Identifying Knowledge Management Processes and its effect on Organisational Performance in the Airline Industry context

Thesis submitted for the degree of Doctor of Philosophy by

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بسم الله الرحمن الرحيم

وَمَا أُوتِيتُم مِّن الْعِلْمِ إِلاَّ قَلِيلا

الاسراء, آية 85

...and of knowledge, you (mankind) have been given only a little." (Al-Israa' 17:85)

Abstract

In today's increasingly competitive business environment, the use of knowledge to gain a competitive advantage has become a serious concern for all organisations. However, some industries have been affected more acutely than others in the transition to a knowledge-based economy. Despite the increasing number of studies relating to Knowledge Management (KM), few have explored this concept within the Airline Industry (AI). As all the studies and model of this research have built on the relationship between KM and organisational performance (OP), the AI is the context of the study within the area of Gulf Cooperative Countries (GCC). This area has been chosen as it provides a good airlines-based industry which is mature. A comprehensive and critical assessment of different KM models was made through a review of the available studies in order to evaluate KM and to identify the processes that affect OP. This research proposes a conceptual model that represents KM processes and OP measurements.

This research adopts a qualitative research approach through a case study strategy to identify and test a conceptual model proposed from the literature review. Four international airlines companies were investigated through extensive face-to-face semi-structure interviews, followed by observations, and documentation with managers, senior managers, general managers (GMs) and vice presidents (VPs) to produce accurate results. Data findings were then reported and analysed.

The main finding revealed that most studies relating to knowledge management processes and their effect on organisational performance took place in different sectors other than the AI. Also, KM processes and their effect on OP appear to be neglected, leading to conflicts in KM adoption. However, KM processes are applicable in the AI and these processes are not only used and implemented, but are also perceived as important in influencing positive OP. The only KM processes that generally received less support from the participants in terms of perceived effectiveness in affecting positive OP were knowledge translation/repurposing and knowledge disposal.

The main contribution of this research is a novel model for KM processes and OP. This model serves as a guideline for the stakeholder and decision maker to be adopted in organisations to lead to more effective implementation and adoption of KM disciplines. It also provides a practical guideline for future KM research which at present seems fragmented within the AI. The suggestion for future research is to further validate and

improve the generalisability of the KM processes model to the entire AI in the world and across other industries. Moreover, due to the time constraints and lack of funding, there were no attempts made in this research to assemble a sample that is representative of all the airlines in the world. In order to increase the generalisability of the results of this study, the sample size needs to be expanded and quantitative research might be considered.

Key Words: Knowledge Management Processes, Organisational Performance, Airline Industry.

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[2] Tubigi, M., Alshawi, S., & Alalwany, H., 2013. Impact of Knowledge Management processes on Organisational Performance; a Preliminary Study. In *European, Mediterranean & Middle Eastern Conference on Information System (EMCIS).* Windsor, United Kingdom.

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Table of Contents

List of Tables

List of Figures

Chapter One

Introduction

1.1 Research Background

As the business environment has grown more competitive in recent years, achieving competitive advantage has become a serious concern for all corporations. However, as a result of current economic conditions, many difficulties and challenges, arising from a multiplicity of factors such as globalisation and the resulting intensification of competition between organisations, face the majority of businesses. Governments and organisations are trying to invest in people, studies and tools that could help organisations to face such problems. One of these organisations are airlines companies as it is becoming increasingly difficult for local carriers to run profitable businesses as a result of the encroachment by, and undercutting of, other firms. According to Lee (2010) American Airlines, Delta Airlines, Frontier Airlines, Northwest Airlines, United Airlines, and US Airways filed for chapter 11 bankruptcies in the last decade. The AI is primarily a service industry. Competitive advantage within this field depends upon competitive prices, safety, customer satisfaction and loyalty (Sheth, 2002). Thus, this current situation encouraging the use of new emerging management tools, such as Knowledge Management (KM), to improve organisational effectiveness, efficiency and, ultimately, success (Lee and Choi, 2003).

The present situation is inevitably likely to become more critical. Drucker (2001) asserts that ‘‘knowledge’’ is growing to become the most significant issue affecting industrial production as it slowly but surely replaces traditional elements of economic power, such as capital, labour, equipment, machinery and raw materials. Moreover, to achieve long-term competitive advantage, knowledge has grown to be the key competence required by organisations (Sherif, Hoffman and Thomas, 2006).

Therefore, the aspects of KM which are of most relevance to the AI are likely to be those that consistently engender high levels of customer service, availability of key information to all staff, and those that enable the organisation to maintain high levels of safety, along with competitive pricing. Leidner and Alavi (2006) and Schein (2004) argue that the key critical success factors enabling an organisation to remain competitive in today’s rapidly changing knowledge-based economy are knowledge and innovation.

Some researchers argue that, in the 21st century companies' principle competitive advantage is directly related to the knowledge that they possess and how effectively they are able to utilise it (Wong and Aspinwall, 2006). One of the ways in which organisations gain competitive advantage from one another is through the creation of knowledge, and how this knowledge is managed and utilised (Wong and Aspinwall, 2006). Critical success factors for competing effectively within the present rapidly changing knowledge-based economy include knowledge and innovation (Leidner and Alavi, 2006). Competitive advantage is said to be achieved when organisations are able to be the first to obtain and use a particular set of knowledge successfully (Davenport and Prusak, 1998).

Consequently, the successful introduction and use of KM practices are considered essential components of any strategy for the improvement of Organisational Performance (OP). This is because appropriate management and application of knowledge can help organisations in their attempts to become more creative, more intelligent and more able to adapt within an ever-changing business climate (Wong and Aspinwall, 2004). Indeed, KM should be viewed as a strategy used to assist organisations to envisage, make and control the whole decision-making process through the use of knowledge (Kongpichayanond, 2009). Furthermore, improved performance, arising from enhancement and cultivation of the individual knowledge of organisational members, can be achieved from a clearly defined strategy of continuous organisational learning (Nonaka, 1998; O'Dell and Grayson, 1998).

Despite the possible benefits to be gained from the use of KM in the workplace, and the relatively large number of research studies conducted into the KM concept in developed countries, only a small number of studies have set out to investigate this concept within the context of AI in developing countries (for instance, Zaim et al., 2013; Zawawi, Akpolat, and Bagia, 2011; Tubigi *et al.*, 2013).

The grown significance of KM and intellectual capital makes such investigation of KM issues a critical concern for airline businesses. Thus, this study seeks to provide a qualitative analysis that is based on a solid and critical overview of the available KM studies and to investigate the potential effect of KM processes on OP within the AI. In particular, the current study attempts to develop a model to frame the effect of KM processes on OP. This model could help AI businesses to understand KM processes and their level, and effectively enhance these processes to maximise their positive effect on OP as the most important concern for business organisations. It is believed that this will

provide a holistic and detailed perspective concerning KM processes, as well as identifying their effect on OP.

1.2 The Significance of the Research

Organisations are increasingly required to be learning systems if they wish to thrive in a dynamic business environment, giving that the ability to learn and continuously gain new knowledge is the most critical process to survive and grow. Moreover, organisational knowledge is considered as an important asset when attempting to gain competitive advantage in a highly competitive business environment (Al-adaileh, 2013; Mills and Smith, 2011; Tubigi and Alshawi, 2015).With the increasing focus on knowledge workers and knowledge-based organisations, KM has the potential to help organisations to capture, select, organise, distribute, and transfer significant information, knowledge, and expertise which enables improvement of organisational performance. Numerous researchers have highlighted the importance of knowledge to the company's performance (for instance, Daud and Yusoff, 2010; Liao and Wu, 2009; Mills and Smith, 2011; Tubigi and Alshawi, 2015; Al-adaileh, 2013; Zaim, *et al*., 2013; Tubigi, *et al*, 2013), therefore, organisations are increasingly concerned with managing their knowledge effectively in order to keep ahead of the competition and to improve their performance. However, according to Kalling (2003), research into KM does not identify or offer a clear understanding of the role of KM in improving organisations' performance. Many scholars have tried to assess KM's contribution, such as Su, *et al* (2006) who claims that knowledge work can lead to new technologies for developing improved products and ways of working. Moreover, the knowledge base of a company is commonly viewed as the fundamental underlying factor in performance levels (Lai and Lee, 2007). For many authors (Amit and Schoemaker, 1993; Grant, 1996; Krogh and Roos, 1996; Spender, 1996; Teece, 2000; Eisenhardt and Santos, 2000), knowledge which possesses all the characteristics of a strategic asset is the best and the only resource for achieving sustainable superior performance. Since knowledge is rapidly becoming a very important measure of future organisational performance (Choi and Lee, 2002), it is therefore vital that indicators and measures are developed in order to explore correlation between KM processes and OP as well as to allow management to handle the organisational knowledge better. Subsequently, investigating of KM and its processes is seen as an essential and demanding research issue. This study attempts to fulfil the general need for greater and more empirical extensive research. In addition, it is significant because there is a particularly lack of studies within the context of AI in the GCC countries which makes the topic of this study very important

to businesses within that industry. This research contributes to analyse the degree to which organisations in such countries, including AI, are conscious of and struggle to implement KM processes and to transform into knowledge-based organisations.

Accordingly, the importance of this study is derived first from the importance of KM as a strategic organisational tool as well as the effect of KM processes on the organisational overall performance, and second, the limitations of previous studies in terms of the extent of their explanatory power, the quantitative nature of these studies, and their applicability across wider organisational and cultural settings. Therefore, this study seeks to provide in-depth examination of the issue of KM within a different context using qualitative data gathered from the research context. This will potentially enables development of a conceptual model for KM implementation which can improve the OP within the AI context. Based on this argument, the study is aimed at answering the following main research questions:

1) What are the processes of Knowledge Management that affect Organisational Performance within the context of the Airline Industry?

2) What are the levels of effect of Knowledge Management Processes on organisational performance within the context of the Airline Industry?

1.3 Research Aim and Objectives

This research seeks to achieve the following aims:

First: To identify KM processes that affect OP with particular reference to the AI in the GCC countries.

To facilitate the achievement of this aim, the following objectives are proposed:

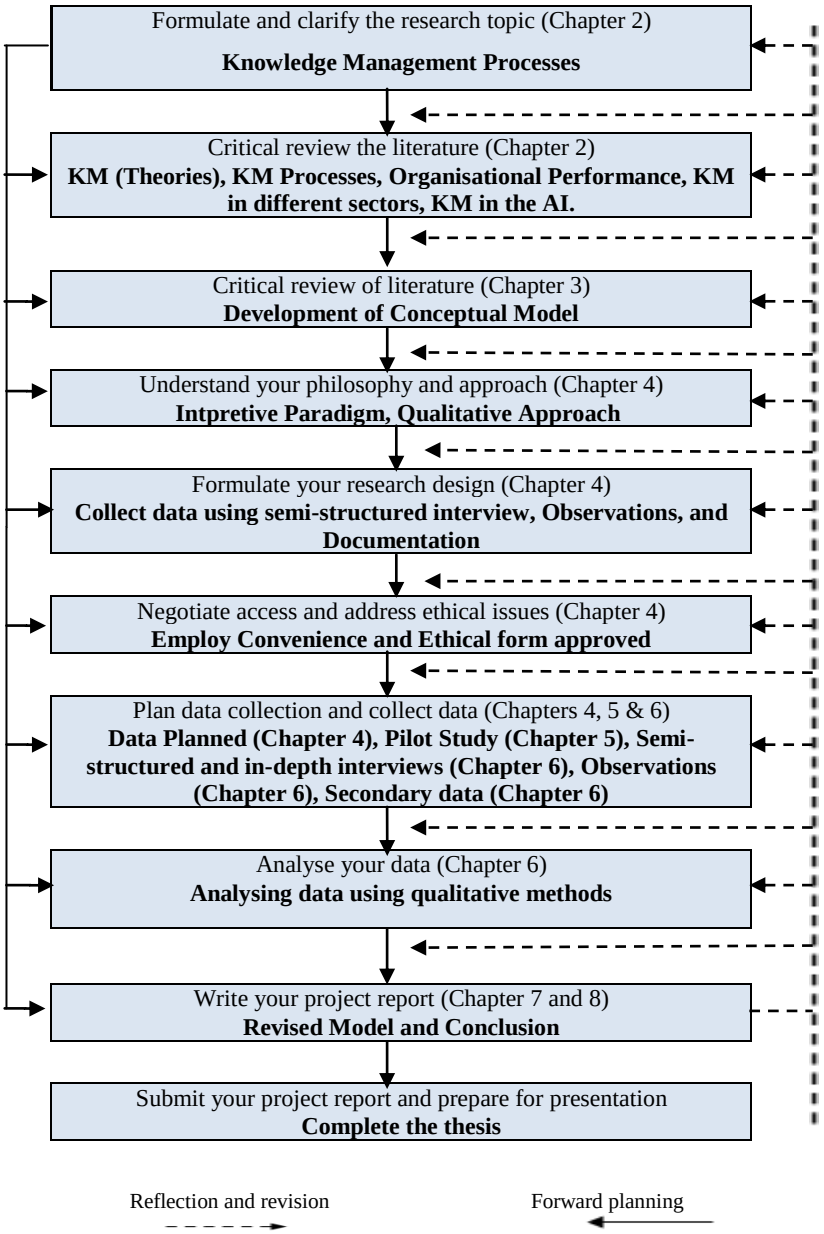
- Conduct an extensive and critical review of the available literature and previous studies relating to KM processes along with knowing performance measurements. This enables solid identification of the KM processes and OP measurements.
- Propose a conceptual model that represents KM processes that can affect OP measurements through mechanisms to enhance KM implementation within the context of AI.
- Conduct an empirical study in order to validate the conceptual model.

Second: To provide a set of recommendations for decision makers, stakeholders, and academics.

1.4 Research Process

To achieve the aim and objectives of this research, fill the identified gaps, and answer the research questions, a critical research process has been created (the bold words). According to Saunders *et al*., (2007), Figure 1.1 shows the research process.

Figure 1.1: PhD research process



Source: Saunders *et al*., (2007) Developed and modified by the author.

1.5 The Structure of the Thesis

To guide the overall process of this research, the thesis is presented according to the following structure:

Chapter 1 – The research background identifies the research problem and issue as well as the related previous studies that support this problem, then the chapter moves on to the significance of the research which explains the importance of knowledge management to gain competitive advantage. The chapter then presents the research aims and objectives, and finally the structure of the Thesis.

Chapter 2 – Presents an extensive review of the available literature and previous studies relating to the KM concept and processes, including introducing the concepts of Knowledge, KM, OP, and KM processes from different perspectives in order to identify the gap among previous studies. It also provides an in-depth review of relationship between KM processes and OP, as presented by other researchers in different contexts, which will lead to the development of the research model and its main propositions.

Chapter 3 – Describes previous studies that are related to KM and OP, and then the compares different types of OP measurements in order to build a Conceptual Model.

Chapter 4 – Discusses the methodological approach that will be followed for this study, involving the design of the research, the population and sampling strategy, data gathering techniques, and data analysis methods.

Chapter 5 – Presents the pilot study that was carried out within the airline sector and the main purpose. The results, from face-to-face interviews, are presented and discussion developed, along with the conclusions of the pilot study. The chapter then discusses the findings of the pilot study, involving the selection of the case studies and the main study.

Chapter 6 – This chapter start with the description of the case studies and their background in the airline sectors, and presents the analysis, findings and discussion of the main study, commenting on all the details and processes that lead to the outcomes of this study.

Chapter 7 – Provides a discussion of the conceptual model according to the findings of the main study, describing the lessons learned from the study and suggesting a revised conceptual model based on the findings.

Chapter 8 – The final chapter of the study contains the conclusion, contribution, limitations and details of future work.

Chapter Two

Literature Review

2.1 Introduction

This chapter provides an extensive overview of the literature review and previous studies, leading to the realisation of the logic behind the decision to conduct this particular research. It begins by defining and evaluating the concept of knowledge in organisations and the basic features of KM. Then the chapter discusses KM processes in order to identify the processes that have been used in previous studies. In addition, the chapter takes an overview of the OP measurements that have been used in previous research.

The relationship between KM processes and OP from earlier studies is discussed to identify the processes of KM and its mechanisms that have been used in previous studies and to discover which aspect of these processes has more effect on OP for building a conceptual model. The specific focus of the review will be on the effect of KM processes on OP, as found in the literature, choosing specific concepts for use within this study. The review then examines the findings of a selection of the literature, in terms of the relationship between KM and OP. An overview of KM processes and OP is also discussed to measure the relationship between these two holistic and intangible concepts.

As the background of this study is the AI, relevant literature on KM and OP in the AI is the focus of the section so that an understanding of what was already known in the research topic can be gained, along with the results of previous studies relating to KM processes and OP in the AI.

The limitations of previous research are addressed to identify any gap in the current literature and to build conceptual model for KM processes and OP within the context of AI. The discussion of the limitations of past research on KM and OP illustrates the need for this research by addressing this identified gap.

The final section of this chapter attempts to identify the gap in the available literature, thus providing a rationale for this research.

2.2 Knowledge and its Management

According to Pathirage *et al.,* (2007, p.116), the *'understanding of what constitutes knowledge is central to its effective management'*. Knowledge is an important resource, both for entire organisations and the employees that work within them (Bollinger and Smith, 2001). However, the concept of knowledge has attracted many issues concerning its definition. The different definitions of knowledge that are currently available threaten the possibility of a universal understanding of the concept.

Grey (1996) contended that knowledge comprises intensive use of information and data, which can be combined with personal skills, intuitions, competencies, ideas, commitment and motivation. Nonaka and Takeuchi (1995), however, suggested that knowledge can be defined as a dynamic human process, which justifies personal belief towards the truth. Nevertheless, both of these definitions emphasise the roles played by people and, as Beveren (2002, p.19) asserted, *'even though some argue knowledge can be acquired, stored and used outside of the human brain, knowledge cannot exist outside of the human brain, and that only information and data can exist outside of the brain'*. Thus, KM can be seen to extend beyond the management of information and data to establish information within the minds of employees.

There is widespread recognition that knowledge in organisations is considered a source of competitive advantage (Ambrosini and Bowman, 2008). However, knowledge in itself cannot be considered a competitive advantage unless it is utilised and managed. Included in the utilisation and management of knowledge is the creation of new knowledge and the transfer of existing knowledge to the individuals in the organisation. Knowledge in organisations is embedded in various structures, such as in the organisational culture, documents and the people working in the organisation (Grant, 1996). Competitive advantage is said to be achieved when organisations are able to be the first to attain and use a particular set of knowledge successfully (Davenport and Prusak, 1998).

As an asset, knowledge is considered to be invisible and intangible, and therefore hard to measure or manage by traditional means. Thus, any attempt to manage knowledge will not succeed if it is over-simple; rather a comprehensive approach is required. Contrary to information, which can be stored externally from the human brain, the essentials of organisational knowledge may be viewed as housed within it. As stated by Tubigi and Alshawi 2012, if we accept knowledge to be socially constructed then, like culture, it emerges and develops through organic creation and societal interaction. Thus, knowledge is seen in terms of cognitive, situational, experiential and emotional factors (Al-adaileh and

Al-atawi, 2011). Effective utilisation of organisational knowledge, in a way that adds value to the organisational knowledge, is referred to as 'KM' within the academic literature. However, it is important to establish that knowledge as a concept is subjective and therefore it has different meanings to scholars. Each organisation will have its own definition of knowledge, which will define how knowledge should be gained, categorised and accessed by employees.

The intangible nature of knowledge naturally renders its management problematic. In much the same way as there are varying definitions of knowledge, there exist a plethora of concepts of what KM entails (Al-adaileh, 2008).

Depending on which view of knowledge is adopted, the focus of KM may change. Where knowledge is considered as an object, the focus of KM will be placed on development and management of stores of knowledge. However, where knowledge is seen to be a process, by implication KM is thought of as a combination of the flow of knowledge and the associated processes of creating, sharing and distributing knowledge (Alavi and Leidner, 2001). In order to understand the significance of tacit knowledge, it has been argued that all KM practices should prioritise the conversion of such knowledge into explicit knowledge, as well as the management of tacit knowledge in social interactions (Nonaka, 1991)

Although KM has developed into an important area of research over recent years, it has been hard to develop a commonly accepted conceptualisation. Since knowledge is both a tangible and an intangible resource, this is not altogether surprising (Hall, 1993).

Marques and Simon (2006, p.144) do, however, conclude that the following set of practices can be considered as aspects of KM:

- Orientation towards the development, transfer and protection of knowledge;
- Continuous learning in the organisation;
- An understanding of the organisation as an overall system;
- Development of an innovative culture to encourage R&D projects;
- Approach based on individuals; and
- Competence development and management based on competences.

The broad definition of KM is the creation and utilisation of knowledge within an organisation (Takeuchi, 2001). KM can be viewed as a centralised system that is able to control all the decision-making processes of an organisation (Kongpichayanond, 2009). From a human resource management view, KM can be thought of as 'any process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it

resides, to enhance learning and performance in organisations' (Swan, *et al*, 1999). Conversely, Shaw and Edwards (2005) proposed that KM, both inside and between organisations, was formed by the merging of the processes of sharing, retention, utilisation and acquisition of knowledge by individuals. In terms of management information systems, KM can be considered to combine all the techniques which lead to the development of processes related to core knowledge, in holistic terms.

Furthermore, from the strategic management standpoint, KM may involve improving the methods which firms that are facing highly turbulent environments use in order to mobilise their knowledge base (or leverage their knowledge "assets") in order to ensure continuous innovation (Jashapara, 2004). The link between KM and OP was clarified by Jennex (2007) when he determined KM to be a practice that selectively applies knowledge from previous decision-making occasions to present-day and future situations in an attempt to improve an organisation's effectiveness.

2.2.1 Knowledge Management in the Arab Region

According to Ozbilgin and Syed (2010), given the unique cultural context of the Arab region, the Arab Club for Information and the Arab Knowledge Management Society are two organisations that can facilitate better KM within the Arab region. They argue that the government in the Arab region needs to make an effort to encourage the introduction of knowledge management in that region and that there is a need to address its commencement in the Arab region (Ozbilgin and Syed, 2010).

El Emary *et al.,* (2012) examine KM in Dubai: specifically, the requirements needed for KM to be successful in the Arab city. The results of the study show that KM in Dubai needs the following requirements: *'a central memory and collective mind of members of the organisation; information technology infrastructure; multi-dimensional organisational structures; dialogue in human community; and shared knowledge space/tacit knowledge'* (El Emary *et al.*, 2012, p. 357).

The centralisation of memory and minds of the members of the organisation is a requirement for KM to commence in Dubai, which is a major Arab city (El Emary et al., 2012). An organisation is needed to provide the structures for knowledge management to occur. Infrastructure for information technology is also needed in the Arab region, specifically in Dubai, to commence KM (El Emary *et al.*, 2012). According to El Emary *et al.,* (2012), the technology infrastructures in Dubai are available but they are not being used effectively in relation to KM.

In addition, multi-dimensional organisational structures are important in the commencement of KM in Dubai (El Emary *et al.*, 2012). This is consistent with the preponderance of transformational leadership in Dubai, which is preventing hierarchical organisational structures. These multi-dimensional structures are important as they allow decentralisation to occur and this enables knowledge to flow from one structure to another, making KM possible.

Dialogue in the human community also emerged as a requirement for KM in Dubai (El Emary *et al.*, 2012). Only through dialogue can knowledge be transferred from one person to another. Through the structures available for KM dialogue needs to occur, otherwise these structures will not serve their purpose in relation to KM.

Finally, shared knowledge space or tacit knowledge is an important component for the commencement of KM in Dubai (El Emary *et al.*, 2012). This is significant in the commencement of knowledge management because it gives a space so that different people can understand each other without being explicit about how they communicate knowledge. From previous discussion of KM in the Arab region, it is appear that KM is neglected and limited; there is more work to be done as the bases and infrastructure are missing. Also, there should be more studies related to KM and OP in the Arab region in general and AI in particular as most of the available literature based in the west.

2.2.2 Tacit and Explicit Knowledge

Riding a bicycle is an example of how to do something without thinking about it; this is how Polanyi (1966) thinks when he described tacit knowledge as knowing more than we can tell. According to Dhanaraj, *et al* (2004) *"tacit knowledge is abstract and can be communicated only through active involvement of the teacher"*. Explicit knowledge is highly codified and is transmitted using formal, systematic language (Polanyi, 1966; Nonaka and Takeuchi, 1995), and it is embedded in standardized procedures (Nelson and Winter, 1982; Martin and Salomon, 2003). However, whilst explicit knowledge provides the building blocks, tacit knowledge provides the glue and integrating mechanism in learning and it develops from the transfer of context-specific knowledge which is embedded typically in non-standardized and tailored processes (Polanyi1966). Although tacit knowledge is often considered more valuable, explicit knowledge is simpler to acquire and can be rapidly exploited (Polanyi, 1966).

Al-adaileh and Al-atawi (2011) identifies two sorts of knowledge: 'explicit': knowledge and 'tacit' knowledge. They define explicit knowledge as a systematic knowledge that can be readily communicated and shared within a particular context among people. Examples

would include documented organisational procedures, product specifications or official organisational publications. Explicit knowledge is rooted in tacit knowledge that was converted to make it explicit (Nonaka and Konno, 1998). Explicit knowledge is equivocal and traceable, making the transfer of knowledge between people within an organisation more definitive and formal. Room for interpretation is limited as explicit knowledge is clear and can be reasonably understood by people in the organisation.

On the other hand, they Al-adaileh and Al-atawi (2011) define tacit knowledge as highly personal and difficult to formalise. This type of knowledge can only, by definition, exist within the human brain and it constitutes a product of social and professional interaction and the interaction of individuals with their environment. Tacit knowledge focuses on two areas: (a) technical knowledge, which contains information about the technical know-how of different topics and issues relevant to the organisation; and (b) cognitive knowledge, which is involved in foundational beliefs and values (Nonaka and Konno, 1998).

Tacit knowledge is considered a competitive advantage in organisations because its informal and implicit nature makes it difficult for other organisations to copy (Ambrosini and Bowman, 2008). However, this difficulty in the transmission of tacit knowledge can be both an advantage and a disadvantage. It is a disadvantage because of the difficulty in quantifying and formalising this type of knowledge.

Another component of tacit knowledge focuses on relationships with other individuals (Parise *et al.,* 2006). Relationships with co-workers can be instrumental in the development and communication of tacit knowledge, underscoring the significance of interaction within an organisation. The only problem is that developing trust in an organisation may take some time for tacit knowledge to be shared, which can prove problematic for new employees. Because of the informal nature of tacit knowledge, explicit knowledge is easier to communicate and transfer within an organisation.

It is possible to transform tacit knowledge into explicit knowledge by the interaction and exchange of ideas between people within the same social context or by formal writing and publications. This has been labelled by many KM scholars as knowledge conversion. According to Al-adaileh and Al-atawi (2011), effective KM seeks ways to utilise explicit knowledge, as well as transforming tacit knowledge into explicit knowledge. Successful KM also aims to produce an appropriate environment for the sharing of this knowledge and to use it effectively in order to achieve organisational goals. However, one could argue that the nature of Arab culture attributes (e.g. collective nature of culture), if directed

effectively, might encourage the transformation of explicit knowledge into a tacit knowledge. This might maximise the value of knowledge through the possibility of sharing, exchanging and transferring of both types of knowledge.

Stevens *et al.,* (2010) focus on the problem of converting tacit knowledge into explicit knowledge in cases where there seems to be confusion about the purpose of KM. According to them, KM is often understood as content management, but not the creation of knowledge, resulting in KM that focuses on management and not on knowledge creation. They further emphasise the importance of externalisation and internalisation, in which tacit knowledge is converted into explicit knowledge, and once that knowledge becomes explicit it converts again into tacit knowledge. The process of knowledge conversion of tacit and explicit knowledge is a continuous cycle.

Based on the previous discussion, this research views KM as the process of effectively managing the available formal explicit accumulative knowledge in a way that can add organisational value as well as creating an appropriate organisational environment for transforming tacit knowledge into formally recognized explicit knowledge.

2.3 Knowledge Management Processes

From the process point of view, KM is variable. As stated in Tubigi *et al.,* 2013, Chen (1998) states that there are nine KM processes: selection, acquisition, learning, creation, dissemination, construction, storage, management systems and culture. Sanchez and Palacios (2008) state that increasing the quality and quantity of knowledge for individuals and teams, as well as whole organisations, can be achieved through the organisational environment and by the use of effective implementation of KM. Yang and Wan (2004) provide a comprehensive view of the concept of KM that manages to identify all of the processes involved. They define KM as *'the process of collecting and identifying useful information (i.e. knowledge acquisition), transferring tacit knowledge to explicit knowledge (i.e. knowledge creation or transfer), storing the knowledge in the repository (i.e. organisational memory), disseminating it through the whole organisation (i.e. knowledge sharing), enabling employees to easily retrieve it (i.e. knowledge retrieval,) and exploiting and usefully applying knowledge (i.e. knowledge leverage)'* (Yang and Wan, 2004, p.595).

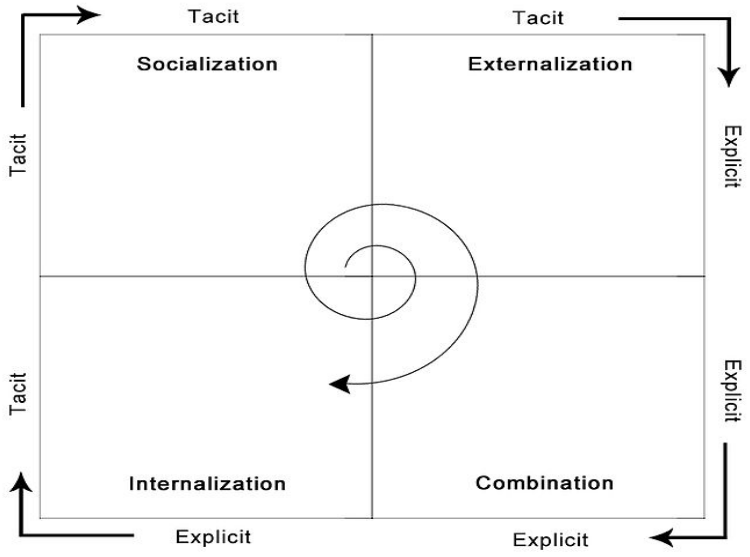
Nonaka (1994) also asserts that knowledge is fundamentally convertible, proposing four key stages of knowledge conversion. These are known as SECI (Socialisation, Externalisation, Combination and Internalisation). Nonaka and Takeuchi (1995) postulate

that knowledge conversion involves the transformation of tacit knowledge into explicit knowledge, followed by the re-transformation from explicit knowledge into tacit knowledge. They described the following KM processes:

- Socialisation, which is seen as the method of adapting implicit knowledge into new tacit knowledge.
- Externalisation, which involves the process of articulating tacit knowledge into explicit knowledge.
- Combination, which is seen as the method of transferring explicit knowledge into more intricate and organised sets of explicit knowledge.
- Internalisation, which is the process of integrating explicit knowledge into tacit knowledge.

Interaction between these processes is shown in Table 2.1 below.

Table 2.1 Nonaka and Takeuchi's (1995) SECI model of knowledge creation



Source: Nonaka and Takeuchi (1995)

Within large organisations, knowledge conversion processes are viewed as means to create knowledge using continuous dialogue on tacit and explicit knowledge According to Nonaka (1994). This, as one may argue, can limit the value of these processes to the measurement of knowledge creation, which is seen by other researchers as one of the main KM processes. However, it is not the only one that should be considered to be valuable.

The process of knowledge conversion facilitates the new knowledge creation and, most importantly, the transference of knowledge as a result of social interaction between tacit knowledge and explicit knowledge, using four specific patterns of interactions. Tseng (2010) describes any process of this kind as 'learning by doing', whereby explicit knowledge that is created within the whole organisation is converted into tacit knowledge for individuals. Such a conversion commences with the individual, increasing and developing as it proceeds through a variety of interactive communities, thus moving ahead of any boundaries of sections, departments, divisions and the whole organisation. As a consequence, knowledge creation across organisations is possible both horizontally and vertically, resulting in a constant self-upgrading process (Tseng, 2010).

As stated in Tubigi *et al.,* 2013, a more comprehensive view of the constituent KM processes is provided by Zaim (2006) who claims that it is possible to compose a more comprehensive, process-oriented view of KM. He states that *'KM is the systematic management of all activities and processes referred to generation and development, codification and storage, transferring and sharing, and utilisation of knowledge for an organisation's competitive edge'* (Zaim, 2006, p.3). A process-oriented definition of KM is also emphasised by Jashapara (2004), who reveal that KM involves any process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it resides, to enhance learning and performance of organisations.

In their study of the 'knowledge creating company', 'learning organisation', and 'absorptive capability', Baek *et al.,* (1999) find that each one has its own characteristic transforming strategy. Table 2.2 demonstrates these findings.

Table 2.2: Summary of three organisation theories

Theory/Activity	**Creating Knowledge**	**Securing Knowledge**	**Distributing Knowledge**	**Retrieving Knowledge**
Knowledge Creating Company (Nonaka, 1991,1994)	Knowledge is created via interactions between tacit knowledge and explicit knowledge at two different levels: the individual and the group.	Once the task of a team is completed, team members incorporate tacit knowledge acquired and created in the project with explicit knowledge in the form of documents and report.	Knowledge is disseminated by building a cross-functional, self-organising team.	The knowledge created is tested by various departments within the organisation. This is called the "crystallisation process".
Learning Organisation (Senge, 1990)	Knowledge is created through communication of individual learning among co-workers.	Besides formal knowledge, informal knowledge, in the form of tacit know-how, letters, memos, and informal conversations should be captured, shared and reused.	A variety of mechanisms can be used for spreading knowledge quickly and efficiently throughout the organisation: written, oral and visual reports; site visits and tours; personal rotation programs; and education programs and seminars.	Through double-loop learning, individuals continuously update the existing norms, procedures, and policies in the organisation, based on their experiences.
Absorptive Capability (Cohen and Levinthal, 1990)	Knowledge is created based on prior knowledge. In other words, the process of creating knowledge is characterized by the process of assimilating new knowledge with pre-existing knowledge.	When new knowledge is added, the existing linkage and associations between different knowledge sources need to be modified.	Individuals who stand between subunits within the organisation capture, translate, and disseminate external information in order to allow other co-workers to share it.	All available knowledge can be combined by establishing new linkages with pre-existing knowledge. Diverse knowledge sources are closely linked in a shared memory.

Source: Baek, et al (1999)

As stated in Tubigi *et al*., 2013, researchers differ in their appreciation of KM processes and different researchers have adopted different classifications of KM processes. Table 2.3 below provides a summary of selection criteria of these classifications.

Table 2.3 Classification of KM processes

Author	**Processes**
Alavi and Leidner (2001)	Knowledge creation, knowledge sharing, knowledge distribution
De Jarnett (1996)	Knowledge construction, knowledge embodiment, knowledge dissemination and use, knowledge retention and refinement
Demerest (1997)	Knowledge construction, knowledge dissemination, knowledge embodiment, use
Fong and Choi (2009)	Knowledge acquisition, knowledge creation, knowledge storage, knowledge distribution, knowledge use, knowledge maintaining
Hedlund (1994)	Knowledge acquisition, knowledge store, knowledge transfer, knowledge application, knowledge protection
Lettieri, Borga, and Savoldelli (2004)	KM cycle in non-profit organisation, storage, retrieval, diffusion and presentation, application, creation
Mills and Smith (2011)	Knowledge creation, knowledge acquisition
Mishra and Bhaskar (2011)	Knowledge creation
Quintas, Lefrere, and Jones (1997)	Process or practice of crating, acquiring, capturing, sharing, and using knowledge
Singh and Soltani (2010)	Knowledge creation, knowledge use, knowledge transfer
Tubigi and Alshawi (2015)	Knowledge creation/acquisition, knowledge modification, knowledge archiving, knowledge use, knowledge transfer, knowledge translation/repurposing, user access to knowledge, and knowledge disposal.
Zack, Mckeen, and Singh (2009)	Knowledge location and sharing; knowledge experimental and creation
Zaim, Tatoglu, and Zaim (2007)	Knowledge generation and development; knowledge codification and storage; knowledge transfer and sharing; and knowledge utilization
Yang and Wang (2004)	Knowledge acquisition
Zolingen, Streumer, and Stooker (2001)	Acquiring knowledge, establishing knowledge, disseminating knowledge, developing knowledge, applying knowledge

However, regardless of the nature and number of KM processes that are proposed in the previous studies, one could argue that a more comprehensive and systematic classification is needed for these processes to enable handling of all the aspects relating to KM discipline.

As stated in Tubigi *et al.*, 2013, Bergeron (2003) provides probably the most detailed and, for the purposes of this study, useful description of KM processes. He uses the concept of a KM life cycle that includes eight processes (creation and acquisition, modification, use, transfer, archiving, translating/repurposing, access and disposal). The next chapter will present an in-depth description of these processes.

2.4 Organisational Performance

As stated in Tubigi *et al.*, 2013, for every scholar or practitioner within business and management disciplines, performance is the paramount concern (Politis, 2002). Measuring organisational performance can be difficult because of the constant changes which occur in the variables and factors that are measured in organisational performance (Hubbard, 2009). Based on the measurements used by previous researchers, organisational performance is often measured using financial performance indicators (Lee and Huang, 2012).

In the same source, Chakravarthy (1986) argue that it is difficult to engage in comprehensive comparative analysis of the differences between the performances of companies when using traditional financial measures, such as Return On Equity (ROE), Return On Capital (ROC), and Return On Sales (ROS). Similarly, Kaplan and Norton (1996) show that classic financial accounting measures, such as Return On Investment (ROI) and Earning Per Share (EPS), can be deceptive when providing indicators of issues of continuous progress and innovation. This suggests that these traditional accounting practices, with their focus on short-term indicators such as share prices, turn over, cash flow and profit, are not actually appropriate for assessing the overall performance of corporations, whereas non-financial elements, such as stakeholders, investors and customers, have recently been recognised as more accurate indicators (Edvinsson, 1997; Lee *et al.*, 2005).

In addition to the definition difficulties mentioned above, in order to measure the impact of KM on OP, scholars must establish a means by which OP should be measured. This is more problematic than it might first appear as the changing nature of the ‘firm’ or 'organisation' has led to a corresponding need to adjust the scales and factors by which we

measure performance. It is also important to be able to utilise a method of measurement which is compatible with the independent variable (i.e. Knowledge Management). This is because it has proven to be difficult to measure the effects of KM when utilising more traditional measurements for the evaluation of OP. For instance, as stated in Tubigi *et al.*, 2013, Tanriverdi (2005) finds only a moderately weak relationship (r ¼ 0.15 to 0.17) between a firm's financial performance (ROA and Tobin's Q) and its ability to create, share, integrate and use knowledge. Davenport (1999) states that although the relationship between KM and performance indicators has been exhaustively analysed, in terms of exchange value, market value, balance sheet, etc, only a small number of organisations have been able to determine any causal relationship between KM activities and OP, through traditional measurements. In their study, Behn and Riley (1999) examine empirically whether timely non-financial performance information is a helpful predictor of financial performance in the airline industry. Their study reveals that on-time performance, mishandled baggage, ticket over-sales, and in-flight services have considerable association with their proxy for customer satisfaction. It has been determined by many scholars that it is necessary to measure other KM indicators, including non-financial measures of performance such as quality (Mukherjee *et al.*, 1998), innovation (Francisco and Guadamillas, 2002) and productivity (Lapre and Wassenhove, 2001).
Cotora (2007) stated that in order to effectively measure corporate performance, a system must be adopted that considers indefinable values, such as competencies, partnerships and knowledge, alongside inter-relationships and the process of conversion in situations.

To address the limitations of using only financial performance as a measure of organisational performance, factors of customer/market performance, short-term efficiency, and long-term learning and development may be included (Hubbard, 2009). Financial performance includes factors such as sales, return on sales, and gearing. Internal processes that focus on short term efficiency may include factors such as productivity, capacity utilisation and labour turnover. Customers/market performance may include factors such as product share, defects and number of new customers. Finally, learning and development measure organisational performance factors such as investment and total assets, development of new products and spending on research and development. It is apparent from these different factors that measuring organisational performance accurately in research is a difficult task.

2.5 Overview of KM Processes and Organisational Performance

One of the main difficulties that the vast majority of the literature has to face in this field is how to measure the relationship between two holistic and intangible concepts KM and firm performance (Decarolis and Deeds, 1999; Davenport, 1999). The key issue that scholars face when dealing with the KM is how to determine the ways in which it affects OP. For KM as a discipline of considerable significance (as its supporters argue), there is a need to demonstrate a clear and causal relationship between KM that is effective within an organisation and associated with improvement in the performance of the organisation.

Kalling (2003) points out that numerous scholars and practitioners have simply accepted without question this apparent tautology because successful firms utilise superior knowledge than others. Nevertheless, the *'conversion of knowledge into improved performance is not automatic or free from problems'* (Kalling, 2003, p.68). Whereas it would seem that common sense suggests that such a relationship exists and that an organisation improving its KM practices would consequently see improvement in performance, proving a link empirically and designing an appropriate theory that can explain, reason and predict the behaviour of the two has been very difficult.

Furthermore, Al-Adaileh and Al-Atawi (2011), in their study on the impact of organisational culture on knowledge exchange, argue that the uniqueness of the culture of Saudi Arabia, where collectivism attributes are emphasized, is of great importance to the application of KM processes. They also argue that hierarchical and formalised management structures and uncertainty avoidance are the predominant characteristics for the region in terms of organisational culture. They reveal that this can lead to a lack of willingness to take risks and stunted communication. However, other cultural attributes, including the community-based nature of the culture of Saudi Arabia, may promote the exchange of knowledge among members of an organisation. However, they also find that Saudi employees were particularly hostile to change; that there is a comparative lack of team culture and the company structure proves to have a limiting influence on KM practices.

Weir and Hutchings (2005) provide a context in terms of how KM in the Arab region may be different from other cultures. Focusing on the nature of the networking of society, Weir and Hutchings note that in the Arab world, people have tacit knowledge, suggesting that they are pre-socialised, which is consistent with the socialisation component of Nonaka and Takeuchi's (1995) KM model. In terms of the externalisation component of Nonaka and Takeuchi's (1995) KM model, tacit knowledge is not often converted in the Arab

world. The lack of definitive separation between public and private lives in Arab regions also affects how knowledge is translated.

Weir and Hutchings (2005) also indicate that the Arab region is both authoritarian and consultative in terms of its cultural characteristics, which means that knowledge translation can be more complex in this region when compared to other parts of the world. The decision-making process in the Arab region is primarily rooted in the family Diwaniah or Majlis, which balance both authoritarian and consultative natures of the decision-making process in the region (Ozbilgin and Syed, 2010). However, it is our belief that the collectivist nature of Arab society can play a positive role in terms of sharing, exchanging, and transferring knowledge among the members of the society as well as the organisational members. The changing nature of Arab management in the last few years and the transformation into more participative management paradigms might provide additional support for knowledge flow, all of which might enhance OP it could be argued.

In attempting to analyse the effects of the KM process on OP, many different scholars have adopted differing methods of measurement and utilised a wide range of hypotheses and propositions, obtaining a wide variety of results.

The majority of studies and surveys (such as Hasan and Al-Hawari, 2003; and Claycomb *et al.*, 2002) show that there is a positive correlation between efficient and effective application of KM and OP. The perceived benefits of KM may include more rapid access to knowledge, improved sharing of knowledge, reduced costs, improved profitability, and lower time-to-market for new business opportunities (Skyrme, 2001).

The improvement in OP can be attributed to creativity, intelligence and adaptation to changing business climate, all of which can be achieved through effective KM practices (Wong and Aspinwall, 2004). Moreover, the enhancement and cultivation of the individual knowledge of members of an organisation is an effective strategy for developing continuous organisational learning, resulting in improved OP (Nonaka, 1998; O'Dell and Grayson, 1998).

Marqués and Simón (2006) explore the connection between KM practices and OP, based on an empirical study carried out on 222 Spanish firms in the biotechnology and telecommunications industries. Their study reveals how organisations that adopt KM practices achieve better results than their competitors. Therefore, they argue that effective implementation of KM practices is important because of its relationship in improving OP.

Yang and Wan (2004) examine the extent to which the four international five-star hotels in Taiwan implement KM practices (notably acquiring, sharing and storing), the methods

used to implement them and any associated obstacles. Their research shows clearly that KM practices benefit such hotels, through programs and cultures that support knowledge acquisition, dissemination and storage, not just financially but also in terms of the functioning of the organisation and welfare of staff.

Furthermore, Darroch (2005) provides important empirical evidence to support the role of KM practices within organisations. Based on the analysis of data that was collected using a mail survey sent to CEOs representing organisations with 50 or more employees from a cross-section of industries, the study presents KM as a coordinating mechanism. This empirical evidence supports the view that an organisation with a KM capability will use resources more efficiently, and thus be more innovative and perform better. In addition, according to the study, knowledge acquisition positively affects both knowledge dissemination and responsiveness to knowledge. Similarly, knowledge dissemination was found to have a positive impact on responsiveness to knowledge. Thus, an organisation that supports access to a wider pool of knowledge is almost certain to have better developed knowledge dissemination and responsiveness to knowledge behaviours and practices. Furthermore, if an organisation achieves this, it is more likely to be more responsive to knowledge. It is clear from this study that not only do KM practices improve OP, they also enhance each other.

It is also argued that KM speeds up the stages of innovation, providing continuous learning, which leads to enhanced business performance (Chang and Ahn, 2005). Thus, as Wiig (1999) propounds, adopting effective KM implementation practices enables organisations to perform intelligently when attempting to maintain their competitive advantage through the development of their knowledge assets.

Furthermore, Alsereihy *et al.*, (2012) have examined the role of KM strategies in the improvement of the performance of industrial and business organisations, problems and solutions in the Kingdom of Saudi Arabia. The key-findings of the study show that major organisations which apply KM effectively achieved better performance in productivity, turnaround time, and overall organisation efficiency.

However, many of the studies suggested wide-ranging conclusions. For instance, Darroch (2005, p.107) finds that *'firms with well-developed KM practices and behaviours are more likely to develop incremental innovations", but there is "insufficient evidence to support the view that firms with well-develop KM practices and behaviours will perform better'* (Darroch, 2005, p.107), and that out of the indicators examined only responsiveness to knowledge was found to directly influence organisational performance.

Tanriverdi (2005) finds only a weak correlation between a firm's use of knowledge and its financial performance. In addition relationships of this type are tenuous and tricky to empirically validate because of the vast number of exogenous factors (Bharadwaj, 2000). Thus, recent studies refer to direct links between KM performance, including knowledge quality (Huang *et al.*, 1999), level of knowledge sharing (Bock and Kim, 2002) and end-user satisfaction, and KM implementation.

Indeed, this lack of ability to directly correlate OP and KM sufficiently has encouraged many to extrapolate the relationships they have managed to determine positively. Many recent researchers, such as (Lee and Choi, 2003; Liao and Wu 2009; and Zach *et al.*, 2009) examine further variables that could more accurately connect KM and OP, as opposed to the simple direct relationship found by other researchers. For instance, Lee and Choi (2003) conclude that as long as KM practices enhance aspects of OP, positive financial performance will later result. They find that KM practices can be directly related to a range of intermediate measures of strategic OP, including customer intimacy, product leadership, and operational excellence, which are linked to financial performance.

This assertion is supported in the work of Zack *et al.*, (2009) who described a direct link between KM practices and OP but a lack of any definite relationship between KM practices and financial performance. Furthermore, they find that there is a significant and direct relationship between OP and financial performance, postulating that OP mediated the link existing between KM practices and financial performance. This assertion is supported by Darroch (2005, pp. 103-104), who argues that *'capabilities underpin the long-run survival of a firm; firms with effective KM behaviours and practices are likely to make better use of resources and so will exhibit superior outcomes such as more innovation and superior financial performance'*.

Alternatively, Daud and Yusoff (2010) examine the relationships between KM, social capital and OP through the use of a questionnaire directed to small- and medium-sized enterprises in Malaysia. The results, based on 289 questionnaires, reveal that KM processes positively influence social capital and that social capital enhances OP. The study emphasises that KM processes and social capital can be integrated to enhance OP.

Liao and Wu (2009) examined KM, OP and organisational learning in order to have a more precise understanding of the way in which KM and OP are linked. The results of the structural equation modelling of the survey responses of the participants from Taiwanese firms indicate that organisational learning mediates the relationship between KM and OP. Furthermore, the specific relationship shows that KM influences OP through organisational

learning. The implication of the results, as argued by Liao and Wu (2009), is that KM can be beneficial to organisations but organisational learning should also be developed in order to improve OP. Moreover, the researchers note that even though organisational learning may be instrumental in improving OP, financial and marketing improvements are not part of the scope of the influence of organisational learning.

Other scholars have argued that a firm's financial performance will be improved as a result of KM as firms with higher levels of knowledge will operate more efficiently (Detert and Schroeder, 2000; Ostroff and Schmitt, 1993). The concept of a learning (or experience) curve represents a well-established example of this relationship (Yelle, 1979; Kalling, 2003), with unit costs reducing as experience grows, but at a rate which decreases. Darr *et al.*, (1995) discover, in their study of 36 pizza stores, that increased productivity can be achieved by knowledge acquisition and knowledge sharing within the same organisation.

Another approach used to justify the causal relationship between KM and OP is that of Schack (2004), who details through an analysis of evolution the direct and causal link between knowledge and performance. This states that as human beings evolved to be able to store greater amounts of knowledge, so their ability to perform within their environment increased and the sum of human achievements also increased.

Another moderating variable human resource control is examined by Lin (2012) to understand the relationship between KM and OP. The results of the analysis of the survey responses of 135 participants indicate that input control does not moderate organisational learning and OP. However, output control has a positive moderating effect on knowledge transfer share strategy and OP.

Yu (2010) examines the correlation of KM with innovation performance and financial performance, both of which are measures of organisational performance. The results of the structural equation modelling, based on the 152 firms, show that KM is positive related to both technological and management innovation performance. Yu (2010) notes that the link between KM and financial performance is mediated by innovation performance.

One of the other extremely important concerns for scholars is the aspects of KM that have the greatest effect upon OP and in what ways. Previous studies have drawn a variety of conclusions. Mills and Smith (2011), for example, evaluate the impact of certain KM resources (e.g. KM enablers and processes) on organisational performance. The study obtained survey data from 189 managers and uses structural equation modelling to determine the relationship between specific KM resources and OP. Results show that certain knowledge resources (e.g. organisational structure and knowledge application) are

directly related to OP, whilst others (e.g. technology, knowledge conversion) are not directly related to OP even though they are important preconditions for KM.

Furthermore, Moorthy and Polley (2010) explore the influence of OP of the depth and breadth of organisational technological knowledge. The study includes an empirical investigation of a sample of US manufacturing organisations, the results of which show that an analysis of the depth and breadth of technological knowledge contributes significantly more towards predicting measures of OP in terms of measures such as return on invested capital, sales growth and Tobin's q.

Zaim (2006) attempted to identify the key processes of KM and determine the relationship between them and KM performance, using data collected from IZGAZ in Turkey. The analysis of the data collected from 70 IZGAZ employees demonstrates that a positive relationship exists between processes and performance. In addition, knowledge sharing and distribution have a greater effect on KM performance than the processes of knowledge generation and development and the processes of knowledge codification and storage.

In addition, Al-adaileh (2013) investigates the effect of KM processes (including creation, acquisition, organising, usage, archiving, and sharing) on OP within the mining sector in Jordan. From data collected in the 182 questionnaires, the study reveals that knowledge organising and sharing have no significant statistical impact on OP. However, knowledge creation, acquisition, usage and archiving can significantly influence OP within the context of the mining sector in Jordan.

It is clear, therefore, that whilst the direct link between KM and OP has proved difficult to validate, there are both empirical and logical benefits applied to OP by KM, albeit often mediated through other factors. The literature, therefore, suggests that for firms to be successful, they must be able continually to learn and to apply gained knowledge, whilst they anticipate market changes (Alvesson, 2000).

It is apparent, therefore, that knowledge and its management are issues that are extremely important for firms and all manner of organisations. Scholars such as Nonaka (2007), who argues that it is the most important means by which to gain competitive advantage within the current business climate, are corroborated both by studies that do exist and through logical reasoning. However, there remain many problems for practitioners in that there is *'little guidance in the extant literature as to what effective KM really means and even less guidance as to what the quantifiable outcomes of effective KM might be'* (Darroch,2005,p.103). Practitioners must remain *'cognizant of the range and variety of KM*

practices and the extent to which so many of these are significantly related to performance' (Zack *et al.,* 2009, p.404). There are also many challenges to be noted with regard to the successful capitalisation of KM practices, such as aspiration management, change management and gaining a understanding of all the consequences of knowledge utilisation, as detailed by Kalling (2003). In order to tackle the challenges posed by the management of strategic knowledge resources, an organisation needs to assess the preconditions for its own successful KM and the subsequent impacts on KM performance (Gold *et al.,* 2001). To provide a more in-depth investigation of the impact of KM processes on OP, Table 2.4 summarises some of the previous studies that have been relevant to the focus of this research.

Table2.4: Summary of previous studies concerning the interrelationship between KM Processes and OP

Article	**Nature of study**	**Study method**	**Key finding(s)**
Tubigi and Alshawi (2015)	Empirical	Case Study	Knowledge usage is the most influential aspect of KM in terms of the impact on OP. Moreover, the study reveals that knowledge transfer is a common KM process employed by organisations.
Al-adaileh (2013)	Empirical	Survey	Knowledge organising and sharing have no significant statistical impact on organisational performance while knowledge creation, acquisition, usage, and archiving can significantly influence organisational performance within mining sector in Jordan.

Zaim *et al*, (2013)	Empirical	Case Study	There is a positive relationship among the four components (creation, storage, transfer, and utilisation) of KM. Moreover, results illustrate a positive relationship between the four KM activities and the OP of Turkish airlines.
Lin (2012)	Empirical	Survey	Input control did not moderate organisational learning and OP; however, output control has a positive moderating effect on knowledge transfer share strategy and OP.
Mills and Smith (2011)	Empirical	Survey	Certain knowledge resources (i.e. organisational structure and knowledge application) are related directly to organisational performance, whilst others (i.e. technology and knowledge conversion), though important preconditions for KM, are not related directly to organisational performance.
Zawawi *et al.*, (2011)	Empirical	Case Study	The field of KM is far less understood in Saudi Arabia than in other parts of the world. They argue that, despite the particular importance of KM to such an industry, KM has often "*taken a back seat*" (p164). They also find that western KM literature is overly reliant upon IT-based solutions and, as a result, is less applicable to countries that are not as comprehensive in their use of IT solutions as the west.
Daud and Yusoff (2010)	Empirical	Survey	KM processes influence social capital positively and that social capital enhances organisational performance. The study emphasises that KM processes and social capital can be integrated to enhance organisational

			performance
Moorthy and Polley (2010)	Empirical	Case Study	Analysis of the depth and breadth of technological knowledge contributes significantly towards predicting measures of organisational performance, such as return on invested capital, sales growth, and Tobin's q.
Yu (2010)	Empirical	Survey	The link between KM and financial performance is mediated by innovation performance.
Kwong and Lee (2009)	Empirical	Survey	Work provides a real-life example to support the stages of learning from individuals and group to the organisational level.
Liao and Wu (2009)	Empirical	Survey	The organisational learning mediates the relationship between KM and OP. The specific relationship is the KM influences OP through organisational learning. The implication of the results is that KM can be beneficial to organisations, but organisational learning should also be developed in order to result in improved OP. Moreover, the researchers note that even though organisational learning may be instrumental in improving OP, financial and marketing improvements are not part of the scope of the influence of organisational learning.
Zack *et al.,* (2009)	Empirical	Survey	KM practices are found to be directly related to organisational performance which in turn was directly related to financial performance. However, there is no evidence of any direct relationship between KM practices and financial performance.

Marqués and Simón (2006)	Empirical	Case Study	Their study reveals how organisations that adopt KM practices are able to obtain better results compared to their competitors.
Zaim (2006)	Empirical	Survey	There is a positive relationship between KM processes and KM performance
Darroch (2005)	Empirical	Survey	This empirical evidence supports the view that an organisation with a KM capability will use resources more efficiently, and so will be more innovative and perform better. In addition, according to the study, knowledge acquisition positively affects both knowledge dissemination and responsiveness to knowledge. Similarly, knowledge dissemination is found to positively affect responsiveness to knowledge
Tanriverdi (2005)	Empirical	Survey	IT relatedness of business units enhances the cross-unit KM capability of the firm. The KM capability creates and exploits cross-unit synergies from the product, customer, and managerial knowledge resources of the firm. These synergies increase the financial performance of the firm. IT relatedness also has significant indirect effects on firm performance through the mediation of KM capability.
Yang and Wan (2004)	Empirical	Case Study	KM practices (such as programs and cultures that support knowledge acquiring, sharing and storing) can benefit organisations, such as hotels, not only financially but in terms of the functioning of the organisation and staff welfare.

Hasan and Al-Hawari (2003)	Empirical	Case Study	There is a positive relationship between the efficient and effective application of KM and organisational performance.
Kalling (2003)	Empirical	Case Study	The effect of KM on organisational performance is contingent on range of firm and organisational level contingencies. KM can be divided into three processes: knowledge development, knowledge utilisation and knowledge capitalisation. Each process has its own contingency factors and performance outcomes.
Lee and Choi (2003)	Empirical	Survey	KM enablers affect KM processes, which in turn affects organisational performance arising from intermediate impacts.
Claycomb *et al.,* (2002)	Empirical	Survey	There is a general consensus that knowledge and performance are positively and significantly related
Gold *et al.,* (2001)	Empirical	Survey	A capability model of KM is developed and used to show that knowledge infrastructure capabilities and knowledge processes capabilities influence organisational performance.
Behn *et al.,* (1999)	Empirical	Survey	The study shows that on-time performance, mishandled baggage, ticket over-sales, and in-flight services are significantly associated with their proxy for customer satisfaction.
Decarolis and Deeds (1999)	Empirical	Case Study	The main difficulties concern measuring the relationship between two holistic and intangible concepts: KM and firm performance.
Ruggles (1998)	Empirical	Survey	The most difficult obstacle faced when carrying out KM practices was found to be ‘‘measuring the value of knowledge assets and/or impact of KM’’

2.5.1 Knowledge Management Processes and Organisational Performance in the Airlines Industry.

As the background experience of this researcher lies in the Airline Industry (AI), and a great deal of this study will rely upon data gathered from within this context, it is appropriate at this stage to consider other studies that have been conducted by researchers utilising data from within this context.

There has been little research carried out within the AI on the topic of KM and its effect upon OP, with most of the available research focusing on the role that culture plays in KM processes. Only a small number of studies into the interrelationships between KM processes and OP seem significant. Moreover, these have shown positive relationship between the KM processes and OP within the context of AI (Tubigi and Alshawi, 2015; Tubigi *et al.,* 2013; Zaim *et al.,* 2013; Zawawi *et al*., 2011; Fan and Ku, 2010). These studies will be discussed to demonstrate the relevance of KM processes to the AI.

In their study on the AI, Tubigi *et al*., (2013) conduct a preliminary study to evaluate the impact of KM processes (namely knowledge creation/acquisition, modification, use, archiving, transfer, translation/repurposing, user access to knowledge and knowledge disposal) on organisational performance. The study reveals the applicability of KM processes on OP within the context of AI. In particular, the study revealed that there is a strong impact of knowledge creation/acquisition, modification, use, archiving, transfer, and user access to knowledge on OP, whereas knowledge translating/repurposing and knowledge disposal show less effect.

Zaim et al. (2013) examine the effect of KM on the OP in Turkish airlines using a case study. The focus of the study is on four KM processes: (a) creation of knowledge; (b) storage of knowledge; (c) transfer of knowledge; and (d) utilisation of knowledge. The results of the analysis show a positive relationship between the four components of KM. Furthermore, their results also indicate a positive relationship between the four KM activities and the OP within the Turkish airlines.

In their study of the airline industry, Kwong and Lee (2009) identify the appropriate method of determining how knowledge in reliability management can be elicited from individuals, as well as from teams. The findings of the study showed that work provides a real-life example to support the stages of learning from individuals and groups to the organisational level. In another study by Fan and Ku (2010), the researchers focus only on the effect of knowledge sharing on the OP in the aviation industry. The specific organisational outcomes that are examined include customer focus, the fit of the service process, and profitability in terms of customer relationship management. The results show

that knowledge sharing is able to influence positive organisational outcome, specifically in terms of improved profitability.

To help understand KM and OP in the AI, as stated in Tubigi *et al.*, (2013), Zawawi *et al.*, (2011) conducted a study into operations-based KM within the Saudi Arabian airline. One of their findings is that the field of KM is far less understood in Saudi Arabia than it is in other parts of the world. They argue that, despite the particular importance of KM within such an industry, KM has often *"taken a back seat"* (Zawawi *et al.*, p.164). They also find that western KM literature is overly reliant on IT-based solutions and, as a result, is less applicable to countries that do not use IT solutions as comprehensively. They argue that knowledge sharing can make a reduction of aircraft maintenance time, *'reduction or eliminating silo behaviour in handling expert knowledge, and reduction of the learning curve of a new graduate or recruit to fully function as an aircraft engineer'* (Zawawi *et al.*, 2011, p.166).

Furthermore, Behn and Riley (1999) examine empirically whether timely non-financial performance information was a helpful predictor of financial performance in the AI. Their study revealed that on-time performance, mishandled baggage, ticket over-sales, and in-flight services had considerable association with their proxy for customer satisfaction.

In their 2014 study entitled 'The impact of KM processes on organisational performance within the context of AI', Tubigi and Alshawi show that knowledge usage is the most influential aspect of KM, in terms of impact on OP. Moreover, the study reveals that knowledge transfer is a common KM process employed by organisations.

Despite the differences that were found to exist in the KM processes in the Arab region, some researchers, such as Weir and Hutchings (2005), argue that certain aspects of the KM model proposed by Nonaka and Takeuchi can be universally applied to any culture. Weir and Hutchings (2005) argue that this model remains relevant for all cultures, providing the unique cultural context is not neglected in the conceptualisation.

Similarly, Zhu (2004) argue that even though there is recognition that cultural differences play a role in KM, a universal KM model remains relevant. However, Zhu believes that such recognition is problematic as it does not address how the KM model can be improved. Zhu proposes that *'KM will benefit not from a universal concept, but from an interactions strategy that facilitates the construction, connection and sharing of cross-cultural contexts, through which cultural differences and diversity are important sources for KM competence rather than obstacles to be overcome'* (Zhu, 2004, pp.67).

Within AI, knowledge is created/acquired to improve the performance of the employees because it helps them to gain new information/ knowledge, which in turn will benefit the organisation (Tubigi and Alshawi, 2015). Zaim *et al.,* (2013, p. 548) revealed that knowledge generation or creation is *"related to the development of new organisational knowledge within the organisation"*. They added that knowledge generation is a result of such factors as mistakes when maintenance is done, improvements, comparison with other institutions, customer demand, published regulations after airplane crashes, and the adaptation of innovations made by aeroplane manufacturers.

The process of modification is applied in order to meet the future needs of KM and their workers; for example, information or knowledge that is stored in the database is always revised to check its value for current and future needs (Tubigi and Alshawi, 2015). Hence, modification is a continuous process. According to Foon and Eurn (2009), AI rely on ICT in the form of a yield management system (YMS), computer reservation system (CRS), and enterprise resource planning system (ERP), for their operations. They add that, in order to improve airlines' value chains and operational efficiency, using these systems plays an essential role in integrating and generating information assets into organisational decision-making and knowledge-building processes. For example, YMS plays a vital role in maximising revenue and using the full capacity of each flight, which is dependent upon computer forecasts of passenger demand around the year. CRS stores information about passengers, such as names, gender, contact details, route of the flight and number of passengers on flight, their ages for catering, and weight, in order to measure fuel consumption. Foon and Eurn (2009) provide a good example, which indicates how CRS has been responsible for the rapid growth of AirAsia, whose annual passenger count has risen from 2.2 million to 7 million in two years. In addition, using CRS has enabled direct sales to remove travel agents' commission and reduce ticketing and handling expenses. ERP also plays a key role in the AI by managing basic business functions, such as planning, inventory and materials management, purchasing, manufacturing, finance, accounting, human resources, marketing and sales, and services (Green Beacon Solutions). In the case of the Malaysian Airlines System (MAS), a new integrated Human Resource Management system has led to reduced administration costs, improved data management and improved HR efficiency (Foon and Eurn 2009). Additionally, the information is employed for whichever purpose necessary for the particular situation, such as decisions made to operate a flight, buy a new airplane, or lease additional aircraft during the peak season. Tubigi and Alshawi (2015) added that the archiving process is applied within AI

due to the huge volume of data that is related to passengers and operations which requires more confidentiality and security. Alavi and Leinder (2001) propose that organisational memory is composed of written documentation, electronic databases, codified human knowledge, and organisational procedures. Furthermore, Zaim *et al.*, (2013) suggest that there are two types of knowledge archiving or storage: hard copy and electronic. In the latter type, they state that knowledge can be transferred electronically; for example, by education, meetings, and the use of bulletins. Meanwhile, Nielsen (2006) identifies that knowledge sharing or transfer is related to certain packaging activities such as codifying and articulating, transferring, and receiving the knowledge. The data are transferred freely within the organisation using various types of media, such as intranet and email. For example, any internal correspondence is transferred through an internal network. Moreover, within the AI, the information might be translated from its original form into a form that is easier for the user to read and understand (for example, from numerical to textual form). For instance, employees gather data about a flight in terms of no-show, go-show, fuel consumption and load factor, with every single detail written as a full report. The responsible person then clearly presents this information in the form of figures (e.g. pie charts) to the managers next day. However, the value of knowledge is still restricted by the ability to access it when needed to make decisions, to solve organisational problems, or for other purposes in any given situation. It also provides continues access for authorised users. For example, each employee within the AI's organisation has his own password allowing access to several sites, according to his organisational level. Finally, clear procedures and policies are applied for the disposal of information or knowledge so that valuable information is not destroyed. For example, the airline organisation has a policy for disposal of information that is no longer needed after a period of five years. Foon and Eurn (2009) reinforce that other KM technologies, including knowledge sharing, collaboration, business intelligence, mobile work, and content and business process management (BPM), are valued throughout the industry.

2.6 The Limitations of Previous Studies

As described previously, it is clear that there are limitations to the findings of previous studies, both in terms of the extent of their explanatory power and of their applicability across a wider spectrum of organisations and cultural settings.

Firstly, in terms of the limitations of their explanatory power, it has already been made clear that, despite anecdotal evidence and logical assumption, the literature has failed to reach agreement on the exact effects (their nature, scope and depth) of KM on OP.

It is also unclear exactly which aspects of KM affect OP to the greatest degree as the literature has proposed divergent conclusions. Existing research has also tended to combine the dimensions that make up knowledge capabilities, and therefore not identify the constituent parts. As Mills and Smith (2011, p.157) argue *'although research suggests that a firm's KM capabilities, in combination, impact organisational performance* (Gold *et al.*, 2001; Zaim *et al.*, 2007), *it is probable that only a small number of the resources making up these capabilities contribute to OP alone* (Grant, 1996)

It must also be noted that the findings of the literature often vary according to the models used to test and evaluate the relationship. As detailed, only a very low correlation has been identified connecting the implementation of KM practices with financial performance, whilst a much more significant correlation is found between both variables and mediating factors. However, many other studies, such as Detert and Schroeder (2000) and Ostroff and Schmitt (1993), find that KM practices have a substantial positive impact upon mediating factors such as organisational efficiency, which are then known to positively influence financial performance. The literature must, therefore, proceed forward in two ways: firstly by undertaking a more comprehensive evaluation of the effects of KM through all of the mediating factors; and secondly by identifying which aspects of KM most influence these mediating factors, and in what way.

It is also apparent that studies vary widely in their conclusions according to the nature of the organisation they are utilising as the basis for their evidence. This is because the nature of the knowledge relevant to a bank, for example, will be vastly different from the nature of the knowledge relevant to a catering firm. Similarly, the organisational structure of a media company will be very different to that of a retail company. As such, the nature and impact of KM will vary according to the nature of the organisation.

This is important to note when attempting to develop a model with which to perform this particular study as it is necessary to extrapolate from those studies which have a greater relevance to the AI. For example, Lim and Hase (2007) conducted a study entitled "Knowledge Management in the Malaysian Aerospace Industry". Whilst this might, at first glance, appear to be of a similar nature to the current study, this is not in fact the case. The aerospace industry is far more knowledge based and knowledge intensive than the AI. Therefore, the emphasis that this study places upon the knowledge creation aspect of KM would not be replicated in a study of the AI. Studies such as "The Outcome of Knowledge Process for Customer of Jordanian Companies on the Achievement of Customer Knowledge Retention" (Nehari-Talet *et al.*, 2010) are, therefore, of greater relevance. They

argue that it is imperative to adopt a "customer-centric orientation" (Stefanou *et al.*, 2003) approach. The study also notes that, whilst technology is essential, an *'emphasis on technology hides the range of knowledge available in an organisation and processes that facilitates the flow of knowledge'* (Nehari-Talet *et al.*, 2010, p.45). What is the key therefore is not merely focussing upon the technical ability to manage knowledge but fostering a collaborative culture in which knowledge is shared. In addition, *'the management processes of such industries need to be highly focused on the efficiency and effectiveness of the information and knowledge exchanges that happen between the different organisations that need to collaborate to deliver composite products'* (Baggio and Cooper, 2010, p.1757). When analysing the effects of KM within the AI, therefore, it is imperative to maintain a holistic, customer-centric view of KM practices.

2.7 Gap in the Literature

It must be noted that there is a significant gap in the literature of 'large-scale empirical evidence that KM makes a difference to organisational performance' (Zack *et al.*, 2009, p. 393). This has translated into problems for practitioners. For example, in a survey of 431 US and European organisations by the Ernst & Young Centre for Business Innovation, the most difficult obstacle faced in carrying out KM practices is found to be *'measuring the value of knowledge assets and/or impact of knowledge management'* (Ruggles, 1998,p. 82). Even where correlations are found between the various KM processes and an improvement in OP (by whatever measurement used), there is difficulty in establishing a causal link between these two factors; how can it be proved that the one is caused by the other, other than by an insufficiently academic hunch that this is likely to be the case? Also, what is the precise nature of the relationship, to what extent is it correlated, and where upon the scale does an increase in the independent variable lead to the largest corresponding increase in the dependent variable? Other questions are concerned with which aspect of KM has the greatest impact upon OP and in what ways the different aspects of KM affect OP.

From this review of the relevant literature, it is clear that there is still work to be done in the field of establishing which aspects of KM influence OP, and in what ways. There is also a gap in the literature in terms of evaluating and identifying best processes of KM and their precise impact on customer-oriented organisations, specifically those within the AI. It is these gaps which the following study seeks to address. This study would argue that this research is necessary for the AI context since the contemporary business environment forces all organisations in all parts of the world to adopt KM processes in order to remain competitive. It is of relevance to the academic study of KM as a whole since, although

previous literature has not often focused on the consumer-centric view of KM, this approach is becoming ever more important as the consumer's freedom of choice and mobility renders customer loyalty evermore elusive and evermore vital for success. It is also imperative that the body of literature of KM recognises that globalisation requires that organisations must learn how to operate in many different areas of the world, and the success of this may well depend upon the adoption of different methods of KM within different settings.

Previous research on KM has focused on how it can be a source of competitive advantage over other organisations. Subsequently, further study of certain aspects of KM (mainly KM processes) is seen to be a vital issue for intensive research. This study is not only important in that it fulfils the general need for greater and more extensive research in this area but also because there is a particularly notable scarcity of studies within the context of the AI, making the topic of this research not only unique but also of high practical importance to businesses.

The current study is, therefore, a novel study as it provides an in-depth and semi-grounded analysis of KM processes, not only within the context of an important and knowledge-based industry but also within one that is unique in terms of its socio-cultural settings. The trend towards technology-centred approach as the main driving factors towards KM application, according to many previous studies, will be avoided as this study argues that KM is not mainly a technological issue but it is more an organisational, social and managerial concern. In addition, the current study will analyse the effect of KM processes on OP in an attempt to provide a real added value for the application of KM paradigm.

To this end therefore, this study undertakes an identification of KM processes and their effect on OP within the context of AI. For research purposes, the study will adopt the KM classifications and mechanisms proposed by Bergeron (2003) (which includes creating/acquisition, knowledge modification, immediate use, archiving, transfer, translation/repurposing, user access and disposal) due to the high level of differentiation provided. This will enable the research to be able to separate and identify the effects of all constituent aspects of KM separately. Similarly, as stated in Tubigi *et al.*, (2013), this research will utilise the following five performance measures proposed by Maltz *et al.*, (2003): financial, market/customer, processes, people, and future. These will be used to evaluate OP as they provide a holistic approach to measuring organisational success and are comprehensive and clear in their identification of measurement tools**.**

The aim of this study, therefore, is to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics.

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2.8 Chapter Summary

This chapter has presented an overview of the literature upon which this study's aims are founded. The research aim is to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics

The purpose of this chapter has been to place this aim, and thus this study, in context. In doing so, this thesis now offers a full rationalisation for why this research is warranted and important. Several standpoints relating to knowledge and management processes in Arab contexts have been explored, and their offerings and shortfalls have been unpacked. It is argued that there is a lack of empirical studies exploring the relationship between KM and OP within AI. Given that effective KM processes can provide organisations with competitive advantage over others, and thus contribute to income, profit and, ultimately, the economy, research exploring this specific area is warranted. This research has the potential to offer considerable insight into some of the processes that organisations use to increase performance and profit. Such findings may educate business strategy, not only in AI context but globally. Nevertheless, there is an opportunity to gather such data within a context that has been scarcely explored and the significance of this cannot be understated. The following chapter will guide the reader through the conceptual proposed model for this study and, therefore, the theoretical underpinning of this research.

Chapter Three

Development of the Conceptual Model

3.1 Introduction

This chapter provides an in-depth analysis of the selected KM processes and OP measurements, which include: (a) knowledge creation and acquisition; (b) knowledge modification; (c) immediate use; (d) knowledge archival; (e) knowledge transfer; (f) knowledge translation/repurposing; (g) user access to knowledge and (h) knowledge disposal. A review of the association between KM processes and OP will be presented next. Based on the literature reviewed, the identification of the limitations of the current body of literature will be discussed. The chapter ends with details of the development of the research proposed conceptual model.

3.2 Knowledge Management Effect on Organisational Performance

Since knowledge is rapidly becoming a very important measure of organisational future performance (Choi and Lee, 2002), it is therefore, vital that indicators and measurement techniques are developed in order to allow managers to better handle organisational knowledge. The contribution which KM can make is an important issue for research, especially given the increasing emphasis on the concept of knowledge workers and the knowledge-based organisation. Moreover, KM has the potential to help organisations to capture, select, organise, distribute and transfer significant information, knowledge and expertise, enabling improvement of OP.

As discussed earlier in chapter 2, numerous researchers have highlighted the importance of knowledge in company performance, and organisations are increasingly concerned with managing their knowledge effectively in order to keep ahead of the competition. However, according to Kalling (2003), current research into KM does not identify or offer a clear understanding of the role of KM in improving an organisation's performance. Many scholars have tried to assess KM's contribution, such as Su *et al.*, (2006), who claim that knowledge work can lead to new technologies to develop new products and ways of working. Moreover, the knowledge base of a company is commonly viewed as the fundamental underlying factor in performance levels (Lai and Lee, 2007). A number of authors (Amit and Schoemaker, 1993; Grant, 1996; Krogh and Roos, 1996; Spender, 1996; Teece, 2000; Eisenhardt and Santos, 2000) have suggested that the best knowledge is that which possesses the characteristics of a strategic asset and that this is the only resource

suitable for the achievement of sustained superior performance. Subsequently, there would seem to be a strong correlation between KM processes and OP.

3.2.1 Knowledge Management Life Cycle

Bergeron (2003) suggests perhaps the best description of KM processes applicable to this study. He refers to the concept of KM life cycle, having eight processes (with knowledge creation and acquisition considered as a single process):

Knowledge Creation and Acquisition

Knowledge creation, when considered as a process, deals with initiatives and activities undertaken to produce new ideas or objects (Mitchell and Boyle, 2010). The term refers to the ability of an organisation to develop new and useful ideas and solutions related to a variety of aspects of organisational activities, including products, technological processes and managerial practices (for instance, Nonaka, 1991; Un and Cuervo-Cazurra, 2004). According to Mills and Smith (2011), acquisition describes an organisation's ability to identify, acquire and accumulate both internal and external knowledge essential to its operations. Knowledge creation can be associated with innovation, whether the knowledge is created outside or within the organisation, because knowledge creation allows organisations to expand their resources and explore possibilities (Spaeth *et al.*, 2010). Knowledge creation serves as a mediator between the ties of managers and innovation of the organisation (Shu *et al.*, 2012). There is some empirical evidence that knowledge creation is particularly effective in providing solutions to existing problems in organisations (Mahr and Lievens, 2012). However, knowledge creation is less effective in identifying possible problems that exist in organisations (Mahr and Lievens, 2012).

In the creation and acquisition process of the KM life cycle, knowledge workers create or acquire information, either outsourced or purchased from an outside source. The stages of this process will include self-reporting, documentation, program instrumentation, networks and knowledge engineering (Bergeron, 2003; Spaeth *et al.*, 2010). An organisation can obtain knowledge from external sources by, for example, hiring people with the necessary knowledge or by purchasing knowledge assets which might include patents, research documents or other intelligence (Wong and Aspinwall, 2004). New strands of knowledge creation can be instigated by reaching out both horizontally and vertically across organisations, producing a continuous self-upgrading organisational process (Tseng, 2010). Moreover, Daud and Yusoff (2010) argued that the manner in which people communicate with one other in an organisation may influence the likelihood and success of knowledge creation. That formalised explicit form of knowledge, in combination with the tacit

knowledge of organisational members, increases organisational value due to the creation or production of new products or services that can satisfy the needs of highly demanding customers.

The significant impact of knowledge creation on OP has been emphasised by researchers (for example, Seleim and Khalil, 2007). Furthermore, when acquired knowledge is appropriately used, there is a significant link observed between knowledge acquisition and OP (Seleim and Khalil, 2007). According to Tubigi and Alshawi (2015), within the airline industry knowledge is created/acquired through regular meetings, sustained training and learning, and attendance of global conferences to improve the performance of the employees. This enables new information/knowledge to be gathered, which in turn will benefit the organisation in many ways and link it with OP measurements such as finance, market, process, employees' development, and preparing for the future. Consequently, this leads to the research question regarding the processes of KM that affect OP within AI and their level of the effectiveness. Therefore:

- Knowledge creation/acquisition is positively related to organisational performance through self-reporting, documentation, program instrumentation, networks and knowledge engineering.

Knowledge Modification

After knowledge creation is accomplished, the next step in the knowledge management process is knowledge modification (Andreeva and Kianto, 2011). Bhatt (2001) stated that the modification or conversion process takes place along the supply chain of data, information and knowledge, and he argued that organisations must speedily convert data into information, and then this information into organisational knowledge to maximise the benefits from this process. According to Kwong and Lee (2009) to minimize airline operation distractions and to install new avionic systems, *'airlines can design modifications from changing the seating layout and installing photo luminescent floor path lighting'* (Kwong and Lee, 2009, p. 36). Within the context of AI, the process of modification is applied to meet the future needs of KM and their workers (Tubigi and Alshawi, 2015). For example, information or knowledge that is stored in the database is always revised to check its value for current and future need; hence, modification is a continuous process (Tubigi and Alshawi, 2015). Therefore, this will lead to the research question regarding the process of KM that affect OP within AI and the level of the effectiveness. Moreover, the modification process improves employees' training, acknowledges the markets' wants and

needs, and enhances the upper-level managers to take the right decisions. According to Bergeron (2003), the information from the modification phase is modified to meet the requirements of the future needs of KM and their workers. Examples of mechanisms supporting this process include editing tools (where information is modified using graphic programs, text editors and other tools), tracking data (where intermediate products on internally authored information are located by software tools), security and version control.

Therefore:

- Knowledge modification is positively related to organisational performance through editing tools, tracking, security and version control.

Immediate Use

Bergeron (2003) suggests that there are few limitations placed on the uses of information, but that this depends upon the needs and activities of the knowledge workers and management within the organisation. He also states that knowledge which an employee fails to use or share is of little importance to an organisation. At a theoretical level, knowledge use in organisations depends on relevance, legibility and accessibility (Contandriopoulos *et al.,* 2010).

Knowledge use can be instrumental in the success of organisations because it increases competitive sustainability (Makó *et al.,* 2011). Bhatt (2001) stated that making knowledge more active and relevant for the organisation in creating values depends on applying and sharing this knowledge. The ultimate goal for knowledge is to get the right knowledge to the right people at the right time, and to help people share and use different types of knowledge to improve OP. In fact, one could argue that the real value of all KM processes comes from the effective use of individual and organisational collective knowledge. Employees should collaborate to use knowledge for the benefits of their organisations through acquiring, accumulating, seeking, creating, generating and capturing knowledge (Daud and Yusoff, 2010). In the AI, as stated by Tubigi and Alshawi (2015) information is employed for whichever purpose necessary based on the situation, such as decisions made to operate flights, buy new aircraft, or lease aircraft during peak seasons. Hence, this leads to the research question concerning the processes of KM that affect OP within AI and the level of their effectiveness. This process is also related to OP measurements, for instance, using new knowledge improve employee and process efficiency and financial performance. Bergeron (2003) stated that in this process of the KM life cycle the information is employed for useful particular relevant purpose. The information, for

example, may be utilised by applications for sale or license to third parties. Of particular importance in this process are the main feedback mechanisms, which are the feedback system (where feedback from automated tracking of the direct user is used to improve the processes involved in the KM lifecycle), tracking systems, dissemination technology (technology-enabled dissemination systems for information from expert systems and decision support tools used to increase the value of specific information) and technologies for search engines (Berberon, 2003).

Therefore:

- Knowledge use is positively related to organisational performance through feedback systems, tracking systems, dissemination technology and search technologies.

Archiving

Archiving is essentially about storing information using methods that enhance the confidentiality and security of the information, yet also enable efficient access. This process is applied in the AI due to the huge volume of data that is related to passengers and operations, all of which need high levels of confidentiality and security (Tubigi and Alshawi, 2015). The relationship between knowledge archiving and OP measurement is very strong, for example, this process help the organisation save passengers information, market studies, operation data for future need, training purposing, and strategic plan. Knowledge archiving is an important component of knowledge management because it ensures that information is accessible (Groff and Jones, 2012). It involves storing information in an appropriate form that ensures its security and allows access in the future. This is achieved through information technologies such as databases, and controlled vocabularies, librarian, controlled environment, maintenance programs to supervise the archiving process (Bergeron, 2003). An organisation is constantly in danger of accidentally losing its gained knowledge if this knowledge that has been acquired, created, and shared is not supported by knowledge storage and documentation (Stein and Swass, 1995). As stated by Alavi and Leidner (2001), organisational memory exists in a variety of forms, including electronic databases, written documents, codified knowledge in expert systems, organisational procedures and processes, and tacit knowledge which is located in individuals' brains.

Saedi *et al.,* (2002) proposed a framework for archiving knowledge within an organisation. They revealed that any practice (e.g. development a new product or practice of solving a

problem) or decision (e.g. pricing or employment decision) creates an organisational or individual learning that needs to be archived in the organisation. They added that every practice or decision-making situation occurring within an organisation is a practice of knowledge or learning that must be stored and managed for future use. Consequently, this leads to the research question regarding the process of KM that affect OP within AI and the level of the effectiveness. Therefore:

- Knowledge archiving is positively related to organisational performance through information technologies, controlled vocabularies, librarian, controlled environment, and maintenance programs**.**

Transfer

Knowledge transfer involves the transfer of knowledge from one entity to another (Carlile and Rebentisch, 2003). Knowledge transfer was defined as: *'a process of exchange of explicit or tacit knowledge between two agents, during which one agent purposefully receives and uses the knowledge provided by another'*. The term ‘‘agent’’ can refer to an individual, a team, an organisational unit, the organisation itself or a cluster of organisations (Kumar and Ganesh, 2009, p. 163). Argote and Ingram (2000, p.151) define knowledge transfer as *'the process through which one unit (e.g. group, department, or division) is affected by the experience of another'*. According to Al-adaileh and Al-Atawi (2011), transfer of knowledge is related to how we learn and how we otherwise can capture and exchange knowledge.

Knowledge transfer is about connections that ultimately depend on choices made by individuals (Dougherty, 1999). It is a ‘two-way process’ involving a transferor and a transferee. Knowledge transfer is used as an increasingly popular term by authors in the literature in an attempt to emphasise the human aspect of KM. It is a concept that is highly related to the social setting within the organisational context. Tubigi and Alshawi (2015) argued that within the context of AI, information is transferred freely within the organisation using various types of media (e.g. intranet, email, telephone, regular meetings and manually), for example, any internal correspondence is transferred through an internal network. It is also linked with OP measurements in term of exchanging knowledge between employees to enhance and improve people development. Bergeron (2003) postulated that information must be freely communicated within an organisation by means of different media such as intranets and emails, in order to increase the value of the

information and to enable knowledge sharing. The speed of the transfer of knowledge is also important in order for the process to be truly effective (Knockaert *et al.,* 2011).

Without effective channels and mechanisms for knowledge transfer, knowledge management, on the whole, is likely to fail (Carmel and Beulen, 2005). Bergeron (2003) suggested that in this situation, physical transfer and networks are the support mechanisms. This leads to the research question concerning the processes of KM that affect OP within AI and the level of their effectiveness. Therefore:

- Knowledge transfer is positively related to organisational performance through physical transfer and networks.

Translation/repurposing

In this process, the information may be translated from its original form into another form which is more suitable for the user (for example, from numerical to textual form). For example, in the AI as stated by Tubigi and Alshawi (2015) employees conduct data about one flight (for instance, in terms of no-show, go-show, fuel consumption and load factor) so that every single detail is written as a full report. After that, the responsible person loads this information in very concise, clear figures (e.g. a pie chart) for presentation to managers next day (Tubigi and Alshawi, 2015). This process is related to OP measurements in term of process efficiency. From the previous example, it is clear that this process leads to the research question regarding the processes of KM that affect OP within AI and their level of the effectiveness. It is important to simplify the information in order to match the recipients' specific requirements and their own knowledge base, and this process takes place through outsourced expertise and information technologies (Bergeron, 2003). Knowledge translation is concerned with converting knowledge into action as it combines the processes of knowledge creation and knowledge application (Graham et al., 2006). Many terms have been used to describe the process of putting knowledge into action, which can be problem because of the lack of a uniformly accepted definition of knowledge translation (Greenhalgh and Wieringa, 2011). According to Graham *et al.*, (2006), knowledge translation is concerned with the reporting, quality assessment and adaptation of research and development knowledge, and its conversion into an easily understood and contextually relevant form. Armstrong *et al.*, (2013) noted that increasing the access to research needed for knowledge translation involves skills, resources and tools, and network. Some of the barriers for effective knowledge translation include the high volume of data that needs to be translated and read, and access to materials needed for translation, such as research (Grimshaw *et al.*, 2012).

Therefore:

- Knowledge translation/repurposing is positively related to organisational performance through outsourced expertise and information technologies.

User Access to Knowledge

User access to knowledge is an important process of knowledge management (Tubigi and Alshawi, 2012). Bergeron (2003) showed that for KM systems to be successful, they should enable authorised users to have continuous access through the use of query support mechanisms. Knowledge can usually be accessed through a computer database (Desouza, 2003). Parallel access should also be available and supported by the system. Lettieri *et al.*, (2004) made the point that knowledge distribution can be accessible to whoever can use it. Furthermore, different kinds of people (e.g. managers, professionals, client, etc) may perhaps need to show the information in different ways depending on how they have to use it (Lettieri *et al.*, 2004). In fact, in the context of AI, the value of knowledge is restricted by the ability to access it when needed to make decisions, to solve organisational problems or for whatever purpose in a particular situation (Tubigi and Alshawi, 2015). It also provides continues access to authorised users, for instance, each employee in the organisation has his own password to access several sites, according to his organisation level (Tubigi and Alshawi, 2015). Consequently, this leads to the research question regarding the processes of KM that affect OP within AI and their level of the effectiveness. It is also an important process for organisational performance measurements in terms of finance, marketing, and process. Moreover, in an increasingly globalised world, the geographical distance between people and companies can be a barrier for accessing knowledge (O'Leary, 1998). The support mechanisms for this process are corporate policy, information technology and librarian which are performed by a manager or knowledge worker, using a computer program to control and prevent any misuse of technology and to ensure the corporate policy is imposed (Bergeron, 2003).

Therefore:

- Knowledge access is positively related to organisational performance through corporate policy, information technologies and librarian.

Disposal

Knowledge disposal is an important component of knowledge management because the process completes the cycle of how knowledge is used within an organisation. Bergeron (2003) affirms that in the future certain information will have little or no value and, thus,

may be destroyed or removed to another location for storage by using existing processes and technologies so that the standard body of knowledge remains at a manageable level. For efficiency and management purposes, the database needs to include relevant data that will remain useful for the functioning of the organisation. This process help the organisation to save money in terms of making more space for new data and information to be stored in the same archive system and to avoid buying new tools. Within the AI, clear coherent procedures should be applied when selecting information for disposal in order that valuable information is not destroyed (Tubigi and Alshawi, 2012). For example, Tubigi and Alshawi (2015) revealed that within the context of AI, organisations have a policy of waiting five years before disposing of any information that is no longer needed, which leads to the research question regarding the processes of KM that affect OP within AI and their level of the effectiveness.

Therefore:

- Knowledge disposal is positively related to organisational performance through established processes and technologies.

3.3 Review of Existing Organisational Performance Measurements

A major difficulty in the study of performance is the limitation of single constructs. Using a single dimension as a support for performance leads to the possibility of ambiguous results. Chakravarthy (1986), for example, used Peters and Waterman's 'excellent' (1982) list of organisations, utilising well-known criteria for profitability to compare both ‘excellent’ and ‘non-excellent’ organisations. He proposed that it was not possible to distinguish variations in performance between these organisations using measures such as ROE, ROC and ROS. He noted that *'accounting-measures-of-performance record only a history of firm'*(Chakravarthy, 1986, p.444). Therefore, it is of no surprise that using short-term financial measures as sole indicators of OP presents limitations which have been mentioned in a number of recent studies. Two important developments in the evolution of new frameworks for performance have been used by Kaplan and Norton's (1982, 1993, 1996) "Balanced Scorecard" and Shenhar and Dvir's (1996) "Success Dimensions" framework.

“The Balanced Scorecard” and the “Success Dimensions” are both based on the concept that success is composed of a number of facets, and “what you measure is what you get” (Maltz *et al.,* 2003). Therefore, to manage an organisation effectively requires the use of performance measures which evaluate how successful the organisation is over time. By

using suitable indicators, managers are able to adopt the necessary strategies to achieve such success measures. The Balanced Scorecard approach determines that financial measures, such as ROI and EPS, can indicate unreliable results in terms of continuous improvement and innovation. Thus, they may not be reliable indicators of the skills and competencies required in present-day organisations. A multi-dimensional framework, which converts corporate strategy into specific measurable objectives and involves a combination of financial measures, should be provided so that it is possible to utilise results from previous actions and operational measures in an attempt to develop future performance drivers. There are often as many as twenty measures that may be developed in customer, internal, innovation and learning, and financial areas. Moreover, Kaplan and Norton have commented that the quality of a set of measures may not necessarily be directly related to a winning strategy.

Maltz *et al.,* (2003) suggest that the Success Dimensions model can be viewed as a multi-dimensional tool for identifying organisational effectiveness at three levels: project, business unit and company. It also uses four time horizons: very short, short, long and very long time-frames. The basis for the model is that measuring the success of an organisation is only effective when more than one time dimension is used.

Short-term corporate success indicators, such as sales, profit and cash position, are measured at a unique time and are highly likely to alter within successive time periods. It is important to remember that such measures will not necessarily be indicators of corporate success in the long-term. If there is a lack of corporate vision and high-level values, then there is unlikely to be much evidence within a short-term organisational view of technology strategy, investments in people and potential businesses and new ventures, but they should nevertheless be monitored over the longer term. One of the critical success factors which form the long-term dimension is the development and effective use of core competencies. These embrace new technologies, processes or marketing and distribution capabilities that may be used to provide improvements for customers (Maltz *et al.,* 2003). Shenhar and Dvir (1996) suggest that, in the 'very long term', using the 'ability to see the future' and to 'define new needs' ahead of competitors and customers should be identified as key critical success measures.

3.4 The Limitations of Balanced Scorecard and Success Dimensions Measurements

The Balanced Scorecard and the Success Dimensions models both represent a major breakthrough in the assessment of OP and essentially are based on common theory. However, both models have limitations which have been noted. Atkinson *et al.,* (1997) for

example, highlight that the Balanced Scorecard model can be considered incomplete because it is unable to identify:

- the contributions made by employees and suppliers to enable an organisation to achieve its objectives,
- the role played by the community in the definition of the environment within which the company operates, and
- performance measures which assess the contributions of stakeholders.

Although the Balanced Scorecard approach is able to provide direction for multiple measures and is considered a method for tackling limitations of single measures, it does not provide a straightforward answer for measures which are longer term. Furthermore, there is little distinction identified between means and ends, and therefore the model requires further empirical validation (Maltz *et al.*, 2003).

The 'Success Dimensions' approach, however, does provide a framework for both short and lengthy time frames, but it has a significant limitation regarding the lack of specific operational measures for any particular dimension. Maltz *et al.*, (2003) identify the constructs of 'strategic leverage' and 'creating the future' which fail to convert into measurable variables for organisations. Furthermore, although Shenhar and Dvir's (1996) model has been empirically tested at both the levels of the Strategic Business Unit and individual projects, it has not as yet been applied to the corporate level. Maltz *et al.*, (2003) suggest that, if focus is missing from a company's human resources dimension, it will result in failure in terms of the Balanced Scorecard and the Success Dimensions models. A number of companies have noted a lack of people-orientation as a weakness of the Balanced Scorecard.

3.5 The Dynamic Multi-dimensional Performance (DMP) Model

Noting the limitations of previous models, Maltz *et al.*, (2003) propose a new performance model, known as the Dynamic Multi-dimensional Performance (DMP) framework. The validity of this model has been empirically tested within current organisational settings. The model, whose foundations are to be found in the Balanced Scorecard and the Success Dimensions models, consists of five major success dimensions: financial, market, process, people and future.

The five major dimensions can be described as follows:

- **Financial Measures** - representing the traditional approach to organisational success by using measures such as sales, profits or return on investment.

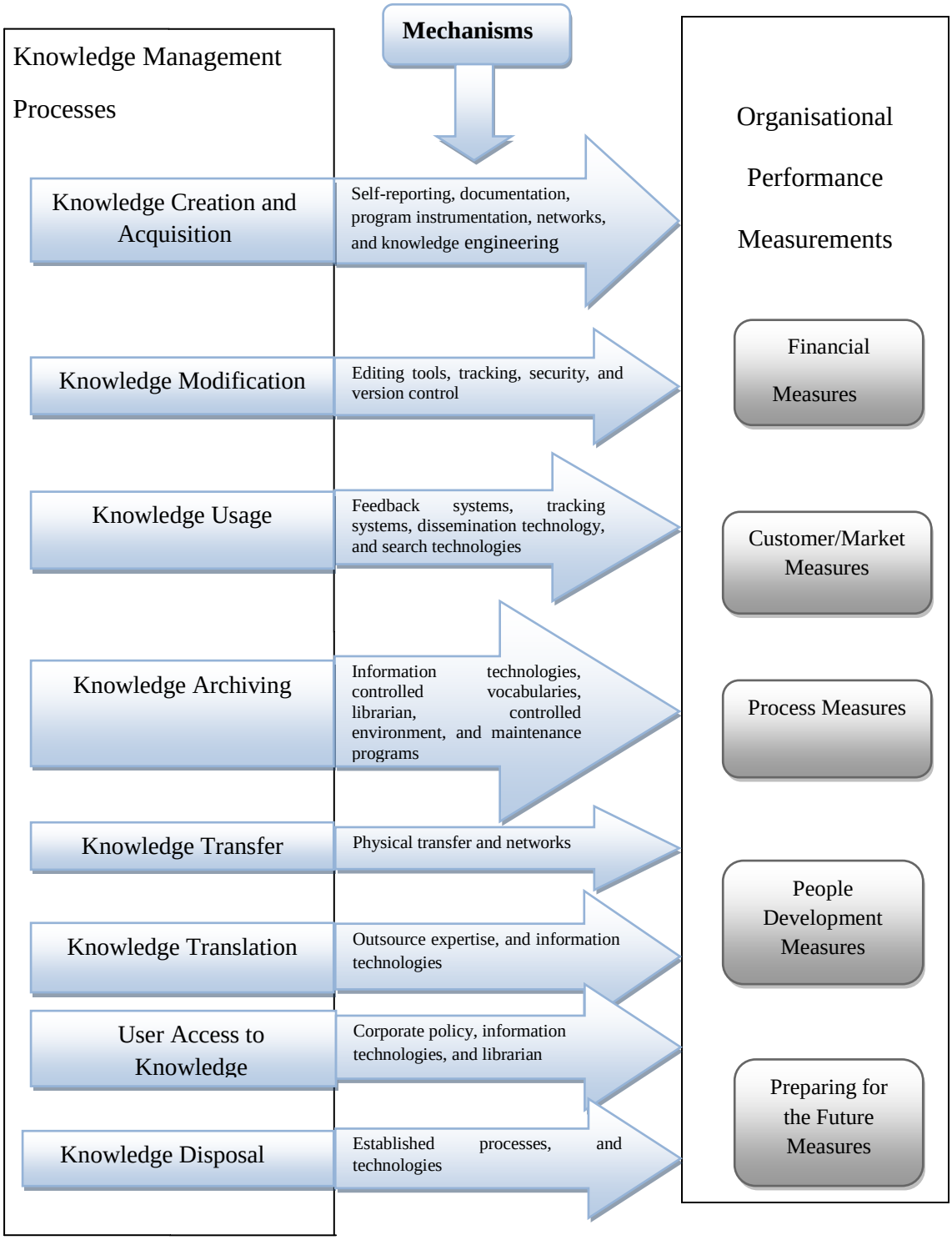
- **Customer/Market Measures** - representing relationships between an organisation and its customers. Customer-centric organisations are usually designed to understand and react to the needs and wants of their customers by producing products which meet their needs, and ensuring high levels of retention by maintaining customer satisfaction.
- **Process Measures** – reflecting organisational efficiency and an improvement view which focuses on process improvement by using concepts such as TQM, learning organisations and team-based efforts.
- **People Development Measures** - considering the vital role played by stakeholders in the success of organisations through awareness of the key role of employees in organisational success, i.e. the level of employee skills, commitment to technological leadership, personnel development, and staff slack resources.
- **Preparing for the Future Measures** - involving clear expressions of foresight, and thus representing an essential issue for organisations, including depth and quality of strategic planning, indicators of partnerships and alliances, anticipation and preparation for environmental changes, and investment in new markets and technologies.

This research project uses the five performance measures proposed by Maltz *et al.*, (2003) to evaluate organisational performance as they provide a holistic approach to the measurement of organisational success whilst being comprehensive and clear in their identification of measurement tools.

3.6 Research Conceptual Model

Based on earlier discussion, the following conceptual research model (Figure 3.1) was proposed as a platform for exploration of the influential relationship between a set of KM processes (creation and acquisition, modification, use, transfer, archiving, translating/repurposing, access and disposal) and OP measurements (financial, customer/market, process, people development and preparing for the future). The first eight arrows represent the KM processes and its relationship to OP within the AI.

Figure 3.1: Research Conceptual Model



This model emphasises that knowledge and KM processes exist in any organisational setting where people continuously learn from their experiences and interactions with others. Ordinary people also attempt to behave in a way that matches their knowledge and make decisions on the basis of the knowledge they have. This, one could argue, is true not only on the individual level but also on the group and organisational levels.

The issue, as this research argues, is about framing KM processes, and academic research tends to model these processes and frame them in a way that can facilitate understanding and enable their more effective management. This research argues that people create, acquire, share and use knowledge. However, the level of these processes may differ from one person, or organisational setting, to another and this research will begin by identifying KM processes that affect OP within the context of AI.

3.7 Chapter Summary

As discussed in Chapter 2, the research gap of this study has been identified from an extensive review of the available findings related to KM processes and OP. This chapter has extensively analysed KM processes and OP measurements to establish a conceptual model. The following KM processes have been explored: (a) knowledge creation and acquisition, (b) knowledge modification, (c) immediate use, (d) knowledge archiving, (e) knowledge transfer, (f) knowledge translation/repurposing, (g) user access to knowledge, and (h) knowledge disposal. Moreover, this chapter has also identified OP measurements found in the literature. The study then adopted the DMP model which includes: (1) financial, (2) customer/market, (3) process, (4) people development, and (5) preparing for the future, to measure OP and propose a conceptual model. In addition, the chapter also identifies the mechanisms that are used as a key links between KM processes and OP measurements. As such, this research argues that the issue lies in the way in which KM processes are framed and that people create, acquire, share and use knowledge. However, the level of these processes may differ from person to person and from organisation to organisation. In the next chapter, the study aims to test and validate these propositions through identifying the appropriate paradigm, methods and techniques.

Chapter Four

Research Methodology

4.1 Introduction

The main aim of this study is to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders and academics. To achieve this aim, a case study strategy is adopted. Interviews are used as the primary data collection technique, along with secondary research to collect secondary data. This provides a holistic perspective concerning KM processes and their potential impact on OP in the AI. The first part of this chapter introduces, in general terms, the major methodological issues, providing background information and a foundation for the philosophical basis of the research. The second part discusses the specific issues relating to the selection of the methodology which guides the research process, in particular the justification of the selected methodology. In order to enrich the discussion, presentation and justification of the selected methodological paradigm, part one and two of this chapter are integrated and overlapped. The final part highlights the process of data collection, including details of the methods used for data collection and the structure, arrangements and procedures adopted to guide this process; it also includes a description of the way in which the gathered data are analysed and interpreted.

4.2 Research Paradigms

Research paradigms can be defined as 'universally recognised scientific achievements that for a time provide model problems and solutions to a community of practitioners' (Kuhn, 1962, p.viii). Hussey and Hussey (1997, pp.47) asserted that the term ‘research paradigm’ refers to *'the progress of scientific practice based on people's philosophies and assumptions about the world and the nature of knowledge'*. In addition, Collis and Hussey (2009) suggest that a research paradigm should be considered as a philosophical framework, guiding how scientific research should be conducted. It is important to understand the research-particular paradigm because this determines the entire direction of the research project. Thus, our fundamental beliefs about the world will be reflected in the methods adopted to design the research, collect and analyse data and the way the thesis is written (Hussey and Hussey, 1997).

Two main paradigms are common within the social science disciplines: positivism and interpretivism (phenomenological) (Collis and Hussey, 2009). While the positivism paradigm generally seems to be quantitative, objective, scientific and traditionalist, the interpretivism paradigm seems to be qualitative, subjective, humanist and phenomenological (Collis and Hussey, 2009). Table 4.1 illustrates the differences between positivism and interpretivism approaches.

Table 4.1 Approaches within the two main paradigms

Positivism	**Interpretivism**
Quantitative	Qualitative
Objective	Subjective
Scientific	Humanist
Traditionalist	Phenomenological

Sources: Adopted from Collis and Hussey (2009, p.58).

According to Collis and Hussey (2009, p.56):

'Positivism is a paradigm that originated in the natural sciences. It rests on the assumption that social reality is singular and objective, and is not affected by the act of investigating it. The research involves a deductive process with a view to providing explanatory theories to understand social phenomena.'

Blumberg, Cooper, and Schindler (2008) propose that positivism is a research philosophy based on natural science with three basic principles:

- The social world is external and can be viewed objectively
- Research is free of values
- The researcher, takes the role of an objective analyst and is independent

It provides a framework for conducting research in the natural world and these scientific methods are still readily used within social science research (Collis and Hussey, 2009). Positivists believe that research should be carried out in a scientific manner (Wilson, 2010). Furthermore, positivist researchers attempt to detach themselves from what they are seeking and instead investigate the phenomena as objects. It is also described as a highly structured and deductive approach which seeks to explain the casual relationships between

variables using quantitative data. Although a highly-structured design may impose certain constraints on the research results, ignoring certain relevant and interesting findings (Hussey and Hussey, 1997), it does provide a precise and defined theoretical focus for the research, allowing greater opportunity to maintain control of the research process.

The interpretivism approach, on the other hand, is: *'A paradigm that emerged in response to criticisms of positivism. It rests on the assumption that social reality is in our minds, and is subjective and multiple. Therefore, social reality is affected by the act of investigating it. The research involves an inductive process with a view to providing interpretive understanding of social phenomena within a particular context.'*

As opposed to positivists, interpretivists propose the concept of a social world in which research principles adopted from the natural sciences cannot be explained by application, but instead an alternative research philosophy is needed for social sciences (Blumberg *et al.*, 2008). The essential principles of interpretivism are:

- The social world is developed and it is subjectively given meaning by people.
- The researcher is a part of what is perceived.
- Research is directed by interests.

Overall, interpretivists see the world as complex and open to interpretation. Such interpretation of their findings leads to issues relating to reliability (Wilson, 2010). These research paradigms or philosophies are directed by conflicting and diametrically opposed philosophical factors, which include ontological, epistemological, axiological, rhetorical and methodological assumptions as described below (Creswell, 1994):

- **The Ontological Assumption**. The ontological assumption is based on the nature of reality:

Positivists perceive social reality as objective and external to the researcher. Thus, there is only a single reality, whereas interpretivists consider it to be subjective as it is socially constructed. Therefore, everyone has his or her own sense of reality, leading to the existence of multiple realities.

- **The Epistemological Assumption**. The epistemological assumption is concerned with what is accepted as valid knowledge. This involves an understanding of the relationship existing between the researcher and the subject under research:

Positivism is based on the belief that only phenomena which can be observed and measured are considered to be knowledge, and positivists try to maintain an independent and objective position. In contrast, interpretivists attempt to reduce the distance between the researcher and the subject of research, and are often involved in a number of different forms of participative enquiry. This polarity that is present between the two approaches has been described by Smith (1983, pp 10-11) who argues that, *'in quantitative research facts act to constrain our beliefs; while in interpretive research beliefs determine what should count as facts'*.

- **The Axiological Assumption**. The axiological assumption deals with the role of values:

Positivists believe that the process of research is value-free. Positivists, therefore, feel detached and independent from the subject under research and consider as objects any phenomena that are under investigation. Positivists are also keen to explore the relationships between the objects under study, believing that these objects existed before they showed any interest in them. Moreover, positivists consider that the objects under study are not affected by the research activities and will remain present once the study has been completed. Such assumptions are readily accepted in research studies within the natural sciences, yet they are harder to apply to the social sciences because they consider activities and behaviours of people. Many studies have shown that the process of inquiry has an influence on researchers, as well as on those involved in the research. However, interpretivists believe that researchers have values that may have been made explicit and that may help them determine what is fact, as well as what interpretations may be drawn. Most interpretivists believe that the researcher is involved with the subject being researched.

- **The Rhetorical Assumption.** The rhetorical assumption relates to the language of research:

In a positivist study, it is common practice to write in a formal style with a passive voice. On the other hand, for an interpretivists study, the position is not as clear with the preferred style reflecting the immediacy of the research, as well as the researcher's involvement.

- **The Methodological Assumption.** This assumption is concerned with process of the research:

A positivist approach generally considers theories and hypotheses, testing them to determine which can be identified a priori and then empirically in order to determine any causal relationships between variables. This is done to either uphold or refute the theory under investigation. On the other hand, in the interpretivists approach, an inductive approach is adopted, with the logic of framing the research seeking to build "emerging theories" where categories or theories are constructed or developed from empirical observations. Table 4.2 shows the assumptions of these main paradigms and is adopted from Creswell's (1994 and 1998) work.

Table 4.2: Assumption of the main paradigms

Philosophical assumption	**Positivism**	**Interpretivism**
Ontological assumption (the nature of reality)	Reality is objective and singular, separate from the researcher.	Reality is subjective and multiple, as seen by the participants.
Epistemological assumption (what constitutes valid knowledge)	Research is independent of that being researched	Researcher interact with that being researched
Axiological assumption (the role of value)	Research is value-free and unbiased.	Researcher acknowledges that research is value-laden and biases are present.
Rhetorical assumption (the language of research)	Researcher writes in a formal style and uses the passive voice, accepted quantitative words and set definitions.	Researcher writes in an informal style and uses the personal voice, accepted qualitative terms and limited definition.
Methodological assumption (the process of research)	Process is deductive. Study of cause and effect with a static design (categories are isolated beforehand). Research is context free. Generalisations lead to prediction, explanation and understanding. Results are accurate and reliable through validity and reliability.	Process is inductive. Study of mutual simultaneous shaping of factors with an emerging design (categories are identified during the process) .Research is context bound. Patterns and/or theories are developed for understanding. Findings are accurate and reliable through verification.

Source: Adopted from Creswell (1994, p.5 and 1998, p. 75).

The methodological assumption, which deals with the research process, is different depending upon which of the positivism or interpretivism research approaches is adopted.

Positivistic approaches are generally concerned with theory testing. Theories and hypotheses are indentified and then tested empirically to determine any causal relationships between tested variables. This might lead to either upholding or disproving the theory's investigation. Interpretivistic approaches, on the other hand, follow the inductive approach or the logic of framing the research, seeking to develop "emerging theories", in which categories or theories are developed or emerge from empirical observations.

This research aims mainly to derive a conceptual model to explain the interrelationships between KM processes and some important selected measurements of organisational performance. It outlines some initial correlations that will be tested more deeply in later stages to develop a model that is appropriate to explain the issue of KM processes and their effect on OP within a specific context. The scarcity of the available studies concerning this research topic within the developing countries motivated the researchers to conduct a preliminary study to build such model. Accordingly, this research adopts elements of both deductive and inductive approaches. Schutt (1996) distinguishes between inductive and deductive research and claims that deductive research proceeds from general ideas (usually existed theories), deduces specific expectations from these ideas and tests the ideas with empirical data. Conversely, inductive research begins with specific data to develop empirical generalisations or theories to explain the data about the reality of particular context. However, deductive and inductive research strategies are useful to understand the relationship between theory and research. Within the field of social research, the distinction between these strategies is difficult to make because each of them is likely to entail some elements from the other. Based on this, one can argue that social research, in its nature, tends to be deductive and inductive at the same time: whether we start from theory to explain reality or start from exploring empirical realities to develop theory, we still have an impact on the reality or theory used. This impact (reflection and perception of the situation by the researcher) could produce either a new theory (inductive) or a revised theory through reflecting the researcher's own findings that are built on an existed theory (deductive). This research starts with extensive review of the available relevant literature with the aim of generating a conceptual model which goes with the nature of deductive approach. Then, the conceptual model is tested using interviews method in order to verify the proposed model which goes with the nature of inductive approach.

Both positivistic and interpretivistic approaches may work well together to explore a particular issue in what is called the *triangulation* methodological paradigm (Bryman, 2001). The selection of a particular research approach is determined by the situation in which the research is conducted, the level of accessibility available for the researcher, and the issues that are being researched. This research will adopt the *triangulation* paradigm, in which aspects of both positivistic and interpretivistic paradigms will be used. This research demonstrates the main aspect of both deductive and inductive approaches. The research variables are mainly derived from the available studies and re-tested within the context of AI where the scarcity of the available studies has been a major concern. Retesting of the relatively large number of variables within this context is expected to provide a foundation for a new theory describing the most important KM processes within this context, as well as their effect on OP. This means that the variables generated from the available studies are not taken for granted, but have been used as a conceptual model for KM processes. This conceptual model is expected to be reformed, based on the data that will be gathered from the research population to improve their suitability for the context of AI.

4.3 Quantitative and Qualitative Research Strategies

The dichotomy between quantitative and qualitative approaches remains a significant issue among social researchers. According to Bryman and Bell (2007), quantitative research may be viewed as a research strategy which emphasises quantification through the processes of collection and analysis of data. They also argue that quantitative research involves a deductive approach to determine the relationship between theory and research, where the emphasis is placed on the testing of theories. By contrast, qualitative research is described as a research strategy, focusing on words and emotions rather than the collection and analysis of data, which predominantly emphasises an inductive approach to the relationship between theory and research, in which the focus is placed in the generation of theories. Table 4.3 shows the main differences between quantitative and qualitative research.

Table 4.3: The main differences between quantitative and qualitative research

Dimension	Quantitative Approach	Qualitative Approach
Purpose	Prediction and control	Understanding
Reliability	Stable-reality is made up of facts that do not change.	Dynamic-reality changes with changes in people's perceptions.
Viewpoint	Outsider-reality is what quantifiable data indicate it to be.	Insider-reality is what people perceive it to be.
Values	Free-values can be controlled.	Value bound-values will impact on understanding the phenomenon.
Focus	Particularistic-defined by variables studies.	Holistic
Orientation	Verification	Discovery
Data	Objective	Subjective
Instrumentation	Non-human	Human
Conditions	Controlled	Naturalistic
Results	Reliable	Valid: the focus is on design and procedures to gain real, rich and deep data.

Table 4.3: Quantitative vs. qualitative research (Source: Jarratt 1996, p7)

Quantitative research methods are, in most cases, developed from natural science for the study of natural phenomena (Myers, 1997). This type of research is concerned with objects that can be identified using statistical number operations to process data and summarise results (Locke *et al.*, 1998). A quantitative research strategy emphasises a deductive approach to the relationship between theory and research, using traditional formal methods (e.g. surveys, statistical analysis and data modelling) in order to collect, analyse and interpret a set of data. Bryman (2001) describes the process of quantitative research as a linear series of steps, moving from theory through hypotheses development and testing to conclusions and writing up.

Qualitative research, on the other hand, was developed in social science to enable researchers to investigate phenomena that are social and cultural. It allows the researcher to understand the complex and dynamic quality of the social world (Hoepfl, 1997) and it focuses on an approach to the relationship between theory and research which is inductive, where the main concern is directed towards the generation of theories. However, that does not mean that qualitative research cannot be employed to test theories (Bryman, 2001).

Qualitative research can be classified into two main traditions: interpretive research and critical research (Locke *et al.,* 1998). In interpretive research, the researcher builds an extensive collection of data dealing with context, people, actions and participants' perceptions as a basis for the inductive generation of explanatory theory. Thus, this kind of research aims to understand the setting of social context from the perspective of the participants. Research techniques used in this kind of research include interviews, documentary analysis and observations. Critical research aims to understand and critique power and inequality within a society. The same methods of data collection that are used in interpretative research can be used in critical research.

The distinction between qualitative and quantitative approaches is sometimes over-emphasised, which may lead to all sorts of confusion (Hoepfl, 1997; Trochim, 2000). Trochim (2000) argues that qualitative and quantitative data are closely related to one other. With this in mind, quantitative data is focused on qualitative judgements, whilst qualitative data can be described and manipulated numerically.

Furthermore, both qualitative and quantitative approaches can be used jointly in all stages of research process in order to get rich and reliable data concerning the area of study. Byrman (2001) refers to what he called a technical version to explain the nature of qualitative and quantitative research. He emphasises the growing recognition that qualitative and quantitative methods are each linked to distinctive epistemological and ontological assumptions. These links, as he claimed, should not be viewed as fixed and ineluctable, and thus research methods can be viewed as autonomous. This means that a research method from one research strategy can be used to serve another strategy. Thus, the two kinds of research are not mutually exclusive and can work well together (Remenyi and Williams, 1996).

Moreover, one could argue that the use of one research strategy, either qualitative or quantitative, alone may constrain the process of data collection and limit the researcher's

ability to interpret and provide a possible explanation of the research findings. Since the researcher has a degree of access to the research context, as is the case of this research, he/she should try as much as possible to understand this reality, either formally through standard ways of data collection (questionnaire) or informally through socialisation and interviewing processes. In addition, as revealed by Jarratt (1996) and also Bryman (2001), the use of an *integrated* approach, which includes quantitative and qualitative elements, has the potential to provide a more accurate view of a phenomenon and assists the researcher in avoiding the weaknesses of each individual approach. In conclusion, the use of qualitative research as the main strategy guiding this particular research does not prevent the use of quantitative research aspects, including exploratory survey and documentary analysis of the research context. The qualitative aspect is used specifically to verify the research independent variables (KM processes), as well as its dependent variables (OP measurements). This is seen as an essential process to improve the suitability of the research variables to the context of this particular research. Although this does not mean grounding the research variables, it can improve the relevance of the research variables and enable the development of a realistic and applicable KM model. In fact, the nature of the main concept of this research (KM) encourages the use of a qualitative research strategy.

4.4 Research Methodology and Choice of the Research Design

4.4.1 Research Methodology, Methods, and Techniques

Hussey and Hussey (1997, pp. 54) define methodology as an *'overall approach to the research process, from the theoretical underpinning to the collection and analysis of the data', while methods refer to 'various means by which data can be collected and/or analysed'.*

Jankowicz (2005) classifies the methods used in social research into the following types:

1- explicatory method - questions are directed towards people and written sources, regarding past issues and events from either historical review or biographical analysis so that an understanding of the present is gained and, as a result, predictions of the future can be made. This method considers personal and social meanings of phenomena, viewing them as experiences of the people or organisation under study, and recording the implications of those perceived to have meaning;

2- case study method - issues which affect the whole organisational unit (single case study) or group of organisational units (comparative case study) can be explored in

both the present and the past, The case study data are usually obtained from analysis of written documents and interviews;

3- survey method: where the questions are put to large groups of people to explore issues, largely in the present. The survey method may use different kinds of techniques, such as interviews, focus groups and questionnaires;
4- experimental method - the relative importance of a number variables is determined by using techniques such as observation, so that a focus placed on variables, rather than issues, proves effective.

In contrast, techniques are sequenced procedures involving stages which are followed in order to collect data, and then analyse them for the information contained (Jankowicz, 2005).

This research is interested in identifying KM processes that affect OP, issues and difficulties, and important factors, as well as seeing views and perceptions of KM. It should use current data to target OP. To this end, experimental and survey methods are not appropriate for KM because the issues of KM are complex and recently concerned. Also, the explicatory method, which mainly focuses on historical review, is not suitable. Thus, the case study method, involving a single organisation or group of organisational units, is both appropriate methods for this study. Bryman and Bell (2007) revealed that the multiple case study method is usually applied in business and management research.

This research design adopts this scenario. The first stage of this research involves literature searches and a review of previous studies with the aim of exploring the concepts of KM, KM processes and their tested impact on OP. This helps the researcher to formulate a problem in such a way that it can be researched and suggests testable propositions for other research designs. The empirical part of this research involves describing the reality of KM processes and their observed effects on OP from the participants' point of view. Accordingly, the analytical phase is expected to enable the interpretation of findings based on the analysis of the interviewers, documents, observations, the researcher's perception, and the comparison between the findings obtained and the findings of the previous studies. The final expected outcome of this research process is to develop a prediction model that is applicable in similar situations for the same concepts.

4.4.2. The Choice of the Case Study

Robson (2002, pp.178) define 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'*. Supplementing the previous definition, Yin

(2003) highlights the importance of the context when he mentions that the boundaries between phenomenon and context within a case study are not clearly evident. Morris and Wood (1991) suggest that, to gain a rich understanding of the context and the processes being enacted, the case study strategy will be particularly interesting. Therefore, using a case study allows the researcher to make an in-depth study of a specific phenomena and context within which it is being implemented. Saunders *et al.,* (2007) stated that a case study has the ability to generate answers to the questions 'why?' and 'what?', as well as 'how?', and various data collection techniques are employed which are likely to be used in combination; for example, interviews, observation and documentary analysis.

Yin (2003) identifies four types of case study:

- Single case study which is used to cover a single unit or unique case
- Multiple case study which involves studying more than one case
- Holistic case study, where the researcher views the organisation as a whole.
- Embedded case study, which involves studying more than one unit in a single organisation.

In this research, multiple case study used as four cases in four different airline companies were investigated because of the focus on the need to ascertain whether the findings of the first case happen in other cases and the need to make generalisations from these findings. As Yin (2003) stated, multiple case studies may be preferable to a single case study, thus when choosing to use a single case study there is a need to have strong justification. Furthermore, the case study strategy enables an in-depth study to be made within a specified context of the complex process of the implementation of KM in the AI.

4.5 Source of Data and the Methods of Data Collection

4.5.1 Source of Data

Denzin and Lincoln (2007) revealed that interviewing is the primary technique used for the collection of data within the qualitative research approach. Primary data will be collected through both field study and pilot study, which will be used to develop and test the research questions. An interview will be used for this purpose, and the formal field research will utilise a combination of research techniques, such as personal (face-to-face) interviews and semi-structured interviews which will be conducted with senior and middle managers, allowing us to ask the same questions to different respondents. Another source

of data, as stated by Yin (2009), suggests that there exist commonly-used major sources of evidence in case studies. These are; documentation, archival records, interviews, directs observations, participants-observation, and physical artifacts. Table 4.4 show the strengths and weaknesses of those sources of evidence that has been used in this study.

Table 4.4: Strengths and Weaknesses and their use in this research

Sources of Evidence	Strengths	Weaknesses	Use of Sources in this Research
Documentation	• Stable–can be reviewed repeatedly. • Unobtrusive – not created as a result of the case study. • Exact–contains exact names, references and details of the events. • Broad coverage–long span of time, many events and settings.	• Retrievability-can be low • Biased selectivity, if collection is incomplete. • Reporting bias-effects (unknown) bias of author. • Access-many be deliberately blocked.	• Reports from the case study organisations under investigation. • Notes and other websites. • Newspaper articles • Organisation structure, strategy, missions etc.
Archival Records	• [Same as above for documentation] • Precise and quantitative	• [Same as above for documentation] • Accessibility due to privacy reasons	• Case study organisational records
Interviews	• Targeted-focuses directly on case study topic. • Insightful-provides perceived casual inferences.	• Bias due to poorly constructed questions. • Response bias. • Inaccuracies due to poor recall. • Reflexivity-interviewee gives what interviewer wants to hear.	• Structured interviews. • Semi-Structured interviews. • Unstructured interviews
Direct Observation	• Reality-covers events in real-time. • Contextual-covers context of events.	• Time consuming. • Selectivity-unless broad coverage. • Reflexivity-event may proceed differently because it is being observed. • Cost-hours needed by human observers.	• Meetings with the interviewees of the case study organisation for additional insight.
Participant Observation	• [Same as above for direct observation]. • Insightful into interpersonal behavior and motives.	• [Same as above for direct observation]. • Bias due to investigator's manipulation of events.	• Simple participation with arranged meeting between different groups of participants.
Physical Artifacts	• Insightful into cultural features. • Insightful into technical operations.	• Selectivity. • Availability.	• Hardware and software tools such as CD's. and files.

Table 4.4: Six Sources of Evidence: Strengths and Weaknesses and their Use in this Research (Source: Yin, 2009)

4.5.2 Interview

Collis and Hussey (2009) stated that interviews are a means for data collection in which interviewees are chosen and asked a number of questions to determine what they do and how they think or feel. Most interviews fall somewhere between structured and unstructured interviews. A structured interview uses a questionnaire conducted by an interviewer who does not deviate in the slightest from the questions that have been prepared beforehand. However, this form of interview is not common among researchers who prefer to use unstructured interviews that enable them to get further details and discussion about the issue under study. Usually, a researcher has some issues to be raised in the interview beforehand but these issues are not structured as formal or restricted questions.

An interview is viewed as a mid-point between methods of structured research, such as questionnaires and those that are more in-depth, which include participant observation. It also may provide greater depth and understanding of the social world as it gives a researcher the ability to take the discussion further and explore some issues in more detail. It is also seen as a useful method for generating original hypotheses and theories that the researcher may not have considered. However, interviewees can be influenced by the researcher's presence, especially when the issues raised involve providing personal information (Haralambos and Holborn, 1991). This, however, may not be true if these issues are general and have no impact on the interviewee's personal situation.

4.5.3 Type of Interviews

There are different types of interviews, including personal interviews (face-to-face), computer interviews (email or video conference) and telephone interviews. Structured interviews used (which involve a set of questions which the interviewer asks in a fixed order and form), as well as unstructured interviews (which involve questions that are not fixed in nature but that can be compiled as the interview takes its course) (Collis and Hussey, 2009). Semi-structured interviews fall in between structure and unstructured interviews.

Within the context of this research, interviews were conducted personally (face-to-face), alongside semi-structured and unstructured interviews which were selected randomly from the research population. Semi-structured interviews are used in particular to enable the gathering and sifting of in-depth details and discussion concerning the issue under study. They are seen as a flexible way to extract simple factual information from people (Haralambos and Holborn, 1991).

4.5.4 Why select the Interview approach?

The interview approach enables both the interviewer and interviewee to interact with one another and to share their experiences, thus enabling the researcher to understand any observed behaviour, actions, impressions and opinions of those from their own frame of reference (Fontana and Frey, 1998; Ackroyd and Hughes, 1992). Hussey and Hussey (1997) stated that the benefit of using semi-structured interviews is their flexibility, allowing the researcher to prepare and order the questions in a way dictated by the prevailing circumstances rather than being restricted by very specific questions.

However, semi-structured or unstructured interviews have some weaknesses of which the researcher needs to be aware when gathering data. The researcher should bear in mind that recent events may affect the interviewee's responses; for example, he/she may have recently have received news of a salary increase, a cut in hours, or misfortune for a member of the family (Collis and Hussey, 2009). In addition, interviewees might not be familiar with the subject, or they might give an unreliable or inaccurate response.

4.5.5 Documentary Sources

This is the second method that will be used in this study to complement the interview method. According to Saunders *et al.,* (2007) the use of documentary secondary data in research projects is often with primary data collection methods. Erlandson, *et al*. (1993) described this method as 'the broad range of written and symbolic records as well as any available material or data'. Documentary sources include collection of secondary data published or unpublished such as written material (e.g. notices, correspondence, reports, diaries, journal and magazine, books, and newspaper) or non-written material (e.g. video recording, pictures, films and television programmes (Robson, 2002), DVDs, Blue-ray, and CD-ROMs). Access to the records and data of an organisation is a key issue for secondary research as these may be unsuitable or inadequate in the context of the problem under study.

4.5.6. Observation

Saunders *et al.,* (2009) state that there are two types of observation. *Participant observation* is used for qualitative research and is related to the discovery of the meanings that people link to their action. On the other hand, the *structure observation* is used in quantitative research and deals with the frequencies of those actions. However, the researcher does not become part of the situation. They revealed that *'observation is involved: the systematic observation, recording, description, analysis and interpretation of people's behaviour'* (Saunders *et al.,* 2009, p.288). It is rational to set a number of

observations in order to reduce the effects of researcher bias and to increase consistency and reliability. Therefore, *'it is efficient when it comes to studying and interpreting human behaviour'* (Bukhary, 2014, pp. 80).

4.5.7 Ethical Issues

It is *'difficult to conduct much research at all without running into ethical arguments'* (Coolican, 1992, pp. 249). One of the most important ethical principles that researchers should consider is the avoidance of coercion which may force people into partaking in the research (Collis and Hussey, 2009). In order to access and obtain full collaboration of interviewees, personal and official instruction letters will be used. As recommended by Collis and Hussey (2009), King (1995), Fontana and Frey (1998), and Hussey and Hussey (1997), the researcher should avoid offering any financial or other material rewards to induce people to take part, the interviewee should be aware of the purpose of the interview, and why they have been chosen, and the interview will be anonymous and confidential. Furthermore, subjects should be aware that the interview will be conducted as part of PhD research and the organisation will be provided with a copy of the final thesis.

4.5.8 Construct Measures

The interview questions document is divided into nine parts with a cover page which includes details of interviewee's name, organisation, address, telephone, fax, email, interview date and time, and interviewee background information. The first part of the interview questionnaire includes the background information (e.g. nature of work, number of employees in the department, employees in charge of knowledge management, and ranking knowledge management processes in the organisation). The second part relates to knowledge creation and acquisition. The third part relates to the knowledge modification. The fourth part relates to the knowledge use. The fifth part relates to the knowledge archiving. The sixth part relates to knowledge transfer. The seventh part relates to knowledge translation/repurposing. The eighth part relates to user access to knowledge. The last part relates to the knowledge disposal.

These questionnaires were developed from the related literature and some of them were adopted from Cong (2008).

4.6 Interview Design

The interview will be semi-structured, containing a pre-determined set of questions but it might be an unstructured interview in some levels of the study during the process of collecting data. There will be a protocol for the interview which, according to Yin (1994),

is used to increase the reliability of the interviews and to ensure consistency of the results. In this study the protocol consists of the following:

- **Introduction**: in which the interviewer will pay particular attention to important points, including the purpose of the interview, explaining some of the terminology used to enable the interviewee to gain a better understanding of the meaning of knowledge management.

- **Part one: Question for Work Nature and the Current Situation of Knowledge Management**; which consist of five questions about participants' background information, the interviewee and his/her organisation, including details of the interviewee's name, telephone number, e-mail address, and job title? Also, the concepts of knowledge and knowledge management processes, organisational performance, data and information are detailed to avoid misunderstanding.

- **Part two: Question for Knowledge Creation and Acquisition:** in this part, eight questions are asked about the incentives mechanisms, and collaborative and cooperative relationship with other departments. Also the source of knowledge and responsibility of collecting and clarifying work, problem solving, type of development and training programmes, mechanisms that used to create/acquire knowledge, and organisational performance measurements that are affected by knowledge creation/acquisition.

- **Part three: Question for Knowledge Modification:** in this part five questions are asked about knowledge modification, the updated of knowledge, the willingness of the employees to have new knowledge, the mechanisms used to modify knowledge, and the possible affect of knowledge modification on organisational performance**.**

- **Part four: Question for Knowledge Use:** in this part three questions asked about using knowledge from employees to improve performance and solve work-related problems, mechanisms used to indicate the use of knowledge, and the possible effects of knowledge use on organisational performance measurements.

- **Part five: Question for Knowledge Archiving:** in this part five questions asked about departments that responsible for knowledge archiving, the protection of knowledge against loss, the accessibility of information from archive, the

mechanisms used to archive knowledge, and the affect of knowledge archiving on organisational performance measurements.

- **Part six: Question for Knowledge Transfer:** in this part four questions asked about the importance of knowledge transfer, the ease of knowledge transfer among employees, the mechanisms used to transfer knowledge, and the affect of knowledge transfer on organisational performance measurements.

- **Part seven: Question for Knowledge Translation/Repurposing:** in this part three questions asked about using knowledge translation/repurposing within the organisation, the mechanisms used to translate knowledge, and the affect of knowledge translation/repurposing on organisational performance measurements.

- **Part eight: Question for User Access to Knowledge**: in this part five questions asked about the availability of information/knowledge for everyone, the restriction on valuable knowledge, the accessibility of knowledge in database, the mechanisms used to provide the user to access knowledge, and the affect of user access to knowledge on organisational performance measurements.

- **Part nine**: **Question for Knowledge disposal:** in this part three questions asked about the disposal of knowledge, the mechanisms used to dispose knowledge, and the affect of knowledge disposal on organisational performance measurements.

The last section of the protocol is about participants' opinion on building up knowledge management organisation, suggestions about knowledge management processes, application of IT, organisational culture, and talent development and training. Hence, these protocols are only procedures for the interviews as some questions were not used in the interviews. Instead, some questions were generated during the interviews according to the participants" responses.

4.7 Population and Sampling

Hussey and Hussey (1997) define the term ‘population’ as a body of people or other collection of items under study for the purposes of research. Saunders *et al.*, (2007, p.204) stated that *'sampling techniques provide a range of methods that enable you to reduce the amount of data you need to collect by considering only data from subgroup rather than all possible cases or elements'*. To generalise the outcome of a specific sample to the entire population is the idea behind sampling. According to Cooper and Schindler (2003), a

sampling technique is a cost-effective method, giving more accurate results and increasing speed in the process of collecting data. Saunders, *et al.,* (2007) revealed that there are two types of sampling techniques. Probability or representative sampling which is often linked with survey and experimental research strategies. It contains five main techniques including simple random, systematic, stratified random, cluster, and multi-stage (Saunders *et al.,* 2007). Non-probability or judgemental sampling also contains five main techniques including quota, purposive, snowball, self-selection, and convenience; it is usually used when adopting a case study strategy (Saunders *et al.,* 2007). According to Marshall (1996) there are three approaches for qualitative study when selecting a sample; [1] *convenience sample* which is knowing the most accessible subjects which are the least costly to the researcher in terms of time, effort, and money; [2] *judgement sample* which is one of the most common sampling techniques as the researcher selects the most productive sample to answer the research question; and [3] *theoretical sample* is the iterative process of qualitative study design means that samples are usually theory driven to a greater or lesser extent (Marshall, 1996, p. 523). The sampling frame in this study is to select the elements of the sample by using subjective methods, such as experienced personal. For the purpose of this study, 43 decision-making managers from higher and middle level were selected. Four leading airline companies from GCC countries has been chosen for the case study because of their good quality services, organisational size, accessible of data, importance and impact on those countries' economies, thus meeting the requirements for a case study (Ghauri *et al.,* 1995) and ease of access (Yin, 1994).

The participants are working in different departments, including customer services, IT, planning, maintenance, sales, marketing, finance, training and human resources. Participants' job descriptions varied: there were two VPs from finance and network planning departments. Two AVPs from direct sales and domestic sales departments. Eight GMs were selected from different departments as follow; (two from IT, two from maintenance, one from finance, one from marketing, one from e-marketing, and one from e-commerce departments). Ten SMs were selected as follow; (three from training department, three from IT department, two from marketing department and two from sales department) and twenty one managers were selected as follow; (five from sales, six from marketing, three from maintenance, five from customer services, two from planning department). Participants had between 11 and 30 employees. Despite the fact that interviewees are at very busy middle and higher levels within the organisations, the duration of the interview ranged from 75 minutes up to a maximum of 120 minutes. All the

interviews were tape-recorded to assure the accuracy of data. Only 7 out of 43 participants' responses were in Arabic and these have been translated into English. All the interviews were analysed through content analysis described in section 4.8.

4.8 Data Analysis Methods

The method chosen to analyse research data is dependent upon the research paradigm and the nature of the data (i.e. quantitative or qualitative). Collis and Hussey (2009) stated that analysing qualitative data is challenging due to the large volume of data to be managed. One difficulty is that there is *'no clear and accepted set of conventions for analysis corresponding to those observed with quantitative data'* (Robson, 1993, p.370). In addition, it is difficult to appreciate how researchers, in some published studies, structured and summarised hundreds of pages of qualitative data to get their findings. Whilst much has been published about the techniques used in qualitative interview data analysis (Miles and Huberman, 1994; Ghauri *et al.*, 1995; Strauss and Corbin, 1998; Bryman, 2004), qualitative researchers have always faced the accumulation of large volumes of data and found it difficult to adopt appropriate analytical approaches as a result.

In this study, *content analysis* used to analyse interviews in an attempt to find emerging key themes (Brewerton and Millward, 2001; Bryman, 2001; Hussey and Hussey, 1997). This content analysis is mainly based on Miles and Huberman's (1994) approach which provides a thorough pathway to qualitative data analysis utilising networks and graphs as suitable displays for data. After coding the interview transcripts, codes were reviewed to be grouped together into categories, these processes were then used to deduce key themes that were common or recurring. Miles and Huberman (1994, p.10) suggested a three-step strategy for data analysis including, *data reduction* which refers to *'the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcription'*. The second strategy is *data display* which is refers to *' organised, compressed assembly of information that permits conclusion drawing and action'* (Miles and Huberman, 1994, p.11). The third strategy is *conclusions drawing and verification*, used to validate the meanings emerging from the data it has to be tested (Miles and Huberman, 1994).

4.9. Triangulation of Data

Within interpretive research, important issues facing research findings concern validity and reliability. Yen (2003) reported that there are four types of triangulations namely, data triangulation (collecting data from different sources), investigator triangulation (where

more than one researcher is carrying out the research), theory triangulation (interpreting the same data set from more than one theories) and methodological triangulation (which refers to different methods of research to investigate a particular issue).

4.10. Chapter Summary

This chapter has provided a review of the philosophical stances and diverse research paradigms associated with research generation, and the wide range of methods available to assist primary data collection. Selecting philosophical approaches, paradigms and methods that are properly aligned to the aims of specific research is essential. The outcomes of this selection process represent the foundation of robust research.

The main aim of this study is to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders and academics. To this end, a qualitative research approach has been adopted using a multiple case study strategy. Data were collected mainly from four airlines through extensive face-to-face interviews, followed by observation, and documentation with managers, senior managers, GMs, AVPs, and VPs in various departments. This research is particularly well-suited to the interpretivist's standpoint, given its emphasis on understanding a social phenomenon via the meanings that those associated with it derive. As such, this research demonstrates key aspects of both deductive and inductive approaches.

Chapter Five

Pilot Study in the Airline Sector

5.1 Introduction

The first section of this chapter describes the main purpose of the pilot study. Then, the results and discussion arising from the face-to-face interviews follows with the conclusion of the pilot study. The chapter includes the findings of the pilot study, involving the selection of the case studies and the main study. Finally, the chapter ends with a conclusion.

5.2 Pilot Study

The main purpose of the pilot study was to make sure that all the functions of the research tool are properly organised and well designed, as well as providing initial information about how KM is used and implemented in the airlines sector. In addition, the pilot study is used to validate the conceptual model. According to Bryman and Bell (2011), *'the desirability of piloting such instruments is not solely to do with trying to ensure that survey questions operate well; piloting also has a role in ensuring that the research instrument as a whole functions well'* (Bryman and Bell, 2011, p.262). In order to proceed with the pilot study and collect information, semi-structured face-to-face interviews were used. The interview schedule was prepared and five extensive interviews were conducted with top managers in an airline context between March 2011 and June 2011. Each interview lasted between 30 and 45 minutes, and was tape-recorded and transcribed. Key features of all the KM processes (knowledge creation and acquisition, knowledge archiving, knowledge modification, knowledge use, knowledge transfer, user access to knowledge, knowledge translation/repurposing and knowledge disposal) were investigated in this pilot study. A contents analysis approach was used to generate ideas and identify the main themes.

5.2.1 Results and Discussion

Since the researchers used content analysis, various aspects of KM were investigated in detail and the interview questionnaire was prepared to observe the prime processes of KM and their effect on OP. Key features of all the KM processes were investigated in this pilot study. Five participant managers (coded M1 - M5) from one Airline Company were selected for this study in order to present the true picture of how OP is seen by the employees who were chosen from various categories of managerial staff.

Knowledge Creation/Acquisition

M1 and M3 managers emphasised that knowledge creation and acquisition are KM practices employed by the company. This agrees with (Obaisat, 2005; Mills and Smith, 2011) who stressed the high level of perception of creation and acquisition managers in different contexts, whilst M2, M4, and M5 managers mentioned that knowledge creation and acquisition is not employed in the company. Furthermore, M1 and M3 have ranked knowledge creation and acquisition as the highest knowledge management practice used in the company. In addition, M3 and M4 have selected knowledge creation and acquisition as the most influential processes affecting organisational performance. M1 has chosen program instrumentation as a mechanism to create and acquire knowledge, whilst M2 selected self-reporting and documentation as the mechanisms used by the company to create and acquired knowledge. M3 selected self-reporting and documentation as mechanisms for knowledge creation and acquisition, M4 selected documentation as a mechanism to create and acquired knowledge, whilst M5 selected self-reporting, documentation, program instrumentation and networks as mechanisms to create and acquire knowledge.

Knowledge Modification

Only M5 selected knowledge modification as the process being used by the company. M1 ranked knowledge modification as a moderate process, whilst M2 ranked it as lowest knowledge management process used in the company. In response to the question about the most influential processes on organisation performance, the participants agree that knowledge modification came in the middle, as neither a high nor a low influential process on organisation performance. Bhatt (2001) stated that modification or conversion process takes place along the supply chain of data, information and knowledge, arguing that organisations must speedily convert data into information, and such information into organisational knowledge to maximise benefits from this process. In response to the question about the mechanisms being used to modify knowledge, tracking was chosen by M1 and M5, editing tools and security were chosen by M2 and M5, and version control was selected by M3, M4 and M5.

Knowledge Usage

Managers M2, M4 and M5 selected knowledge usage as the process being employed by the company. This is has been supported by Daud and Yusoff (2010), who contend that employees should collaborate to use knowledge for the benefits of their organisation. M1 and M2 have ranked knowledge usage as a highest practice in the company. In response to

the question about KM practices and their impact on organisation performance, the managers M2, M3, M4 and M5 selected knowledge usage as the most influential process on organisation performance. Finally, in response to the question about the mechanisms being used to indicate the use of knowledge, M1, M2, and M5 have selected feedback system, while M3 had no idea and M4 selected tracking system.

Knowledge Archiving

The managers M2, M4 and M5 have selected knowledge archiving process employed by the company. M4 and M5 have ranked knowledge archiving as the highest process used by the company, while M1 ranked it as lowest, and M2 ranked it as moderate process. In addition, M2 selected knowledge archiving as the most influential process on organisation performance. Finally, M1, M2, M4 and M5 selected IT as the mechanism to archive knowledge. The findings concerning knowledge usage and archiving agree with most of the previous studies in other contexts (for example, Hasan and Al-Hawari, 2003; Marqués and Simón, 2006; Moorthy and Polly, 2010; Mills and Smith, 2011).

Knowledge Transfer

All the managers selected knowledge transfer as a process being employed by the company, with the exception of M4. None of the managers ranked knowledge transfer as a highest process being used by the company although M5 selected it as the lowest process. In response to the question about KM practice and its impact on organisation performance, only M3 and M5 selected knowledge transfer as the most influential process on organisation performance. Networks are the most common mechanism being used to transfer knowledge. The use of networks is also supported by Bergeron (2003), who postulated that in order to increase the value of the information and to enable knowledge sharing, information should be transferred freely within the organisational context using various types of media (e.g. intranet, emails), assuming that in this phase physical transfer and networks are the support mechanisms. Physical transfer has been selected by M3 and M4. The importance of knowledge transfer was also emphasised by other researchers, including Al-adaileh and Al-atawi (2011), and Ladd and Ward (2002).

Knowledge Translation/Repurposing

Knowledge translation has been selected as a process being employed by the company by all the managers except M1. This is cleared by Graham, *et al.,* (2006) who revealed that knowledge translation includes the coverage, quality appraisal, and modification of R&D knowledge into a comprehensible and contextually pertinent shape. M2 and M5 have ranked knowledge translation as a moderate process. None of the participants selected

knowledge translation as the most influential process on organisation performance. IT was chosen from all participants as the mechanism to translate knowledge. However, M3 had no idea about it.

User Access to Knowledge

Only M2 and M5 selected user access to knowledge as a process employed by the company. M2 ranked user access to knowledge as the highest process being used by the company, whilst M5 ranked it as moderate process. Bergeron (2003) shows that successful KM systems should provide continuous access for authorised users through the use of query support mechanisms. None of the managers selected user access to knowledge as the most influential process on organisation performance. In response to the question about mechanism being used by the company to provide the user to access knowledge, all the participants selected IT in first place, whilst M2 and M5 selected corporate policy.

Knowledge Disposal

Some information will be of little or no value in the future and, therefore, it should be destroyed or stored elsewhere through established processes and technologies in order to keep the standard body of knowledge at a level which is manageable (Bergeron, 2003). Managers M2 and M5 selected knowledge disposal as the process employed by the company. None of the participants ranked knowledge disposal as the highest process being used by the company, yet M1 ranked it as the lowest process, and M5 ranked it as moderate process. M1, M2, M4 and M5 selected technologies as the mechanism to dispose knowledge, while M3 had no idea. Only M1 selected knowledge disposal as the most influential process on organisation performance, while M3 stated that it has least impact.

5.3 The Findings of the Pilot Study

The findings of the pilot study were as follows: (1) 60 percent of interviewees were familiar with the term knowledge management; (2) most respondents possessed some knowledge about the organisation's type of technologies; (3) little was known about organisation's profitability; (4) there was a lack of knowledge regarding the various processes of the organisation, the clients associated with the organisation and various organisational ventures; (5) interviewees generally felt that KM processes can help the organisation through increasing profitability and improving employees' knowledge sharing and participation; (6) interviewees ranked KM practices of their organisation with a scale ranging from 1 (lowest) for knowledge modification and knowledge disposal to 8 (highest) for knowledge use and knowledge translation; (7) interviewees agreed that KM adds value to the organisation; (8) KM was considered very important to the organisation; (9) most of

the interviewees agreed that self-reporting and documentation are mechanisms to create and acquire knowledge, 60 percent of the interviewees felt that version control is the mechanism to modify knowledge, 60 percent felt that feedback system is the mechanism for knowledge use, 80 percent felt that information technologies is the mechanism for archiving knowledge, 20 percent of the interviewees sees physical transfer is the mechanism to transfer knowledge, while 80 percent saw networks as the mechanism to transfer knowledge, 80 percent of the interviewees agreed that information technologies is the mechanism to translate knowledge, 80 percent of the interviewees saw IT as the mechanism to provide the user with access to knowledge, 80 percent of the interviewees agreed that technologies is the mechanism for knowledge disposal, while 20 percent did not know; (10) interviewees felt that knowledge usage, and transfer were the most influential processes that impact organisational performance; and, finally, (11) most interviewees saw that financial measures were influenced by KM processes, while the preparing for the future measure comes at the bottom of the list.

5.4 The Conclusion of the Pilot Study

Drawing conclusions from the pilot study, the author found that employees are using KM although there is no KM system provided to them. It is clear that there is a lack of knowledge in terms of knowing the situation around them, such as profitability of the organisation, various processes, and various ventures undertaken by the organisation, inside and outside the organisation. The pilot study provided the author with first hint of what the term KM means to the employees, and helped to understand what issues and difficulties are faced. It also helped to know their opinion about KM value, what factors of KM processes affect OP more, and what mechanisms has been used for this effect.

The main conclusion derived from the pilot study is that the proposed research was feasible. The results of the pilot study suggested that research on KM in the AI can be successful. The pilot study influenced the main study in terms of validating that rich information can be collected from the participants and that enough public records are available to answer the research questions. The homogeneity of the results also provided evidence that enough themes can be developed from the responses of the participants, highlighting the collective experience of different airlines operators.

5.5 Main Study

The main study of this research includes four airline companies from three different countries, all in the GCC countries. The identity of these companies and the participants

kept confidential. The first airline will be called as (W), the second will be (X), the third one will be (Y), and the fourth one will be called (Z). The gathered information from literature and the pilot study will be used to start the in-depth main study.

5.6 The Selection of the Case Studies

The selection of the case studies was based on airlines that were operational in the GCC countries although this research context is AI. The reason for choosing this part of the world is the accessibility of data, initiative, profits, and good quality of services that are provided from these mature companies. All four airlines showed profitability and were still currently operational. Finally, the four airlines were selected for the case studies because enough public information was available to provide a brief background for each case study.

5.7 Chapter Summary

This chapter has identified the purpose of the pilot study, results and findings. The main key finding of the pilot study in the AI shows that research on KM can be successful. Moreover, issues and difficulties encountered in the process and the implementation of KM in the AI have been discussed. The chapter provided background information about the four case studies, in terms of operations, size of the fleet, date of establishment, number of destinations offered to the public and type of systems that were adopted. The next chapter will provide the results, findings and discussion of the main study.

Chapter Six

Analysis, Results and Discussion

6.1 Introduction

As discussed in Chapters 2 and 3, the need for more investigation and analysis of the KM processes in organisations has been established. To satisfy that need, a conceptual model was proposed. This proposed model contains eight processes: namely, creation and acquisition, modification, usage, archiving, transfer, translation, user access, and disposal). The proposed model also contains five performance measurements: financial, customer/market, process, people development, and preparing for the future. It also contains mechanisms to facilitate the work of the model. The selected methods for conducting and analysing this chapter were presented in Chapter 4. In this chapter, empirical data collected from four airline companies are analysed and presented. The participants in this study were coded as (S, Q, E and N) according to their companies. This chapter contains the results of the analysis of the data. The chapter will be organised into several sections as follows: (a) data analysis procedures, which explain the research methods used and the thematic analysis procedure; (b) presentation of findings and discussion, which provides the themes and sub-themes extracted from data; and (c) a summary of the chapter.

6.2 Data Analysis

The main aim of this qualitative research is to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders and academics.

In this study, *content analysis* was used to analyse interviews in order to identify key themes emerging from the data. Qualitative methods, principally based on Miles and Huberman's (1994) approach, were used to analyse the responses. The eight main thematic categories that emerged from the data were: (a) knowledge creation/acquisition, (b) knowledge modification, (c) knowledge use, (d) knowledge archiving, (e) knowledge transfer, (f) knowledge translation, (g) user access to knowledge, and (h) knowledge disposal. Each of these categories, and its corresponding sub-categories, will be presented next with illustrative tables and direct quotes from the participants also included.

6.3. Quantifying the data

Some of the data were quantified based on interviewees' responses; however, this is not exactly as it is in the questionnaires. According to Bukhary (2014) qualitative data can be

quantified and *'take the form of counting the frequencies and relationship among the data variables itself with respect to answers of the same inquiry'* (Bukhary, 2014, p.150). Furthermore, data can be calculated by using special computer programs or even manually (Mathie, 2005). Therefore, in this study, the data is quantified on the basis of number of interviewees and percentage. For example, out of 43 participants, if 21 interviewees (number of participants) mentioned a certain theme (e. g. 'incentives mechanisms in the organisation') then 49% (% of participants) support this idea. In addition, if there are sub-themes, the highest percentage will be counted to represent the main theme. For example, if a certain theme has five sub-themes with value of 0%, 5%, 9%, 49% and 37%, then the value of 49% will represent the main theme.

6.4 Background of Case Study One – Airline One (W)

The first airline (W) in this study started out in the 1940s with a single twin-engine aircraft. It now has around 141 aircraft (website accessed May 2013) with around 15,000 employees working in different departments. This company operates flights to 54 international and 26 domestic destinations, in addition to extra flights that operate at special seasons, bringing the total to more than 100 destinations worldwide. The airline (W) carries around 24 million passengers annually (according to the report in 2012) around the world. The airline (W) operates around the world, including the Middle East, Asia, Africa, Europe and North America. The company has posted in 2012 that it carried about 516,000 tons of cargo, with a 21% increased in revenue compared with 2011.

In the Airline (W), IT used to host all services in its Data Centre. The platform was solely IBM mainframe. However, since around 2008 this has changed over time to cater for Unix-based servers. The host operating system used to be OS/390 and Z/OS. Thin client architecture was employed, so developers and end-users could access mainframe services through dump terminals. For decades this platform was hosting airline (W) applications/services, such as STARTS (reservations system), FOIS (flight operations system), maintenance, HR, revenue, marketing, security and finance systems. Systems support, capacity planning and database management were responsible for a 24/7 availability of the environment for end-users and customers worldwide.
It was the role of departmental application developers to produce, test and deploy new applications (transactions), with the help of end-user requirements in various airline divisions. The applications were mainly transactional programs under CICS, which was running under IBM's TSO (Time Sharing Option). IBM DB2 was the primary database management system utilised, with accessibility from mainframe and non-mainframe platforms. In a large-scale project, since 2008 this environment has started to transform

into a new UNIX servers-based platform to cater for demands on emerging internet and mobile services that shape the theme of the current decade's applications. This transformation is still going on with the applications being migrated in a well-planned manner from the legacy mainframe systems to the new state-of-the-art platform. From the knowledge management point of view, although this environment was technically capable of handling such a requirement, knowledge management was not among the priorities in the IT master plan for the last decade. However, as an inbuilt module within the new environment, implementation of knowledge management has become an objective in the current IT master plan.

6.5 Background of Case Study Two – Airline Two (X)

The second airline (X) in this study was established in 1993, and commenced operation in 1994. The headquarters of the airline is in one of the cities in the GCC countries. Since its re-launch in 1997, 50% of the airline is owned by the government. It has around 132 aircraft, currently operating (website accessed January 2014) with around 30,000 staff, of which 17,000 were directly employed by the airline. The average age of the fleet is five years. Among the cabin crew, 120 nationalities are represented. This company operates international and domestic flights to over 100 locations in the world, including Africa and South Africa. It is one of only a few airlines in the world that operate across the seven continents of the world. It has won several awards in the course of its operations, including Airline of the Year. In 2013, the airline launched a mobile application that allowed passengers to book flights using their phone. Nowadays, this Airline is considered as one of the top five airlines in the world.

6.6 Background of Case Study Three – Airline Three (Y)

The third airline (Y) in this study was established in 1985 in the GCC countries and has been rated as a four-star airline. The award-winning airline has a fleet size of 213 aircraft, with operations in 161 destinations. Airline Y had almost 39,000 employees in 2011, and has expanded to 50,000 at present. Aircraft purchases have been one of the landmarks of this airline, having bought as many as 170 aircrafts in a single year. Airline Y has been recording profits every year, apart from its second year of operations. The records revealed that growth has never been below 20% for every year since its establishment. The size of the airline doubled every 3.5 years for its first 11 years. As of November 2013, the company has been able to announce profitability, despite increasing fuel prices, reaching profits of USD 11.5 billion, which represents a 13% increase from last year.

6.7 Background of Case Study Four – Airline Four (Z)

The fourth airline (Z) in this study was established in 2006, and has operations in the Middle East and the eastern part of Africa. Airline Z had three divisions and was planning to expand to include European flights. It has a fleet size of 5 aircraft, and only conducts operations in 11 destinations. In November 2013, the airline rebranded itself and adopted a new name. The low-cost airline is now both a national and private airline. After rebranding, the airline has expanded to 24 aircraft, servicing 23 destinations. The average age of the fleet is five years. It has an average of 950 flights per week, covering 88 different routes within the country that the airline is based. Since its establishment, 12 million passengers have travelled on more than 100,000 flights. The airline is known for innovation, such as mobile booking of flights, and a strong social media presence, using Facebook.

6.8 Results and Discussion

6.8.1 Theme 1: Knowledge Creation/Acquisition

The first thematic category was labelled knowledge creation/acquisition. Several sub-themes were coded: (a) incentives, (b) collaborative relationship, (c) sources of knowledge, (d) problem-solving, (e) development training, (f) mechanisms to create/acquire knowledge, and (g) effect of knowledge creation/acquisition on organisational performance.

Airline Industry is a huge business with different departments and branches all over the world. Employees within this business need to be active, capable, and creative. As stated by Tubigi and Alshawi (2015) in the airline industry knowledge is created/acquired through regular meetings, sustained training and learning, and attendance of global conferences to improve the performance of the employees. This enables new information and knowledge to be gathered, which in turn will benefit the organisation. To create and acquire knowledge, incentives, collaborative relationship, source of knowledge, problem-solving, development training, and mechanisms have been adopted. From the interviewees' responses, incentives, collaborative relationship, source of knowledge, problem-solving, and developing training are recognised as tools used to encourage creating/acquiring of knowledge.

Most of the participants (21 out of 43 participants, 49%) cited financial incentives, formal appreciations (13 out of 43 participants, 30%), and promotions (12 out of 43 participants, 28%) as ways in which knowledge creation/acquisition can be encouraged within the organisation. Other incentives include training, praise, days-off and vouchers/gifts. Table

6.1 summaries the incentives mechanisms. In the AI, it appears that incentives that are financial in nature, formal appreciation, and promotions were perceived to be the most effective ways to encourage knowledge creation/acquisition. It has been noted from informal meetings that employees are looking to increase their salaries and grades in order to improve their life style.

The opinion of the participants was that incentives were used to encourage knowledge creation/acquisition, with Participant S2 from airline one (W) sharing his opinion,

> *"There is a rewards program in the organisation designed for those who create and innovate."*

Incentives vary in every department, but most usually include financial incentives, promotions, and formal appreciation. The responses of several participants suggest that the variance in the incentives provided to employees might be dependent upon the decisions of managers. The observation of Participant S11 from airline one (W) regarding incentives was,

> *"The incentive is mostly through departments. For example, in our department, we have a quarterly ceremony for the best three employees in the department, and at the end of year we count them and the one who has been number one in the department is presented with an honorary shield and recognition certificate and this written in his yearly report to help him for promotion. We note that employees who have these incentives are more creative and hard-working."*

Table 6.1: Quantifying sub-themes for incentives mechanisms

Sub-themes	Number of participants	% of participants
Financial	21	49%
Formal Appreciation	13	30%
Rank/promotion	12	28%
Training incentives	7	16%
Praise	6	14%
None	4	9%
Day-off	3	7%
Ingrained in the organisational culture	3	7%
No response	2	5%
Health care	1	2%
Special assistance	1	2%
Vouchers/gifts	1	2%

When exploring how collaborative relationships are developed in order to create and acquire knowledge, the researcher engaged in meetings and workshop in different

departments and observed that during the meetings or workshops questions are asked to find solutions for a specific problem, and the best solution is adopted. In addition, many participants felt that engaging in meetings, exchanging ideas/delegates, workshops, and agreements with other departments were all beneficial. Senge (1990) proposes that the creation of organisational knowledge is dependent upon the individual learning of co-workers. Furthermore, Nahapiet and Goshal (1998) revealed that knowledge is created as a result of combination and exchanging knowledge among employees. The results of this study validated the importance of collaborative relationships, indicating that in the AI engaging in meetings, exchanges of ideas/delegates, workshops, and agreements with other departments are the ways in which collaborative relationships can be built. Table 6.2 summaries the collaboration relationship. The opinions of the participants interviewed provided some insights into how collaborative relationships function within the context of knowledge creation/acquisition, with Participant E8 from airline (Y) saying,

> *"We have different types of co-operation and collaborative relationship with other departments and agencies inside and outside the organisation. We exchange experiences, attend lectures and attend regular meetings. We arrange and attend yearly conferences and symposiums. I believe all these activities will make employees more open-minded, which in turn will affect their performance in the organisation."*

Participant Q6 from airline (X) also spoke about engaging in meetings and exchanging ideas,

> *"Inside an organisation, the organisation builds up co-operative relationships with other departments by building up social relationships and sharing lectures, while with others – outside the organisation - by conferences held in other companies, centres and also attending international conferences. All these meetings and exchanges of knowledge will have positive effects on employees' creativity".*

Table 6.2: Quantifying sub-themes for collaborative relationship

Sub-themes	Number of part	% of participants
Meetings	22	51%
Exchange of ideas/delegates	10	23%
Workshops	9	21%
Agreement with other departments/unified	8	19%
Consulting	6	14%
Training	6	14%
Open dialogue/communication	4	9%
None	2	5%
Understanding of different department	1	2%

Regarding the source of knowledge in the organisation which can benefit employees to create/acquire knowledge, the participants' observations suggest that the internet is an important source of knowledge. However, the results also showed that manuals/books and the expertise of the people working in the organisation remain relevant sources of knowledge in the AI.

Zollo and Winter (2002) stated that development of new knowledge through the build-up of experience that emerges from KM activities is derived from knowledge accumulation, application, and use contribution. The participants' opinions in the study provided some insights into the different sources of knowledge for knowledge creation/acquisition. It appears that there is no single source of knowledge that the participants use; rather, employees rely on a variety of sources of knowledge, such as communications between different employees and departments, reading books, using the internet and internal data on the internal network. In addition to the sources available internally, Table 6.3 summaries the sources of knowledge. Participant N5 from airline (Z) spoke about experts as a source of knowledge in the organisation,

> *"We rely on experts from the outside, for example, our top management just hired an individual from a well-respected organisation heading our revenue management, so that is one way for us to try to absorb the knowledge quickly and avoid the time issue of trial and error methods. So, as I have said, there are so many ways of obtaining knowledge, and we're knocking at every single door possible."*

Table 6.3: Quantifying sub-themes for source of knowledge

Sub-themes	Number of participants	% of participants
Internet	25	58%
Manual /Books	15	35%
Experts	11	26%
Experience	8	19%
House training	5	12%
Lectures/workshops	5	12%
Outside training courses	5	12%
Customers	4	9%
Reports	4	9%
Networking	2	5%
Websites	2	5%
Formal education	1	2%
Brainstorming/meeting	1	2%
Newspapers	1	2%
Other companies	1	2%
Database	1	2%

Problem-solving is always a matter of choosing a way or mechanisms to figure out the problem. However, how problem-solving mechanisms used in the organisation can lead to acquire and create knowledge? Based on the interaction meetings with employees, they mentioned that the first step to solve any (new) problem is reference to the manual. By doing so, employees acquire new knowledge through reading new materials then they create knowledge through understanding the solution. The participants also cited mechanisms such as experts/managers, and the internet. For example, within the four AI, the participants indicated that, when faced with problems, the technical manual was the first step, followed by other options that may help form a solution to the problem. Participant N1 from airline (Z) provided an in-depth explanation regarding solving problems,

> *"It depends on the problem itself; for example, if the problem is related to one of our employees, we sit together and exchange knowledge to solve the problem. On the other hand, if the problem relates to the work we refer to the manual or the IT department."*

Training programmes provided by training departments from all four case studies AI organisations were mentioned as an important department and added value to the staff and the organisation as a whole. The interviewees' responses suggest that the presence of a training department is important in the development of knowledge among employees. Many participants spoke about the availability of training programs in the department, which are designed to improve employees' performance in terms of gathering new

information. Table 6.4 summaries the type of mechanisms for problems-solving. Tubigi and Alshawi (2015) assured that in the AI the knowledge is created/acquired through regular meetings, sustained training and learning, and attendance at global conferences to improve the performance of the employees. This enables new information/knowledge to be gathered, which in turn will benefit the organisation. The range of training programmes available was also varied, ranging from management, financial, customer services and maintenance training. Participant N1 from airline (Z) described how training programmes were used in the development of knowledge,

> *"We have lots of training programs, such as our new scholarship programme, for our employees' to undertake higher education. Also, we have crew training, finance, management courses, pilot training, maintenance training, inside and outside the country, and marketing training".*

Table 6.4: Quantifying sub-themes for problem-solving

Sub-themes	Number of participants	% of participants
Experts/managers	29	67%
Manual	20	47%
Internet/Research	16	37%
Experience	4	9%
Discussion	2	5%
Database	2	5%
Analysis	1	2%
Common sense	1	2%
No response	1	2%
Software	1	2%

As mentioned earlier, knowledge creation/acquisition can be encouraged through incentives, collaborative relationships, sources of knowledge, problem-solving and developing training, which in turn will affect organisational performance. The literature supports this as revealed by Al-adaileh (2013), Tubigi *et al.*, (2013), Zaim *et al.*, (2013) and Yang and Wan (2004).

Knowledge creation/acquisition refers to the initiative to create and to generate new knowledge for the benefit of the organisation (Mitchell and Boyle, 2010). The results of this study confirm the importance of knowledge creation/acquisition in the AI, as exemplified by the use of mechanisms to create/acquire knowledge, such as documentation, networks, self-reporting and program instrumentation.

With regard to the mechanisms used to create/acquire knowledge, the interviewees reported that self-reporting and documentation were typically used. Participant S16 from

airline (W) spoke about self-reporting and documentation, as methods of creating/acquiring knowledge in the department,

> *"In my opinion, self-reporting and documentation does help. For example, if a member of staff comes and says he didn't understand an issue, I am in a position to guide, teach and give him what experience I have, also to make him refer to policies and procedures and manuals."*

Table 6.5 summaries the mechanisms that have been used to create/acquire knowledge.

Table 6.5: Quantifying sub-themes for mechanisms to create/acquired knowledge

Sub-themes	Number of participants	% of participants
Documentation	38	88%
Networks	37	86%
self-reporting	33	77%
program instrumentation	29	67%
Manual	1	2%
Experience	1	2%
Benchmarking	1	2%
attending conferences	1	2%
IT knowledge	1	2%

Regarding the effect of knowledge creation/acquisition on organisational performance measurement, such as financial, customer/market, process, people development, and preparing for the future performance, it has been noted that knowledge creation/acquisition affects all organisational performance measurements that have been used in this study within the context of AI. The importance of knowledge creation/acquisition for organisation performance has been mentioned earlier in this chapter in different aspects. Therefore, to measure the affect of knowledge creation/acquisition on financial performance, the participants in the study believed that there is a strong effect of knowledge creation/acquisition on financial performance. Participant S1 from airline (W) spoke about the effect of knowledge creation/acquisition on financial performance;

> *"In my opinion, I'd rank it as strong because knowledge creation/acquisition is very important for the whole organisation not only finance department, where it is the core."*

This was supported by Yang and Wan (2004), who revealed how knowledge acquiring, can benefit the organisation financially.

In terms of customer/market performance, participants felt that there was a very strong effect of knowledge creation/acquisition on customer/market performance. This was supported by Darroch (2005) who detailed that knowledge acquisition positively affected both knowledge dissemination and responsiveness of the employees. This in turn will reflect on customer/market. The opinion that the effect of knowledge creation/acquisition was strong was generally formed by the participants from the information gained regarding the needs of customers. Participant N3 from airline (Z) sharing the following,

> *"We always believe in our customer/market as they are a source for information, and allow us to identify and understand their wants and needs. Therefore, I'd rank this as very strong."*

In terms of process performance, organisations with a higher level of knowledge management will operate more efficiently. Participants felt there was a strong effect of knowledge creation/acquisition on process performance. Participants generally referred to efficiency when talking about knowledge. For example, Participant N3 from airline (Z) stated that:

> *"Knowledge creation/acquisition will have strong effect on processes as it will affect the efficiency of any process in terms of using and acquiring new knowledge and information."*

This assertion is supported by the literature of Detert and Schroeder (2000) and Ostroff and Schmitt (1993).

The data also revealed a recurring theme in terms of knowledge creation/acquisition affecting people development performance. Participants generally thought of knowledge creation/acquisition as an opportunity to improve themselves. Knowledge creation/acquisition provides employees with much-needed information to enhance their ability to do their work. Participant N2 from airline (Z) shared his opinion about how knowledge creation affects people development performance:

> *"People development or employees' development will be affected by knowledge creation/acquisition very strongly in terms of providing new ideas and information to the employees for training purposes."*

From the literature, Yang and Wan (2004) stated that knowledge acquisition benefits the welfare of staff.

In terms of preparing for future performance, this aspect is related to the quality of strategic planning, indicators of partnership and alliance, investment in new markets, and preparation for any change. Participants expressed that knowledge creation/acquisition was important, especially for strategic planning. This assertion was supported by Wiig, (1999). Participant S5 from airline (W) shared his opinion about how knowledge creation/acquisition effects on future performance,

> *"In my opinion, preparing for the future will be affected by knowledge creation/acquisition very strongly. It will provide information and data for the organisation about depth and quality of strategic planning and indicators of partnership and alliance."*

Consistent with the model presented in an earlier chapter, knowledge creation/acquisition has a positive effect on all organisational performance measurements (financial, customer/market, process, people development and preparing for the future) within AI. This suggests that the participants in the study believed that through knowledge creation/acquisition, positive organisational performance can be improved. The strongest perceived effect of knowledge creation/acquisition on organisational performance was found within the process of organisational measurement.

This study validates the applicability of KM processes in the AI. Across all the organisational performance measurements, there was a perception among the participants that knowledge creation/acquisition is important for any organisation.

Table 6.6 summaries the effect of knowledge creation/acquisition of organisational performance.

Table 6.6: Quantifying sub-themes for the effect of knowledge creation/acquisition on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	0	0%
Weak	2	5%
Moderate	4	9%
Strong	21	49%
Very Strong	16	37%
Customer/Market		
Very Weak	0	0%
Weak	1	2%
Moderate	4	9%
Strong	18	42%
Very Strong	20	47%
Process		
Very Weak	0	0%
Weak	1	2%
Moderate	2	5%
Strong	29	67%
Very Strong	11	26%
People Development		
Very Weak	0	0%
Weak	3	7%
Moderate	5	12%
Strong	17	40%
Very Strong	18	42%
Preparing for the Future		
Very Weak	2	5%
Weak	1	2%
Moderate	5	12%
Strong	17	40%
Very Strong	18	42%

6.7.2 Theme 2: Knowledge Modification

The second thematic category was labelled knowledge modification. Several sub-categories were coded including: (a) modification of knowledge; (b) importance of knowledge update; (c) preference to information; (d) effect of knowledge modification on organisational performance; and (e) the mechanisms to modify knowledge.

For this theme, modification of knowledge, importance of knowledge update, preference to information, effect of knowledge modification on organisational performance, and the mechanisms to modify knowledge were tested to identify knowledge modification and to measure its effect on organisational performance.

Within the context of AI, the process of modification is applied to meet the future needs of KM and their workers (Tubigi and Alshawi, 2015). Most participants within AI believed

that knowledge modification is always applied in the organisations that have been observed during the interviews. For example, information or knowledge that is stored in the database is always revised to check its value for current and future need. Hence, modification is a continual process (Tubigi and Alshawi, 2015).

Also, the information is employed for whichever purpose necessary based on the situation such as decisions made to operate a flight, buy a new airplane, or leasing aircraft for peak season. Participants generally expressed the opinion that in order for their organisation to remain competitive, information needed to be continually modified. Knowledge modification is important because it ensures that any information used is up to date. Participant S12 from airline (W) spoke about this issue:

> *"Knowledge is always modified to suit the organisational current and future needs of information, we always refer to the archive system if we plan to implement new system, plan for next year strategies, revised operating flights, and so on. So archiving every single detail is very important. Therefore, if the organisation doesn't modify attained knowledge, it will lose its ability to be in the market, it will lose its customers, and will lose everything. It may even become bankrupt."*

Flexibility was discussed as necessary because knowledge modification will make decisions flexible, which can enhance the company's efficiency. Participant S6 from airline (W) noted the importance of flexibility, identifying the need for knowledge modification in the organisation,

> *"We have flexibility, and frequent measurement for economic and social change. So I think knowledge must be modified to suit organisational needs, both current and future."*

To understand the behaviour of the employees regarding knowledge modification, a question was asked about preference of the employees in terms of old or new information, the results generally indicate that the preference depended upon individual employees. Some employees prefer old data because they tend to resist learning new technologies, whereas others prefer new information. From interviewees' behaviour and action observations, the employees who refuse to learn new technologies tended to be older with little education. Participant S18 from airline (W) reported that the preference for information depends on the employees,

> *"I think it depends on the employees themselves. Some of them are willing to use new knowledge; for example, some of the employees are keen to continue their study and attend courses so that they are up to date with information. On the other hand, some of them prefer to keep their old information without self-development; for example, we have employees in this department working with the company for more than 18 years without any initiative from them to learn or attend courses, the organisation has to push them to do so."*

This assertion was supported in the literature by Bergeron (2003). Table 6.7 shows a summary of the types of sub-themes for knowledge modification.

Table 6.7: Quantifying sub-themes for knowledge modification

Sub-themes	Number of participants	% of participants
IS IT MODIFIED?		
Yes	33	77%
No	1	2%
Not all the time	9	21%
IS IT UPDATED?		
Yes	34	79%
No	0	0%
Not all the time	6	14%
Depends on department	2	5%
Lacks expertise	1	2%
PREFENCE OF EMPLOYEES REGARDING INFORMATION		
New	18	42%
Depends on person	17	40%
Old	8	19%

For the knowledge modification process in the AI, it appears that the mechanisms for the modification of knowledge were consistent with the conceptual model which included editing tools, tracking, version control and security (Tubigi and Alshawi, 2012). Even though all three mechanisms were found to be important for knowledge modification, editing tools emerged as the most important mechanism for knowledge modification. It's been observed that employees were aware of using software to modify knowledge. Table 6.8 summaries the mechanisms that used to modify knowledge.

Table 6.8: Quantifying sub-themes for knowledge modification mechanisms

Sub-themes	Number of Participants	% of Participants
Editing tools	35	82%
Tracking	26	61%
Version Control	26	61%
Security	22	52%
Social networking	1	2%

Participants in this study considered knowledge modification to be crucial in terms of financial, customer/market, process, people development and preparing for future performance. According to Chen and Huang (2009) knowledge modification is an important process because it increases the efficiency of innovative outcomes. The literature also supports this view (for instance, Tubigi *et al.*, 2013). The general opinion was that knowledge modification enabled employees to help the organisation's income by constantly being up-to-date and knowledgeable. Participant Q3 from airline (X) spoke about this issue:

> *"As long as modifying knowledge will affect the whole organisation, financial measurement is a part of the organisational measurements. So yes, finance will be affected strongly."*

In terms of customer/market performance, there was a recurring theme relating to the effect of knowledge modification on customer/market performance. Participants expressed that knowledge modification enabled them to address the changing needs of customers. This was supported by participant E3 from airline (Y):

> *"I believe knowledge archiving is important for any organisation and it will help the organisation to modify its products according to customer/market needs and demands. Therefore, I'd rank it as strong effect on customer/market measurement"*

Participants also expressed that knowledge modification affects process performance. Participant N1 from airline (Z) explained the relationship:

> *"I'd rank it as strong because the input of the modifying knowledge will affect the process and will help the process to increase performance."*

In terms of people development performance, participants felt that knowledge modification was an important process. This seemed to be principally attributable to the fact that knowledge modification improves employees' training and learning courses. Participant Q1 from airline (X) explained how knowledge modification impacts on people development:

> *"Very strong as the information that is modified will help the organisation to develop the employees."*

In terms of preparing for the future, participants considered knowledge modification to be very important in that it allows for the production of data needed for future planning. Participant S12 from airline (W) shared his opinion:

> *"I believe that knowledge modification will provide an organisation with valuable knowledge to plan for the future, therefore, I'd rank it as strong."*

Overall, the perceived effect of knowledge modification on the different factors of organisational performance was positive. These results are consistent with the literature regarding the role of knowledge modification as a process of knowledge management processes (Bergeron, 2003; Tubigi *et al.,* 2013). In the AI, knowledge modification emerged as an important link to organisational performance. The results of the study are consistent with this finding, validating the relationship of knowledge modification and organisational performance in the AI. One unique finding of this study is that some employees prefer to use old information, as opposed to new and updated information. Even though there is recognition that knowledge modification is important in organisational performance in the AI, some refused to accept such benefits and chose to remain using knowledge that they have previously used. Participant S11 from airline (W) revealed,

> *"Most of the employees prefer to keep their old information."*

Consistent with the conceptual model presented in Chapter 3, knowledge modification had a positive effect on all organisational performance measurements (financial, customer/market, process, people development and preparing for the future). The strongest perceived effect of knowledge modification on organisational performance was found in the process of organisational measurement.

This study validates the applicability of knowledge management in the AI. Across all the organisational performance measurements, there was a perception among the participants that knowledge modification is important in the AI's knowledge management. Table 6.9 summaries the effect of knowledge modification on organisational performance.

Table 6.9: Quantifying sub-themes for the effect of knowledge modification on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	0	0%
Weak	5	12%
Moderate	5	12%
Strong	20	47%
Very Strong	13	30%
Customer/Market		
Very Weak	1	2%
Weak	0	0%
Moderate	6	14%
Strong	25	58%
Very Strong	11	26%
Process		
Very Weak	1	2%
Weak	1	2%
Moderate	1	2%
Strong	29	67%
Very Strong	11	26%
People Development		
Very Weak	0	0%
Weak	5	12%
Moderate	8	19%
Strong	13	30%
Very Strong	17	40%
Preparing for the Future		
Very Weak	1	2%
Weak	2	5%
Moderate	11	26%
Strong	17	40%
Very Strong	12	28%

6.8.3 Theme 3: Knowledge Use

The third thematic category was labelled knowledge use. This theme related to the perceptions of the participants regarding issues pertinent to knowledge use. Several sub-themes were coded: (a) perceptions on knowledge use; (b) mechanisms of knowledge use; and (c) effect of knowledge use on organisational performance.

The participants believed that knowledge use improved the performance of employees. These results are consistent with the literature about the role of knowledge use as a process of knowledge management processes, which can affect organisational performance positively (Daud and Yusoff, 2010; Tubigi *et al.,* 2013). According to Tubigi and Alshawi (2015) within the context of AI, information is employed for whichever purpose necessary based on the situation, such as decisions made to operate flights, buy new aircraft, or lease aircraft during peak seasons. Gaining knowledge from different sources, such as reading,

training, experience, and using it in a proper way, helps the organisations to perform better and remain competitive (Tubigi and Alshawi, 2015). For example, Participant S4 from airline (W) described how an employee shows initiative in using knowledge,

> *"The employees in my department are always asking me or the managers to buy new software or to attend new training courses, which will help to solve specific problem or to improve performance."*

Regarding the mechanisms that have been used in knowledge use, it appears that the mechanisms for the use of knowledge were consistent with the model that included feedback systems, tracking system, dissemination technology and search technologies (Bergeron, 2003). Even though all four mechanisms were found to be important for knowledge use, feedback system emerged as the most important mechanism for knowledge use, this is observed during the interviews process. For example, a senior manager during the interview asked one of the employees about an issue, the reply came with reference to using a computer for a feedback. Table 6.10 summaries the perceptions and mechanisms for knowledge use.

Table 6.10: Quantifying sub-themes for knowledge use and its mechanisms

Sub-themes	Number of participants	% of participants
DOES KNOWLEDGE IMPROVE PERFORMANCE?		
Yes	37	86%
No	1	2%
Not all	5	12%
MECHANISMS OF KNOWLEDGE USE		
Feedback	32	74%
Tracking system/search	27	63%
Search technologies	17	40%
Dissemination	16	37%
Auditing	2	5%
Training	1	2%
IT system	1	2%
Not aware	1	2%

Regarding the effect of knowledge use on organisational performance measurement, such as financial, customer/market, process, people development and preparing for the future performance, the participants in the study believed that there is a strong effect of knowledge use on financial performance. In the AI, knowledge use has emerged as an important link to organisational performance. Employees should collaborate to use knowledge for the benefits of their organisations through the acquisition, accumulation, seeking, creation, generation and capturing of knowledge (Daud and Yusoff, 2010). The

opinion that the effect of knowledge use was strong was generally attributed by the participants to the creation of new ideas that may be instrumental in improved financial performance, with Participant S19 from airline (W) sharing the following,

> *"I'd rank it as strong because using knowledge in creating new ideas will affect the financial measures such as expenses."*

In terms of customer/market performance, participants expressed that knowledge use is an influencing process. The opinion that the effect of knowledge use was strong was generally attributed by the participants to better understanding of the needs of customers. Participants E6 and E7 from airline (Y) shared their opinion:

> *"We would rank it as strong because it will help in understanding customers' behaviour and market trends to change distributing or customers' segments."*

In terms of process performance, participants considered knowledge use an important process. Participants N4 from airline (Z) and Q3 from airline (X) stated:

> *"We'd rank it as strong as it will affect the process in terms of using new information for input."*

Knowledge use was also considered important for people development. Participants felt that knowledge use was generally attributed to informed decisions and increased learning. This, in turn, helps employees to perform better in their jobs. Participant S16 from airline (W) shared his opinion about the relationship between knowledge use and people development,

> *"Knowledge use will help the organisation to decide the employees' needs and wants to design the correct learning and training courses. Therefore, I'd rank it as strong."*

In terms of preparing for the future, there is a strong effect of knowledge use on preparing for future performance. The opinion that the effect of knowledge use was strong was generally attributed by the participants to the improved ability to plan for the future based on knowledge. Participant Q7 from airline (X) shared his opinion,

> *"I'd rank it as strong – because you cannot prepare for the future without using valuable information."*

Consistent with the model, knowledge use had a positive effect on all organisational performance measurements (financial, customer/market, process, people development and preparing for the future). The strongest perceived effect of knowledge use on organisational performance was found in the financial and process organisational measurements.

Overall, the perceived effect of knowledge use on the different factors of organisational performance was positive. This study supports this assertion, which is reflected both by the presence of mechanisms of knowledge use and the conscious belief about the positive effect of knowledge use on organisational performance in the AI. Participants believed that knowledge use affects performance. Table 6.11 summaries the effect of knowledge use on organisation performance measurements.

Table 6.11: Quantifying sub-themes for the effect of knowledge use on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	0	0%
Weak	1	2%
Moderate	2	5%
Strong	21	49%
Very Strong	19	44%
Customer/Market		
Very Weak	1	2%
Weak	1	2%
Moderate	3	7%
Strong	22	51%
Very Strong	16	37%
Process		
Very Weak	0	0%
Weak	0	0%
Moderate	3	7%
Strong	28	65%
Very Strong	12	28%
People Development		
Very Weak	0	0%
Weak	1	2%
Moderate	3	7%
Strong	24	56%
Very Strong	15	35%
Preparing for the Future		
Very Weak	1	2%
Weak	1	2%
Moderate	4	9%
Strong	23	53%
Very Strong	14	33%

6.8.4 Theme 4: Knowledge Archiving

The fourth thematic category was labelled knowledge archiving, and referred to how knowledge is archived in organisations. The sub-themes that were coded included: (a) department responsible for archiving knowledge; (b) perception of knowledge archived protection; (c) perception of getting the information from archive; (d) mechanisms used to archive knowledge; and (e) effect knowledge archiving on organisational performance. Knowledge archiving is perceived as an important tool to protect organisations' current and previous data. In this study, the participants shared their opinion about the department responsible for knowledge archiving, their perception about knowledge being protected, and obtaining information from archive. This process is applied in the AI due to the huge volume of data that is related to passengers and operations, all of which need high levels of confidentiality and security (Tubigi and Alshawi, 2015). According to Stein and Swass, (1995), an organisation is constantly in danger of accidentally losing gained knowledge if

this knowledge has been acquired, created and shared, but not supported, by knowledge storage and documentation. This study supports this assertion. Participant S15 from airline (W) shared his opinion about the department that is responsible for knowledge and how this knowledge has been archived,

> *"There is a general archive and back-up systems for the whole organisation, but each department has its own archive system to retrieve information in daily-bases."*

In terms of participants' perception about knowledge being protected against loss, 95% of the participants agreed that knowledge is protected against lost and natural disaster. Participant S14 from airline (W) spoke about this issue,

> *"Yes, it is protected against lose and natural disaster by a backup system. I'll give you an example: two years ago there was flooding caused by heavy rain which happened in the city where the headquarters of the company is. Most of the system went down and was damaged as well as hard copy. Luckily all the data and paper were stored and archived in the backup system which was in another city".*

More than half of the participants reported that failure to search for information (already acquired from passengers, customers, and employees) and extract it from archives or databases never happened to them stating that they are always able to extract information from archives and databases. On the other hand, other participants stated that they face problems getting information from archives and databases due to reasons such as the type of information, the persons themselves, the information is sketchy, the information is restricted, and a lack of authorisation to access information. Participant N4 from airline (Z) shared the following about this topic:

> *"Actually, it depends on the information itself. If it is general information, then it is easy to find information. For example, in our department when I search for information I get it immediately because I have full access to our department's information. In the meantime, I cannot access the other department's information. To sum up, general information is available for everyone."*

Table 6.12 shows a summary of types of departments that emerged from the sub-themes department responsible for archiving knowledge, the protection against lose, and failure to obtain knowledge in archive system. In addition, mechanisms used to archive knowledge are also included.

In Chapter 3, the mechanisms that archive knowledge are identified as information technologies, controlled vocabularies, librarian, controlled environment and maintenance programs (Bergeron, 2003). New mechanisms including paper files and manual documentation have been adopted, based on interviewees' responses and perceptions within AI. More details are provided in Chapter 7.

The results of the study indicated that information technology was the overwhelming mechanism used to archive knowledge, more than any other mechanisms in the conceptual model, and that was due to the AI using the latest technologies. Table 6.12 summaries the perceptions and mechanisms used to archive knowledge.

Table 6.12: Quantifying sub-themes for knowledge archiving and its mechanisms

Sub-themes	Number of participants	% of participants
DEPARTMENT RESPONSIBLE FOR KNOWLEDGE ARCHIVING		
Storing file/archive department	27	63%
IT department	22	51%
No response	4	9%
Not aware	3	7%
Backup system	3	7%
library	2	5%
Quality department	1	2%
Hard copies	1	2%
MECHANISMS TO ARCHIVE KNOWLEDGE		
Information technologies	42	98%
Controlled environment	18	42%
Librarian	16	37%
Controlled vocabularies	13	30%
Maintenance programs	13	30%
Paper files	1	2%
Manual documentation	1	2%

Regarding the effect of knowledge archiving on organisational performance measurements, such as financial, customer/market, process, people development, and preparing for the future performance, knowledge archiving is perceived as an influential process on organisational performance measurements. These results are consistent with the literature on the role of knowledge archiving as a knowledge management process, which can positively affect organisational performance (Al-adaileh, 2013; Tubigi *et al.*, 2013; Yang and Wan 2004). The participants in this study believed there is a significant influence of knowledge archiving on financial performance. Participant S10 from airline (W) explained this issue,

> *"Knowledge archiving is a very important process for the organisation in terms of archiving valuable data and information. In this case, I'd rank it as very strong."*

In terms of customer/market performance, there appeared to be a strong influence of knowledge archiving on customer/market performance. The opinion that the effect of knowledge archiving was strong was generally attributed by the participants to the ability to understand better the behaviour of customers. Participant N4 from airline (Z) shared his opinion on this topic,

> *"If we use saved information about customer/market for our research and studies to understand their behaviour then use it for making decisions, I'd say it will affect strongly as this process will help to make future plan on accurate information, otherwise, there would be no direct link between knowledge archiving and customer/market."*

In terms of process performance, participants expressed that knowledge archiving was an important process. Participants felt that archiving enabled efficient information retrieval, which in turn improves the operations of the organisation. Participant N7 from airline (Z) shared his opinion about the importance of knowledge archiving:

"Archiving valuable data will help the process measurement to find the data at any time and will help to improve the output. So I'd rank it as strong."

In terms of people development performance, participants regarded knowledge archiving as moderate. This viewpoint was generally attributed to a lack of consensus in terms of how knowledge archiving can benefit organisations. Participant Q3 from airline (X) shared his opinion with the following summary:

> *"In my opinion, knowledge archiving will have a slight effect on training or courses as the employees will not benefit from old information. Therefore, I'd rank it as moderate as there is no direct effect from knowledge archiving to people development."*

Knowledge archiving was also regarded as having a big influence on preparing for the future. The opinion that the effect of knowledge archiving was strong was generally attributed by the participants to improved ability for strategic planning for the needs of the organisation. Participant E5 from airline (Y) expressed that:

> *"In my opinion referring to archived knowledge will help in using knowledge and information in preparing for strategic plan because it will have all the data needed for future plan. Therefore I'd rank this process as strong."*

Consistent with the model, knowledge archiving had a positive effect on four organisational performance measurements: financial, customer/market, process and preparing for the future. People development measurement was the only measure that was perceived to have been only moderately affected by knowledge archiving. It is, therefore, necessary to remove people development from the revised conceptual model.

The strongest perceived effect of knowledge archiving on organisational performance was found in the financial organisational performance measurements.

Overall, the perceived influence of knowledge archiving on the different factors of organisational performance was generally positive. In the AI, knowledge archiving emerged as an important link to organisational performance except in people development measurement. Table 6.13 summaries the effect of knowledge archiving of organisational performance measurements.

Table 6.13: Quantifying sub-themes for the effect of knowledge archiving on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	1	2%
Weak	2	5%
Moderate	3	7%
Strong	17	40%
Very Strong	20	47%
Customer/Market		
Very Weak	3	7%
Weak	3	7%
Moderate	8	19%
Strong	17	40%
Very Strong	12	28%
Process		
Very Weak	2	5%
Weak	6	14%
Moderate	11	26%
Strong	20	47%
Very Strong	4	9%
People Development		
Very Weak	1	2%
Weak	12	28%
Moderate	9	21%
Strong	12	28%
Very Strong	9	21%
Preparing for the Future		
Very Weak	2	5%
Weak	4	9%
Moderate	6	14%
Strong	22	51%
Very Strong	9	21%

6.8.5 Theme 5: Knowledge Transfer

The fifth thematic category was labelled knowledge transfer. Several sub-themes were coded: (a) the importance of knowledge transfer; (b) ease of transferring knowledge among employees; (c) channels or mechanisms used in knowledge transfer; and (d) effect of knowledge transfer on organisational performance measurements.

The process of transferring knowledge is related to how we learn and how we can capture and exchange knowledge (Al-adaileh and Al-Atawi, 2011). In this theme, the importance of knowledge transfer and ease of transferring knowledge among employees were examined through in-depth interviews. The participants agreed that knowledge transfer is an important process to increase the efficiency of the organisation. Tubigi and Alshawi (2015) argued that within the context of AI, information is transferred freely within the organisation using various types of media (for example, intranet, email, telephone, regular

meetings and manually), such as any internal correspondence transferred through an internal network.

In terms of knowledge transfer, all of the participants agreed that this is important to the organisations in terms of people working in the organisation and in terms of changing the environment. Knowledge transfer can be very important for the organisation when knowledge is transferred and exchanged among employees to carry out their jobs in a proper way. Participant S10 from airline (W) spoke about why knowledge transfer is important in the organisation,

> *"Yes, I think knowledge transfer is important in terms of people working with you, in terms of changing the environment and in terms of learning from your mistakes*. He added, "*if you do not have that knowledge transferred, then knowledge has to be re-learnt and has to be re-learnt by reinventing the wheel."*

With regard to ease of transferring and exchanging knowledge among employees in the organisations, most of the participants agreed that knowledge is easy to transfer and exchange among employees. Participant Q1 from airline (X) spoke about his experience,

> *"Yes, I believe that knowledge is easily transferred and exchanged among employees because we have regular meetings, both formal and informal. People are seeing each other and chatting to each other, transferring and sharing their knowledge and experience".*

According to Bergeron (2003) in order to increase the value of the information and to enable knowledge sharing, information should be transferred freely within the organisational context using various types of media (e.g. intranet, emails).

In terms of the channels or mechanisms of transferring knowledge that were used by participants, physical transfer and networks were rated as the most common mechanisms used to transfer knowledge, which was supported by Bergeron (2003). Other mechanisms mentioned included meetings/conferences, boards, and workshops and have been adopted based on interviewees' responses. More details are provided in Chapter 7.

This importance in the AI is validated by the unanimous usage of knowledge transfer by the participants in the study. Physical transfer and network transfers emerged as the mechanisms in which knowledge are transferred. Table 6.14 summaries the perceptions and mechanisms for knowledge transfer.

Table 6.14: Quantifying sub-themes and mechanisms for knowledge transfer

Sub-themes	Number of participants	% of participants
Do you Believe it is Important?		
Yes	43	100%
No	0	0%
Ease of Transferring Knowledge		
Yes	33	77%
No	4	9%
Relatively	6	14%
Mechanisms of Knowledge Transfer		
Physical transfer	36	84%
Network	36	84%
Meetings/conferences	3	7%
Boards	1	2%
Workshops	1	2%

Participants regarded knowledge transfer as an important process affecting organisational performance measurements such as financial, customer/market, process, people development, and preparing for the future performance. Knowledge transfer is perceived as an influential process on organisational performance measurements. These results are consistent with the literature regarding the role of knowledge transfer as a knowledge management process, which can affect organisational performance positively (Al-adaileh, 2013; Tubigi *et al.,* 2013; Palacios Marques *et al.,* 2013). Participant Q2 from airline (X) shared his view,

> *"I have seen many situations where transferring of knowledge can enable avoidance of some mistakes and can maximize the benefits for all which will have an impact on the cost of doing business as well as on the financial added value. Therefore, I'd rank it as strong."*

With regard to customer/market performance, there is a strong effect of knowledge transfer on customer/market performance. The opinion that the effect of knowledge transfer was strong was generally attributed to the ability to address the needs and wants of customers. This is also supported by Tubigi *et al.*, (2013). Participants N4 from airline (Z) and S17 from airline (W) shared how knowledge transfer will affect customer/market,

> *"In my opinion knowledge transfer will affect customer/market strongly and the affect will happen in needs and wants of the customer/market."*

> *"Transferring knowledge will benefit the employees and will also reflect on customer/market services."*

In terms of process performance, there is a strong effect of knowledge transfer on process performance. The opinion that the effect of knowledge transfer was strong was generally attributed to improved performance in the exchange of information within the organisation. The speed of the transfer of knowledge is also important in order for the process to be truly effective (Knockaert *et al.*, 2011). Participant S2 from airline (W) spoke about the effect of knowledge transfer on process performance,

> *"This process I'll rank it as strong because transferring knowledge with information that is important will make the company's process improved."*

In terms of people development performance, participants felt that knowledge transfer was an influential process. The provision of new information to employees was considered very important in terms of their job performance. Participant Q6 from airline (X) shared his opinion about the topic:

> *"In my opinion, knowledge transfer will provide employees with the new information and new experiences which, in turn, will improve the efficiency of the employees, therefore, I'd rank it as strong"*

With regard to preparing for future performance, there appeared to be a strong influence of knowledge transfer. The opinion that the effect of knowledge transfer was strong was generally attributed to the creation of a strong foundation for strategic planning. Participant S5 from airline (W) shared the following,

> *"In my opinion, any organisation will benefit from knowledge transferred in terms of building strategic plan. This knowledge can be transferred from other departments and agencies inside and outside the organisation. Therefore, I'd rank this process as strong. "*

Consistent with the conceptual model presented in Chapter 3, knowledge transfer had a positive effect on all organisational performance measurements (financial, customer/market, process, people development, and preparing for the future). However, the strongest perceived effect of knowledge transfer on organisational performance was found in the people development organisational measurement.

Overall, the perceived effect of knowledge transfer on the different factors of organisational performance was positive. These results are consistent with the literature about the role of knowledge transfer as a process of knowledge management processes, which can affect organisational performance positively (Zaim *et al.*, 2013; Tubigi *et al.*,

2013). Knowledge transfer is particularly important for knowledge to be converted from tacit to explicit knowledge (El Emary *et al.*, 2012). In the AI, knowledge transfer emerged as an important link to organisational performance. This study validates the applicability of knowledge transfer in the AI. Across all the organisational performance measurements, there was a perception among the participants that knowledge transfer is important in the AI's knowledge management. Table 6.15 summaries the effect of knowledge transfer of organisational performance measurements.

Table 6.15: Quantifying sub-themes of the effect of knowledge transfer on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	0	0%
Weak	4	9%
Moderate	10	23%
Strong	17	40%
Very Strong	12	28%
Customer/Market		
Very Weak	2	5%
Weak	4	9%
Moderate	1	2%
Strong	27	63%
Very Strong	9	21%
Process		
Very Weak	3	7%
Weak	0	0%
Moderate	2	5%
Strong	30	70%
Very Strong	8	19%
People Development		
Very Weak	1	2%
Weak	0	0%
Moderate	1	2%
Strong	23	53%
Very Strong	18	42%
Preparing for the Future		
Very Weak	3	7%
Weak	5	12%
Moderate	5	12%
Strong	25	58%
Very Strong	5	12%

6.8.6 Theme 6: Knowledge Translation/Repurposing

The sixth thematic category was labelled knowledge translation/repurposing, and pertained to the perceptions of the participants regarding knowledge translation/repurposing as a component of knowledge management. The sub-themes that were coded included: (a)

perceptions on knowledge translation; (b) mechanisms used in knowledge translation; and (c) effect of knowledge translation on organisational performance.

Knowledge translation/repurposing refers to changing the information from its original form into one that is suitable for the user (e.g. from numerical to textual form). It is used in the organisations as a means of saving time and money when preparing reports, depending upon the department itself. Knowledge translation/repurposing was explained in the literature. Knowledge translation is concerned with turning knowledge into action, incorporating the processes of knowledge creation and knowledge application (Graham *et al.*, (2006). Furthermore, Knowledge translation involves the mechanisms that allow users to access knowledge in a summarised or simplified form for easier access (Serenko, 2012). Within the context of AI, a large majority of the participants reported that knowledge translation is used (29 out of 43 participants, 67%). Participant S3 from airline (W) explained how knowledge translation/repurposing has been used,

> *"In our department we deal with numerical form and sometimes we translate this form to textual form or to bar chart or graphics lists to clarify and illustrate the differences from time to time."*

Based on the interviews, the participants in the study reported that knowledge translation/repurposing is used all the time in the AI. As stated by Tubigi and Alshawi (2015) employees conduct data about one flight (e.g. in terms of no-show, go-show, denied passenger, fuel consumption and load factor) so that every single detail is written as a full report. After that, the responsible person loads this information in very concise, clear figures (e.g. a pie chart) for presentation to managers next day (Tubigi and Alshawi, 2015). Table 6.16 summaries the sub-theme for participants' perception about using knowledge translation/repurposing within the AI's organisations.

Table 6.16: Quantifying sub-themes for knowledge translation/repurposing

Sub-themes	Number of participants	% of participants
IS KNOWLEDGE TRANSLATION USED?		
Yes	29	67%
Not all the time	11	26%
No	3	7%

The majority of the participants used information technology and outsourced expertise as mechanisms in knowledge translation/repurposing, which is supported by Bergeron (2003). Other mechanisms relevant to knowledge translation/repurposing included computer programs, internal expertise and personal effort. The results indicated that information

technologies were used slightly more to translate knowledge compared to outsource expertise. However, both were relatively perceived as useful mechanisms for knowledge translation. Table 6.17 summaries the mechanisms used to translate/repurposing knowledge.

Table 6.17: Quantifying sub-themes for knowledge translation/repurposing mechanisms

Codes	# of participants to offer this experience	% of participants to offer this experience
MECHANISMS FOR KNOWLEDGE TRANSLATION		
Information technologies	33	77%
Outsource expertise	29	67%
Computer programmes	4	9%
None	1	2%
Internal expertise	1	2%
Personal effort	1	2%

Regarding the effect of knowledge translation on organisational performance measurement, such as financial, customer/market, process, people development and preparing for the future performance, the participants in the study believed there is a strong effect of knowledge translation on financial performance. Participant S8 from airline (W) stated that,

> *"Knowledge translation/repurposing will have strong effect on organisation's finance measurement in terms of saving time and money and increasing the profit and sales."*

In terms of customer/market performance, there is a weak effect by knowledge translation/repurposing on customer/market performance. The opinion that the effect of knowledge translation/repurposing was weak was generally attributed to knowledge translation/repurposing as an internal process that has nothing to do with customer relations. Participant E3 from airline (Y) shared this opinion,

> *"I'd rank this process as weak because knowledge translation/repurposing is an internal process; it has nothing to do with customer/market. Therefore, there is no direct link between knowledge translation/repurposing and customer/market."*

Participants expressed the importance of knowledge translation/repurposing on process performance. The opinion that the effect of knowledge translation/repurposing was strong was generally attributed to the ability to understand knowledge in the organisation in a

more efficient way. Participant Q1 from airline (X) shared his opinion regarding the importance of knowledge translation,

> *"In my opinion, knowledge translation/repurposing will have a strong effect on the process because translation of knowledge to an easy way that is understandable will accelerate the process."*

Participants also expressed the importance of knowledge translation/repurposing on people development performance. The opinion that the effect of knowledge translation/repurposing was moderate was generally attributed to insufficient impact on employees, even though some improvements in the performance may have been achieved. Participant Q6 from airline (X) spoke about this topic,

> *"This process is internal and it has no direct impact on people development such as training and learning, so I'd rank it as moderate."*

In terms of preparing for future performance, there is a weak effect of knowledge translation/repurposing. This was generally attributed to the lack of relevance to preparing for the future performance. Participant E2 from airline (Y) explained why knowledge translation/repurposing has no direct effect on preparing for the future performance,

> *"In my opinion, knowledge translation/repurposing is related to the process of explaining and presenting information for meetings, while preparing for the future is accumulating and gathering information from inside and outside the organisation to build up a strategic plan. Therefore, I'd rank this process as weak as knowledge translation/repurposing has no direct impact on preparing for the future performance."*

The results were not completely consistent with the model presented earlier in Chapter 3 in terms of the effect of knowledge transfer on organisational performance.

The strongest perceived effect of knowledge translation/repurposing on organisational performance was found in the financial and process organisational measurement.

Compared to the other knowledge management processes, there seems to be a generally weak perceived benefit of knowledge translation/repurposing in affecting positive organisational performance in terms of customer/market, people development and preparing for the future. Therefore, without mentioning the importance and use of knowledge translation/repurposing in organisations, there seems to be less effect of

knowledge translation/repurposing on customer/market, people development and preparing for the future. However, some factors appear to be important in term of affecting organisational performance, such as financial and process factors. Therefore, customer/market, people development, and preparing for the future have been removed from proposed model. Chapter 7 have more details. In the AI, knowledge translation/repurposing emerged as a complex process that does not have a clear link to organisational performance. However, this seems to confirm previous researchers' arguments regarding the complexity of knowledge translation (Ozbilgin and Syed, 2010).Table 6.18 summaries sub-themes for the effect of knowledge translation/repurposing on organisational performance measurements.

Table 6.18: Quantifying sub-themes of the effect of knowledge translation/repurposing on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	1	2%
Weak	8	19%
Moderate	8	19%
Strong	15	35%
Very Strong	10	23%
Customer/Market		
Very Weak	3	7%
Weak	20	47%
Moderate	7	16%
Strong	9	21%
Very Strong	3	7%
Process		
Very Weak	0	0%
Weak	1	2%
Moderate	12	28%
Strong	26	60%
Very Strong	3	7%
People Development		
Very Weak	1	2%
Weak	7	16%
Moderate	15	35%
Strong	17	40%
Very Strong	2	5%
Preparing for the Future		
Very Weak	12	28%
Weak	14	33%
Moderate	5	12%
Strong	5	12%
Very Strong	6	14%

6.8.7 Theme 7: User Access to Knowledge

The seventh thematic category was labelled user access to knowledge, which pertained to the perceptions of the participants regarding user access to knowledge as a process of knowledge management processes. The sub-themes that were coded included: (a) perceptions on user access to knowledge; (b) the restriction on the value of knowledge; (c) ease of finding knowledge in database; (d) mechanisms used in user access to knowledge; and (c) effect of user access to knowledge on organisational performance.

A large majority of the participants reported that user access to knowledge is controlled by and based on the job position of an employee. In fact, within the context of AI, the value of knowledge is restricted by the ability to access it when needed to make decisions, to solve organisational problems or for whatever purpose in a particular situation (Tubigi and Alshawi, 2015).

It also provides continual access to authorised users, as each employee in the organisation has his own password to access several sites, according to his organisation level (Tubigi and Alshawi, 2015). The general practice was that knowledge is available when needed and access is provided, based on analysis of the people's needs and nature of their work. Participant Q2 from airline (X) revealed:

> *"Knowledge is available when needed and access is provided based on analysis of the people's need and nature of their work."*

Some information is not available for everyone, with only top management and decision makers having access to it. These results are consistent with the literature about the role of user access to knowledge as a factor of knowledge management processes which can affect organisational performance (Tubigi *et al.,* 2013). Participant S10 from airline (W) reported the nature of knowledge access in his organisation,

> *"It is based on the nature of the information and the environment that we work in. It's obviously restricted access for selected individuals and total access for other individuals depending on your work requirements and the nature of your job."*

In terms of knowledge value restriction, 36 out of 43 participants (84%) consider that the value of knowledge should be restricted. Participant S17 from airline (W) shared,

> *"Of course, knowledge will lose its value if it is accessed by everyone who needs it or not, it has to be standard for accessing knowledge according to the job position".*

The opinion was generally based on the value of knowledge, wherein access to important knowledge is only allowed for top managers and decision makers to make decisions or to solve organisational problems. Participant S1 from airline (W) shared his opinion about knowledge restriction,

> *"We don't have restrictions; we benefit from the knowledge that we have and is available and we pass it to anyone who needs it, but there are things in the organisation that not everybody has access to; it is definitely not available to all employees, but knowledge and information; yes, it is accessible for everyone."*

Conversely, 5 out of 43 participants, (12%) see that the value of knowledge should not be restricted as long as this knowledge or information is not abused. The opinion of some of the participants was that the value of general knowledge should not be restricted; it should be available for everyone who needs it. Participant Q1 from airline (X) stated,

> *"No, I think knowledge shouldn't be restricted, as long as people don't abuse it. So if we have restricted information, such as financial, you shouldn't put it out but knowledge or information that is beneficial to the organisation shouldn't be restricted at all."*

One of the participants N3 from airline (Z) identified differences between knowledge and general knowledge restrictions. He revealed,

> *"The value of general knowledge should not be restricted; general knowledge should be available for everyone who needs it. However, there is some information which can't be available for everyone, this is should be restricted".*

In terms of ease of finding knowledge in databases, the majority of the participants agreed that it is easy. Participants reported having a high level of information systems within the company, wherein information is available through integrated systems. Participant S2 from airline (W) spoke about this,

> *"Yes, it is easy to find knowledge in the database in a short time. For example, in my department there is a program called (CPS). This program is for salesmen and allows them to take decisions immediately, according to the situation in front of them."*

Table 6.19 summaries the sub-themes for availability of knowledge, the restriction of knowledge, and finding knowledge in databases.

Table 6.19: Quantifying sub-themes for user access to knowledge

Codes	Number of participants	% of participants
Is knowledge available for everyone?		
Controlled/depends on person	34	79%
Yes	6	14%
No	3	7%
Do you agree the value of knowledge is restricted?		
Yes	36	84%
No	5	12%
Depends	2	4%
Is it easy to find knowledge in database?		
Yes	35	81%
No	8	19%

The results of the study are consistent with the practice of access to knowledge, using information technology, as long as the person has the authority for such access.

For user access to knowledge, it appears that the mechanisms were consistent with the conceptual model that was presented earlier, which included information technologies, corporate policy and librarian (Bergeron, 2003). Information technologies emerged as the overwhelming mechanism used to access knowledge, compared to corporate policy and librarian. Table 6.20 summaries the sub-themes for mechanisms used for user access to knowledge

Table 6.20: Quantifying sub-themes for mechanisms used to user access to knowledge

Sub-themes	Number of participants	% of participants
Mechanisms for accessing knowledge.		
Information technology	40	93%
Corporate policy	32	74%
Librarian	23	53%

User access to knowledge is part of Bergeron's (2003) model of knowledge management process, underscoring the importance of being able to access knowledge when needed. According to Al-adaileh (2013) *'a successful KM system should also provide continuous access for authorised users through the use of query support mechanisms'* (Al-adaileh, 2013, p. 355). Regarding the effect of user access to knowledge on organisational performance measurements, such as financial, customer/market, process, people development and preparing for the future performance, the participants in the study

believed that user access to knowledge affects financial performance. Participant Q2 from airline (X) posited,

> *"The real value of knowledge can't be reached without access, and accessing knowledge will impact the financial performance in many ways, such as increasing profit, decreasing costs and excellent financial performance. Therefore, I'd rank this process as strong."*

Participants felt that user access to knowledge impacted on customer/market performance. The view that the effect of user access to knowledge was moderate was generally attributed to the opinion that helping the company to determine customer/market's demand can improve services. Participant Q1 from airline (X) shared his opinion about user access to knowledge:

> *"It is important that the employees have access to the right information, which in turn will be delivered to the customer/market. In this case, I'd say moderate".*

With regard to process, there is a strong effect of user access to knowledge on process performance measurement. The opinion that the effect of user access to knowledge was strong was generally attributed to helping improve the performance and efficiency of the organisation. Participant Q6 from airline (X) shared his opinion about why user access to knowledge has a strong effect on process performance,

> *"In terms of process, user access to knowledge will have strong impact on process performance because it helps in developing performance and efficiency."*

In terms of people development performance, there is a strong effect of user access to knowledge on people development. The opinion that the effect of user access to knowledge was strong was generally attributed to the ability to access information with much more flexibility. Participant N2 from airline (Z) shared his opinion about the topic,

> *"Accessing knowledge will have a strong effect on people development measurement through accessing the information needed at any time, in any place."*

In terms of preparing for future performance, there is a moderate effect of user access to knowledge on preparing for the future. The opinion that the effect of user access to knowledge was moderate was generally attributed to a seeming lack of consensus among the participants. Participant Q4 from airline (X) shared,

> *"In this process, accessing knowledge by employees in the lower level of the organisation will not affect a strategic plan. On the other hand, knowledge that has been accessed by higher level and decision maker will have strong impact on a future plan. Therefore, I'd rank it as moderate."*

Consistent with the conceptual model presented in Chapter 3, user access to knowledge had a positive effect on all organisational performance measurements (financial, customer/market, process, people development and preparing for the future). The strongest perceived effect of user access to knowledge on organisational performance was found in the process of organisational measurement.

Overall, access to knowledge appeared to have a positive influence on the different factors of organisational performance, except for the factor 'preparing for the future' which received moderate effect. User access to knowledge is an important component of knowledge management (Tubigi and Alshawi, 2012; Tubigi *et al.,* 2013). These results are consistent with the literature that explores the role of user access to knowledge as a process of knowledge management processes, which can affect organisational performance positively (Bergeron, 2003). In the AI, user access to knowledge emerged as an important link to organisational performance.

This study validates the applicability of user access to knowledge in the AI. Across all the organisational performance measurements, there was a perception among the participants that user access to knowledge is important in the AI's knowledge management. Table 6.21 summaries the sub-themes of the effect of user access to knowledge on organisational performance measurements.

Table 6.21: Quantifying sub-themes of the effect of user access to knowledge on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	0	0%
Weak	2	5%
Moderate	7	16%
Strong	21	49%
Very Strong	13	30%
Customer/Market		
Very Weak	1	2%
Weak	12	28%
Moderate	8	19%
Strong	19	44%
Very Strong	3	7%
Process		
Very Weak	1	2%
Weak	0	0%
Moderate	2	5%
Strong	32	74%
Very Strong	8	19%
People Development		
Very Weak	0	0%
Weak	2	5%
Moderate	8	19%
Strong	27	63%
Very Strong	6	14%
Preparing for the Future		
Very Weak	4	9%
Weak	8	19%
Moderate	8	19%
Strong	14	33%
Very Strong	9	21%

6.8.8 Theme 8: Knowledge Disposal

The eighth thematic category was labelled knowledge disposal, and referred to the perceptions of the participants regarding knowledge disposal as a process of knowledge management. The sub-themes that were coded included: (a) perceptions on knowledge disposal; (b) mechanisms used in destroying knowledge; and (c) effect of knowledge disposal on organisational performance.

In the knowledge disposal process, one could argue how knowledge could be disposed. According to Bergeron (2003) *'information with no future value is discarded to save space and reduce overhead'* (Bergeron, 2003, p. 6). Data that are not relevant or important in the organisation need to be destroyed in order to save space and overhead (Al-adaileh, 2013). The organisation disposes of information that is no longer needed. Within the AI, clear coherent procedures should be applied when selecting information for disposal in order

that valuable information is not destroyed (Tubigi and Alshawi, 2012). For example, as revealed by Tubigi and Alshawi (2015) within the context of AI, organisations have a policy of waiting five years before disposing of any information that is no longer needed. Information that is no longer needed in the organisation is usually disposed of after this time. There is a consensus that the organisations' policy is to dispose of knowledge after five years. Software is usually used to dispose of knowledge from computers and shredders for paperwork. The large majority of the participants reported that knowledge disposal is currently being used in the organisation (38 out of 43 participants, 88%). Table 6.22 summaries the sub-themes of participants' perception about knowledge disposal being used in the organisations. Participant S1 from airline (W) shared how knowledge is destroyed in the organisation,

> *"There are things that we don't need and no longer in use, no point in keep this things, you need to move forward not keep going back to the past, if things that we don't use it we dispose it. We got shredder here and also we use anything that computerise to delete from system".*

Participant S10 from airline (W) described how knowledge is destroyed in the organisation,

> *"Yes, the organisation disposes of the information and data that no longer needed. We have an organisation policy that we should dispose of any knowledge that is no longer needed within five years to make space for new knowledge and to save cost in terms of buying or maintaining software. This process runs through shredding hard copies or deleting data installed in hard drive."*

Table 6.22: Quantifying sub-themes for knowledge disposal

Sub-themes	Number of participants	% of participants
IS KNOWLEDGE DISPOSED?		
Yes	38	88%
No	3	7%
Not aware	1	2%

As proposed in Chapter 3, the mechanisms used to dispose knowledge primarily involved 'technologies' and 'established process' (Bergeron, 2003). Although established process has been removed earlier, based on the findings of the Pilot Study described in Chapter 5 the interviewee in the main study recommend established process as a mechanism to dispose of knowledge. In the meantime, new mechanisms have been adopted, based on

interviewees' responses. These mechanisms are manual/physical and IT. Manual/physical tools involved the manual destroying of paper files using a shredder or other equipment that permanently destroys paper data. Technological equipment is used to destroy computer files. For knowledge disposal, only technology was consistent with the model as a mechanism to destroy knowledge. Technology was widely perceived among the participants as a useful mechanism for knowledge disposal.

The results of the study indicated the use of knowledge disposal and the presence of mechanisms or structures that can destroy these data properly, such as technological or physical tools. Table 6.23 summaries the sub-themes of mechanisms being used in knowledge disposal.

Table 6.23: Quantifying sub-themes of mechanisms used for knowledge disposal

Sub-themes	Number of participants	% of participants
Mechanisms to dispose knowledge		
Technology	36	84%
Manual/physical	8	19%
IT	2	5%
Agreements	1	2%
Established processes	1	2%
No response	1	2%

Regarding the effect of knowledge disposal on organisational performance measurements, such as financial, customer/market, process, people development, and preparing for the future performance, the participants felt that knowledge disposal was important in terms of financial performance. Participant Q2 from airline (X) spoke about reducing costs by disposing of knowledge and information,

> *"The cost of storing data and maintaining the accumulative information is high, therefore, disposing some data or information that no longer needed will save this cost. Accordingly will have a direct positive impact on financial performance, so, I'd rank it as strong."*

Participant S7 from airline (W) added,

> *"Knowledge disposal will affect financial measurement strongly in term of saving money on making more space and reducing the maintenance".*

In terms of customer/market performance, there is a weak effect by knowledge disposal on customer/market performance as mentioned by 77% of the participants. Most of the

participants felt that knowledge disposal has a weak effect on customer/market performance. The opinion that the effect of knowledge disposal was weak was generally attributed to the process being internal, and not necessarily targeted towards customer relations. Most of the participants saw no direct link between knowledge disposal and customer/market performance. Participant S8 from airline (W) shared his opinion,

> *"Knowledge disposal is an internal process that has nothing to do with customer services or satisfaction and has nothing to do with market research or studies. Therefore, I see no direct link between knowledge disposal and customer/marker, so I'd rank it as weak."*

Participant N2 from airline (Z) added,

> *"I see no direct link between knowledge disposal and customer/marker, as it is something belong to the organisation something happen inside the organisation it has nothing to do with customer or market, so I'd rank it as weak".*

In terms of process performance, there is a moderate effect of knowledge disposal on process performance. The opinion that the effect of knowledge disposal was moderate was generally attributed to a lack of evidence regarding the strong link with affecting efficiency. Participant N2 from airline (Z) shared his opinion about the effect of knowledge disposal on process performance,

> *"In my opinion, I think there is a moderate link between knowledge disposal and process measurement in terms of helping process to be in good condition through making more space and maintaining work for long time."*

Participant S6 from airline (W) added,

> *"I'd rank it as moderate as knowledge disposal will help process of the organisation slightly in term of efficiency".*

In terms of people development performance, there is a weak effect of knowledge disposal. The opinion that the effect of knowledge disposal was weak was generally attributed to the perception that knowledge disposal had nothing to do with people development. Participant N2 from airline (Z) shared his opinion,

> *"As I mentioned before, knowledge disposal has nothing to do with developing employees in training or learning, so I'd rank it as weak because there is no direct link between knowledge disposal and people development."*

In terms of preparing for future performance, there is a weak effect of knowledge disposal. The opinion that the effect of knowledge disposal was weak was generally attributed to the perception that managers do not need to dispose of knowledge to make strategic decision. Participant S17 from airline (W) spoke about the link between knowledge disposal and preparing for the future,

> *"This process I'd rank as weak because when the top level manager or decision maker makes a strategic plan for the organisation, they don't need to refer to the disposed data that is no longer valid. Therefore, I see no direct link between future planning and knowledge disposal".*

Participant Q2 from airline (X) agreed with S17 from airline (W), he revealed,

> *"This process I'd rank it as weak, because I can't see any impact for disposing knowledge on the future direction of our company".*

The results were not completely consistent with the conceptual model presented earlier in Chapter 3 when it comes to the effect of knowledge disposal on organisational performance. The strongest perceived effect of knowledge disposal on organisational performance was found in the financial organisational measurement, where the majority of the participants responded strong and very strong effects, and process measurement where less of the participants responded strong and very strong. With regard to the effect of knowledge disposal on the organisational performance measurements, customer/market, people development and preparing for the future are proposed to be removed from revised model due to weak effect.

Overall, the perceived effect of knowledge disposal on the different factors of organisational performance measurements was weak. However, knowledge disposal is being used in the targeted organisations 'AI'.

When the use and perception of the importance of knowledge disposal was examined, it appears that knowledge disposal is used in the AI, but there are no conscious beliefs that it is linked to increased organisational performance. Moreover, the presence of mechanisms and structures suggests that knowledge disposal is ingrained in the operations of the AI, but the rationale for their presence seems irrelevant, as evidenced by the perceived weak effect of the participants between knowledge disposal and organisational performance. Table 6.24 summaries the sub-themes of the effect of knowledge disposal on organisational performance measurements.

Table 6.24: Quantifying the effect of knowledge disposal on organisational performance

Sub-themes	Number of participants	% of participants
Financial		
Very Weak	2	5%
Weak	2	5%
Moderate	3	7%
Strong	31	72%
Very Strong	5	12%
Customer/Market		
Very Weak	7	16%
Weak	33	77%
Moderate	2	5%
Strong	1	2%
Very Strong	0	0%
Process		
Very Weak	3	7%
Weak	12	28%
Moderate	13	30%
Strong	14	33%
Very Strong	1	2%
People Development		
Very Weak	14	33%
Weak	28	65%
Moderate	0	0%
Strong	0	0%
Very Strong	1	2%
Preparing for the Future		
Very Weak	16	37%
Weak	24	56%
Moderate	2	5%
Strong	0	0%
Very Strong	1	2%

6.9 Suggestions Drawn from Participants

Most participants suggested the creation of a knowledge management department in the organisation, emphasising the perceived importance of using knowledge management. Table 6.25 summaries the sub-themes for suggestions drawing from the participants regarding knowledge management.

Participant S7 from airline (W) shared:

> *"I believe that knowledge management with its processes, such as knowledge transfer, knowledge exchange, and creating, is one of the most important factors for organisations to success."*

Participant S17 from airline (W) spoke about the importance of knowledge management and the creation of a department for that area,

> *"Most of the successful organisations around the world are looking to adopt a new concept to help them to compete within this competitive environment. I think the employees are using knowledge management without they know. Therefore, I'd recommend adopting this concept and its processes to be strong in the field."*

Participant Q2 from airline (X) explained the need to make knowledge management official organisations,

> *"I believe that our company needs to have a proper plan for KM project to document the process of managing the knowledge and to increase the people's awareness of KM concept. Our culture is a supportive culture and can enhance the KM processes. What we need is to push the process further and make it official."*

Table 6.25: Quantifying the suggestion regarding knowledge management

Sub-themes	Number of participants	% of participants
No response	17	40%
Creation of knowledge management department	15	35%
Continued training	6	14%
Transparency	3	7%
Rotation	1	2%
Using expert knowledge	1	2%
Encouragement/rewards	1	2%
Documentation	1	2%
Application	1	2%
Financial resources	1	2%
Research	1	2%
Clarity of jobs/purpose	1	2%
Increased awareness	1	2%

6.10 Findings of the main study

In terms of knowledge creation/acquisition, knowledge is encouraged through monetary incentives, promotions in rank, and formal appreciation. Collaborative relationships are developed by engaging in meetings and exchanging ideas/delegates, workshops and agreements with other departments. Sources of knowledge include the internet, manuals and experts in the field. New mechanisms have been adopted, based on interviewees' response. More details are provided in chapter 7. Overall, there is a perception that knowledge creation/acquisition influences positive organisational performance.

Most participants believed that knowledge modification is important in organisations, which is why it is currently being practiced. However, the decision to apply new information depends on each employee, and their personal preferences, in terms of using new or old information. New mechanism has been adopted based on interviewees'

responses. More details are provided in Chapter 7. Overall, there is a general perception that knowledge modification influences positive organisational performance.

Many participants believed that knowledge use improves employee performance. Feedback and tracking systems are the mechanisms involved in knowledge use. New mechanisms have been adopted, based on interviewees' response. More details are provided in Chapter 7. Overall, there is a general perception that knowledge use influences positive organisational performance.

In terms of knowledge archiving, participants reported that the archive department and IT departments are usually in charge of the archiving of knowledge. Information technologies are often used as a mechanism of archiving knowledge. New mechanisms have been adopted based on interviewees respond. More details in Chapter 7. Based on the results, there is a suggestion that knowledge archiving influences positive organisational performance, except in the people development measurement.

Knowledge transfer was primarily accomplished through physical transfers and networks. New mechanisms have been adopted, based on interviewees' responses. These mechanisms are meetings/conferences, boards and workshops. More details are provided in Chapter 7. Based on the results, knowledge transfer appeared an important process for the organisation, and the majority of the participants agreed that knowledge is transferred easily.

Knowledge translation/repurposing is widely used in organisations. However, there seems to be no recognition of the link between knowledge translation/repurposing and organisational performance except for financial and process measurements, wherein IT and outsource expertise are the main mechanisms in knowledge translation. However, new mechanisms have been adopted, based on interviewees' responses. These mechanisms are computer programmers, internal expertise and personal effort. More details are provided in Chapter 7.

In term of user access to knowledge, a large majority of the participants reported that user access to knowledge is controlled, as access to knowledge is based on the job position of an employee. 35 managers among the participants see the value of knowledge being restricted. Employees easily find knowledge in databases when needed. IT, corporate policies and librarian are the main mechanisms.

In terms of knowledge disposal, a large majority of the participants (38 managers) reported that knowledge disposal is used in their organisation. A technology is the mechanism to dispose knowledge. However, new mechanisms have been adopted, based on interviewees' responses. These mechanisms are IT, manual/physical, agreements and established process. More details are provided in Chapter 7. Overall, it was perceived that there is a use of knowledge disposal in the AI. However, there is no strong and clear effect on organisational performance measurements, including customer/market, people development, and preparing for the future.

The participants' main suggestion was to formalise the creation of a knowledge management department. Many believed that processes of knowledge management are already in place in most organisations. However, participants expressed that there is a need to make this more official. Participants recognised the significance of knowledge management in the organisational performance of many companies.

6.11 Chapter Summary

The aim of this research is to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics. Content analysis was used to analyse the interviews of 43 participants working in four airlines companies. The participants were coded as (S, Q, E, and N) according to their companies. Analysis revealed eight main thematic categories: (a) knowledge creation/acquisition; (b) knowledge modification; (c) knowledge use; (d) knowledge archiving; (e) knowledge transfer; (f) knowledge translation; (g) user access to knowledge, and (h) knowledge disposal, and sub-themes plus five performance measurements (1) financial; (2) customer/market; (3) process; (4) people development; (5) preparing for the future.

The next chapter will discuss the revised conceptual model, including knowledge management processes, mechanisms and organisational performance measurements. In addition, Chapter 7 will discuss lessons learned from the study and the revised model.

Chapter Seven

Revised Conceptual Model for Knowledge Management Processes

7.1 Introduction

As discussed in the earlier chapter, there is a need to explore KM processes in the AI. Theoretical, general and processes models were presented for KM and OP; however, most of these models lacked details in term of which precise process affects OP more and in which way. Also, the mechanisms were absent in terms of how these processes can affect OP, alongside a lack of these models' studies in the AI. In addition, it is apparent that there is a need for consideration of KM processes in the AI, which is important for decision makers and stakeholders. The purpose of this thesis is to identify the KM processes that affect OP within the context of AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders and academics. The empirical data in Chapter 6 identified the processes that were mentioned earlier in Chapter 2. As a result, this study contributes a comprehensive understanding of the KM processes and its adoption linked to OP. This chapter reviews the conceptual model of KM processes and its mechanisms by considering the empirical evidence presented in Chapter 6. This chapter then presents the modified conceptual model based on the finding of the analysis.

7.2 Redesigned Conceptual Model for Knowledge Management Processes

In Chapter 6, the empirical data presented play an important role in identifying KM processes and mechanisms, and validating its effect on OP. The modifications to the conceptual model in Chapter 3 concerned mechanisms and performance measurements. Furthermore, the effect on OP is presented in detail in the next sections, along with the modifications on mechanisms and performance measurements. Based on the results of the study, a revised conceptual model is proposed.

7.2.1 Knowledge Creation/Acquisition

For the knowledge creation/acquisition process of knowledge management processes, it appears that the mechanisms for the creation/acquisition of knowledge were based on five constructs: self-reporting, documentation, program instrumentation, knowledge engineering, and networks (Bergeron, 2003). The participants in the study (Chapter 6) agreed with these mechanisms, as did the participants from the pilot study conducted earlier in Chapter 5. However, knowledge engineering has been removed from the revised model as a result of the responses from participants and subsequently new mechanisms

have been added. These new mechanisms include manual, experience, benchmark, attending conferences and IT knowledge. In addition, documentation and networks appear to be the most important mechanisms for the creation/acquisition of knowledge. Table 7.1 shows the modifications derived from empirical study in Chapter 6 and have been added to the revised model.

Table 7.1: Revised conceptual model for the processes and mechanisms of knowledge creation/acquisition

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Creation	✓	✓
• Self-reporting	✓	✓
• Documentation	✓	✓
• Program Instrumentation	✓	✓
• Networks	✓	✓
• Knowledge Engineering	✓	✗
• Manual	✗	✓
• Experience	✗	✓
• Benchmarking	✗	✓
• Attending Conference	✗	✓
• IT knowledge	✗	✓

Moreover, knowledge creation/acquisition has a positive effect on all organisational performance measurements, including finance, customer/market, process, people development and preparing for the future. Table 7.2 shows the perceived effect of knowledge creation/acquisition on organisational performance measurements.

Table 7.2: Revised conceptual model for the perceived effect of knowledge creation/acquisition on organisational performance measurements

Process and Organisational Performance Measurements	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Creation	✓	✓
• Financial	✓	✓
• Customer/market	✓	✓
• Process	✓	✓
• People Development	✓	✓
• Preparing for the Future	✓	✓

7.2.2 Knowledge Modification

For the knowledge modification process of KM processes, it appears that the process that has been proposed in the conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. Moreover, from the proposed conceptual model, the mechanisms that have been adopted were based on editing tools, tracking, security and version control (Bergeron, 2003). The participants in the study (Chapter 6) agreed with these mechanisms, as did the participants from the pilot study conducted earlier in Chapter 5. Nevertheless, the participants added social network to be used as a mechanism to modify knowledge. Consequently, social network has been added to the revised model. Table 7.3 shows the modifications derived from the empirical study in Chapter 6 which has been added to the revised model.

Table 7.3: Revised conceptual model for the processes and mechanisms of knowledge modification

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Modification	✓	✓
• Editing Tools	✓	✓
• Tracking	✓	✓
• Security	✓	✓
• Version Control	✓	✓
• Social network	✗	✓

Moreover, knowledge modification has a positive effect on all organisational performance measurements, including finance, customer/market, process, people development and preparing for the future. Table 7.4 shows the perceived effect of knowledge modification on organisational performance measurements.

Table 7.4: Revised conceptual model for the perceived effect of knowledge modification on organisational performance measurements

Process and Organisational Performance Measurements	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Modification	✓	✓
• Financial	✓	✓
• Customer/market	✓	✓
• Process	✓	✓
• People Development	✓	✓
• Preparing for the Future	✓	✓

7.2.3 Knowledge Use

For the knowledge use process of KM processes, it appears that the process that has been proposed in the conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. Moreover, from the proposed conceptual model, the mechanisms that have been adopted were based on feedback, tracking system/search, search technologies and dissemination (Bergeron, 2003). The participants in the study (Chapter 6) agreed about these mechanisms, as did the participants from the pilot study conducted earlier in Chapter 5. Alongside these mechanisms, the participants added auditing, training and IT system as mechanisms for using knowledge. This change has been added to the revised model. Table 7.5 shows the modifications derived from the empirical study in Chapter 6 and have been added to the revised model.

Table 7.5: Revised conceptual model for the processes and mechanisms of knowledge use

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Use	✓	✓
• Feedback System	✓	✓
• Tracking System	✓	✓
• Search Technologies	✓	✓
• Dissemination Technology	✓	✓
• Auditing	✗	✓
• Training	✗	✓
• IT System	✗	✓

In terms of the effect of knowledge use on organisational performance measurements, including finance, customer/market, process, people development and preparing for the future, knowledge use has a positive impact on all these measurements. Table 7.6 shows the perceived effect of knowledge use on organisational performance measurements.

Table 7.6: Revised conceptual model for the perceived effect of knowledge use on organisational performance measurements

Process and Organisational Performance Measurements	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Use	✓	✓
• Financial	✓	✓
• Customer/market	✓	✓
• Process	✓	✓
• People Development	✓	✓
• Preparing for the Future	✓	✓

7.2.4 Knowledge Archiving

For the knowledge archiving process of KM processes, it appears that the process that has been proposed in the conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. In addition, from the proposed conceptual model, the mechanisms that have been adopted were based on IT, controlled vocabularies, librarian, controlled environment and maintenance programs (Bergeron, 2003). The participants in the study (Chapter 6) agreed about these mechanisms, as did the participants from the pilot study conducted earlier in Chapter 5. However, the participants added papers, files and manual documentation as mechanisms to archive knowledge. This change has been added to the revised model. Table 7.7 shows the modifications derived from empirical study in Chapter 6 and have been added to the revised model.

Table 7.7: Revised conceptual model for the processes and mechanisms of knowledge archiving

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Archiving	✓	✓
• Information Technologies	✓	✓
• Controlled Vocabularies	✓	✓
• Librarian	✓	✓
• Controlled Environment	✓	✓
• Maintenance Programs	✓	✓
• Papers Files	✗	✓
• Manual Documentation	✗	✓

In terms of the effect of knowledge archiving on organisational performance measurements, including finance, customer/market, process, people development and

preparing for the future, knowledge archiving has a positive effect on all these measurements, with the exception of people development measurement. Consequently, knowledge archiving has a positive effect on finance, customer/market, process and preparing for the future measurements. People development measurement has been removed. Table 7.8 shows the perceived effect of knowledge archiving on organisational performance measurements

Table 7.8: Revised conceptual model for the perceived effect of knowledge archiving on organisational performance measurements

Process and Organisational Performance Measurements	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Archiving	✓	✓
• Financial	✓	✓
• Customer/market	✓	✓
• Process	✓	✓
• People Development	✓	✗
• Preparing for the Future	✓	✓

7.2.5 Knowledge Transfer

For the knowledge transfer process, it appears that the process that has been proposed in the conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. Additionally, from the proposed conceptual model, it appears that the mechanisms for knowledge transfer were consistent with the model that was presented earlier in Chapter 3, which included physical transfer and networks (Bergeron, 2003). The participants in the study (Chapter 6) agreed about these mechanisms, as did the participants from the pilot study conducted earlier in (Chapter 5). However, the participants added meetings/conferences, boards and workshops as mechanisms to transfer knowledge. This change has been added to the revised model. The results of the study indicated that both physical transfers and networks were perceived as equally important in the transfer of knowledge within the model of knowledge management. Table 7.9 shows the modifications derived from the empirical study in Chapter 6 and have been added to the revised model.

Table 7.9: Revised conceptual model for the processes and mechanisms of knowledge transfer

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Transfer	✓	✓
• Physical Transfer	✓	✓
• Networks	✓	✓
• Meetings/Conferences	✗	✓
• Boards	✗	✓
• Workshops	✗	✓

In terms of the effect of knowledge transfer on organisational performance measurements, including finance, customer/market, process, people development and preparing for the future, knowledge archiving has a positive effect on all these measurements. Table 7.10 shows the perceived effect of knowledge transfer on organisational performance measurements.

Table 7.10: Revised conceptual model for the perceived effect of knowledge transfer on organisational performance measurements

Process and Organisational Performance Measurements	**Proposed Conceptual Model**	**Revised Conceptual Model**
Knowledge Transfer	✓	✓
• Financial	✓	✓
• Customer/market	✓	✓
• Process	✓	✓
• People Development	✓	✓
• Preparing for the Future	✓	✓

7.2.6 Knowledge Translation/Repurposing

For the knowledge translation/repurposing process, it appears that the process that has been proposed in the conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. Moreover, from the proposed conceptual model, the mechanisms that have been adopted were based on IT and outsource expertise (Bergeron, 2003). The participants in the study (Chapter 6) agreed with these mechanisms, as did the participants from the pilot study conducted earlier in (Chapter 5). However, they added computer programmers, internal expertise and personal effort. This change has been added to the revised conceptual model. Table 7.11 shows the modifications derived from empirical study in Chapter 6 and have been added to the revised model.

Table 7.11: Revised conceptual model for the processes and mechanisms of knowledge translation/repurposing

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Translation/Repurposing	✓	✓
• IT	✓	✓
• Outsource Expertise	✓	✓
• Computer programmers	✗	✓
• Internal expertise	✗	✓
• Personal Effort	✗	✓

In terms of the effect of knowledge translation/repurposing on organisational performance measurements, including finance, customer/market, process, people development and preparing for the future, knowledge translation/repurposing has a positive effect on finance and process measurements. Consequently, customer/market, people development, and preparing for the future has been removed based on the participants response. Table 7.12 shows the perceived effect of knowledge translation/repurposing on organisational performance measurements.

Table 7.12: Revised conceptual model for the perceived effect of knowledge translation/repurposing on organisational performance measurements

Process and Organisational Performance Measurements	**Proposed Conceptual Model**	**Revised Conceptual Model**
Knowledge Translation/repurposing	✓	✓
• Financial	✓	✓
• Customer/Market	✓	✗
• Process	✓	✓
• People Development	✓	✗
• Preparing for the Future	✓	✗

7.2.7 User Access to Knowledge

For the user access to knowledge process, it appears that the process that has been proposed in the conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. Furthermore, from the proposed conceptual model, the mechanisms that have been adopted were based on IT, corporate policy and librarian (Bergeron, 2003). The participants in the study (Chapter 6) agreed with these mechanisms, as did the participants from the pilot study conducted earlier in Chapter 5. Therefore, no

change has occurred with this process in terms of mechanisms. Table 7.13 shows the mechanisms derived from the empirical study in Chapter 6 that have been added to the revised model.

Table 7.13: Revised conceptual model for the processes and mechanisms for user access to knowledge

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
User Access to Knowledge	✓	✓
• Information Technologies	✓	✓
• Corporate Policy	✓	✓
• Librarian	✓	✓

In terms of the effect of user access to knowledge on organisational performance measurements, including finance, customer/market, process, people development and preparing for the future, user access to knowledge has a positive effect on all organisational performance measurements, including finance, customer/market, process, people development and preparing for the future. Table 7.14 shows the perceived effect of user access to knowledge on organisational performance measurements.

Table 7.14: Revised conceptual model for the perceived effect of user access to knowledge on organisational performance measurements

Process and Organisational Performance Measurements	**Proposed Conceptual Model**	**Revised Conceptual Model**
User Access to Knowledge	✓	✓
• Financial	✓	✓
• Customer/market	✓	✓
• Process	✓	✓
• People Development	✓	✓
• Preparing for the Future	✓	✓

7.2.8 Knowledge Disposal

For the knowledge disposal process, it appears that the process that has been proposed in conceptual model in Chapter 3 is important and it has a positive effect on organisational performance. In addition, from the proposed conceptual model, the mechanisms that have been adopted were based on technology and established processes (Bergeron, 2003). The participants from the pilot study (Chapter 5) agreed about technology but disagreed about established process as a mechanism to dispose of knowledge. However, in the main study (Chapter 6), the participants were asked about technology, agreeing about it and adding established process, IT, manual/physical and agreements. It has been noted that established

process was removed from the conceptual model based on the pilot study conducted earlier in Chapter 5. In the revised model, the participants suggested established process to be one of the mechanisms to dispose of knowledge. Table 7.15 shows the mechanisms derived from the empirical study in Chapter 6 that have been added to the revised model.

Table 7.15: Revised conceptual model for the processes and mechanisms of knowledge disposal

Process and Mechanisms	Proposed Conceptual Model	Revised Conceptual Model
Knowledge Disposal	✓	✓
• IT	✗	✓
• Technology	✓	✓
• Manual/Physical	✗	✓
• Agreements	✗	✓
• Established Process	✗	✓

In terms of the effect of knowledge disposal on organisational performance measurements, including finance, customer/market, process, people development and preparing for the future, knowledge disposal has a positive effect on finance and process organisational performance measurements. Consequently, customer/market, people development and preparing for the future have been removed based on the participants response. Table 7.16 shows the perceived effect of knowledge disposal on organisational performance measurements.

Table 7.16: Revised conceptual model for the perceived effect of knowledge disposal on organisational performance measurements

Process and Organisational Performance Measurements	**Proposed Conceptual Model**	**Revised Conceptual Model**
Knowledge Disposal	✓	✓
• Financial	✓	✓
• Customer/Market	✓	✗
• Process	✓	✓
• People Development	✓	✗
• Preparing for the Future	✓	✗

7.3 Lessons Learned from the Study

Based on the results of the study presented in Chapter 6, this section illustrates the main findings of Chapter 6 as the aim of this study is to identify KM processes that affect OP

with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics

These finding are:

- The general results of the study suggested that KM processes are applicable in the AI. Specifically, KM processes including knowledge creation/acquisition, knowledge modification, knowledge use, knowledge archiving, knowledge transfer, knowledge translation/repurposing, user access to knowledge and knowledge disposal, can positively affect OP in the AI based on the five organisational performance measurements (financial, customer/market, process, people development and preparing for the future).
- It appears that, in the AI, KM processes are not only used and implemented but they are also perceived as important in influencing positive OP.
- All KM processes that have been used in this study are perceived to be positively affecting OP measurements in the AI with different levels of effect.
- The only KM processes that generally received less support from the participants in terms of perceived effectiveness in affecting positive organisational performance were knowledge translation/repurposing and knowledge disposal.
- Even though there is widespread usage of knowledge disposal and knowledge translation/repurposing, the participants in the study did not believe that they can affect all OP measurements.
- One of the important findings of the study is that some employees prefer to use old information as opposed to adopting updated and new information. This propensity for old information can be attributed to refusing to adapt to changes.
- Even though there is recognition that knowledge modification affects OP, some participants still prefer to use old information and avoid any modification on knowledge. More insights need to be gained regarding this practice in future studies in order to understand how this refusal to adopt new information can affect organisational performance.
- The participants in the study revealed that processes involving KM are already being used in the AI. The participants believed that a need exists to formalise KM in the organisation.
- The top suggestion made by the participants was to create a KM department in the AI.

- The participants in the study recognised the importance of having a formal department for KM, emphasising not only the importance of KM but also the willingness of individuals who work in the AI to adopt KM processes as a way to improve OP.

7.4 Revised Conceptual Model

Based on the finding of both the pilot study (Chapter 5) and the main study (Chapter 6), the proposed model in Chapter 3 was adjusted, as seen in Figure 7.1 below. These involve modification of the mechanisms of all KM processes adopted in this study, with the exception of one process (user access to knowledge). The modification of the proposed model also included the OP measurements in terms of the effect of KM processes. These modifications were in knowledge archiving (no effect on people development measurement), knowledge translation/repurposing (no effect on customer/market, people development, and preparing for the future measurements) and knowledge disposal (no effect on customer/market, people development and preparing for the future measurements).

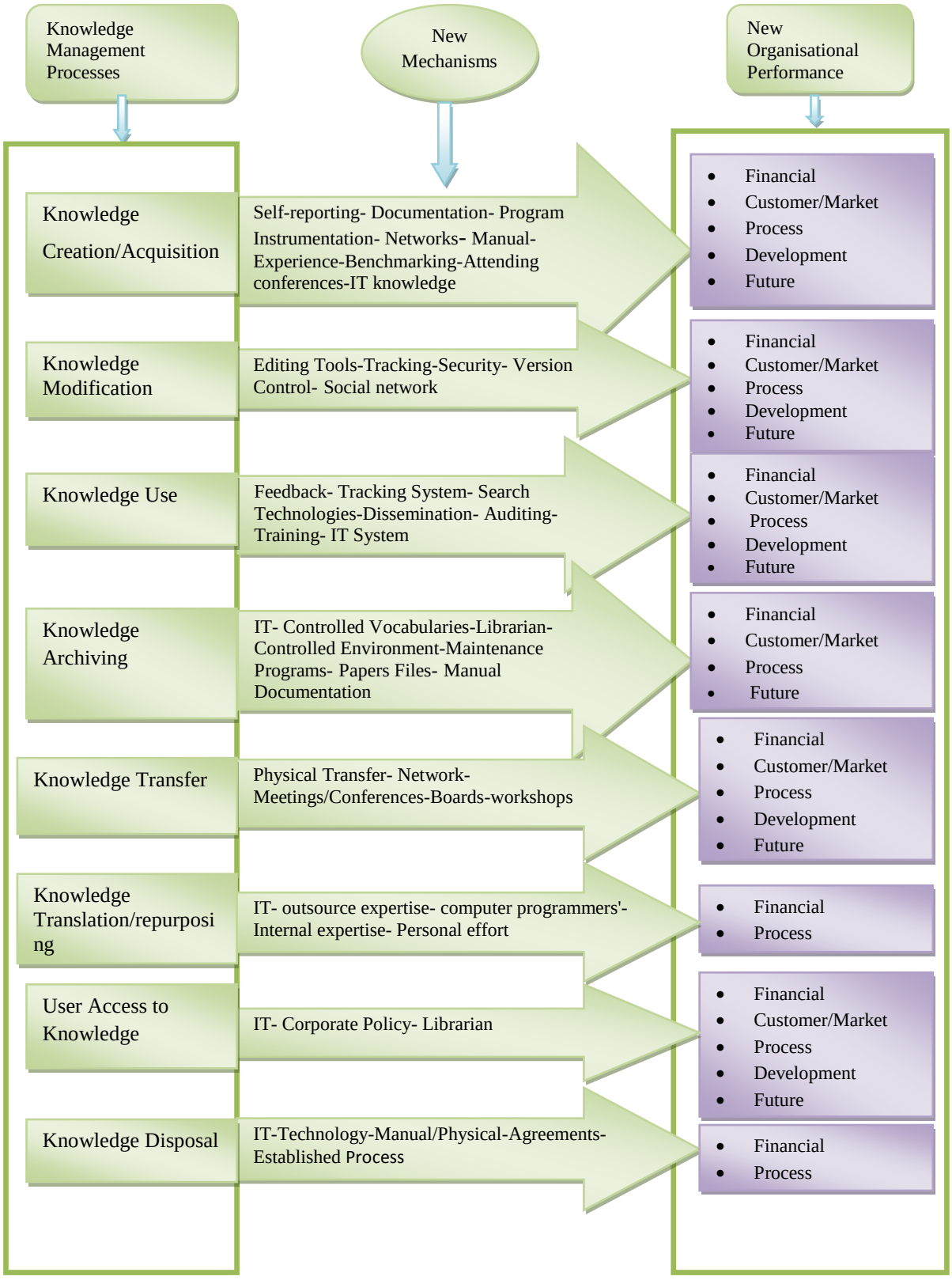


Figure 7.1: The revised conceptual model for knowledge management processes and organisational performance.

7.5 Chapter Summary

Based on the results of the study, a revised model regarding KM processes in the AI has been presented by the researcher. This chapter has identified modifications to the proposed model from empirical evidence presented in chapter 6. Moreover, these modifications consist of mechanisms and OP measurements with the same processes adopted from chapter 3. This revised model involves an integration of the conceptual model presented in Chapter 3 and the novel findings that emerged from the results of the study. The novel ideas that emerged from the data included the following:

- Based on the argument in chapter 2 (literature review), there was a lack of study relating to KM processes and OP within the context of AI. The conceptual model presented in this study was developed to fill this gap by increasing understanding of the adoption of best processes that affect OP.
- All the factors of KM processes adopted in this study are applicable in the AI in terms of identification. However, the effect on OP measurements varies. For example, knowledge translation/repurposing and knowledge disposal are the only two processes of KM that did not show evidence of a strong effect on OP measurements.
- The conceptual model and the revised model were generally consistent with each other in terms of the processes. However, additional mechanisms were adopted according to the findings from the main study (Chapter 6).

The next chapter will discuss conclusion, contribution, limitation, and recommendation for future research.

Chapter 8

Conclusion, Contribution, Limitations, and Recommendations for Future Research

8.1 Introduction

The aim of this study was to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics. In addition to this aim, the study provides a set of recommendations and builds a model for decision makers, stakeholders, and academics. This chapter includes conclusions, contributions, limitations, and recommendations for future research. The contributions and the novel findings from this study are identified and discussed, along with theoretical and practical contributions. The limitations of the study are identified and the reasons why they were not performed will be explained. Finally, recommendations for stakeholder, decision-makers, and future research in the area of KM will be presented.

8.2 Research Overview

Based on the literature survey and personal experience, it has been noticed that KM within the context of AI in the GCC countries is much neglected compared to similar organisations in the western countries. However, there is still a lot of research to be accomplished to establish which aspects of KM that influence OP and in what ways. Moreover, there is also a gap in the literature in terms of evaluating and identifying best processes of KM and their precise impact on customer-oriented organisations, specifically those within the AI. In general, there is a lack of studies related to KM processes and OP within the context of AI. Therefore, this study is an attempt to address these aspects by means of KM, and aims to identify KM processes that affect OP with particular reference to the AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics. In addition, the study provides a set of recommendations and a model for decision makers, stakeholders, and academics.

The objectives have been achieved by reviewing the available literature and previous studies related to KM processes and OP from different prospective in the area of AI. The main issues of KM processes and OP measurements that have risen from the review were analysed, leading to the development of a basic KM model and the identification of essential processes. To establish a solid and robust foundation for the developed model,

interviews were carried out, as part of the pilot study, to gather empirical data related to the key issues of KM processes and OP measurements. Face-to-face interviews with AI managers were implemented to investigate the processes of the proposed model. The main suggestion of many participants was to formalise the creation of KM departments. Whilst many participants believed that processes of KM are already in place in most organisations, they expressed that there is a need to make this more official, recognising the significance of KM in the OP of many companies.

8.3 The Main Findings

The key findings that resulted from this study are the following:

- It appears from the literature review, that most studies relating to KM processes and their effect on OP were carried out in different sectors, other than AI. This is attributed to the fact that there are little or no in-depth investigations relating to KM processes and OP within the context of AI.
- The literature review on KM within AI in the GCC suggests that KM processes and their effect on OP are often neglected, causing mixed opinions about the importance of KM adoption. This is the result of the lack of studies, insufficient information about KM and the weakness of establishing appropriate aspects of KM that influence OP. Evaluation studies and identification of best processes of KM and their precise impact on customer-oriented organisations, specifically those within the area of AI, are limited.
- An innovative conceptual model adopting KM with empirical data can bridge the gaps observed in the literature. The proposed conceptual model for KM processes is based on eight important processes: knowledge creation/acquisition, knowledge modification, knowledge use, knowledge archiving, knowledge transfer, knowledge translation/repurposing, user access to knowledge, and knowledge disposal. Moreover, the model is also based on five performance measurements: financial measurement, customer/market measurement, process measurement, people development measurement, and preparing for the future measurement.
- The empirical evidence from W, X, Y, and Z airlines indicates that researchers could use the revised conceptual model to gain an understanding of KM processes adoption and carry out an appropriate analysis. This could be used as a tool for decision making, which would result in more effective decisions for improved AI performance.

- An outcome from this study is that it has validated the existence of a positive correlation between KM processes and OP within the AI.

- Most of the KM processes were perceived to be positively affecting OP in the AI. However, knowledge translation/repurposing and knowledge disposal appear to be less important in positively affecting OP.
- Although there is a widespread usage of knowledge disposal and knowledge translation/repurposing, the participants in the interviews did not perceive these as crucial in terms of OP measurements, including customer/market, people development and preparing for the future.

- One of the findings of the study is that some employees prefer to use existing information rather than adopt updated or new information. This preference can be attributed to a refusal to adapt to change. Future research requires in-depth studies to understand how this refusal might affect organisational performance.

8.3 Implication and Contributions

Different processes were presented in the earlier chapters; they form the basis of the identified contributions. Chapter 6 presented the data analysis in the form of several categories and themes of the AI-related KM processes and OP. Chapter 7 introduced the revised conceptual model based on the findings that were generated in the previous chapter. Theoretical and practical gaps in the conceptual model were identified and have subsequently been overcome by the proposal of a new research model which was implemented to identify KM process and their effect on OP measurements within the context of AI. This model evaluates evidence from earlier studies in KM processes, mechanisms, and OP measurements to support the conceptual nature of this study. Previous studies focused on merging the identified processes within normative literature. However, the proposed model has linked processes and mechanisms to create a consistent KM model by utilising the empirical work.

It is possible to apply KM processes and their mechanisms to effectively evaluate KM as a learning process. The new contributions indicate the importance of extending KM processes as highlighted in the next section.

8.3.1 Theoretical Contributions

This study has contributed to the available literature in different aspects.

- The findings that have been presented to the KM processes are creating/acquisition, knowledge modification, immediate use, archiving, transfer, translation/repurposing, user access and disposal and their mechanisms.
- Moreover, OP measurements factors in the AI, such as financial, market/customer, processes, people development, and preparing for future.
- All these processes and measurements have been empirically examined through qualitative analysis from triangulation of data resource (e.g. managers, senior managers, AVPs, and VPs, documents, and observation).
- The building of the conceptual model was based on these processes, mechanisms and factors. Each process has its own mechanisms as illustrated in the earlier chapters.
- Data analysis was performed and guided by the initial proposed conceptual model and pilot study data.
- This study has identified the effect of KM processes on OP within the AI. Furthermore, it has evidently found which of KM processes has more effect on OP than the others within the AI. For instance, knowledge creation/acquisition has more influence on OP than knowledge disposal.
- Ultimately, this study clarified the relationship between KM processes and OP measurements factors and identified their effect on each other at different levels. Compared to only a few processes in previous studies, eight processes were used for KM and OP. The study clarified how these processes implemented through identifying mechanisms.
- Previous studies showed that KM processes were primarily applied in different sectors in the developed countries. One of the contributions of this study indicated that KM processes are applicable in the AI sector in the GCC countries, and possibly the developed countries. It has used the insights from previous literature to explore the same processes in a different context.

8.3.2 Practical Contribution

The major practical contribution of this study is the development and building of a novel conceptual model.

- The author conducted a preliminary study (pilot study) with five managers from one airline to make sure that all the functions of the research tool were properly organised and well designed.
- The study provided initial information about how KM is used and implemented in the airlines sector. The pilot study was used to validate the conceptual model.
- Then the main study was conducted using interviews with 43 managers from different departments of four airline companies from three different GCC countries. The identity of these companies and the participants were kept confidential.The data were analysed and empirical outcomes proved that the model was ready to be used as a tool for KM research, stakeholders, and decision-makers within the AI context.

As a direct implementation of the model:

- AI managers created and acquired knowledge through monetary incentives, promotions in rank, formal appreciation, engaging in meetings and exchanging ideas/delegates, workshops, and agreements with other departments.
- AI staff managed to modify knowledge-based data according to their preferences and situations. The information was employed for required purposes based on the situation, such as a decision made to operate a flight, buy a new airplane, or lease an aircraft for peak season.
- Use of knowledge is essential and improves employees' performance. Hence, feedback, auditing, training, IT system and tracking systems were used as mechanisms for these processes.
- AI managers use knowledge archiving in their organisations to store huge numbers of data and information about staff, airlines operations, and customers.
- Such data are transferred freely using various mechanisms of knowledge transfer, including intranet and email.
- AI managers implement specific applications to translate information such as no-show, go- show, fuel consumption, and load factor, in its initial form into one that is easy to explain, present, and read.
- User access to knowledge-based data is a critical issue in KM processes. AI managers are very strict in terms of keeping information secure. Therefore, each employee has his/her own password to access several sites according to his organisation level.

- AI managers issue clear procedures and policies when selecting information or knowledge for disposal so that important information and knowledge is not disclosed to non relevant people.

The AI context is fully equipped with programmes and instruments that facilitate the adoption of KM. As a result, this will help AI organisations to create/acquire, modify, archive, use, transfer, translate, ease of access, and dispose their KMs. This, in turn, will improve services, loyalty, profitability, productivity, safety, worker efficiency and gain competitive advantages. The results can also lead to more efficient KM processes and improved OP of the entire AI.

8.4 Research Limitations

A revised KM model for the AI was proposed, based on the results of the data analysis of the interviews. The limitations of the study are primarily identified in this section for other researchers to avoid any misinterpretations or restrictions. The discussion of the limitations will provide a better defined scope of the relevance and intention of the presented results. The limitations of the study are as follow:

- The results of this research were based on a small number of participants, which is typical in qualitative studies. Therefore, using a small sample limits the generality of the results and suggests that the proposed revised KM model may not be applicable to all airlines. The findings in this study should not be considered as definite evidence to characterise a constructive relationship between KM processes and OP in all companies in the AI. However, the results may be used as a starting point for future studies on KM and OP in a variety of industrial sectors in the GCC countries in particular or in other Arab countries in general.
- Another limitation is the possible bias in the data analysis process due to the nature of the collected data, which were qualitative narratives and open-ended responses from the participants. To address this possible bias, the researcher made a conscious effort to be as objective as possible by ensuring that data analysis was not contaminated by any preconceived notions and opinions about KM processes. The collected data from the interviews were used to interpret the meaning as intended by the participants.
- Although this research examined the relationship between individual KM processes and various OP measures, the results were not based on statistical analysis and objective data such as a survey. This qualitative study relied on the

perceptions and opinions of the participants, documents, and observations and hence, the revealed relationship between KM and OP may not be assumed exclusively accurate. This relationship was subjective and strictly based on the participants' opinions, not on objective data. This relationship between KM and OP should not be construed as definitive. More research is needed to validate this specific finding.

- The results of this study suggest that the majority of the applied mechanisms to accomplish KM processes were generally consistent with the operational mechanisms in the developed countries. However, this finding was based on qualitative interviews rather than on quantitative data (i.e. mainly on the participants' experiences and opinions). This limits the conclusion made about the applicability of KM mechanisms in the AI to be less definitive.
- The participants were encouraged to provide rich and detailed responses. However, some of them provided short answers with no in-depth explanation. The accuracy of the results was limited by this lack of detailed answers and the researcher might not have fully captured the complete participants' perceptions and opinions. Some participants provided detailed responses but others provided short responses, resulting in uneven data.
- The empirical results suggest that knowledge translation/repurposing and knowledge disposal were not perceived as relevant to KM processes in the AI. This led to a revision of the conceptual model in this study. These empirical results might not be based on solid findings because some participants might not have been fully aware of the precise definitions of these particular KM processes. This might lead to the generation of a false perception or opinion about their relevance.

8.5 Recommendations for Future Research

The proposed KM model in this research was generated based on the results and was supported empirically by four airlines companies. However, this proposed model is not definitive and may need further refinements in order to fully capture the needs and limitations of the AI. Therefore, further work can be suggested to address these limitations. Recommendations for future studies can be drawn as follows:

- The evidence of the applicability of KM processes in the AI, as indicated in this study, was based on the results from the AI in the GCC countries, and thus might not be applicable to airlines in other countries. A suggestion for future

research is to enhance the generality of the KM processes model to the entire AI. Moreover, this study did not attempt to assemble a representative prototype for all airlines. To achieve this, airlines from various countries would need to be included and represented. The generality of the results can be expanded through methodological strategies.

- Future research might take into account cross-cultural studies so that cultural factors are considered within the AI. Extending the applicability of KM processes within the cultural context can be accomplished by comparing the differences between KM and OP interaction in the AI in different contexts. Future researchers might further examine different processes of the KM model and their applicability in other countries.
- The revised KM model intended to positively influence OP when applied in the AI. Future studies might involve the validation of this intention specifically when the knowledge translation/repurposing and knowledge disposal were removed.
- In order to understand the scope of the KM processes in AI, a large descriptive study may be conducted. This quantitative descriptive study will provide a clear insight into the number of airlines that have KM in their organisation, including the specific KM processes that are being utilised. This study might be useful in the expansion of studies on KM processes in the AI.
- A quantitative comparative study may be conducted, comparing the OP of airlines that have KM with airlines that do not. This proposed comparative study would further provide evidence of the effectiveness of KM processes in positively influencing OP in the AI.
- Results from this study indicate that KM processes are able to positively affect organisational outcomes in the AI, based on the perceptions of employees in the AI. However, it is essential to conduct a quantitative study to validate or strengthen this specific finding. This proposed study may involve a correlation research using more objective data such as profit reports, or a larger sample that takes into consideration the representation of the entire AI.
- The participants in the study revealed that processes involving KM are already being used in the AI. However, these participants believed that there is a need to formalise KM. To address this lack of formal KM processes in the AI, future research may focus on the encountered barriers to formalise KM processes in

the AI. The results might be instrumental for developing a formal KM department in the AI. Airlines' stakeholders and decision-makers should make an effort to further develop their KM, possibly resulting in increased worker efficiency and increased profits.

- The only knowledge management processes that generally received less support from the participants in terms of perceived effectiveness in affecting positive OP were knowledge translation/repurposing and knowledge disposal. This finding needs to be further validated, given that these results were based on the subjective opinions of the participants. To pursue this line of research, future studies should involve a more focused case study or a quantitative study that utilises objective data and statistical analysis.

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Appendix A: Abbreviations

	A
AED	Arab Emirates Dirham
AI	Airline industry
AVP	Assistance Vice President
	B
BPM	Business Process Management
	C
CD-ROM	Compact Disc-Read Only Memory
CEO	Chief Executive Officer
CICS	Customer Information Control System
CRS	Computer Reservation System
	D
DB2	A family of Database Server Products
DMP	Dynamic Multi-dimensional Performance
DVD	Digital Versatile Disc
	E
EPS	Earnings Per Share
ERP	Enterprise Resource Planning
	F
FOIS	Flight Operation System
	G
GCC	Gulf Co-operation Council
GM	General Manager
	H
HR	Human Resource
	I
ICT	Information Communication Technology
IT	Information Technology
IBM	International Business Machines
IZGAZ	Turkish Gas Company
	J

	K
KM	Knowledge Management
KMP	Knowledge Management Processes
KMLC	Knowledge Management Life Cycle
	L

	M
M1	Manager 1
M2	Manager2
M3	Manager3
M4	Manager4
M5	Manager5
MAS	Malaysian Airlines System
	N

	O

OS/390	IBM Operating System most commonly installed on its S/390 line of Mainframe server
OP	Organisational Performance
	P&Q

	R
R&D	Research and Development
ROA	Return on Asset
ROC	Return on Capital
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sale
	S
STARTS	Reservation System
SM	Senior Manger
SECI	Socialisation, Externalisation, Combination, Internalisation
	T
TQM	Total Quality Management
TSO	Time Sharing Option
	U
US	United States
	V
UNIX	Computer Operating System
VP	Vice President
	W&X

	Y
YMS	Yield Management System
	Z
z/OS	64-bit Operating System for mainframe computer

Appendix B: Interviews Agenda
English Version

The interview agenda aims to identify knowledge management KM processes that affect OP within the context of AI in the GCC countries, and to provide a set of recommendations for decision makers, stakeholders, and academics.

The agenda is consists of nine parts:

1- Part one: background information.
2- Part two: questions for knowledge creation/acquisition.
3- Part three: questions for knowledge modification.
4- Part four: questions for knowledge use.
5- Part five: questions for knowledge archiving.
6- Part six: questions for knowledge transfer.
7- Part seven: questions for knowledge translate/repurposing.
8- Part eight: questions for user access to knowledge.
9- Part nine: questions for knowledge disposal.

Interviewee's personal information sheet

Interviewee Name:
Job Title:
Organisation:
Address:
Tel: Fax:
Email:
Interview Date and Time:
Interviewee Background Information:

Consent Form

Brunel Business School

Research Ethics

Company Confidentiality Form

This is to confirm that the research project An Evaluation of Knowledge Management Processes and their Impact on Organisational Performance, undertaken by Mohammed Tubigi, Student ID: 1036645, in part fulfilment of the degree of PhD in Management and Business Study, will be viewed for assessment purposes only, by Brunel University/ Brunel Business School from 26 October 2012 until around three months (26 January 2013) and then it will be published without mentioning the name of the participant organisation or the participants.

Date:

Signature of Contact in Organisation:

Signature of Student:

Signature of Supervisor:

Brunel Business School

Research Ethics

Participant Consent Form

Many thanks for agreeing to participate in my research project. The project has to be completed in part fulfilment of my degree programme and so your assistance is much appreciated.

Consent:

I have read the Participation Information Sheet and hereby indicate my agreement to participate in the study and for the data to be used as specified.

Name of participant or informed third party:

Signature:

Date:

Thank you for agreeing to be interviewed. This research will take place in Gulf region in the Airline Industry in particular. The researches on knowledge management in this area are very few; therefore I would like to introduce some of the basic terms and concepts in order to clarify these concepts and to better understand the interview.

Knowledge Management:

KM can be defined as any process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it resides, to enhance learning and performance in organisations**.**

Knowledge Management Processes:

Knowledge Creation: the generation of new ideas or objects.

Knowledge Acquisition: the ability to identify, acquire and accumulate knowledge.

Knowledge Modification: the information through the modification phase is modified to meets the requirements of the future needs of the knowledge management and their workers.

Knowledge Use: the information is employed for whichever purpose necessary based on the situation.

Knowledge Archiving: involves the storing of the information in an appropriate form that ensures the security and access to this information in the future.

Knowledge Transfer: information should be transferred freely within the organisational context using various types of media (e.g. intranet emails).

Knowledge Translation/Repurposing: the information translated from its original form into a form that is more suitable for the user (e.g. from numerical to textual form).

Knowledge Access: provide continuous access for authorised users.

Knowledge Disposal: selecting information for disposal or disposing them in order that valuable information does not end up being destroyed.

Background Information

Part 1: The work nature and the current situation of knowledge management.

1. What is the nature of your work?

   ---
2. How many employees are there in your department?

   ---
3. Is there any department or employees in charge of knowledge management in your organisation? If yes, what is the scale, number of department or employees involved and their main responsibilities, and the status in the organisation?

   ---
4. In your opinion, does a knowledge value mean anything to the organisation?

   ---
5. From 1 to 5, where 5 highly existed and 1 is not existed at all, how do you rank the knowledge management practice in your organisation?

Part 2: Question for Knowledge Creation and Acquisition

1. What is the incentive mechanism in your organisation to encourage staff to contribute their wisdom and experience and facilitate the creation of knowledge that is favourable to the organisation?

   ---
2. How does your organisation build up co-operative and collaborative relationship with other departments and agencies to create knowledge?

   ---
3. Is there anyone in charge of collecting and clarifying work in the department?

   ---
4. What are the sources of knowledge?

   ---

5. When you face any problem in your work, what do you do to find knowledge and information needed to solve this problem?

   ---
6. What kind of development and training programs are designed in your organisation?

   ---
7. In your opinion, which of the following mechanisms are used within your organisation to create and acquire knowledge (i.e. [**self-reporting**, **documentation, program instrumentation, networks**] or do you suggest other mechanisms?

   ---
8. In your opinion, which of the following organisational performance measurement can be affected by knowledge creation/acquisition (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and why?

   Financial:---

Customer/Market:----------

Process:----------

People Development:----------

Preparing for the future:----------

Part 3: Question for Knowledge Modification

1. Is the organisational knowledge always modified to suit the organisational current and future needs of information?

   ---

2. Tell me about the available knowledge, is it updated and reflects the reality?

   ---

3. How do you describe the employees within the organisation are they willing to have new knowledge or prefer to keep their old information?

   ---

4. In your opinion, which of the following organisational performance measurement can be affected by knowledge modification (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and why?

   Financial:---

   Customer/Market:---

   Process:---

   People Development---

   Preparing for the future:---

   ---

5. In your opinion, which of the following mechanisms are used within your organisation to modify knowledge (i.e. [**editing tools** such as graphic programs and text editors] [**tracking**] [**security**] and [**version control** such as using software tools to track of versions of documents and other information] or do you suggest other mechanisms?

Part 4: Question for Knowledge Use

1. How do you think employees within this organisation are using their knowledge to improve their performance and solve work-related problems?

   ---
2. In your opinion, which of the following mechanisms are used within your organisation to indicate the use of knowledge (i.e. [**feedback system, tracking system, dissemination and search technologies**] or do you suggest other mechanisms?

   ---
3. In your opinion, which of the following organisational performance measurement can be affected by knowledge use (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and WHY?

   Financial: ---

   Customer/Market:---

   Process:---

   People Development:---

   Preparing for the future:---

Part 5: Question for Knowledge Archiving

1. Is there any department in the organisation that responsible for archiving and storing knowledge or information?

   ---
2. Is the knowledge archived protected against loss and natural disasters?

   ---
3. Have you ever searched for information and failed to get it from the archive or database? If yes, does this occur frequently?

   ---
4. In your opinion, which of the following mechanisms are used within your organisation to archive knowledge (i.e. [**information technologies** from database management system] or [**controlled vocabularies** to expert systems] or [**librarian** to have oversee the archiving process] or [**controlled environment and maintenance programs** to have longevity of the information], or do you suggest other mechanisms?

   ---
5. In your opinion, which of the following organisational performance measurement can be affected by knowledge archiving (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and WHY?

   Financial:---

   Customer/Market:---

   Process:---

   People Development:---

   Preparing for the future: ---

Part 6: Question for Knowledge Transfer

1. How do you describe the importance of knowledge transfer?

   ---
2. How do you describe the transfer and exchanged of knowledge among employees in this organisation?

   ---

3. In your opinion, through what mechanisms is your knowledge exchange and experience transferred (i.e. [**physical transfer**] [**networks**] or do you suggest other mechanisms?

   ---
4. In your opinion, which of the following organisational performance measurement can be affected by knowledge transfer (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and WHY?

   Financial:---

   Customer/Market:---

   Process:---

   People Development:---

   Preparing for the future:---

Part 7: Question for Knowledge Translation/Repurposing

1. How do you describe knowledge translation/repurposing process within this organisation?

   ---
2. In your opinion, which of the following mechanisms are used within your organisation to translate knowledge (i.e. [**outsource expertise**, the external vendors providing translation services to companies that don't have time or resources to perform the translation in-house] or [**information technologies**, software programs, specialised translation hardware] or do you suggest other mechanisms?

   ---
3. In your opinion, which of the following organisational performance measurement can be affected by knowledge translation/repurposing (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and WHY?

Financial:---

Customer/Market:---

Process:---

People Development:---

Preparing for the future:---

Part 8: Question for User Access to Knowledge

1. What type of information within the organisation is available for the employees?, and is it available for everyone who need it?, or for only top level management (i.e. top managers, decision makers, middle managers, etc)?

   ---
2. Do you agree that the value of knowledge is restricted with the ability to access it when needed to make decision or to solve organisational problems or for whatever purpose in any given situation? And why?

   ---
3. Is it easy to find the knowledge you need in the database in a short time when you make decision?

   ---
4. In your opinion, which of the following mechanisms are used within your organisation to provide the user with access to knowledge (i.e. **corporate policy**, access to corporate information is fundamentally defined by corporate policy for example, who needs access to specific information] or [**information technologies**] or [**librarian**, which performed by knowledge worker, manager, or computer program to control expectations, prevent misuse of the underlying technology] or do you suggest other mechanisms?

   ---
5. In your opinion, which of the following organisational performance measurement can be affected by user access to knowledge (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and WHY?

   Financial:---

   Customer/Market:---

   Process:---

People Development:----------

Preparing for the future:----------

Part 9: Question for Knowledge Disposal

1. How do you describe the process of disposing knowledge?

   ---
2. What of the following mechanisms does the organisation use to dispose knowledge (i.e. **technologies**, **established process**) or do you suggest other mechanisms?

   ---
3. In your opinion, which of the following organisational performance measurement can be affected by knowledge disposal (financial, customer/market, process, people development, preparing for the future), could you rank them (very strong- strong- moderate- weak- very weak) and WHY?

   Financial:---

   Customer/Market:---

   Process:---

   People Development:---

   Preparing for the future:---

   Finally, to build up a knowledge management organisation, I would like to ask you, can you make any suggestion about knowledge management process, application of IT, organisational culture, and talent development and training etc?

Appendix C: Interview Agenda /Arabic Version

الاسم :
مسمى الوظيفة :
اسم الشركة :
العنوان :
رقم التلفون : الفاكس :
البريد الالكتروني :
يوم المقابلة و وقتها :
معلومات اضافية عن المتقابل معه :

عزيزي المشارك في المقابلة , أشكرلك موافقتك على اجراء هذه المقابلة . هذا البحث سيطبق في منطقة الخليج العربي وبالتحديد في قطاع الطيران . إن الابحاث المقدمة في إدارة المعرفة قليلة في هذه المنطقة , لذلك سوف اقوم بتعريف مبسط لمصطلحات ادارة المعرفة و عملياتها حتى تكون واضحة ومفهومه في المقابلة .

اولا : تعريف ادارة المعرفة

هي عملية خلق او ايجاد , اكتساب , حصول او التقاط , مشاركة و استخدام المعرفة , اينما وجدت , لتدعيم التعلم والاداء في المنظمة .

ثانيا : تعريف عمليات ادارة المعرفة

1- *خلق او ايجاد المعرفة* : توليد او ايجاد افكار جديدة او اهداف .
2- *اكتساب المعرفة* : القدرة على تحديد او تعريف المعرفة واكتسابها و تجميعها .
3- *تعديل المعرفة* : تعديل المعلومات لتتوافق مع المتطلبات والاحتياجات المستقبلية من قبل العاملين .
4- *أستخدام المعرفة* : توظيف المعلومات المتوفرة لاستخدامها لاي غرض ضروري حسب الموقف .
5- *أرشفة المعرفة* : حفظ المعلومات في شكل مناسب لتأكيد سريتها وسهولة الوصول اليها من قبل الشخص المسئول عند الحاجة .
6- *نقل المعرفة* : سهولة نقل المعلومات داخل المنظمة باستخدام انواع مختلفة من الاتصالات مثل , الشبكة العنكبوتية , الهاتف .
7- *ترجمة او اعادة صياغة المعرفة* : ترجمة المعلومات من شكلها الاصلي الى شكل آخر لتوافق متطلبات المستخدم , مثال ذلك ترجمة خطاب من شكل نصي الى رقمي .
8- *الوصول او النفوذ الى المعرفة* : تزويد الشخص المخول بالدخول الى المعلومات .
9- *التخلص من المعرفة* : التخلص من المعلومات التي لم يعد بحاجة اليها للحفاظ على المعلومات الاخرى القيمة .

معلومات عامة

الجزء الاول: طبيعة العمل والوضع الحالي لادارة المعرفة

1- ما هي طبيعة عملك ؟

2- كم عدد الموظفين في ادارتك ؟

3- هل يوجد اي ادارات او موظفين في الشركة مسئولين عن ادارة المعرفة ؟ واذا نعم , ما هو مستوى وعدد الادارات او الموظفين و ما هي مسوؤليتهم في العمل و وضعهم في العمل ؟

4- من وجهة نظرك , هل قيمة المعرفة تعني اي شي للشركة ؟

5- اختار من 1 الى 5 , ماهو تقييمك لعمليات إدارة المعرفة في الشركة؟ (5- موجودة بشكل كبير , 1 – غير موجودة مطلقا).

الجزء الثاني : أسئلة عن خلق المعرفة او إجادها و اكتسابها .

1- ما هي آلية الحوافز لدى الشركة لتشجيع الموظفين للمساهمة بخبراتهم وتجاربهم للحصول منهم على المعرفة المطلوبة التي تفيد الشركة ؟

2- ماهي طريقة الشركة في بناء علاقات التعاون والمشاركة مع الادارات والمؤسسات الاخرى لإجاد المعرفة ؟

3- هل يوجد شخص في الادارة او الشركة مسئول عن تجميع وتوضيح مهام العمل على الموظفين ؟

4- ماهي مصادر المعرفة في الشركة ؟

5- عندما تواجه مشكلة في العمل, كيف تتحصل على المعرفة و المعلومات المطلوبة لحل هذه المشكلة ؟

6- ماهي انواع برامج التطوير و التدريب المصممة في الادارة ؟

7- من وجهة نظرك, ماهي الآليات المستخدمة في الشركة لخلق او ايجاد المعرفة واكتسابها (ان وجدت) هل هي : التقارير الشخصية , توثيق المعلومة , البرامج , الشبكات , اخرى (حدد) ولماذا ؟

8- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بخلق و اكتساب المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) وكيف ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). و لماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

الجزء الثالث : أسئلة عن تعديل المعرفة .

1- هل المعرفة في الشركة تتعدل دائما لتناسب الاحتياجات الحالية و المستقبلية للمعلومات ؟

2- هل المعرفة المتوفرة في الشركة متجددة و تعكس الحقيقة ؟

3- هل تعتقد ان الموظفين في الشركة يسعون للحصول على معرفة جديدة ام انهم يفضلون البقاء على معلوماتهم القديمة ؟

4- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بتعديل المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي)وكيف ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). و لماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

5- من وجهة نظرك , ماهي الآليات المستخدمة في الشركة لتعديل المعرفة (ان وجدت) ؟ هل هي : ادوات التعديل , تتبع المعلومات للتأكد من صحتها , امن المعلومات , الرقابة على الاصدار , اخرى (حدد) ولماذا ؟

الجزء الرابع : أسئلة عن استخدام المعرفة .

1- هل تعتقد ان الموظفين في الشركة يستخدمون معرفتهم لتحسين ادائهم و لحل المشاكل التي تواجههم في العمل ؟

2- من وجهة نظرك , ماهي الآليات المستخدمة في الشركة التي تشير على استخدام المعرفة (ان وجدت) ؟ هل هي : انظمة التغذية الرجعية , انظمة تتبع المعلومات , اخرى (حدد) ؟

3- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر باستخدام المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). و لماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

الجزء الخامس : أسئلة عن أرشفة المعرفة .

1- هل يوجد ادارة في الشركة مسئولة عن أرشفة المعرفة او المعلومات ؟

2- هل أرشفة المعرفة محمية من الفقد و الضياع و الكوارث الطبيعية مثل الحرائق , الامطار ؟

3- هل حصل ان بحثت مره عن المعلومات ولم تستطع الوصول اليها في الارشيف او قاعدة البيانات ؟ وإذا نعم , هل هذه تحصل دائما ؟

4- من وجهة نظرك , ماهي الآليات المستخدمة في الشركة لأرشفة المعرفة ؟ هل هي : (تقنية المعلومات) , (الاشخاص المعنيين او الموظفين المشرفين على عملية ألارشفة) , (وجود البيئة المناسبة للأرشفة وحمايتها من الضياع والتلف) , (برامج الصيانة الدورية والبحث عن كل جديد في عالم الأرشفة حتى تواكب انظمة التشغيل المتجددة) ,(اشكال الملفات الجديدة حتى يكون الوصل الى المعرفة سهل في المستقبل) , اخرى (حدد) ؟

5- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بأرشفة المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). و لماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

الجزء السادس : أسئلة عن نقل او تحويل المعرفة .

1- هل تعتقد ان نقل المعرفة عملية مهمة و لماذا ؟

2- هل تعتقد ان المعرفة يتم تناقلها وتبادلها بسهولة بين الموظفين ؟

3- من وجهة نظرك , ما هي القنوات المستخدمة في الشركة لنقل المعرفة ؟ هل هي : عن طريق النقل الشخصي , الشبكة او التقنية , اخرى (حدد) ؟

4- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بنقل المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). و لماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

الجزء السابع : أسئلة عن ترجمة او إعادة صياغة المعرفة

1- هل الشركة تستخدم اعادة صياغة المعرفة او المعلومات لترجمتها من شكلها الاصلي الى شكل يناسب الغرض من هذه الترجمة , مثال ذلك تحويل او ترجمة جدول من بيانات رقمية الى رسم ثلاثي الابعاد, او بيانات في جدول الى ملخص احصائي ؟

2- من وجهة نظرك , ماهي الآليات المستخدمة في الشركة لترجمة او اعادة صياغة المعرفة ؟ هل هي : الخبراء الخارجيين (بحيث يمكن الاستفادة منهم في هذا المجال), او تقنية المعلومات , اخرى (حدد) ؟

3- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بترجمة او اعادة صياغة المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). و لماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

الجزء الثامن : أسئلة عن الوصول او النفوذ الى المعرفة .

1- هل المعلومات في الشركة متوفرة للكل ؟ وإذا لا , من يملك الوصول او الدخول الى المعلومات , هل هم : المدراء في الادارة العليا , اصحب القرار , المدراء في الادارة الوسطى ؟

2- هل توافق ان قيمة المعرفة تبقى محصنة مع امكانية الدخول اليها حين الحاجة الى اتخاذ قرار او حل مشكلة تواجه الشركة او لاي سبب آخر ؟

3- عند اتخاذ القرار , هل من السهولة الحصول على المعرفة المطلوبة في قاعدة البيانات الخاصة بالشركة في وقت قصير ؟

4- من وجهة نظرك , ماهي الآليات المستخدمة في الشركة للدخول او النفاذ الى المعرفة ؟ هل هي : انظمة الشركة , تقنية المعلومات , الاشخاص المسئولين مثل "المدراء , موظفي المعرفة , او برامج الحاسب الآلي " للتحكم في التوقعات و لمنع الاستخدام السيء , اخرى (حدد) ؟

5- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بالوصول او النفوذ الى المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا).

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

الجزء التاسع : اسئلة عن التخلص من المعرفة .

1- هل الشركة تتخلص من المعلومات التي لم تعد في حاجة اليها ؟ إذا نعم , كيف يتم ذلك ؟

2- ما هي الآليات المستخدمة في الشركة للتخلص من المعرفة او المعلومات ؟ هل هي: عن طريق التقنية , اخرى (حدد) ؟

3- من وجهة نظرك , أي من قياسات اداء المنظمة التالية تتأثر بالتخلص من المعرفة المعرفة (الاداء المالي , العملاء/السوق , العمليات , تطوير الموظفين , التخطيط المستقبلي) ؟ ارجو تصنيفها حسب الآتي (تتأثر بقوة كبيرة – بقوة – متوسطة – ضعيف – ضعيف جدا). ولماذا؟

الأداء المالي :----------

العملاء/السوق :----------

العمليات :----------

تطوير الموظفين :----------

التخطيط المستقبلي :----------

اخيرا , لبناء منظمة او شركة تحتوي على ادارة المعرفة , اريد اسئلك , هل يمكنك تقديم اي اقتراحات عن عمليات ادارة المعرفة , تطبيقات تقنية المعلومات , ثقافة المنظمة , تنمية المواهب , و التدريب ....الخ ؟
