a very effective tool to get people together to solve problems or to increase the level of trust among them, which will, in turn, increase knowledge sharing. Knowledge-based organisations make the success of their employees dependent on the success of the organisation by introducing provisions to ensure everyone receives a bonus if the company achieves its goals and makes a profit. Teamwork is one of the best methods of encouraging people to share their knowledge, especially if the organisation associates the bonus of each member of the team to the performance of the whole team.

“Teamwork is the best way to ensure knowledge sharing among the team, not only by putting the employees in teams and giving them tasks, but also by motivating the whole team by rewarding all the team members when they do the task given successfully. In this way, all team members will work together and share their knowledge, and no one will hide any knowledge that can be helpful to do the task” (CBA-GM-01-05).

Moreover, the study found that all knowledge-based organisations participated in this study use databases as a channel for transferring knowledge. These systems support the collection, storage, transference, and sharing of the organisation’s knowledge, such as operation data and other organisational documents. Also, it was found that an easy-to-use, accessible and efficient system is very important to support the success of implementing KM, as this encourages employees to use it, thus positively influencing the sharing of knowledge.

“The system should be user-friendly in order to encourage employees to use it, which helps in the dissemination of knowledge. Such a system is a very important supportive factor that helps to disseminate, review, share, transfer, or document knowledge” (A-M-01-10).

There are some techniques for increasing the sharing of tacit knowledge among employees. For example, web-based and software tools are considered to be one of the most effective ways for employees to share their experience by posting information (Mayfield 2010). Moreover, Santos et al (2012) point out that the KMS should be user-friendly in order to encourage people to use it. Otherwise, people will be reluctant to use it because it will be considered time consuming to insert data or information. Lehner and Haas (2010) state that organisations must be able to guarantee the usability of their systems, which means that systems must be user-friendly and include all necessary functions. Therefore, the guidelines for the content of the system must be clearly defined and there must be a verification process to ensure the quality and actuality of available knowledge. Furthermore, Beynon Davies (2002 cited in Sedmak 2010, p.5)
defines IT as “‘any technology used to support information gathering, processing, distribution and use’. IT has become an essential aspect of most businesses and many organisations cannot function without it”. In addition, Sedmak (2010) also states that organisations should maximise their effort to ensure the success of implementing systems because if they do not implement it well they will lose the millions spent on them. Moreover, Oliveira et al (2012) state that technology is very important in KM projects, especially in large organisations, and it is better to use existing technology systems rather than implement new ones in order to avoid and minimise employees’ resistance to change. However, if a new IT system is introduced, employees must receive training.

The study emphasised that in order to increase employees’ willingness to participate and share their knowledge, knowledge-based organisations must allocate special time or extra time for each employee that should be used to post knowledge or best practice on the KMS.

“To ensure the success of implementing KM, the company should allocate special time between half an hour to one hour everyday for each employee, in order for them to post knowledge or post best practice…Ah, if there is a will there is a way…Or, we could allocate this time as overtime for posting information” (AACC-D-01-11).

“All employees are required to spend about 10-15% of their working time developing best practice KM value-adding activities” (F-GM-01-07).

Parallel to these viewpoints, Oliveira et al (2012) interviewed 17 top managers using semi-structured interviews and found that employees participate in KM activities only during extra time outside of their normal working hours.

The ninth critical successful factor discovered was the importance of managers’ roles, which is not only to motivate and develop employees, but also to make people willing to participate and share their knowledge.

“But at the end of the day, when you see your top managers in any organisation the best managers are the managers who are able to motivate their staff and to develop them. If these people can’t develop their staff...Ah...part of that development is how they interact with them, how they share information with them...those are the best managers” (H-M-01-08).

“A good manager is one who can handle people, treats them well, encourages them, helps them and develops them, because then he can rely on them to do their work perfectly” (F-GM-01-11).
The same point is emphasised by Cross and Baird (2000). He stated that managers must plan and implement the processes and structures that encourage employees and teams to share and use organisational knowledge. Also, Santos et al (2012) argue that project managers must then deploy the same knowledge among their team members in a short period of time.

Moreover, it has been found that the implementation of a rewards programme is a very important factor in motivating and encouraging people to participate and share their knowledge. Rewards could include being promoted to a higher level with more influence and responsibility; bonuses or financial rewards; or any kind of recognition.

“There are employees who had participated and played a big role in implementing the KM project in the organisation, and they were promoted to higher positions and levels with more influence and responsibility. This kind of promotion has a big impact on people by encouraging them to participate and share their knowledge” (F-GM-01-10).

The same idea is emphasised by the following scholars. Lehner and Haas (2010) state that employees should be motivated to participate and share their knowledge through the use of motivational and reward systems. Holste and Fields (2010) argue that increasing investment in IT may facilitate the storage and sharing of explicit knowledge, but it will not result in better sharing and use of tacit knowledge, because individuals decide whether they will share and use their tacit knowledge. Reward programmes are the most effective way to increase employees’ tacit knowledge sharing (Mayfield 2010). Oliveira et al (2012) state that participation in a rewards programme provides motivation for people taking part in KM projects if KM participation is included in employees’ performance evaluation in order to identify to employees the importance of their participation.

The study also found that ensuring employees have a good sense of job security is a very important factor and organisations should reassure knowledgepossessing workers by promising them they will never be abandoned, and their positions, value and salaries will never be reduced. They should instead be made to understand that sharing knowledge will increase their value and the company will keep them because the success of the organisation relies on the success of its staff. Moreover, organisations should reward knowledgepossessing employees and encourage them to continue sharing their knowledge.
“We should reassure knowledge-possessing employees that the company will not abandon them because they have shared their knowledge, but that sharing knowledge will increase their value and the company will keep them because the success of the company depends on the success of its effective staff” (SG-GM-01-07).

“One of the most important factors is job security, which is an integral part of knowledge sharing. We need to connect job security to knowledge sharing in that if the employee shares his knowledge, the company will never abandon him, but the company will promote or reward him” (HAC-D-01-20).

Finally, organisations should conduct internal audits and follow up with expert people to share their knowledge. Those people who are not participating in KM should be punished.

“There should be internal audits and follow-ups with expert people and those people who are not sharing their knowledge should be punished or demoted. The direct supervisor or the direct manager follows up with experts to coach people.” (AACC-D-01-08).

Parallel to this viewpoint, Oliveira et al (2012) believe that auditing is also fundamental to encouraging employees to store documents and share their knowledge. Internal audits reveal the names of those employees who have not participated in the KM project. These employees will not receive any rewards.

7.3 Comparative analysis of OP between knowledge-based and non-knowledge-based organisations

The criterion for choosing the sample of organisations for participation in this study was whether they were knowledge-based or non-knowledge-based organisations. Qualitative data were collected from 24 informants from 19 different organisations and different sectors in order to enhance understanding of the field and develop theory. Of these companies, 11 are considered to be knowledge-based and 8 are thought of as non-knowledge-based. Drucker (2001) states that the knowledge-intensive organisations are those which treat knowledge as a core strategic resource and they manage their knowledge effectively by using KM. Moreover, Zack (2003:p.88) defined knowledge-based organisations as:

"Knowledge-based organisations (KBO) are usually considered to be those whose product or service is knowledge-intensive. The characteristics of a KBO, however, go beyond product to include process, purpose and perspective. Process refers to an organization’s knowledge based activities and processes. Purpose refers to its mission and strategy. Perspective refers to the worldview and culture that influences and constrains an organization’s decisions and actions. KBOs exhibit
knowledge-intensive processes, purpose, and perspective, regardless of their product”.

The organisations involved represented the following sectors: manufacturing, oilfield services, telecommunications, aviation, wealth and real estate management, IT outsourcing services, software products services, mineral exploration, chemicals and petroleum, banking, education, and marketing communications.

The comparative-case analysis between knowledge-based and non-knowledge-based organisation is detailed in Chapter Six. In this chapter, the researcher will re-perform this comparative-case analysis, but this time he will focus on the OP of these two types. As previously mentioned, there are 11 knowledge-based organisations, and they are: SG, SL, STC, HAC, F, A, S-Bank, CBA, U, SC and O. There are 8 non-knowledge-based organisations, and they are: H-Bank, BHC, BNGF, Airlines Co., M, SE, AACC and TS. It is difficult to perform a comparative analysis between all 19 organisations. Therefore, the researcher has grouped participating organisations according to whether they are knowledge-based or non-knowledge-based. In this way, he will perform a comparative analysis between two case-studies.

The comparative analysis begins with the impact of implementing KM on OP and the main advantages of implementing KM in organisations. The main aim of this comparative analysis is to determine how KM enhances productivity, performance and competitiveness. In addition, the comparative analysis will aid the researcher in identifying the similarities and differences between knowledge-based and non-knowledge-based organisations, thus facilitating the determination of the impact of implementing KM on OP.

The impacts of KM on OP were discussed in detail in Chapter Six. In this section, the comparison has been made briefly in Table 7.1.
<table>
<thead>
<tr>
<th>Knowledge-based organisations</th>
<th>Non-knowledge-based organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustain critical knowledge by transferring tacit knowledge to explicit knowledge.</td>
<td>Lose mission critical knowledge.</td>
</tr>
<tr>
<td>Have information available, obtainable and accessible. Easy to obtain required information, facts and knowledge.</td>
<td>Information is not available, not obtainable and not accessible. It is very difficult to obtain required knowledge and employees waste time looking for information.</td>
</tr>
<tr>
<td>Facilitate the communication and sharing of knowledge among all departments.</td>
<td>Communication is difficult between departments and there are a lot of barriers to knowledge sharing.</td>
</tr>
<tr>
<td>Perform benchmarking.</td>
<td>No benchmarking.</td>
</tr>
<tr>
<td>Document lessons learnt to solve recurring problems and issues, which reduces costs and time.</td>
<td>Reinvent the wheel when recurring problems happen.</td>
</tr>
<tr>
<td>Increase employees’ learning curve. New employees can learn quickly and take over their jobs in a short period of time.</td>
<td>Employees’ learning curve is very slow. New employees get lost and need a long time to learn how to do their work.</td>
</tr>
<tr>
<td>Knowledge workers are happier. Managers and employees are able to make decisions based on facts, information and knowledge.</td>
<td>Knowledge worker are not happy and will look for jobs in another organisation. It is very difficult to make good decisions without information on hand. Information must be repeatedly collected.</td>
</tr>
<tr>
<td>Eliminate the costs associated with duplicated effort and wasted time.</td>
<td>Duplicated effort and waste of time and money.</td>
</tr>
<tr>
<td>Company can foresee and avoid future problems.</td>
<td>Company cannot foresee future problems.</td>
</tr>
<tr>
<td>Retain a sustainable competitive advantage. Increase the loyalty, commitment, and morale of employees. Increase efficiency, performance and effectiveness; reduce costs and capital expenditure; improve return investment; meet customer needs and satisfaction; identify new markets and market plans; increase profit and OP.</td>
<td>Loss of competitive advantage. Reduction in loyalty, commitment, and morale of employees. Reduction in efficiency, performance and effectiveness.</td>
</tr>
</tbody>
</table>

Table 7.1: The comparative analysis between knowledge-based and non-knowledge-based organisations

Figure 7.1 presents the conceptual model that illustrates the impact of KM on OP. As it is shown in Figure 7.1, knowledge-based organisations focus on identifying, collecting, organising, storing and managing existing knowledge either in the organisation or within employees’ minds. Also, at the same time they identify what new knowledge the company needs to develop its performance through benchmarking, training courses (teaching and coaching), attracting external experts, learning by doing (OJT), self learning (e-learning), and finally through R&D. Then, the newly acquired knowledge is identified, collected, organised, stored and managed.
“The role of KM is to collect and organise knowledge related to the core business of the company and put that knowledge in one box, so that any employee can obtain the required knowledge at the right time” (S-M-01-20).

“KM is the process of managing organizing, transferring, disseminating and utilizing knowledge that is related to the core business of the company - such as professional knowledge, technical knowledge and know-how knowledge” (CBA-GM-01-02).

Information and knowledge is available, obtainable and accessible for everyone and this facilitates communication and the sharing of knowledge among people. This will sustain critical knowledge by transferring tacit knowledge to explicit knowledge. Therefore, the organisation benefits from three main things: lessons learnt, an increase in employees’ learning curve, and the ability of managers and employees to make best decisions based on facts and knowledge at the right time without any delay.

“It was very difficult to obtain the correct information before the implementation of the intranet system, but after the implementation of KM systems and the introduction of the intranet, obtaining information became very easy and fast. Moreover, all departments’ manuals and procedures can be accessed on the system by all employees” (SC-M-01-07).

Documenting lessons learnt will lead to the solving of recurring problems and issues within a short period of time, which will eliminate the costs associated with duplicated effort and wasted time.

“KM has the advantage of helping to solve recurring issues and problems; instead of having to reinvent the wheel from the beginning, they can just search the intranet and check with the people who have had the same problem before and contact them to find out how they solved the problem. For example, certain problems have occurred in production or marketing or sales in Egypt around six months ago, and these same problems have happened again in Saudi Arabia. Instead of having to reinvent the wheel from the beginning, they can just search the intranet and check with the people who have had the same problem before and contact them to find out how they solved the problem” (SG-GM-01-04).

Increasing employees’ learning curve leads knowledge workers to be happier within the working environment and also helps new employees to learn quickly. Thus, employees’ loyalty, commitment and morale will be increased. Moreover, knowledge workers will be happy and wish to remain in knowledge organisations because the work environment is good and there is a lot of learning. The organisation will earn its employees’ commitment and loyalty.

“Knowledge workers will be happy and wish to remain in a knowledge organisation such as SG, because there is a lot of sharing of knowledge, learning, development and innovation. The work environment will be good in such an organisation, in which employees do extra work because they like what
they are doing. Thus, the company will earn the loyalty and commitment of its employees, which in turn increases the productivity, performance and morale of employees. In the end, the company will achieve its goals and maximise profits” (SG-M-02-05).

Managers and employees being able to make decisions based on facts and knowledge without any delay will help workers to take the right decisions in a short period of time, which will save time and costs.

“The real advantage of KM is being able to take the right decision using the right facts and information and being able to get any information easily and in no time...so it will save time...in the past, before we applied KM, it was very difficult to get any information and it was taking a long time to get any important information. But now I can get any information that I want at the push of a button by just logging into the system and searching for the required information, and I can make decisions at the same time...Ah...for top management, they can find out how the work is running and they can make any decisions based on facts and valid information” (SE-M-02-04).

At the end of the day, all these benefits positively impact on OP through increased efficiency, performance, and effectiveness; reduced costs and capital expenditure through the elimination of costs associated with duplicated effort and wasted time; the retention of a sustainable competitive advantage; and increased profit and OP.

“In BHC there were no training courses at all, which caused new employees to get lost, not knowing what to do for a period of time. Even when employees became managers, they did not know how to be good managers. Moreover, it was very difficult to obtain information in BHC. In SL an employee can be a good manager within four years, but in BHC the employee needs more than 14 years just to be a manager” (BHC-GM-01-02). Moreover, “A very good example of this is SL and BHC companies – because of the successful implementation of KM, SL is the largest worldwide company in the oilfield services sector, with revenues of $22.7 billion in 2009; whereas BHC is the third largest worldwide company in oilfield services, with revenues of $5 billion in 2009” (BHC-GM-01-04).

“...now, with the new system, I can get any information within no time and I can do the production plan within an hour...Ah, we had 460 employees and only six production lines in the factory in Jeddah, but now after implementing KM and the new system we have 214 employees and 13 production lines...I mean, we doubled our productivity and decreased the manpower by half...Ah, we have made the system more efficient, which has improved the efficiency of the staff and thus improved the performance of the company” (U-M-01-09).

Gupta et al (2000) state that KM can be defined as a process that helps organisations to generate and gain knowledge; and select, organise, use, disseminate, and transfer important information and expertise owned by the organisation, which is necessary for administrative activities, such as making decisions, solving problems, learning, and
strategic planning. Moreover, the study found that there is a clear relationship between KM and OP, productivity and efficiency.

“There is a clear relationship between KM practices and organisational performance and productivity” (SG-M-02-05).

A survey study of 88 mid-level managers and senior executives representing ten different industry sectors from Canada, Australia and the USA was performed by Zack et al (2009). The revenues of those organisations ranged between $2M and $10B and their age ranged between two and 187 years, with workforces varying between 30 to over 300,000. The study found that KM practices have a direct relationship to OP. There are also more studies linking KM to OP – both qualitative (Davenport and Prusak 1998; Massey et al 2002; Nonaka 1994) and quantitative (Choi and Lee 2003; Simonin 1997; Tanriverdi 2005; Darroch and McNaughton 2003; Lee and Choi 2003; Schulz and Jobe 2001) – and the results of those studies also indicate there is a direct relationship between KM practices and OP.

Moreover, a link has been found between KM, OP, and the creation of competitive advantage (Schulz and Jobe 2001). Dalkir (2005) states that organisations are increasingly wasting time by reinventing the wheel because knowledge has not been stored in an accessible way. Worse, some are also losing efficiency when employees use incomplete information to make decisions. He cited a study by the IDC showing that as much as $12 million is lost every year to an organisation with just 1,000 knowledge workers due to these mistakes.
Organisational Learning

Locate existing knowledge

Create new knowledge or replace existing knowledge

Refine knowledge

Storage Knowledge

Sustain Critical Knowledge

Knowledge available

Lessons learnt, increase employees’ learning curve, make decisions, and solve recurring problems and issues

Save time and cost, increase employees’ loyalty, commitment and moral

Increase efficiency and Organisational Performance

Figure 7.1: The Conceptual Model of the impact of KM on OP; Source: collected data set
7.4 Theoretical model of this study

Through this chapter’s detailed discussion of the findings of the research derived from open, axial and selective coding of the qualitative data, a theoretical model has been developed in Figure 7.2. Four of the five categories that emerged from the collected data influenced the core category, which is employees’ willingness. These four categories are: barriers to KM; OL; means of communication; and CSFs. The study found that the fifth category, which is the OP category, is in turn influenced by employees’ willingness.

Strauss and Corbin (1998) state that the researcher in the selective coding stage should use data collected from the interviews as the fundamental basis for the relationships and the stories which helps him/her to link categories to each other. Also, the researcher should undertake the integration and refining of the developed theory in this stage. The researcher then uses the integration process to link main categories to the core category, and he or she must use the refinement process to better-develop poorly saturated categories and remove any excess from other categories. The selective coding process will end when theoretical saturation is reached.

The theoretical model of this study demonstrates the relationships between the ‘employees’ willingness’ category and the other five categories. In this respect, the model illustrates how employees’ willingness can be influenced by the other categories. The researcher used two colours of arrow: blue and red. The blue arrows are used to indicate the positive influence of these main categories on employees’ willingness. These categories are: CSFs, OL and means of communication. The red arrow is used to indicate the negative influence of barriers to sharing on employees’ willingness.
Figure 7.2: The Theoretical Model of knowledge sharing; Source: collected data set
7.5 Conclusions

This chapter provided the final stages of analysis and a detailed discussion of the findings of the research derived from open, axial and selective coding of the qualitative data collected. The final level of coding focused on integrating categories in order to produce theory by linking categories to each other and linking main categories to the core category. The selective coding process ends when theoretical saturation is reached. The researcher selected the “employees’ willingness” as the core category. The study found that employees’ willingness varies between knowledge-based and non-knowledge-based organisations. Thus, this chapter demonstrated the differing of employees’ willingness between those two types of company by comparing employees’ sharing behaviour, barriers to sharing, OL, means of communication, and CSFs affecting employees’ willingness by encouraging them to participate and share their knowledge.

The study found that the most common barrier to knowledge sharing is the unwillingness of employees to participate and share their knowledge due a number of reasons: a belief that knowledge is power; a lack of trust; resistance to change; lack of time; poor verbal written communication; and the existence of types of knowledge that are difficult to document. All these reasons negatively affect employees’ willingness to participate and share their knowledge.

Moreover, the researcher found that OL is very important and is considered to be the main goal of KM. OL helps organisations to sustain a competitive advantage and to improve employees’ performance and efficiency. It also encourages employees to learn by creating a good learning environment. This study found that knowledge-based organisations adopt the following methods to encourage people to learn: training programmes, OJT, e-learning, and investing in R&D. In addition, the main aim of adopting OL is to transfer and share knowledge between people and to improve employees’ performance and efficiency. This will increase employees’ willingness to participate in KM activities and share their knowledge.

The study found that the learning curve of employees is very high in knowledge-based organisations compared with the very slow learning curve of employees in non-knowledge-based organisations. Employees in knowledge-based organisations can
easily find required information and learn how to perform their work in a short period of time because all the information they need is on hand. Therefore, knowledge workers are happy and wish to remain in knowledge-based organisations due to the improved work environment and the wealth of opportunities to learn. These organisations will earn employees’ commitment and loyalty and, thus, they will earn employees’ willingness to share.

The study found that there are some factors that are very important to positively influencing employees’ willingness to share knowledge: top management support, organisational culture, organisational structure, user-friendly systems, trust and reassurance, job security, time, reward systems, KM teams, awareness campaigns, and auditing. Moreover, a well-structured communication system is a vital factor for KM success because its role is to ensure and facilitate the passing of knowledge to the appropriate people. Examples of the best communication practices are: meetings, newsletters, magazines, public lectures, presentations, direct phone calls, help desks and emails. Therefore, providing good means of communication supports and facilitates KM activities, and especially knowledge-sharing activities. Thus it increases employees’ willingness to share their knowledge.

In the next chapter, the conclusions and recommendations of the research will be presented alongside an overview of the study.
Chapter 8 Conclusions and Theoretical and Practical Contributions

8.1 Introduction

The conclusions and recommendations of the research are presented in this chapter. It provides an overview of the study, and it details the conclusions drawn. The objectives of the research design were to meet the aims of this research, which is to understand how the KM concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations. In addition, the aims and objectives of the research have been achieved and they are discussed in this chapter. Also, this research was designed to answer the following questions:

- What are the CSFs for effective KM implementation?
- What are the benefits of KM implementation?
- What are the most common barriers to KM implementation?
- How can organisations implement KM successfully?
- What is the difference in performance between two types of organisations: knowledge–based and non knowledge-based?
- What is the relationship between KM implementation and OP?

The answers to these questions are presented in this chapter as well. Moreover, the study found that employees’ willingness to participate in KM activities and share knowledge is an important constituent of KM, and thus the active willingness of people to share knowledge is essential to the successful implementation of KM. In addition, this study identified and evaluated the CSFs that affect employees’ willingness by encouraging them to participate and share their knowledge using case studies conducted among 19 organisations in SA.

Furthermore, the theoretical and practical contributions of this study are presented in this chapter. The validity of the research findings is presented in this chapter in order to prove that the researcher has selected the most appropriate methodology for his research. Finally, limitations of this study and recommendations for further research are outlined at the end of this chapter.
8.2 Overview of the research

The key to understanding the development of competitive advantage is to understand knowledge and how it is managed and shared. Organisations need to understand comprehensively the concept of knowledge not only in order to manage it effectively, but also to create and maintain competitive advantages. The business environment in SA and elsewhere has become increasingly competitive. However, KM is considered to be a new type of management in SA, which has come to prominence just a few years ago, and KM implementation methodologies are still under development in parallel with the building of KM experience. Thus, there has been little research into successful development and implementation of KM, or the potential benefits of such a system, and until today there have been no sufficient examinations of the CSFs for effective KM implementation and how KM can improve performance within Saudi organisations. Therefore, the purpose of the grounded theory study was to contribute to this area of research and practice, and to examine the relationships between KM implementation and performance within Saudi organisations.

Chapter Two provided a general literature review on KM implementation, referring to academic papers, books, theses and professional journals. The literature review gave the researcher a wide range of ideas and background of the KM field and the CSFs of KM implementation. It also helped the researcher to understand the different existing concepts of KM methods and models, and how they have been developed by researchers. Moreover, it helped the researcher to determine the gaps in previous research.

In Chapter Three, the researcher demonstrated that the qualitative research approach is the most appropriate methodology to use in this study. The grounded theory methodology was adopted in this research by using semi-structured interviews to collect qualitative data – a method which has been used in many previous research projects, such as Leseure and Brookes (2004), Parboteeah et al (2010), Mvungi and Jay (2010), and Scarso and Bolisani (2010). According to Dunne (2011), the researcher in grounded theory does not concentrate on testing existing theoretical hypotheses from the same field of study, but is more focused on developing a new theory from the collecting of empirical data. Therefore, grounded theory has become very popular in qualitative research over the last two decades (Payne 2007).
Chapter Four presented the qualitative data collected from the face-to-face interviews. Those interviews were conducted with 24 managers from 19 different companies and different sectors in order to enhance understanding, develop theory, and to overcome the risk of failing to collect reliable data. The total time of all the interviews was 18 hours of audio transcribed over 280 pages over a period of 12 weeks. The researcher adopted semi-structured interviews and prepared a list of questions, but those questions varied from one interview to another. Most of the questions were about the CSFs that affect KM implementation and the processes and benefits of implementing KM in an organisation. Meanwhile, interviewees were given a chance to talk about events, behaviour and beliefs that are related to the research topic. Discussions with the participating interviewees provided many insights; a clear list of aims and objectives; a clear picture of the CSFs of KM implementation and how one factor can influence another and, indeed, the whole organisation; and what the most common challenge of implementing KM is. Moreover, a good picture and indication of how KM can be implemented was presented, including what the CSFs that support implementing KM in the real world are.

Chapter Five presented the data analysis procedure of grounded theory and a detailed explanation of the coding process used in this study. During the first level of the coding process, 42 codes emerged and, as a result of constant comparative analysis of open coding, five main categories developed. Those categories were: barriers to KM; OL, means of communication; CSFs of implementation KM; and the impact of KM on OP.

Chapter Six outlined the results of the grounded theory analysis of the data. It assessed and evaluated the data gathered in this research to understand KM concepts and issues, and explain how these bodies of knowledge and processes can be applied to enhance productivity, performance and competitiveness within organisations in SA. The researcher investigated the five main categories in all 19 organisations participating in the study. Also, ‘Employees’ willingness’ was selected as the core category that linked all five main categories.

Chapter Seven described the final stages of analysis and provided a detailed discussion of the findings of the research derived from the open, axial and selective coding of the qualitative data collected. Also, this chapter showed that the willingness of employees to participate and share their knowledge differs depending on the knowledge-type of
organisations and the work environment. Thus, this chapter demonstrated the difference between employees’ willingness in knowledge-based and non-knowledge-based organisations by comparing employees’ sharing behaviour, barriers to sharing, OL, means of communication, and the CSFs that affect employees’ willingness by encouraging them to participate in KM activities and share their knowledge. Finally, this chapter presented how this phenomenon affects the successful implementation of KM and thus the impacts of successfully implementing KM on OP.

Finally, Chapter Eight presents the conclusions and recommendations of the research. It provides a summary of the findings resulting from the research, and it details the conclusions drawn. Also, theoretical contributions are used in this chapter in order to provide additional insights into the study’s findings.

8.3 Summary of findings

As mentioned in the interdiction, this research aims to understand how the KM concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations. In addition, it aims to determine the most important CSFs of the implementation of KM in organisations and the relationship between the implementation of KM and the performance of an organisation. There is a lack of empirical studies showing the CSFs of KM implementation and how KM makes a difference to OP. Moreover, there is no sufficient study that examines and investigates the relationship between KM and OP within Saudi organisations. Thus, the conclusions drawn from the findings of this research can produce a theory that determines the relationship between the implementation of KM and the performance of organisations, which has not been researched to a great extent in the past.

Moreover, in order to answer the research question, this research addressed the following research objectives:

1. To determine the CSFs of KM implementation in Saudi Arabia and explore the issues affecting its success in organisations.
2. To determine the benefits of implementing KM in organisations in Saudi Arabia.
3. To list the most common barriers to KM implementation in organisations in Saudi Arabia.
4. To determine the relationship between KM implementation and OP within organisations in Saudi Arabia.

5. To determine the difference in performance between two types of organisations: knowledge–based and non knowledge-based – in order to determine the impact of implementing KM on OP

6. To propose a methodology for implementing KM with organisations in Saudi Arabia.

The following paragraphs discuss the findings of the research against each of its objectives.

The first objective concerned the CSFs of KM implementation in Saudi Arabia and explores the issues affecting its success in organisations. The study found 14 critical successful factors for effective KM implementation as follows: (1) top management commitment and support, (2) awareness campaigns, (3) KM project teams, (4) organisational culture, (5) organisational structure, (6) teamwork, (7) technology, (8) time, (9) roles of managers, (10) reward and punishment systems, (11) reassurance for knowledge-possessing employees (job security), (12) involving staff in decision making, (13) job rotation, (14) follow-ups and auditing.

Moreover, having a good communication system in order to ensure and facilitate the spreading of knowledge among people. Examples of the communication practices are meetings, newsletters, magazines, public lectures, presentations, direct phone calls, help desks and emails. Also, the study found that OL is very important and is considered to be the main goal of KM, as it helps organisations to improve the learning curve of their employees by encouraging them to learn and creating a good learning environment. OL can be divided into six methods as follows: training programmes (teaching); learning by doing (OJT); e-learning activities (self learning); investment in R&D; knowledge worker recruitment, and SOP.

The second objective concerned the benefits of implementing KM in organisations in Saudi Arabia. There are 8 main benefits achieved by implementing KM, as follows: retaining a sustainable competitive advantages; making information available, obtainable and accessible; increasing employees’ learning curve, commitment and loyalty; making better decisions based on required information; sustaining critical
knowledge of losing and avoiding losing mission critical knowledge; lessons learnt and solving recurring issues and problems; benchmarking; and thus improving OP.

The third objective concerned the most common barriers to KM implementation in organisations in Saudi Arabia. This study identified the most barriers to knowledge sharing activities in organisations within SA which is the unwillingness of employees to share knowledge and managing tacit knowledge so that people are willing to share and use it due a number of reasons: the belief that knowledge is power; lack of trust; resistance to change; lack of time; poor verbal and written communication; and the existence of types of knowledge that are difficult to document. People know that knowledge is power, and many people do not want to share what they know, as they think this helps them to keep a competitive advantage over their peers. In addition, increasing spending on IT will not necessarily lead to increased sharing and use of knowledge, because this also depends on the willingness of individuals to share and use tacit knowledge. Tacit knowledge only exists in people’s minds, and they cannot be forced to share and use this knowledge. In other words, KM implementation cannot be successful unless organisations increase their employees’ trust and willingness to share and use tacit knowledge.

“The biggest challenge facing implementing KM is creating willingness among employees to share, manage and transfer knowledge, because there are a great number of employees who do not like to share their knowledge because they consider it a source of power and they do not want to give up this source to anyone else. They want to keep knowledge to themselves to keep their power and value” (A-M-01-14).

The fourth objective concerned the relationship between KM implementation and OP within organisations in Saudi Arabia. The study found that there is a clear relationship between KM and OP, productivity and efficiency.

“There is a clear relationship between KM practices and organisational performance and productivity” (SG-M-02-05).

A survey study of 88 mid-level managers and senior executives representing ten different industry sectors from Canada, Australia and the USA was performed by Zack et al (2009). The revenues of those organisations ranged between $2M and $10B and their age ranged between two and 187 years, with workforces varying between 30 to over 300,000. The study found that KM practices have a direct relationship to OP. There are also more studies linking KM to OP – both qualitative (Davenport and Prusak
1998; Massey et al 2002; Nonaka 1994) and quantitative (Choi and Lee 2003; Simonin 1997; Tanriverdi 2005; Darroch and McNaughton 2003; Lee and Choi 2003; Schulz and Jobe 2001) – and the results of those studies also indicate there is a direct relationship between KM practices and OP. Moreover, a link has been found between KM, OP, and the creation of competitive advantage (Schulz and Jobe 2001). Dalkir (2005) states that organisations are increasingly wasting time by reinventing the wheel because knowledge has not been stored in an accessible way. Worse, some are also losing efficiency when employees use incomplete information to make decisions. He cited a study by the IDC showing that as much as $12 million is lost every year to an organisation with just 1,000 knowledge workers due to these mistakes.

The fifth objective concerned to determine the difference in performance between two types of organisations: knowledge–based and non knowledge-based – in order to determine the impact of implementing KM on OP. The study found that there are eight main benefits achieved by knowledge-based organisations due to the implementation of KM, as follows: retaining a sustainable competitive advantage; making information available, obtainable and accessible; increasing employees’ learning curve, commitment and loyalty; making better decisions based on required information; sustaining critical knowledge of losing and avoiding losing mission critical knowledge; lessons learnt and solving recurring issues and problems; benchmarking; and thus improving OP and efficiency. In contrast, non-knowledge-based organisations suffer from losing mission critical knowledge, reinventing the wheel when recurring problems and issues occur, duplicating effort and wasting time, reducing employees’ loyalty and morale, and thus negatively affecting OP and competitive advantage.

The sixth objective concerned to propose a methodology for implementing KM with organisations in Saudi Arabia. The most important theoretical contribution of this study is the framework shown in Figure 8.1. This framework illustrates and identifies the contributory factors of implementing KM successfully. The knowledge based organisation need to optimise its managing practices to achieve competitive advantage based on this model and non-knowledge organisation need to give attention to these factors in order to move towards knowledge-based organisations. Otherwise, they will end up losing their market share. Moreover, it has been found that the most important factor that influences the successful implementation of KM is employees’ willingness to
participate in KM activities and share their knowledge. This implies that organisations that want to be knowledge-based through implementing KM activities need to ensure employees are willing to participate in the project, otherwise it will fail. As it is shown in Figures 8.1 there are two colours of arrow: blue and red. The blue arrows are used to indicate a positive influence, and the red arrows are used to indicate a negative influence.
Figure 8.1: Conceptual Framework of the interactive factors influencing KM implementation; Source: data collected set.
8.4 Theoretical contribution

As mentioned before, the most important theoretical contribution of this study is the framework shown in Figure 8.1. This framework illustrates and identifies the contributory factors of implementing KM successfully. The knowledge based organisation need to optimise their managing practices to achieve competitive advantage based on this model and non-knowledge organisation need to give attention to these factors in order to transfer to knowledge-based organisation. Otherwise, they will lose their market share. Therefore, the theoretical contributions can be divided into six main factors and they are:

1. Employees’ willingness to share knowledge, and the type of organisation.
2. Barriers to KM.
3. CSFs of KM implementing
5. Organisational learning.

The most important contributory factor that was identified in this study was employees’ willingness to participate in KM activities and share knowledge. The main distinguishing factor of this study compared with previous studies in the field is that it found employees’ willingness is the most important factor that affects the successful implementation of KM, and without it the implementation of KM inevitably ends in failure. The explanations behind this phenomenon emerged from the data collected from the grounded theory study and the researcher’s proposition is based on the empirical evidence in the previous chapters, which presented that the key to implementing KM successfully is the willingness’ of employees to participate and share their knowledge. Cabrera et al (2006) argue that the intentional actions dependent on human beings’ nature is the main factor that affects employees’ knowledge-sharing behaviour; thus sharing behaviour is associated with and depends on employees’ willingness to participate.

“Most companies consider KM pure IT and this is not true. IT is only one side of KM, and it is not everything. Therefore, those companies only focus on the IT aspect and they do not pay attention to other factors such as human factors, which has led to the failure of implementing KM in those companies. Any company can have a fancy IT infrastructure, but it could be
useless without the human factor - in other words, the implementation of KM will never successful without the willingness of employees to use it and post their knowledge on it” (A-M-01-06).

Employees’ willingness to participate in KM varies based on the type of organisation by which they are employed. Organisations can be divided into two main types: knowledge-based and non-knowledge-based. In knowledge-based organisations employees’ willingness to share knowledge is much higher than in non-knowledge-based organisations for several reasons, which will be discussed in the following subsections.

8.4.1 Employees’ willingness to share knowledge in knowledge-based organisations

The study found that employees’ willingness to participate in KM in knowledge-based organisations is affected by four major categories. These categories are: barriers to knowledge sharing, means of communication, OL, and the CSFs of implementing KM.

Drucker (2001) states that the knowledge-intensive organisations are those which treat knowledge as a core strategic resource and they manage their knowledge effectively by using KM. Moreover, Zack (2003:p.88) defined knowledge-based organisations as:

“Knowledge-based organisations (KBO) are usually considered to be those whose product or service is knowledge-intensive. The characteristics of a KBO, however, go beyond product to include process, purpose and perspective. Process refers to an organization’s knowledge based activities and processes. Purpose refers to its mission and strategy. Perspective refers to the worldview and culture that influences and constrains an organization’s decisions and actions. KBOs exhibit knowledge-intensive processes, purpose, and perspective, regardless of their product”.

First category is barriers to knowledge sharing. As it was mentioned previously, both types of organisations face the most common barriers to knowledge sharing, but the difference is how knowledge-based organisations deal with these obstacles and overcome them. Knowledge-based organisations create an environment that is healthy for sharing knowledge by adopting three main factors that positively influence employees’ willingness to participate in KM and share their knowledge. These factors are: CSFs for the effective implementation of KM; means of communication; and OL. These factors not only help and encourage employees to share knowledge but also remove all obstacles that are likely to make employees unwilling to share their knowledge.
The second category is means of communication. The study found that knowledge based organisations have a good communication system. It is a vital factor for KM success. There has to be direct communication and contact in order to find common solutions to problems. Examples of the communication practices are newsletters, websites, meetings, presentations, e-mail, and magazines. Mayfield (2010) stated that there are some techniques for increasing the tacit knowledge sharing of employees. For example, holding meetings is another method which also supports collaborative knowledge sharing. It is helpful to discuss ideas and issues across organisational levels and introduce responsive actions. That will enhance the learning cycle because of direct employees interactions and immediate feedback. Organisations should not only set clear meeting objectives, but also top management should support the meetings in order for them to be successful. Lehner and Haas (2010) stated that it should be a direct social relationship and communication between employees such as regular face to face meetings in order to facilitate contact between them to find common solutions to problems and to encourage knowledge exchange. Communication is very important issue support sharing knowledge such as meetings, messenger, newsletter and e-mail (Oliveira et al 2012).

“The method SG has adopted to increase sharing is a monthly meeting called “learning hour”. Every month, the company selects an expert person and asks him to choose a topic from his experience and present this topic within one hour by explaining briefly about his experience or about the topic” (SG-M-02-04).

The third category is organisational learning OL. Ellis et al (2012) argued that the organisations that use OL intensively have a better sharing knowledge environment and thus the amount of knowledge shared is higher. Also, they have better organisational outcomes. Moreover, Organisations intending to implement KM project need to create a learning environment that encourage their staff to share their knowledge. The study found that employees must be qualified through training and coaching to ensure the success of implementing KM. Also, every employee must be open to KM and have the willingness to develop and promote it himself. Otherwise, he will find himself out of step with the rest of the team and he will not be able to compete with other employees, which means either he will leave the company or he will never be promoted. Also, the researcher found that OL is very important and it is considered to be the main goal of KM and it is help the organisation to sustain a competitive advantage and to improve
the employees’ performance and efficiency. The OL encourages employees to learn by creating a good learning environment.

“SG has considered that OL is the goal of KM through distribution and application of knowledge and it helps the organisation to achieve its goals and to sustain a competitive advantage” (SG-M-02-01).

Lehner and Haas (2010) state that the personnel development of the employees is considered be one of the success factors, which mean that the organisation must qualify its employees through training and coaching in order to secure KM. Moreover, Byrd (2006, p.7) explained, “Trained and educated employees are better able to communicate with management. They ask thoughtful questions. They make informed decisions for improved work performance”. In addition, Mayfield (2010) emphasised that organisations should encourage their employees to share their knowledge and experience with others through training and rewards.

The fourth category is the CSFs of implementing KM. The study identified 14 CSFs for effective KM implementation. These factors emerged from the informants’ statements according to how they experienced them in the real world during the implementation of KM in knowledge-based organisations. These factors are: top management commitment and support, awareness campaigns, KM project teams, organisational culture, organisational structure, teamwork, technology, time, the role of managers, reward and punishment systems, reassuring knowledge possessing employees (job security), involving staff in decision making, job rotation, and follow-ups and auditing.

First of all, top management commitment and support is the most important CSF for effective KM implementation. Top management is the initiator, sponsor and promoter of KM. It does not only provide necessary and sufficient resources – including financial, human, and technological resources – but it also makes time available for successful KM implementation. Lehner and Haas (2010) argue that top management is the initiator, sponsor and promoter of KM and it provides sufficient financial resources and time. Oliveira et al (2012) state that top management support and commitment is an important factor as it is the role of top management to define priorities and support KM activities.

“Top management who is the initiator of implementing KM and they provide all necessary fund, budget, employee, time and system” (U-M-01-07).
The second factor affecting employees’ willingness is the provision of awareness campaigns, in order to get employees’ attention, to indicate the importance of implementing KM and to ask them to personally commit to the project.

Third, create KM project team. Many informants believe that there should be KM team who is responsible for coordinating and obtaining knowledge from the experts’ employees. The KM team should include experts from the human resources department, expert from the information technology department (IT), and expert employees from different departments of the organisation with different backgrounds. This team should be managed by the Chief Knowledge Officer (CKO) who should knows and understand the organisation functions in order to coordinate the core business knowledge effectively. The main role of the CKO is to create a knowledge and teamwork culture by optimizing knowledge and encouraging employees to share knowledge. Moreover, A KM committee is consisting of employees from different departments of the organisation with different backgrounds. The role of this team is “to involve and delegate the organisation as a whole, communicating that it’s everyone’s responsibility to make KM a successful process in the organisation” (Neto et al 2009, p.598).

“The KM team should deal in daily based with the knowledge possessing knowledge and encourage them to share their knowledge. Both IT and HR departments must be members of the team” (BNGF-M-01-05).

“There is a special team called team space for each department; there is team space for HR, supply chine and etc... the roles of team space are post information or if there someone has posted document or information they check it and validate it and then they post it in the system” (SE-GM-01-09).

“... the HR department who in charge to upload all the courses in the portal also anyone want to share any documents or courses he can upload to the system then the training team in the HR department will review it and validate it then post it in the portal for everyone. Moreover, we have special team called SAPT is the department responsible for coordinating the application of KM” (U-M-01-17).

Furthermore, having a knowledge culture is one of the critical success factors for KM implementation. This kind of culture involves building trust, cooperation and collaboration between co-workers. Furthermore, a knowledge culture encourages employees, and makes them willing to share their knowledge and ideas. Without this kind of culture, it is not extremely difficult to make employees share their knowledge, because human nature does not naturally share knowledge, nor does it like change.
“The second most important factor is the organisational culture. If the organisation adopts knowledge and KM as its system, that will make sharing knowledge much easier - otherwise, everybody will hide knowledge and keep whatever he knows, without sharing anything” (SG-GM-01-05).

“SL’s learning system and culture have increased the speed of employee learning, as they acquired a lot of knowledge from the numerous courses, which is turn increased and improved employees’ efficiency” (BHC-GM-01-03).

The study found that the organisational structure has impact for distribution of ideas and remove all barriers that inhibit the diffusion of ideas and make it flow across the whole organisation. Oliveira et al (2012) stated that the roles of organisational structure is enabling the horizontal communication (prevent hierarchical impediments), motivate teamwork; sharing is part of daily routine of the employees and integration the different department in the organisation.

“The organisational structure enables the ideas to get into and across the organisation. It aids for diffusion the new ideas to flow across the whole organisation without the rejection of any new things or the rejection to change. The organisational structure is considered as framework that enables the effective distribution of ideas to maximum number of people. Also it influences the organisational culture by making the organisation willing to take risk and adopting new ideas”(F-GM-01-08).

Sixth, a number of informants have debated that the principal of team work is very effective tool to get people together to solve problem or to increase the level of trust among them and thus that will increase the knowledge sharing.

“Team work is the best way to ensure sharing knowledge among the team, not only by putting the employees in teams and giving them tasks, but also by motivating the whole team by reward all the team members when they do the task given successfully. In this way, all team members will work together and share their knowledge, and no one will hide any knowledge that can be helpful to do the task” (CBA-GM-01-05).

Moreover, a supporting system such as an information and communication technology (ICT) system raises the success of KM by integrating the KM system (KMS) with other information systems, using software tools in order to facilitate KM. The system must be integrated into the available IT-infrastructure in order to save time and cost; otherwise, inconsistency problems may result. Moreover, the system must be easy to use and have all the necessary functions, such as an intranet (which is an internal information system based on web technologies). Employees can easily locate specific information by searching the knowledge base, which saves employees time, and therefore company
expenditure. Also, an intranet not only improves productivity enabling quick access to widely-shared information, but also facilitates higher team productivity by creating a collaborative working environment, which means it facilitates solving recurring problems and issues by allowing repeat implementation of solutions. In addition, it is clear that suitable technology will facilitate employees’ access to necessary knowledge and information, which in turn will increase and encourage knowledge sharing. Moreover, Santos et al (2012) pointed that KMS should be user friendly in order to encourage people to use it. Otherwise, people will reluctant to use it because it will consider as a time consuming inserting data or information.

“A standard and user-friendly web interface makes it easier to get information and solutions quickly and conveniently. The system should be easy to use, accessible and not complicated” (O-M-01-09).

“The system should be user-friendly in order to encourage employees to use it, which helps in the dissemination of knowledge. Such a system is a very important supportive factor that help to disseminate, review, share, transfer, or document knowledge” (A-M-01-10).

There are some techniques are adopted by knowledge based organisations to encourage and motivate employees to share their knowledge, such as applying a reward system linked to promotion or bonuses. Rewards programmes are the most important factors in increasing employees’ tacit knowledge sharing (Mayfield 2010). Oliverira et al (2012) state that participation rewarding program is the motivation for people participation in the KM project by considering KM participation in the employee performance evaluation in order to identify to the employees the importance of their participation.

“There are employees who had participated and played big role in implementing KM project in the organisation were promoted to higher positions and level with more influence and responsibility. This kind of promotion has big impact on people by encouraging them to participate and share their knowledge” (F-GM-01-10).

“By default, an employee who shares knowledge has more chance to be promoted and rewarded than an employee who doesn’t share his knowledge” (HAC-D-01-11).

Moreover, the company should reassure expert employees that the company will not abandon them because they have shared their knowledge, but that this activity will in fact increase their value and the company will keep them because the success of the company derives from the success and effectiveness of their staff.
“We should reassure the knowledge-possessing employees that the company will not abandon them because they have shared their knowledge, but that sharing knowledge will increase their value and the company will keep them because the success of the company depends on the success of their effective staff” (SG-GM-01-07).

The study found that the employees should be involved in making decision in the things that related to them. In this way, the loyalty and commitment of people will increase and they will support this decision.

“You cannot enforce people to share their knowledge; you have to persuade them by the importance of sharing knowledge thus you have to share and involve them in making decision because once they involved in taking decision their loyalty and commitment will be high. But sometimes the top management takes decision related to employees without asking and contributing employees themselves thus the top management will face difficulty, opposition and unwilling from employees to implement these decisions. You are not have to share the employees in strategic decisions, but at least is to involve them in decisions that affect them. But if you sit with them and persuade them by the benefits of being implementing KM or any decision and let them involve in making decision, they will be supporting these decisions because they participated in taken these decision thus they will adopt these decision and apply them” (AACC-D-02-06).

Moreover, job rotation is big time helping in sharing knowledge. They do job rotation between people every a certain period of time and in this way they have to hand over each other all knowledge they know.

“I think rotation is a serious aid to solve this problem...Ah I meant that you do rotation for employees between departments for example every three years because if you do rotation between employees they will hand over the information. But you cannot do it in the small company that only has 20 employees and everyone do different function it will be difficult to do rotation between them” (SE-GM-01-08).

“also we do have job rotation every three years which is help to share knowledge and we do not have such a problem when any employee absent or leave the company for any reason because always there is someone will do his job”(SE-M-02-02).

Furthermore, the organisations should do internal audits and follow up expert people to share their knowledge. Those people who are not participating in KM should be punished. Oliverira et al (2012) believed that the audit is a fundamental factor for encourage employees to store documents and share their knowledge.
“There should be an internal audits and follow up with expert people and those people who not sharing their knowledge should be punished or deprecated. The direct supervisor or the direct manager follows up with the expert to coach people” (AACC-D-01-08).

Also, the study found that to ensure the success of implementing KM should allocate a special time or free time for each employee in order to post knowledge or post the best practice. Oliverira et al (2012) interviewed seventeen top managers using semi-structured interviews and found that employees participate in KM activities only in extra time out of working hours. Santos et al (2012) argued that lack of time is considering one of the knowledge sharing barriers.

“All employees are required to spend about 10-15% of their working time in developing best practice KM value adding activities” (F-GM-01-07).

“…we decided in our organisation 80% of our employees time goes to whatever the work sign and 20% of their time they can do any project they like that helped to improve the organisation” (H-M-01-10).

Managers must plan and implement the processes and structures that encourage employees and teams to share and use organisational knowledge (Cross and Baird 2000). The main roles of managers is planning and implementing the processes that help and support employees to share their knowledge and use KMS to post their knowledge.

“But at the end of the day when you see your top managers in any organisation the best managers are the managers who able to motivate their staff and able to develop them. If these people can’t develop their staff...Ah...part of that development is how they interact with them, how they share information with them... those best managers” (H-M-01-08).

“The good manager who can handles people, treats them well, encourages them, helps them and develops them because then he can rely on them to do their work perfectly”(F-GM-01-11).

Then, the CSFs of implementation KM, Means of communication and OL categories will positively influence the employees’ willingness and make people willing to share their knowledge. The benefits of implementing KM and make people willing to participate and share their knowledge are: lessons learnt; increase learning curve; make right decision; sustain critical knowledge; having information available and obtainable; facilitate the communication; knowledge worker happy; eliminate duplicated efforts; solve recurring problems; save time and cost; increase loyalty and commitment of
employees and benchmarking. Moreover, the additional important reasons for implementing KM have been pointed out in relation to decision-making, time management, quality and competitiveness. KM can improve organisational processes, effectiveness, efficiency, and degree of innovation of the processes. Moreover, KM helps organisations reduce costs, increase speed, meet customer need, increase efficiency, lower costs, improve return on investment, increase profits, identify new markets, improve market share, improve efficiency and be more effective. Furthermore, the knowledge worker will be happy and wish to remain within a knowledge organisation because there is a great deal of knowledge sharing, learning, development and innovation. Also, the work environment will be good in such an organisation, which encourages employees to work harder because they like what they are doing. Thus, the company will earn the loyalty and commitment of its employees, which in turn will lead to an increase in the employees’ productivity, performance and morale. The eventual result of this is that the company will achieve its goal and maximise profits, achieve better service quality, increase revenue, and increase performance.

“The knowledge worker will be happy and wish to remain in the knowledge organisation such as SG, because there is a lot of sharing of knowledge, learning, development and innovation. The work environment will be good in such an organisation, in which employees do extra work because they like what they are doing. Thus, the company will earn the loyalty and commitment of its employees, which turn increases the productivity, performance and morale of employees. At the end, the company will achieve its goals and maximise profits” (SG-M-02-05).

A survey study of 88 mid-level managers and senior executives representing ten different industry sectors from Canada, Australia and the USA has been done by Zack et al (2009). The study found that KM practices have a direct relationship with organisational performance. Moreover, there are many studies linking KM to organisational performance, and the results of those studies indicate that there is a direct relationship between KM practices and organisational performance, both qualitative (Davenport and Prusak 1998; Massey et al 2002; Nonaka 1994) and quantitative (Choi and Lee 2003; Simonin 1997; Tanriverdi 2005; Darroch and McNaughton 2003; Lee and Choi 2003; Schulz and Jobe 2001). Moreover, there is a link between KM and organisational performance to create competitive advantage (Schulz and Jobe 2001).
8.4.2 Employees’ willingness to share knowledge in non-knowledge-based organisations

The study shows that employees’ willingness in non-knowledge-based organisations is affected by three major factors. These factors are: barriers to knowledge sharing, holding meetings as the only means of communication, and OJT as the only learning method used in non-knowledge-based organisations.

First of all, the barriers to knowledge sharing. As it was mentioned previously, both types of organisations faced the most common barriers of knowledge sharing. These barriers can be summarised in the following points: unwillingness of employees to share knowledge to their belief that knowledge is power; employees’ culture; lack of trust; resistance to change; the time-consuming nature of some KM activities, expense; lack of money; poor verbal and written communication skills; and the existence of types of knowledge that are difficult to document.

Moreover, a recent empirical study has been performed by Santos et al (2012), who conducted semi-structured interviews with subjects from six countries: Portugal, Germany, Spain, UK, Finland, and France. This study listed the following main knowledge-sharing challenges: codification processes, unsuitable IT systems, lack of employees’ initiative and strategy, and finally lack of time and resources. Also, a major challenge facing organisations is the management of tacit knowledge through processes attempting to convince, coerce, direct or otherwise get individuals within organisations to share their knowledge (Gupta et al 2000; Leseure and Brookes 2004). In addition, an individual may not be willing to share his tacit knowledge because it may involve risks to him, such as loss of competitive advantage over peers (Stenmark 2002). Such competition between employees is also considered to be a barrier to knowledge sharing (Oliveira et al 2012).

The study found that employees do not share their knowledge because knowledge is power and they believe that knowledge makes them valuable and powerful. Pawlowski and Bick (2012) state that individual traits also cause some potential barriers to KM utilisation, such as fear about job security and lack of trust. Santos et al (2012) point out that difficulty in building trust is one of the knowledge-sharing barriers. The study found that lack of trust negatively affects employees’ willingness to participate in KM.
People are unwilling to share their knowledge because they are afraid to do so, believing they will be abandoned or lose their value and power. Furthermore, it has been found that one of the biggest challenges is employees’ resistance to change, or to use any new system, and this is one of the most common barriers to the implementation of KM projects.

Another common barrier is lack of time. Most employees are overloaded and too busy with their daily work and they have no time to participate in knowledge-sharing practices. Time is considered to be one of the main difficulties in sharing tacit knowledge, as this sharing requires a long time to be spent on post-project reviews and on formulating lessons learnt from these projects (Leseure and Brookes 2004; Yang 2009). Santos et al (2012) state that lack of time and resources is considered to be one knowledge-sharing barrier because documenting knowledge in an appropriate format takes a long time. The research shows that the time issue could be a barrier to sharing knowledge and negatively affect employees’ willingness to participate and share their knowledge.

Pawlowski and Bick (2012) state that poor verbal and written communication and interpersonal skills of individuals could cause some potential barriers towards KM utilisation. Santos et al (2012) state that poor communication and having information in formats that are not understandable to all employees is also considered to be a communication barrier. Therefore, it is necessary to create a common understandable language and format for strong and clear communication. Moreover, Santos et al (2012) state that there is a kind of knowledge – acquired from interactions with others, solving problems and experience – that is hard to codify and thus document because it only exists and is maintained in the expert employee’s mind. Indeed, this research found that there is a type of knowledge that is too difficult to document, such as technical knowledge, experience and skills. The study found that non-knowledge-based organisations use meetings as the only means of communication. There is no other method of communication used, such as frequent newsletters or public lectures.

“The only means of communication we use is holding meetings. In meetings we exchange the latest issues and problems” (M-M-01-08).

Moreover, OJT (learning by doing) was found to be the only method of learning in non-knowledge-based organisations. There are no training courses or self learning
opportunities. Therefore, employees’ learning curve in such organisations is very slow due to the channels for learning being limited. There is also no practice of supporting and encouraging employees to learn. The main disadvantage of this is that new employees learn only what they are taught by the coach who trains them. So if they learn something wrong, they will practice this incorrect information in performing their jobs and there is no way to correct this. According to the following excerpt, the disadvantages of not implanting KM are that new employees get lost and do not know what to do, finding it very difficult to obtain information and knowledge; employees are forced to reinvent the wheel from the beginning when recurring problems and issues arise; and thus the efficiency and performance of organisations is reduced.

“In the past, before A-company implemented KM, new employees took around three months to be ready to take over the work because it was very difficult to obtain the required information and knowledge. But now, after the company has implemented KM, new employees can be ready within ten working days because obtaining knowledge has become very easy and clear, and all the information related to how to do the work from A to Z is documented” (A-M-01-09).

It was found that employees’ willingness to share their knowledge in non-knowledge-based organisations is very low due to the aforementioned factors. There are no supportive or encouraging factors in operation in such an organisation. Therefore, employees keep their knowledge for themselves and they are not willing to share it with others. This leads to several disadvantages that affect OP. These disadvantages are: losing mission critical knowledge; a slow learning curve; reinventing the wheel; difficulties in communication; discontentedness among knowledge workers; difficulties making accurate decisions; duplicated efforts; time and money wasted; and a reduction in the loyalty and commitment of employees.

“If the company failed to transfer their knowledge to explicit knowledge, and they moved from one department to another or retired, then the company would lose all their know-how and other values that have grown with that person” (SG-GM-01-02).

“In BHC, when recurring problems and issues happen, you need to reinvent the wheel from the beginning because there is no cooperation, no sharing of knowledge. Learning curves are very slow, and there are no reliable sources of know-how. For example, some problems have occurred before in Europe, and now they are occurring again in Saudi Arabia. The team in Saudi Arabia has to start from the beginning to try to find solutions to these problems. Sometimes, there are the same problems happening in two or more different locations at the
same time, but no one knows about the other. Hence, it is causing the company to lose a lot of time and therefore a lot of money” (BHC-GM-01-03).

8.4.3 The relationship between KM and OP

This study has found that there is a clear relationship between KM practices and OP. The following informant explained his experience working for a knowledge-based organisation (SL Company) for 12 years then moving to a non-knowledge-based organisation (BHC Company) three years ago as General Manager of the Saudi Arabian branch. He claimed that KM helps to increase the learning curve of employees and he compared the two organisations. He stated that the learning curve at SL Company is very high and he learned a lot in a short period of time. However, the learning curve at BHC Company is very slow and there are no training courses, which leads new employees to get lost for a period of time because it is very difficult to obtain information. Also, he said that in SL Company, any employee can be a good manager within four years, but in BHC the employee needs more than 14 years just to be a manager.

“I had acquired a great deal of useful knowledge, not only from learning about the organisational system in SL, but also from the inTouchsupport.com KM website, which helped me to find any knowledge I wanted on the spot, and enabled me to share my knowledge as well” (BHC-GM-01-01). Moreover, “In BHC there were no training courses at all, which caused new employees to get lost, not knowing what to do for a period of time. Even when the employee became a manager, he did not know how to be a good manager. It was very difficult to obtain information in BHC. In SL, an employee can be a good manager within four years, but in BHC the employee needs more than 14 years just to be a manager” (BHC-GM-01-02). Furthermore, “A very good example of this is SL and BHC companies – because of the successful implementation of KM, SL is the largest worldwide company in the oilfield services sector, with revenues of $22.7 billion in 2009; whereas BHC is the third largest worldwide company in oilfield services, with revenues of $5 billion in 2009” (BHC-GM-01-04).

The following informant argued that KM enabled his organisation to double its productivity and decrease manpower by half. To that end, it improved OP.

“…now, with the new system, I can get any information within no time and I can do the production plan within an hour...Ah, we had 460 employees and only six production lines in the factory in Jeddah, but now after implementing KM and the new system we have 214 employees and 13 production lines...I mean, we doubled our productivity and decreased the manpower by half...Ah, we have
made the system more efficient, which has improved the efficiency of the staff and thus improved the performance of the company” (U-M-01-09).

A survey study of 88 mid-level managers and senior executives representing ten different industry sectors from Canada, Australia and the USA was performed by Zack et al (2009). The revenue of those organisations ranged between $2M and $10B and their age varied from two to 187 years, with their number of employees ranging from 30 to over 300,000. The study found that KM practices have a direct relationship with OP. Moreover, there are many studies linking KM to OP, and the results of these studies indicate that there is a direct relationship between KM practices and OP, both qualitative (Davenport and Prusak 1998; Massey et al 2002; Nonaka 1994) and quantitative (Choi and Lee 2003; Simonin 1997; Tanriverdi 2005; Darroch and McNaughton 2003; Lee and Choi 2003; Schulz and Jobe 2001). Moreover, there is a link between KM and OP in creating competitive advantage (Schulz and Jobe 2001). Dalkir (2005) states that organisations are increasingly wasting time by reinventing the wheel because knowledge has not been stored in an accessible way. Worse, some are also losing efficiency when employees use incomplete information to make decisions. He cited a study by the IDC showing that as much as $12 million is lost every year to an organisation with just 1,000 knowledge workers due to these mistakes.

Finally, this study indicates that employees’ willingness is considered to be the most important factor affecting the successful implementation of KM in any organisation. Employees’ willingness to participate in KM activities and share knowledge is affected by several barriers in both types of organisation. In knowledge-based organisations, such obstacles are overcome through the adoption of three major factors. These factors aid and support those willing to participate and share knowledge and they are: means of communication, OL, and the CSFs of implementing KM. Moreover, the data shows that these factors only exist in knowledge-based organisations and they are not adopted by non-knowledge-based organisations. Moreover, this study helped to deepen understanding of KM concepts and issues and to determine how these bodies of knowledge and processes can be applied to enhance productivity, performance and competitiveness among organisations. It also argued that the successful implementation of KM has a large impact on OP and helps organisations to sustainable competitive advantages.
8.5 Practical contribution

This research introduces a number of practical implications with regards to employees’ willingness to participate and share knowledge. The findings from the qualitative data collected in this research indicate that the employees’ willingness factor is very important for the successful implementation of KM. In particular, it has strong implications for organisations that are seeking to implement KM by encouraging people to participate and increase their willingness to share knowledge. Polyhart and Moliterno (2011) emphasise that organisations need to encourage interaction between people in order to achieve a sustainable competitive advantage. However, Kang et al (2007) state that there is not yet sufficient research measuring the benefits of motivating employees to participate and share their knowledge in organisations. Moreover, most of the existing literature determines that the willingness of a person to share their knowledge comes from within the persons themselves.

As it is identified previously, employees’ willingness is the most important factor that positively affects the successful implementation of KM in organisations, and without this willingness to contribute knowledge, the implementation of KM projects will inevitably end in failure. The willingness of employees to contribute their knowledge is influenced by several barriers, such as the belief that knowledge provides people with power and value, and that most employees think they will lose their power and position if they share what they know. Santos et al (2012) state that individuals realise that knowledge is power. Also, Reid and Bardzki (2004) argue that this attitude inhibits knowledge sharing. Moreover, Stenmark (2002) emphasises that an individual may not be willing to share his knowledge because doing so may involve risks to him, such as a loss of competitive advantage over his work colleagues.

Therefore, the important practical implication offered by this study is that organisations must create a healthy environment that encourages employees to contribute and share their knowledge in order to ensure the success of implementing KM. To do so, there are several important factors that should be adopted by organisations, such as the CSFs, OL, and good means of communication. In knowledge-based organisations these factors have been adopted and thus the willingness of employees to participate and contribute their knowledge is very high compared with employees’ willingness in non-knowledge-based organisations. In other words, these factors have a strong influence on
knowledge-sharing activities by increasing employees’ willingness to participate. This study also found that knowledge-sharing activities in non-knowledge-based organisations participating in this study were much less frequent compared with knowledge-based organisations, due to the working environment not being helpful to support knowledge-sharing activities and maximise employees’ willingness to contribute knowledge.

Organisations should realise and understand that tacit knowledge exists only in people’s mind and no one can extract this knowledge unless the knowledge possessor authorises such action by sharing his knowledge. Therefore, organisations need to redesign different managerial practices and focus on employees’ willingness by motivating employees to contribute and providing all necessary tools to assist in the dissemination of knowledge. This is a very important point to take into account by organisations striving to value employees’ knowledge.

This study was conducted among 24 managers from 19 different companies in different sectors in order to enhance understanding and develop theory. These companies represented the following sectors: manufacturing, oilfield services, telecommunications, aviation, wealth and real estate management, IT outsourcing services, software products services, mineral exploration, chemicals and petroleum, banking, education, and marketing communications. Moreover, this study has provided an insight into knowledge transfer channels and how organisations use knowledge, OL, and overcome knowledge challenges. Despite an increase in KM implementation, most KM projects worldwide have failed due to a lack of knowledge of the CSFs of KM implementation and KM challenges. Thus, this research has determined the most important CSFs of the implementation of KM within organisations in SA. These factors are very important and must be considered in order to ensure implementing KM is a success in any organisation.

Furthermore, the main practical contribution of this study is the presentation of a framework model that demonstrates the process for effective KM implementation, as shown in Figure 8.2. This model is considered to be a summary of the experiences of the organisations participating in this research. These organisations are considered to be the top-ranked and largest organisations in SA. It extracts from their experiences the most important factors that any organisation intending to implement KM should take
into account. It is very useful to learn from their experiences what barriers may be faced, and the main CSFs that help to ensure the success of implementing KM. Also, this model enhances present practices of KM implementation and harnesses KM implementation to improve performance within Saudi organisations.

Figure 8.2: A proposed model for the effective process of KM implementation; Source: collected data set
A number of the informants were assured that knowledge is the most important asset that any organisation needs to retain a sustainable competitive advantage.

“The top management in SG considers knowledge to be power and the most important asset that the company needs to retain a sustainable competitive advantage, which no longer only depends on tangible assets, but is becoming increasingly dependent on knowledge and KM” (SG-GM-01-01).

The study found that top management commitment and support is the most important factor in order to achieve the success of KM implementation in any organisation. Top management are not only the initiator of implementing KM, but they provide all necessary budget, manpower, time and systems. In other words, they will provide whatever is necessary to ensure the success of KM. According to the following informant, the most important factor for the success of implementing KM is the full commitment of the top management to KM.

“The most important factor for the success of implementing KM in SG is the full commitment of the executive management and top management to KM and organisational learning. Any organisation is the shadow of its leadership; if the top management is not committed to ensuring the company becomes a knowledge company...nothing can work” (SG-GM-01-09).

Moreover, implementing KM in any organisation is a hard task and a lot of barriers and challenges will be faced. Those barriers emerged from the informants’ statements as they experience them in the real world. Some of the informants experienced challenges during the implementation of KM in knowledge-based organisations, while some informants still experience such barriers in non-knowledge-based organisations.

Furthermore, critical success factors (CSFs) can be defined as those critical areas of professional planning and action that must be adopted in order to achieve effectiveness (Saraph et al 1989). Moreover, they can be defined as the activities and practices which the organisation should perform and accomplish, such as the examination and categorisation of impacts, in order to achieve its mission (Oakland 2000). In addition, CSFs refer to the minimum level of things that should be done right to ensure success for a manager and organisation (Kanji and Tambi 1999). Moreover, the study identified 14 important factors that aid the implementation of KM successfully as follows: (1) top management commitment and support, (2) awareness campaigns, (3) KM project team, (4) organisational culture, (5) organisational structure, (6) teamwork, (7) technology, (8) time, (9) roles of managers, (10) reward and punishment systems, (11) reassuring
knowledgepossessing employees (job security), (12) involvement in decision making, (13) job rotation, (14) follow-ups and auditing.

The study found that OL is very important and it is considered to be the main goal of KM in that it helps the organisation to sustain a competitive advantage and to improve the employees’ performance and efficiency. OL encourages employees to learn by creating a good learning environment. Moreover, the study found that employees must be qualified through training and coaching to ensure the success of implementing KM. Also, every employee must be open to KM and have the willingness to develop and promote it himself. Many of the informants argued that it is very important to record the process of all transactions of the business in a certain manual or system in order to sustain the quality of the job and support people on how to perform their job according to the standards of the company. This manual or system should be accessible and easy to use.

“SG considers OL to be the goal of KM through distribution and application of knowledge, and it helps the organisation to achieve its goals and to sustain a competitive advantage” (SG-M-02-01).

The study found that a well-structured communication system is a very vital factor for KM success, because its role is to ensure and facilitate the passing of knowledge to the appropriate people. There has to be direct communication and contact in order to share knowledge and find common solutions to problems. Examples of the best communication practices are meetings, newsletters, magazines, public lectures, presentations, direct phone calls, help desks and emails.

Moreover, it has been found that the most important factor that influences the successful implementation of KM is employees’ willingness to participate in KM activities and share their knowledge. This implies that organisations that want to be knowledge-based through implementing KM activities need to ensure employees are willing to participate in the project, otherwise it will fail. In brief, the unwillingness of employees to participate and share their knowledge is the largest barrier to implementing KM and all other barriers affect employees’ willingness. Moreover, the main aim of OL, good communication, and CSFs is to have a positive impact on employees’ willingness to participate in knowledge activities by encouraging them to do so and by facilitating the means of sharing. Then, high employee willingness to participate in knowledge
activities leads to the successful implementation of KM, which impacts positively on OP.

“Most companies consider KM pure IT and this is not true. IT is only one side of KM, and it is not everything. Therefore, those companies only focus on the IT aspect and they do not pay attention to other factors such as human factors, which has led to the failure of implementing KM in those companies. Any company can have a fancy IT infrastructure, but it could be useless without the human factor – in other words, without the willingness of employees to use it and post their knowledge on it” (A-M-01-06).

“KM is very important and vital for the success of any company, especially airlines companies” (Airlines-GM-01-09).

“Knowledge is very important to be able to run and manage the business efficiently” (SC-M-01-01).

According to the following informant, knowledge is the key factor of any success, and KM has a big future in SA.

“Of course, knowledge is the foundation of any success and the deployment of knowledge is the key factor of achieving any success, and KM has a big future in SA because nowadays to be able to compete in the market you have to be able to get the knowledge, manage it and deploy it properly or otherwise you will lose to the competition” (AACC-D-01-14).

The study found that the most important impacts of KM on OP are increasing efficiency and effectiveness, reducing costs and capital expenditure, improving return investment, meeting customer needs and satisfaction, identifying new markets and market plans, and increasing profit and OP.

“SG has implemented KM in order to increase efficiency, be more effective, reduce costs, improve return on investment, increase speed, meet customer needs, identify new markets and increase profits” (SG-GM-01-02).

“KM has improved and increased the organisation’s performance and efficiency, increased production, increased the cycle of knowledge in the company and increased return investment”. Moreover, “KM increases the efficiency of the employees, increasing employee commitment” (A-M-01-12).

Moreover, Dalkir (2005) argues that the implementation process of KM is challenging, and organisations have to adopt the following three things in order to implement KM successfully: focus on people by acknowledging the importance of employees’ personal knowledge; adopt cultural changes and create a culture that enhances the success of KM processes; and develop technology platforms. There is no doubt that both knowledge and experience make employees valuable. Therefore, employees need to have a good
understanding of the benefits of sharing their knowledge, both to them and to the organisation. Otherwise, they will hesitate to share and give up their knowledge, and they will keep their knowledge for themselves. Thus, there are many organisations that have only focused on the IT aspect of KM by implementing a centralised knowledge database system that includes intranets, electronic message boards, and document repositories, but they neglect to focus on the most significant concept of KM, which are people.

Chua and Goh (2008) state that organisations are motivated to adopt KM because knowledge is a source of sustainable competitive advantage for any organisation, and because of the benefits of KM implementation (such as cost saving, and improved productivity, customer satisfaction, and knowledge protection). Oliveira et al (2012) list four main reasons why organisations have implemented KM projects. These are:

- Knowledge retention in the organisation, especially when an employee leaves.
- The organisation’s need to present one coherent image to the customers, regardless of manpower numbers or the country of the headquarters.
- To increase efficiency, reduce costs, improve communication, and increase employees’ productivity.
- The association of KM with innovation.

Finally, all participating interviewees are sure that KM has a big future in SA, and they all agree that all companies in all sectors need to implement KM in order to be successful companies and retain a sustainable competitive advantage. Moreover, all participating interviewees were very excited about the subject of this research because they all believe that KM has considerable benefits that lead to an increase in companies’ efficiency and performance. They asked the researcher to provide them with the report’s results and details of how they can improve the existing situation in order to maximise KM benefits. Moreover, some of the non-knowledge-based organisations want to know how they can implement KM successfully, what the CSFs are, and what techniques help to increase the sharing of knowledge. Moreover, most of the knowledge-based companies consider KM to be a part of their IT department, but this is not true. IT is only one aspect of KM, and there are other aspects including the human factor and processes. In fact, the author believes that the technology aspect is not the most important aspect, because increasing spending on IT will not necessarily lead to
increased sharing and use of knowledge, since this depends on the willingness of individuals to share and use tacit knowledge. In some small and medium-sized companies, there is no need for an elaborate and expensive system. In contrast, they need a simple and user-friendly system that any employee can use easily.

8.6 Data validation

Saunders et al (2009, p. 157) state that “validity is concerned with whether the findings are really about what they appear to be about” and Wilson (2010, p.308) defined validity as “the extent to which it accurately reflects the concept that it is proposed to measure”. Corbin and Strauss (2008) state that there are two main ways of validating the scheme. The first way is by performing a high-level comparative analysis of the scheme against the raw data. The second way is by going back to the participants and asking them about their comments regarding the scheme. The final stage is the integration of literature with an emerged theory.

Therefore, the researcher needs to ensure the validity and credibility of the research findings in order to prove that he has selected the most appropriate methodology for this research. To do so, a number of excerpts from different interview transcripts have been presented in this study in order to prove that the research findings are derived from informants’ statements. Also, at the end of each interview the researcher summarised the main points that had been discussed in the interview and he reviewed these with the informant himself to be sure he did not miss out any important information. Moreover, the researcher did not depend only on the informants’ statements, but he also relied on the organisations’ documents and observational data in order to obtain multiple sources of information.

In this study, the literature is revisited after the data collection and analysis. There are three purposes of using the literature at this stage. Firstly, this can help the researcher to clarify the relationships between categories, which indicate the theoretical saturation. The second purpose is to discuss the findings and place them in the context of previous studies. Thirdly, it can serve as a final check on the emergent theory and completes the process of validation and relevancy.

Additionally, the researcher compared the findings against the raw data by going back to the written versions of the transcripts and written memos and performing a high level
of comparative analysis. A cross-comparison of the written versions of the transcripts and written memos were returned to by the researcher in order to compare the findings against the raw data. The last stage of the process is validating the findings and resulting theory by sending the three KM models that have emerged from this research (Figure 7.1: the conceptual model of the impact of KM on OP; Figure 8.1: the conceptual framework of the interactive factors influencing KM implementation, and Figure 8.2: a proposed model for the effective process of KM implementation) to three of the study's participants (S-M-01, SG-M-02 and TS-D-01) for their comments, in order to ensure the validity of the theory and that it is easy to understand.

The feedbacks of those participants were they believed that the findings were very informative and beneficial and possible to implement in organisations. The Conceptual Framework of the interactive factors influencing KM implementation and the proposed model for the effective process of KM implementation are understandable, easy to read and self explanatory and they good guide for those who intend to implement KM. They thought that implementing the model may be helpful in all sizes of organisations. On other hand, the researcher might need to simple the conceptual framework as it looks somehow confusing, maybe make it shorter and combine tables into one. Here, three participants’ feedbacks and comments:

“I have examined and viewed the 3 KM models you have sent me, and I found them very informative and may be beneficial and possible to implement in organisations. The Conceptual Framework of the interactive factors influencing KM implementation and the proposed model for the effective process of KM implementation are understandable, easy to read and self explanatory and they good guide for those who intend to implement KM. Also, I believe in the great connection between employs attitude, behavior (Over all willingness to act) and reaching the organisation’s goals. Moreover, for the conceptual framework of the interactive factors influencing KM implementation, I agree in facilitating, improving and activating the employees’ knowledge-sharing thorough the three factors and dynamics you provided. On other hand, the conceptual model of the impact of KM on OP, at first glance the model may seem little distracting for the normal reader. But for experienced mangers it’s very clear and makes good sense. The sequence you used in your model is simple to follow a nd realistic. Also, I think implementing the model may be helpful in all sizes of organisations. Moreover, some of the boxes need to have clearer headlines”(S-M-01).

“I believe it all looks fine and makes sense. You might need to simple the conceptual framework as it looks somehow confusing, maybe make it shorter and combine tables into one. However, I strongly believe that KM is a door to
maintain any organisation competitive advantage and optimise on their strength to hold their profit plans, market share, expansion, brands identity, and mostly the satisfaction of their employees. Also, I believe that if our organisation seek to implement this modules, it must be part of the top management strategy and support and the must be the first to utilise and it will minimise any hinders to by the employees to use knowledge management effectively and build up the learning culture within the organisation” (SG-M-02).

“Thank you for sharing the final findings. I believe this is the best practice since it is coming from the research base. Moreover, I believe the outcome of this model will help organisations to build employee and leadership capabilities, and improve the learning of the organisations. As if we will be applying it in our organisation, I believe that it will help us to set a clear goals and increase the probability of the organisation success. minimise employee resistance to apply it and share their knowledge, build KM competency into the organisation, minimise management resistance, help keep the projects and work on schedule, reduce disruptions during implementation, reduce productivity loss during implementation and reduce employee turnover during implementation” (TS-D-01).

Therefore, the researcher took these comments to his consideration and he modified the conceptual model of the impact of KM on OP based on those comments in order to make it easy to use. Then, he emailed the model after modification back to these participants for their feedback and they replied that the modified model is easier to follow, clearer and more understandable. They believed it is applicable to be implemented in any type of firm. The model shows good steps/sequence for managers to follow. It might be helpful to effectively achieve companies’ goals at shorter time and less cost.

“I would like to thank you for considering my last comments in regards to the conceptual model of the impact of KM on OP that you’ve emailed me last time. I’ve compared both models and I’ve found that the modified model is easier, understandable for the reader and clearer. It’s self explanatory for those who are seeking KM professional model guide. Also, I believe it’s possible to implement and execute this model in modern organisations, to increase employees’ level of awareness on this Key subject. The model shows good steps/sequence for managers to follow. It might be helpful to effectively achieve companies’ goals at shorter time and less cost. I am fond of the step you added (refining knowledge) I believe it’s an essential for the pace of your model. Over all I believe that it can be utilised as a good assisting learning tool, and may be used by all sizes and types of organisations. Furthermore may provide excellent instruments for senior managers in sitting and planning their strategies” (S-M-01).
“Now the conceptual model of the impact of KM on OP looks fine and it is more clear and easy to understand and follow. I believe that it is applicable to be implemented in any type of firm” (SG-M-02).

8.7 Limitation of the research

In this study, a number of limitations were identified, which may produce recommendations for future research. This study was subject to limited access to organisations, limited access to data and the limitations of time due to the PhD researcher having to finish the research in a certain amount of time. Despite these limitations, this research was well-structured and this led to the contributions of this study not being significantly affected by these limitations.

Most organisations in SA are not accustomed to sharing information openly with data gathering entities and they are not willing to participate in research studies. Therefore, the process of data collection was not easy and straightforward. Good networking skills were vital and required in order to facilitate data collection. As the researcher is from SA and he has work experience of slightly over ten years, he has a good professional network, which enabled him to gain access to organisations with the help of network contacts. Another limitation is limited access to organisations’ data and documents. This was not easy at all, even with good networking. It was difficult to obtain or access organisational information because this was considered to be top secret and key to sustaining competitive advantages.

Moreover, the number of interviews that could be conducted was limited due to a lack of time and resources, but the researcher made follow-up phone calls or e-mailed the interviewees in order to cover some areas that were not covered in the interviews. Also, the number of interviews in each organisation was limited. Some organisations allowed the researcher to conduct only one interview and very few organisations allowed the researcher to conduct two interviews but not more. Therefore, the study was limited by the background and knowledge of the 24 informants interviewed.

Finally, the time frame is considered to be the main constraint that limited this study in terms of reviewing all literature relevant to KM implementation. However, a large body of relevant literature has been reviewed in this study.
8.8 Recommendation for further research

This study proposed theoretical models which demonstrate the process for effective implementation of KM. Also, they provide general guidelines and checklists for organisations that are planning to implement KM, or are in the process of doing so. However, organisations need more detailed steps, stages, implementation methodology and roadmaps for an effective implementation process. This could be an interesting area of research.

Moreover, these models contain a number of elements and each element could be examined through empirical study in order to gain a better understanding of them and the role they play in implementing KM, including how one could improve the effectiveness of each element. For example, exploring the HRM element and how to create a culture that encourages knowledge creation and sharing.

Another interesting area of study is the role of social networking in order to facilitate knowledge-sharing practice among employees within the same organisation. Studying how knowledge-sharing between peers and parties of a similar status could influence professional businesses’ networking organisations may also be useful.

In addition, all organisations participating in this study were based in SA. However, there were six large multinational organisations among those participating in this study, and thus this research could be used to address non Saudi organisations in order to see what the impacts are of a variance in culture on this study and to validate its findings across different cultures.
REFERENCES


APPENDIX I: Interview Questions

- What is the primary business of the organisation?
- What is the annual revenue?
- What is the size of your organisation with respect to the number of employees?
- What is your position in the organisation?
- What is the history of knowledge management at the organisation?
- How does the organisation implement knowledge management?
- What is the current stage of your overall knowledge management project implementation?
- Why did your organisation implement knowledge management?
- What is the process of knowledge management implementation in the organisation?
- How is the process of knowledge management implementation disseminated in the organisation?
- What are the critical successful factors for effective knowledge management implementation?
- What are the most common challenges of knowledge management implementation?
- What are the benefits of knowledge management implementation?
- How has the organisation been able to implement knowledge management successfully?
- What technology or software tools does the organisation use for knowledge management application?
- What is the department responsible for coordinating the application of knowledge management?
- How does the organisation increase the level of trust among their employees?
- How does the organisation encourage people to share and contribute their knowledge?
- What is the type of the organisation structure?
- Is there any other information you would like to add?
APPENDIX II: Informed Consent Form

Harnissing KM to Improve performance within Saudi Organisations

Informed Consent Form

Preamble: This informed consent form is provided to you with brief information about the aforementioned research project, so that you can make an informed decision regarding your participation in the research interviews.

Brief description of research project.

The aim of this research is to understand KM concepts and issues, and to investigate how these bodies of knowledge and processes can be applied to enhance productivity, performance and competitiveness within organisations in Saudi Arabia.

The use of research data:

The interviews will be audio-recorded for the purpose of analysis. The interviews will also be transcribed verbatim, and saved as encrypted files in the researcher's computer/laptop based at the University of Manchester. Data will not be disclosed to a third party under any circumstance, and all information will be treated with the strictest of confidence. Where data is used in academic publications, these will be anonymised. Direct quotations will also be selected based on how typical and general these can be gleaned from the transcripts.

Having considered the rationale for the research and the way data is collected, analysed and used (Please put a 'V' where appropriate)

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<td>I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason.</td>
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Name of participant Date Signature

Rafat Amir

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Name of the researcher Date Signature