THE RELATIONSHIP BETWEEN ORGANISATIONAL CULTURE AND KNOWLEDGE SHARING IN THE INFORMATION COMMUNICATION TECHNOLOGY FIRMS IN LIBYA

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DEDICATION

I dedicate this thesis to the loving memory of my late father, Bashir Allali, and to my late mother, Mabruka Anajah

ABBREVIATIONS

OC   Organisational Culture

KS   Knowledge Sharing

KM   Knowledge Management

ICT   Information Communication Technology

ABSTRACT

Examining the nature of the relationship between Organisational Culture (OC) and Knowledge Sharing (KS) has been the concern of a number of academic studies. Most of these studies have suggested that different aspects of Organisational Culture have an influence on the effective process of Knowledge Sharing in business firms. However, there has been a lack of studies carried out to examine the relationship between OC and KS in Information Communication Technology firms generally and in Arabic countries (namely Libya) in particular. Furthermore, there is a dearth of frameworks that assist employees in ICT firms to achieve better practices within KS processes.

This study is driven by the need to bridge the gap in the current literature in terms of identifying the nature of the relationship between Organisational Culture and Knowledge Sharing in ICT firms in Libya. As the Information Communication Technology sector in Libya is now heading towards leading the country to a knowledge economy, there is also a need to put forward a framework that helps employees in ICT firms to achieve better practices. This study is undertaken with the aim to "investigate the relationship between Organisational Culture and Knowledge Sharing processes in ICT firms in Libya to enhance Knowledge Sharing practices". The outcomes from this study are used to develop a framework that will help employees in ICT firms to achieve better practices.

This study utilises a mixed research approach. The aim of the study was achieved by adopting the case study research strategy by triangulating the data collected through different techniques (questionnaire, semi-structured interviews and document analysis). Data was collected from four different ICT firms in Libya focusing on the relationship between Organisational Culture and Knowledge Sharing. Descriptive statistics, thematic analysis and content analysis methods were used to analysis the data.

The findings from this research suggest that Organisational Culture and Knowledge Sharing are defined, interpreted, and understood differently, so that there is no one specific meaning for either KS or OC. Therefore, there is a need to understand the different meanings and the aspects associated with each concept in order to understand the relationship between both concepts. Furthermore, this study found that OC is influenced by the culture including personal, government, sector, and nation. At the same time, KS is influenced by OC and an organisation's KS culture rather than by KS as practices or activities. According to the

findings of this study, KS in ICT firms in Libya has not been practiced as a way of fulfilling either strategic or organisational practice, rather it has been practiced randomly. In other words, knowledge sharing plans are not formalised within the organisational strategic policies and practices. Therefore, a STEP BY STEP FRAMWORK has been developed with the intention to enhance the practices of KS in ICT firms in Libya which appear to be more retail-customer services' businesses rather than ICT production service organisations. This fact could suggest that the framework can be applied in other different business contexts, but further investigations would be necessary. The findings of this study have contributed significantly by formulating a framework to enhance KS practices for the ICT firms in developing country as the usage of such framework are limited in countries like Libya.

Chapter 1.   Introduction

1.1 Research Background

The Information Communication Technology sector (which is an umbrella sector for all the Information Communication Technology (ICT) firms distributed all over the country) is one of the main sectors in Libya. It has been influenced by the general economic atmosphere in the country. According to a report published by Puddington (2012), the political events which occurred in 2011 in Libya caused noticeable changes in the business performance of ICT firms as people had more freedom to use the internet and telecommunication services and this factor, in turn, seriously challenged the ICT businesses to perform better. In addition, as in other developing countries, Libya's ICT businesses suffer from many weaknesses including high prices, low quality, a lack of employability, a lack of governmental support, and a lack of policies and strategic vision (Sassi, 2008) . The Freedom House Report by Puddington (2012) stressed that the ICT market in Libya would not grow without changing not only the ways in which firms undertake their activities and functions but also the business culture that dominates the ICT sector in Libya. Additionally, rather than any time in the past, Odongo (2015) stated that Libyan ICT sector now needs to become more open to sharing and collaboration as well as understanding the use of knowledge better in order to move forward towards a knowledge economy. Following the civil unrest in 2011 Libya has experienced political, social and economic changes. The opportunities provided by these changes must be used to embed a new culture in ICT firms in order to enable them to gain benefits from one of their most important resources (knowledge) by sharing it.

Accordingly, Libya can learn from the lessons learned by other countries. Professor Chun, President of the Korean Institute for Development Strategy, in a workshop organized by the Korean Institute for Development Strategy (as part of the Libyan-Korean cooperation agreement to run a Knowledge Sharing Programme with Libya) stated that Libya should move from a hopeless country to a modern industrial state (Kim & Tcha, 2012). Korean business firms have been able to change the future of their country by adopting a strategic vision for knowledge sharing within the firms during the times of conflicts (Gallego & Gutiérrez, 2015). Korea was able to transfer its economy from relying on basic exports in the 1950s to an economy of much higher value (Zaptia, 2013). Similarly, Libya's business firms need effective practices to help them pave the way towards success.

1.2 Research Rationale

Globalisation and the growth of the importance of knowledge in business firms have changed the methods by which business firms perform their functions (Davenport & Prusak, 1998b) . Tsoukas (1996) stated that, in addition to globalisation, the evolvement of the use of information communication technologies to perform business functions has made modern firms complex knowledge domains where both tacit and explicit knowledge exist throughout the firm rather than residing in a single brain or text. Many researchers such as Davenport and Prusak (1998b) and Ford (2001) have seen that the processes of Knowledge Management can be varied but they have emphasised that Knowledge Sharing is one of the most common processes that business firms can utilise as part of their Knowledge Management strategy and initiatives.

Wang and Noe (2010) stated that the success of Knowledge Sharing depends mainly on organisational staff's ability and willingness to share their knowledge. Brown and Duguid (2000) argued that there is no doubt that training and professional development programmes run by business firms are important in order to enhance business performance and enhance the chances for better competitive advantages. Nevertheless, firms cannot rely on training programmes alone to accrue the required developments. Brown and Duguid (2000) suggested that selecting employees who have specific knowledge and motivating them to share their experiences and knowledge is a fundamental way of gaining better value from knowledge as a major business resource. Wenger (2000) stated that business firms should foster cultures that enable their employees to share knowledge in order to achieve expected competitive advantages. However, unfortunately, many firms suffer from a lack of understanding as to how to embed the required Knowledge Sharing in practice within the prevailing Organisational Culture (Islam et al., 2015).

Accordingly, Davenport and Prusak (2000); Hooff and Ridder (2004) have insisted that understanding Organisational Culture before undertaking Knowledge Sharing processes is very important because Organisational Culture reflects the social system in which people operate. Jewels and Berger (2005) carried out a study to examine the relationship between Organisational Culture and Knowledge Sharing and they stated that it is Organisational Culture rather than any other aspects that appears to have the most significant impact on Knowledge Sharing.

In the Arabic context, a few studies have been carried out to examine the relationship between Organisational Culture and Knowledge Sharing. Al-Alawi, Al-Marzooqi, and Mohammed (2007) used a survey as a tool to investigate the impact of Organisational Culture on Knowledge Sharing. They targeted public and private companies in Bahrain. The survey outcomes showed a positive correlation between Knowledge Sharing and trust, communication, information systems, and rewards. Also in Bahrain, Marouf (2007) examined the influence of business and social ties on Knowledge Sharing in an international firm. The study demonstrated a considerable relationship between the strength of business ties and the sharing of both public and private knowledge. El Harbi, Anderson, and Amamou (2011) carried out a study to examine Knowledge Sharing processes in Tunisian ICT firms. Their findings showed that information and knowledge are vital keys in achieving high operational success in such companies and they believed that knowledge and its different applications play an important role in motivating better competitive advantages. Furthermore, Al-Zubi (2011) investigated the influence of OC on KS in the construction sector within Jordan. The findings indicated that culture has an essential impact on Knowledge Sharing in the studies' context. The significance of Knowledge Sharing processes within business firms were highlighted in his study. Additionally, communication technology, social networking, gender and leadership behaviour have been found to be important factors that have an effect on Knowledge Sharing practice (Al-Zubi, 2011). Also, Al-Zubi's study pointed out that there is a general lack of Knowledge Sharing practice within the construction sector in Jordan and attention should be paid to the factors that affect Knowledge Sharing practice by embedding a culture that enhances KS in the studies' context (particularly by taking into consideration Organisational Culture factors).

Within the context of Libya, some studies have been carried out relating to Organisational Culture and Knowledge Management in some other disciplines. A study carried out by Mohd, Jamaluddin, and Ibrahim (2011) (which aimed to examine the status of a Knowledge Sharing culture in Libyan construction firms that had implemented a Knowledge Management system) found that the Knowledge Sharing culture in the examined firms was very low. They also stated that the current Organisational Culture adopted by the firms' leaders did not support a successful practice of Knowledge Sharing.

In another study, Twati and Gammack (2006) categorized Organisational Culture in Libyan firms as a strong culture which resists organisational change in different areas such as in the

adoption of information communication technology tools, the process of making decisions, communication, employment and professionalism. In addition, a study carried out by Bezweek and Egbu (2010) found that Libyan culture tends towards the use of verbal communication and that such a culture was considered as high context culture where individuals prefer to use few words to communicate their ideas. They categorised Libyan culture as having large power distances. The organisational hierarchy examined in their study demonstrated clear differences between the leaders (decision makers) and other members of staff. From the perspective of Twati and Gammack (2006) general managers in Libyan firms which are owned by the government maintain a culture of a high power distance and collectivism; this is characterised by bureaucracy and a tall hierarchical structure which has a negative influence on the level of communication between firms' members, managers and divisions. Furthermore, Alarbi and Jamaluddin (2011) carried out a study to examine the influences of the culture of Knowledge Sharing on the performance of construction firms in Libya. They found an insufficient level of Knowledge Sharing culture in the studied firms. Hence, they suggested that the target companies should create a better knowledge sharing environment and needed to adopt better technological devices. However, in their study, Alarbi and Jamaluddin (2011) did not put forward any framework that could be adopted by business firms to develop their current practices of Knowledge Sharing.

As mentioned above, the relationship between Organisational Culture and Knowledge Sharing in business firms has been the concern of a considerable number of academic studies in Libya (Al-Alawi et al., 2007; Rai, 2011; Wenger, 2000). Nevertheless, as the literature was reviewed, it was noticeable that there is a lack of studies on this topic in the context of Information Communication Technology (ICT) firms in Arabic countries and, particularly, there is no previous research that has developed a framework to assist ICT firms in establishing good practices in the Knowledge Sharing process.

1.3 Justifications

There are four types of justifications that can justify the conducting of this study. These types of justification can be summarized as follows:

1- Contextual justification. It has been mentioned earlier in section 1.1 that ICT businesses play an important role in the business sector globally as well as in Libya. Santangelo (2000) noticeably named the ICT industry as a leading sector because the number of strategic technological partnerships which have been recorded in the science-based fields

has increased. The ICT industry has played a key role in developing the economies of all the countries that have been studied thus far, when one bears in mind that improving performance in industry depends mainly on applying the right business strategy (Schreyer, 2000). Sassi (2008) stated that, in order to enhance the performance of Libyan ICT firms and improve their possibilities for better competitive advantages, more information sharing between staff within the firms is vital. Accordingly, in order to develop the ICT sector to be the leading sector in terms of directing the country towards a knowledge-based economy, the Libyan Deputy Minister for Communications and Informatics, Mr Mohamad Benrasali, stated in 2014 that Libya aims to build a knowledge-based economy through its ICT sector; therefore, the Libyan ICT sector must modernize in order to be able to compete in world markets. He stated "establishing a regulatory framework will spur growth in ICT development in Libya and International Telecommunication Union (ITU) will take immediate measures to share best practices and to ensure that steps are taken in the right direction" (Acharya, 2014). Taking all the prior issues into consideration, alongside the ideas that were mentioned in section 1.1. (In relation to Libya), the selection of this study was, therefore, contextually driven.

2- Subject-based justification. As was stated in section 1.2., knowledge is one of the most important assets of business firms. In order to gain the best benefits from such knowledge, knowledge sharing is essential. According to Hegazy and Ghorab (2014), although knowledge management supports different processes including knowledge transfer and knowledge capture, knowledge *sharing produces the highest effect on business processes' and employees' benefits*" (Hegazy and Ghorab, 2014, P.184). Thus, knowledge sharing has been seen as a part of knowledge management processes such as knowledge transfer, knowledge exchange and knowledge creation. It has been also seen as an organizational practice. This statement suggests that knowledge sharing can be more applicable in terms of its existence and application in the Libyan ICT firms. In other words, the possibility that knowledge sharing as activities are available to be studied and assessed in the ICT firm in Libya is rather than other knowledge management-based processes because "knowledge sharing refers to a social-relational process through which individuals try to establish a shared understanding about reality and to establish the (potential) ability to transform this understanding into (collaborative) actions to yield performance" (Kumar, 2005, P.4).

Furthermore, Mesmer-Magnus and DeChurch (2009) stressed that the benefits of applying the Knowledge Sharing processes successfully within ICT businesses are varied (e.g. reductions in production costs, enhancement of completion rates, better team performance and innovation capabilities). Chong (2006) and Ramachandran, Chong, and Lin (2008) added that other benefits can be gained by implementing Knowledge Sharing processes such as increased productivity and competitiveness, an increase in the decision-making processes, increased responsiveness and innovation, enhanced quality of services and products, enhanced learning curves, increased employee retention, flexibility and cost efficiency.

3- Subject-contextual justification. Someone might ask why focus on KS in ICT sector? Or in another words, what is interesting about examining Knowledge Sharing and Organisational Culture within ICT businesses?

Swan, Newell, Scarbrough, and Hislop (1999) have argued that many ICT business firms fail to improve their performance and competitive position after applying Knowledge Sharing processes because the embedded Organisational Culture did not accept the changes that the Knowledge Sharing processes brought to the organization. Tong, Tak, and Wong (2015) saw that an appropriate Organisational Culture should be embedded in ICT firms to drive Knowledge Sharing in order to increase competitive advantage and stability. Sharing and managing knowledge was looked at by Davenport (2005) who noted that research studies within ICT firms are still limited. Issa and Haddad (2008); Tong et al. (2015); Yang (2007) stated that, although Knowledge Sharing is strongly related to Organisational Culture, only a limited number of studies have been carried out to examine the type of connections between both concepts within ICT firms.

4- Personal motivation. This motivation relates to the educational and professional background of the researcher who has worked as a lecturer in a computer science department which has made her very much aware of the possible challenges to businesses not only in Libya but also worldwide. In addition, being a lecturer allowed her to gain a scholarship to complete her PhD in the area of computer engineering which involves not only machines and technology but also the human aspects within this sector. Her interest has been focused more towards the human aspects because, as she reviewed the literature, she found that an ICT business requires a special type of skill sets because of the rapid change in this industry day by day. Knowledge and experience are key factors that allow staff to provide good service and allow a Firm to be able to survive in an unmerciful

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market place (OECD, 2010; Tong et al., 2015). Therefore, these personal concerns helped in the selection of this research area.

Thus, in order to summarize what have been presented so far, a main factor of this study is that ICT businesses globally, and in Libya particularly, are experiencing regular and rapid changes which are very much related to the value of knowledge and how to benefit from this knowledge value. Furthermore, after the 2011 revolution, the Libyan government determined to make the ICT business a leading sector in the drive towards a knowledge economy whereby knowledge is the main asset of ICT business firms. As the literature was reviewed, a relationship between competitive advantage, knowledge sharing and organisational culture was identified. Such a relationship has not been investigated before in the Libyan context, hence, it appears vital to examine the relationship between knowledge sharing and organisational culture and improve the practice of knowledge sharing.

1.4 Research Aim and Objectives

This study aims to "*investigate the relationship between Organisational Culture and Knowledge Sharing processes in ICT firms in Libya by developing a framework to enhance Knowledge Sharing practices*".

In order to meet this aim, the following objectives were identified.

Objectives:

- To evaluate the issues relating to ICT, Organisational Culture and Knowledge Sharing concepts in general and also with particular reference to Libya;
- To investigate the concepts and elements of Organisational Culture in ICT firms in Libya;
- To investigate the concepts and elements of Knowledge Sharing within ICT firms in Libya;
- To evaluate the relationship between the elements of Organisational Culture and elements of Knowledge Sharing in ICT firms in Libya;
- To develop a framework that assists ICT firms in undertaking Knowledge Sharing processes.

1.5 Research Methodology

In terms of philosophical stances, this research tends more towards the interpretivism assumption. The investigation of this research is based on a phenomenon that is rooted in live-work experience. This suggests that knowledge is socially constructed through the interpretations of the major participants in the practices of Knowledge Sharing. Thus the interpretivism epistemological position is adopted to gain an in-depth understanding of social reality through the study of people's interpretations and attitudes. Furthermore, a multiple-case study design has been selected in this research; this research design allows the researcher to increase the validity and reliability of the study, see section 3.4.5.2. Three different data collection methods have been used in this study. These were a questionnaire, semi-structured interviews and document analysis. The idea behind adopting such methods is based on the fact that the questionnaire was designed to examine the existence of the studied concepts (Organisational Culture and Knowledge Sharing) in the studied context, and also to investigate, to some extent, the possible relationship between those concepts. Following this, and based on the questionnaire's findings, the semi-structured interview questions were developed. The interview questions were designed to extend the understanding of the meanings of Organisational Culture and Knowledge Sharing and, at the same time, to learn about the possible factors that might influence the relationship between the studied concepts. The outcomes from the document analysis were used to clarify issues relating to the establishment of the firms and there was also an analysis of written documents that demonstrated some elements of the culture including procedures and services' elements.

1.6 Contribution by this Study to Knowledge

When a researcher wishes to assess the contributions of his/her PhD to knowledge, she or he needs to identify what new inputs the research would add to knowledge. According to Baptista et al. (2015), 'contribution to knowledge' means that the provided knowledge within PhD research should be meaningful and the relationship between originality, creativity and innovation should be articulated.

1.6.1. Originality of the study

The originality of this study can be seen from different angles, namely the originality of the studied topic, the originality of the studied context and the originality of the expected PhD outputs. Firstly, this study makes significant contributions to the current literature on

Organisational Culture and Knowledge Sharing in different ways. Although the connection between Knowledge Sharing and Organisational Culture in ICT businesses has been the concern of many studies, there has not been, up until now, a clear theoretically-based framework that has put forward the elements of each concept and how those elements interact (output).

Furthermore, in this study, the researcher was not only able to identify the elements of Knowledge Sharing and the aspects of Organisational Culture, but she was also able to produce a theoretically-based framework (see Figure 2-5). Secondly, this study was conducted in Libya, an Arabic country, therefore, Arabic literature relating to ICT, Organisational Culture and Knowledge Sharing was reviewed and important information from this review was presented in the different parts of this study including in the final empirically-based framework. Finally, the background information provided for each case and presented in chapter four (section 4.2) is considered as an important contribution to the literature on ICT because it provides valuable information about each case in terms of establishment elements and cultural elements which have not been presented in academic format before. It is important also to mention that the future directions suggested in chapter 6 propose the publishing of related papers on Organisational Culture, Knowledge Sharing and ICT businesses in an Arabic format and this is expected to be one of the most important contributions.

From another perspective, the business of ICT can be seen as a main element in achieving not only better communication and networking and enhancing people's productivity but also as a main key to achieving further development in other sectors. ITU Secretary-General, Dr. Touré stated that "Today almost everyone on Earth lives within reach of a mobile cellular network and nearly 3 billion people are online; we must now ensure that everyone also has access to broadband connectivity. We are here to pave the way for the future and set the road map for sustainable development in the post-2015 era." (ITU, 2014).Therefore, the output of this research will not only contribute to the development of the ICT sector itself but also to the general future development of other sectors. Thus, the originality of this research will become more apparent when the relationship between organizational culture and knowledge sharing in ICT business is understood together with an understanding as to how such a relationship could be influenced by bordering sectors.

1.6.2. Creativity and innovation within the study.

The researcher believes that innovation and creativity is mainly related to the empirically-based practices in a PhD thesis when data collection and findings are undertaken. In terms of data collection, the issues concerning Organisational Culture and Knowledge Sharing were introduced to ICT professionals throughout this research. The researcher designed a questionnaire which presented definitions (see Appendix 1) which allowed the participants to gain some knowledge about these topics thus providing a gateway to learning. This can be seen as an empirical contribution because it came during the empirical investigation. In addition, there are not many research studies which have been carried out in this important subject matter area. The researcher, in this study, was able to develop a new understanding of the way in which to conduct a research study in this important area and this new vision can pave the way for those who conducting research in a similar context. Finally, the empirical outcomes of this study appear to have wider implications (which are presented in section 6.4). At the same time, the empirical values are also related to the empirically-based framework and its related components.

This contribution can be shown by the extent of knowledge provided to explain the relationship not only between Knowledge Sharing and Organisational Culture but also the relationships between the actors involved in the processes and the operations required for implementing Knowledge Sharing. For example, when this study started, the researcher, in order to complete her questionnaire, consulted the literature in order to generate the close ended questions (e.g. on the level of Knowledge Sharing). The literature suggested four different levels (organisational level, departmental level, unit level and individual level (see section 2.6 for more information)) and, as the research developed, the researcher was able to suggest a theoretical framework (based on the theory) to demonstrate the level of Knowledge Sharing. Once this study reached its end, the researcher was able to identify different levels that were responsible for maintaining the relationship between Knowledge Sharing and Organisational Culture; these levels are represented by the actors (see Figure 5-5). Therefore, it is suggested that the framework is called a STEP BY STEP Knowledge Sharing framework because different levels of actions with different actors are involved which require increasing communication and collaboration. In addition, the original contributions of this study are supported by some publications.

1.7   Scope and Limitations

In section 1.3 a full justification of the topic, context and the focus was provided in order to explain the position of the research. In this section however, the limitations and the scope of the research will be addressed. Although this research has the possibility of achieving many theoretical and practical objectives which will help gain a better understanding of the relationship between Organisational Culture and Knowledge Sharing (which, in turn, will help in improving the practice of Knowledge Sharing activities in ICT firms), the findings which have emerged reflect the state of the relationship between Organisational Culture and Knowledge Sharing in ICT firms in Libya; thus the generalisability of any interpretations gained from the research is limited due to the subjective nature of this research. Any interpretations that are comprehended are likely to relate mainly to the socio-cultural factors that prevail in the Libyan ICT sector (such as the Libyan cultural understanding of the meaning of sharing and Organisational Culture).

1.8   Structure of the Thesis

Chapter One introduces the research background, research rationale, the justifications for the choice of sector and the studied concepts' selection. It also includes the context of this study, the aim and objectives, the research methodology, and its proposed contribution to knowledge. It also presents the scope and limitations of this research.

Chapter Two presents the literature review that provides an extensive background to the studied concepts, namely Information and Communication Technology, Knowledge, Knowledge Management and Knowledge Sharing, and Organisational Culture and their related issues. The relationship between Organisational Culture and Knowledge Sharing including the theory-based framework is presented and discussed.

Chapter Three provides the methodological understanding and the choices selected and employed in this research, in addition to a detailed description of the use of the case study and the triangulation methods (questionnaire, semi-structured interviews and document analysis) utilised to collect the required data in order to support the development of the framework.

Chapter Four provides details on the data analysis process starting with a summary of the background of each of the studied firms and the extracted data from the questionnaire. The analysis of the data gained from the close-ended and open-ended questions in the questionnaire are presented. Furthermore, the interviews' findings are presented including the themes and the sub-themes. These are discussed alongside supporting quotes from the interviewees who are working in the selected case firms.

Chapter Five compares and discusses the findings summarised in chapter four with the current literature. This chapter also includes the first version of the STEP BY STEP framework for Knowledge Sharing. Furthermore, presents the findings from the framework's validation together with the modified framework.

Chapter Six presents the main conclusion and recommendations of this research and the research journey. There is a discussion as to how the objectives and the aim have been achieved, and the implication of this study. Also, suggestions for further study are given. Figure 1-1 shows the structure of the thesis and the sequence of this research.

Chapter 1. Introduction
Research background;
Research rationale and justifications;
Research aim, and objectives;
Research methodology;
The contribution to knowledge;
Scope and limitations; Structure of the thesis.

Research undertaken in order to fulfil the research aim and objectives

Experience and Lit-Review Part

Chapter 2. Literature review
Background of the studied concepts namely,
Information and Communication Technology;
Knowledge, Knowledge Management and
Knowledge Sharing;
Organizational Culture and related issues.
The relationship between Organizational Culture
and Knowledge Sharing;
Theoretical basis framework.

Theoretical Part

Chapter 3. Research Methodology
Methodological choices;
Case study;
Research design and process;
Triangulation methods:
   Questionnaire
   Semi-structured interviews
   Documents analysis
The quality of research.

Theoretical and Imparical Part

Chapter 4. Findings
Cases' background and analysis;
Questionnaire findings (close-ended and
open-ended questions);
Semi-structured interviews
(themes, sub-themes-1, and sub-themes-2)
Summary of the findings (Triangulation
method)

Imparical Part

Chapter 5. Discussion
Compare and discuss the findings with
the literature review;
Present the first draft of STEP BY
STEP Framework for Knowledge
Sharing;
Validation of the framework;
Modified framework.

Practical and Theoretical Part

Chapter 6. Conclusion
The main conclusion and
recommendations;
The research journey;
Achievement of research objectives;
Implication of this study;
Further study .

Practical and Experience Part

Future study

Addressed research aim and objectives

Figure 1-1: The sequence of the research

Chapter 2.   Literature Review

2.1 Introduction

In order to provide the theoretical basis of the studied phenomenon and linked issues, it has noticed that completing a literature review chapter has become common practice among PhD research studies. According to Boote and Beile (2005), the aim of the literature review is to describe, summarize, evaluate and clarify the literature relevant to the studied issues. Boote and Beile (2005) stated that a researcher is not expected to review a large number of studies relating to the focus of the research; he or she is expected to select the crucial literature that will help him or her determine the nature of the research. A literature review should also be able to articulate and enhance the understanding as regards the possible relationships between different concepts and phenomena investigated by the researcher.

In the light of Boote and Beile (2005)'s understanding of the meaning and values of a literature review, the researcher created this chapter with aim of providing the readers with considerable background information on the concepts involved in this research, namely Information and Communication Technology (ICT) businesses mainly in Libya, knowledge and Knowledge Sharing and Organisational Culture. This study (as mentioned in section 1.7 on scope and limitations) is not about understanding the knowledge needed or created in ICT firms specifically, but is about the knowledge sharing process and application. Understanding the knowledge needed in ICT firms should be the concern of further studies (see the conclusion chapter, section 6.5).

This chapter will start by presenting information on the different meanings of ICT as a concept and then on the chronological development of ICT as in the form of ICT businesses. Specific attention will be paid to such businesses' establishment and development in the Arabic region, mainly in Libya. Following this, the classical theoretical bases about the meaning and the development of knowledge (including its importance and value to business firms) will be provided. The issues relating to the creation and the development of Knowledge Management will be highlighted but at a lesser level because the focus of this study is on Knowledge Sharing itself rather than on Knowledge Management. Specific attention will be paid to the development of Knowledge Sharing and to the most current applications and theories as well as to knowledge sharing advantages and issues in ICT firms.

A following section will present the literature relating to the concept of Organisational Culture and its elements. The last section of this chapter will present the outcomes of the studies that examine the relationship between Organisational Culture and Knowledge Sharing and the influencing factors that shape this possible relationship. It will also present a proposal for a theoretical framework to establish the relationship between Organisational Culture and Knowledge Sharing. Specific attention will be paid to the studies that examine this relationship in the Information and Communication Technology (ICT) sector.

2.2 Information and Communication Technology (ICT)

In this section of the literature review, the researcher intends to enhance the readers' awareness of the different meanings of ICT as a concept and then will present, in chronological order, the development of ICT businesses worldwide. This will be followed by addressing some issues relating to ICT business contributions and performance. Subsequently, the development of ICT businesses in the Arabic region (namely in Libya) will be presented.

2.2.1 Information and Communication Technology (ICT) Concepts

Before going any further in presenting information related to the meanings of ICT and the development of ICT businesses, it is worthwhile to indicate that the main motivation for creating this section is to clarify the different understandings and use of the term of ICT in the literature. Subsequently, the focus will shift to the ICT within the business world and then on to the development of ICT businesses.

Information and Communication Technology (ICT) is an umbrella term that includes various IT tools, devices, services, applications, skills, businesses, activities and education which aim to serve the purpose of communicating different formats and types of information. According to the World Youth Report (Report, 2004), ICT is a complicated term which is linked to different issues and subjects. It can be seen as a concept which is related to the new media culture. According to Beck (2002), the complexity of the term ICT is very much related to the complexity of the environment in which the term of ICT was created. Rangan and Sengul (2009) saw ICT as facilitating and enabling the transfer of knowledge around the world; it also allows the integration of multinational and transnational corporations. Freeman and Hasnaoui (2010) stated that the use of ICT allows firms to transfer massive amounts of information in a very short period of time and, at the same time; it enhances development and

communication across great distances. So, ICT is not only a tool or a facility that enhances the transformation of information and knowledge, it also has become a major aspect within humankind's lifestyle which enables better communication and development.

From the perspective of Kellner (2000), the definitions of ICT are all related to the appearance of the information or informational age (the term 'information or informational age' can be interchanged with the term technoculture or technocapitalism, global media culture, or simply globalization). In a simple search for Information and Communication Technology on Google 105,000,000 results appeared with a long list of suggestions to related topics (see Figure 2-1) which indicates vividly the complexity of the issues relating to ICT as a term.
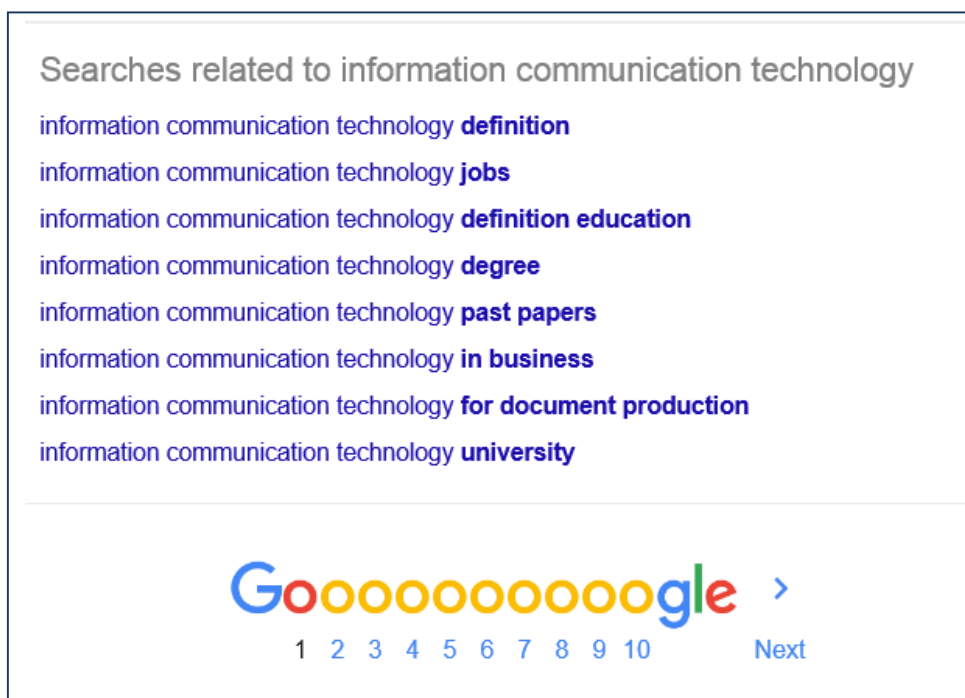
Figure 2-1: Possible related topics to ICT as suggested by a simple Google search (The researcher, 2016

In terms of understanding the meanings of ICT, it can be stated that ICT is a newly established term (established after the 1960s) which relates to IT services (such as mobile and telecommunication services), ICT skills (such as digital and computer skills), ICT tools (including education and teaching tools such as Blackboard) and to the ICT sector which serves the business of ICT services, tools and applications (Dutta, Geiger, & Lanvin, 2015; Todhunter, 2015). In other words, "*ICTs are a complex and varied set of goods, applications and services used for producing, distributing, processing, transforming information – [including] telecoms, TV and radio broadcasting, hardware and software, computer services*

and electronic media" (Marcelle, 2000, p. 2). In terms of ICT businesses, according to Gonzales, Jensen, Kim, and Nordås (2012), ICT firms can be divided into the following sub-sector categories based on the services they provide:

- Components/hardware firms: conducting mainly activities relating to the design, manufacture, assembly and/or sale of ICT hardware (for computers, telephones, network devices, etc.).
- Software products' firms: conducting mainly activities relating to the creation and sale of relatively standardized software applications and tools which may be designed to be used by firms operating in specific sectors of the economy ("vertical" applications), by a wide variety of firms ("horizontal" applications), or by individuals.
- ICT-enabled services (ITES) firms: providing services which are not necessarily directly related to ICT services and products (such as "business processes' outsourcing") but whose delivery to clients is enabled by telecommunication and computer networks (Gonzales et al., 2012).

The Global Information Technology Report that was published in 2015 by Dutta et al. (2015) stressed that ICT nations such as Estonia have started to build up their competitiveness based on ICT products and services. The fast development of ICTs has influenced the ways that people perform their jobs. ICT has become a major factor in enabling better business performance, for example, farmers in developing countries have benefited from new ICT services such as real-time information about commodity prices and weather, and from the easier system of money transfers.

In an interesting way, in an attempt to clarify the confusion about the meaning of ICT and its related concepts and issues, a report on the development of ICT United Nations (UN) published by Philippa (2003) stated that, it is, maybe, more convent to indicate the issues which cannot be identified as ICTs; for example, ICT cannot be an answer for providing development and cannot replace real-world processes. Bureaucracy and dictatorship are reasons for a lack of development. ICTs would not make the functions of the governments faster and easier.

2.2.2 The Development of ICT Businesses

It has been stated by Cukier (1998) that, although it was claimed that the ICT revolution started with globalization wherein information and knowledge became main resources for business firms, the use of some ICT tools (such as the Internet, for example) is very much related to the development of an information exchange.

Cukier (1998, p. 118) stated that "*the voice telecoms network is founded upon the principle of universal connectivity...the Internet, however, lacks a specific definition and it is uncertain whether the telephony model applies to it*". This statement indicates that the business of ICT can be seen also as a part of the development of the communication sector rather than merely the development of the IT sector or it can result from the integration and the development of both IT and communication.

From another perspective, and according to the report published by Philippa (2003), the development of the ICT sector can be related to the development of other areas within a country including policy making, governmental support and politics. The report evidences this opinion by insisting that the digital gap between countries is not only in regard to the development and adoption of ICT tools and services, but also is in regard to access and pricing policies, as well as to the education provided in order to enhance citizens' digital skills.

According to Sanou (2015) (which is the official source for global ICT statistics), the users of ICT tools and services have increased rapidly in the last 15 years. The director of the ITU Telecommunication Development Bureau, stated that in "*2015 there are more than 7 billion mobile cellular subscriptions worldwide, up from less than 1 billion in 2000. Globally 3.2 billion people are using the Internet of which 2 billion are from developing countries. ICTs will play an even more significant role in the post 2015 development agenda and in achieving future sustainable development goals as the world moves faster and faster towards a digital society*" (Sanou, 2015, p. 1).

On the other hand, the Global Information Technology Report prepared by Dutta et al. (2015) indicated that, although the ICT revolution is well under way in some parts of the world, it has not reached many other parts of the world, even within some of the most developed countries. People's age, a lack of digital skills, a lack of access to the services or isolation are all major issues which have an influence on the development of economies and societies. Thus, the claim that the ICT revolution is behind every door can appear to be a big dream with considerable limitations and obstacles.

2.2.3 The Contributions of ICT Businesses to General Business Development

Looking beyond the complexity of the definition/term of ICT, ICT has started to play a central role in a large number of people's lives. It has been argued that the ICT sector is one of the most high-tech industries worldwide due to its great contribution to global development. Schreyer (2000) argued that ICT business firms provide a significant contribution to economic growth and have an important role in providing jobs for thousands and thousands of employees and that they are able to support the development of multi-factor productivity. Santangelo (2000) noticeably named the ICT industry as the leading sector because of the number of strategic technological partnerships which have been recorded in the science based fields. Colecchia and Schreyer (2001) argued that the ICT industry has contributed between 0.2% and 0.5% per year to economic growth depending on the country (bearing in mind that their study covered the output growth within Australia, Canada, Finland, France, Germany, Italy, Japan, the United Kingdom and the United States). Moreover, during the second half of the 1990s, this contribution increased from 0.3% to 0.9 % per year. Regardless of the variations between countries, the ICT industry plays a key role in developing the economies of all the studied countries (bearing in mind that improving performance in the industry depends mainly on applying the right business strategy). Furthermore, it has been considered that ICT influence positivity on compactness, productivity, and performance in business development (Mohaghegh, 2016).

2.2.4 ICT Firms' Performances

According to Pemberton and Stonehouse (2000), ICT firms' performance relies heavily on experts' productivity and innovation. Furthermore, Al Mamun and Wickremasinghe (2014) emphasised that the development of ICT adoption positively impact on a labour productivity. Drucker (1994) rightfully predicted that knowledge has become a key economic resource and a dominant source of competitive advantage. In addition, Choy and Suk (2005) have stressed that ICT firms, just like other firms, have been influenced by globalization and the growth of ICT implementation. They argued that most ICT firms have moved, since the early 1990s, from an information age to a knowledge age which requires them to change their strategies and shift their focus to the value of intellectual capital rather than focusing on common resources to acquire better performance and stability. The question as to whether ICT firms are required to improve their performances in the age of knowledge can be found in the report

published by the iSociety (2012) which was entitled "Technology is not Working at Work" which stressed that all types of firms should avoid the low-tech equilibrium via the statement: "Suppliers and buyers should encourage each other to think organisational ly and culturally, not just technologically, when talking about ICT" which implicitly includes ICT firms. Furthermore, a study conducted by Ilgaz, Mazman, and Altun (2015) indicated that ICT tools utilised for seeking information rather than exchange or share it. Inkinen, Kianto, and Vanhala (2015); Shehata (2015) stressed that, in order to avoid disappointments in the facilitating of their knowledge, ICT firms should manage their experts' knowledge in order to be able to provide better performance.

In addition, Chesbrough and Appleyard (2007) and Bigliardi, Dormio, and Galati (2012) argued that, nowadays, it is widely recognized that companies, regardless of the industry to which they belong, in order to increase the perceived value of their services as well as expanding their competitive areas, are forced to manage their knowledge and enhance innovation and this will involve business strategy.

2.2.5 The Development of ICT Businesses in the Arabic Region

InfoDev (2008) stated that the development of a well-established ICT industry in developing countries is usually associated with well-built government initiatives based on recognition of the sector as being of special strategic importance. The government-backed and -funded development of large technology parks oriented towards software and other ICT-related areas, with substantial representation by domestic businesses, has been vital in the development of ICT sectors in large and small Asian countries.

According to a report published by the UN Philippa (2003), the establishment of the ICT sector in the Arabic region goes back to late 1990s/early 2000s. The report added that some Arabic countries such as the Arab Gulf countries started the development of ICT businesses earlier than some others (such as Sudan) which helped them to enhance the services relating to ICT (such as connectivity) faster than others. It was stated in the same report that "*Four countries (Bahrain, Jordan, Sudan and UAE) do better; four countries' performance declined over time (Algeria, Djibouti, Kuwait and the Syrian Arab Republic). Overall, the contribution of Arab countries is therefore to maintain the status quo, with no major contributions to reducing inequality*" (Philippa, 2003, p. 33).

According to Dutta and Coury (2012), the most critical challenges that Arabic countries are facing in terms of ICT development and usage are related to the political and regulatory environment. The lack of records in legal and regulatory issues, weak ICT strategies, continual R&D shortages, excessive reliance on foreign technology, and ongoing weaknesses in ICT implementation will all keep Arabic countries regularly lagging behind in their readiness for a networked future. The development of ICT services and businesses has changed the face of many Arabic countries. It was stated in The Global Information Technology Report by Dutta et al. (2015, p. 34) that "*The Arab Spring uprising, aided by ICTs, demonstrates the growing impact of ICTs on political action and activity*". Similarity, Ibrahim, Al-Nasrawi, El-Zaart, and Adams (2015) pointed that in general countries and particular in Arabic region, ICTs plays a vital role on improving the interaction and communication between the government and citizens. Therefore, these statements indicate the level of influence that ICT services and tools have within the Arab region.

2.2.6   ICT Businesses in Libya

Libya is an Arabic country which is located in northern Africa on the southern coast of the Mediterranean Sea. Before the 1990s the government dominated the market and controlled the economy but after the 1990s new trends toward socio-economic policies started to play a role in terms of managing, controlling and planning different aspects of the economy. Thorne (2010) stated that socio-economic policies in Libya have not been successfully deployed due to a lack of diversification in economic activities as Libya comes last in a list of countries in the region which have a diverse economy. Porter (2007) reported that nationalization (which controlled all sectors including the ICT sector) reduced employees' motivation to innovate as people were allocated jobs by the government which led to critical problems in terms of over staffing, a lack of unproductive decision-making and a dependency economy. Böhmer (2010) stated that, at the beginning of 2000, the Libyan government inclined towards a more market-based economy with the aim of enhancing the efficiency of its substantial public sector. Privatisation, which has been undertaken with the aim of enhancing organisational efficiency and improving the general performance of the economy, was introduced to the ICT sector but not to the food products' sector and the transportation sector; they are still closed to foreign investments (Böhmer, 2010). Sassi (2008) found that the existing relation between the authority and the government and the authority and the telecommunication companies was not motivating any private sector to invest in the Libyan telecommunication market. Sassi (2008) also indicated that few problems monopoly over the ICT Libyan's market those were:

low rates in the fixed line and internet market, high services' prices, low quality services, lack of clear policies, and lack of job's vacancies.

Nevertheless, following the political and social conflict which led to the death of Al Gadhafi in 2011, the new government is trying to take bold steps towards improving the current situation of the ICT sector. According to Acharya (2014) (the International Telecommunications Union (ITU) press release published in 2014), Libyan officials have approached that organization for support in establishing a regulatory framework that would encourage investment in the ICT sector. The Deputy Minister for Communications and Informatics, Mohamad Benrasali, who headed the delegation, insisted that Libyan ICT sector is heading towards a knowledge-based economy in order to lead the other sectors in the country toward E-Libya initiatives (Acharya, 2014).

Having discussed the meanings of ICT and then followed by the development of ICT businesses globally. After that the ICT business contributions and performance have been covered. Then, the development of ICT businesses in the Arabic region (namely in Libya) has been provided. The next section investigates the development of Knowledge and Knowledge Management.

2.3 The Concepts of Knowledge and the Development of Knowledge Management

2.3.1 The Development of the Concepts of Knowledge

Knowledge is a complex term that has been interpreted and understood differently by scholars in the literature and which has caused much debate regarding its definition. For example, while Gammelgaard and Ritter (2004) and Xiong and Deng (2008) defined knowledge as mixture of value, information, people's experiences and perspectives and contextual information, Tsoukas and Vladimirou (2001, p. 976) defined it as *"the judgment of the significance of events and items which come from a particular context and/or theory"*. Furthermore, the value of knowledge has changed, with the time, as the business environment changed. Before the era of globalization, land, labour and capital were recognized as the main products but after globalization and with the acknowledgement of the value of knowledge as a primary resource, the classical factors of production have become secondary to knowledge. In this sense, knowledge has been identified as more relevant to competitive business rather

than capital, labour or land and considered as a very crucial factor affecting a firm's capacity to perform better in today's fast changing and non-linear business environment (Pathirage, Amaratunga, & Haigh, 2004).

In terms of knowledge types, Polanyi (1958) and Nonaka (1994) listed two types of knowledge: tacit knowledge which is deeply rooted in action, commitment and involvement within a specific context and explicit knowledge which can refer to codified knowledge that can be transmitted in formal, systematic and contextual language. Nonaka and Takeuchi (1995b) classified tacit knowledge as subjective and as referring to individual experience which is hard to communicate, while explicit knowledge is codified as objective and is easy to communicate. Accordingly, understanding the distinction between tacit and explicit knowledge is vital in order to understand the meaning of knowledge clearly (Polanyi, 1958; Nonaka & Takeuchi, 1995).

In a report prepared for the London Chamber of Commerce and Industry, Commercial Education Trust by Wright, Brinkley, and Clayton (2010), knowledge is considered as a major aspect of modern intensive industries. Wright et al. (2010) used terms such as knowledge-based economy, or knowledge-based service industries to demonstrate the usage of knowledge in this current era. Furthermore, they stated that *"over the past 30 years advanced economies have become increasingly hungry for skills. New technologies have combined with intellectual and knowledge assets – the 'intangibles' of research, design, development, creativity, education, science, brand equity and human capital to transform the UK economy"* (p.6). This indicates that knowledge has become not only a major asset, but also a principle value to develop the economy of any country (Bryman & Bell, 2003, pp. 6-11).

Additionally, tacit knowledge can be identified as a main basis of all knowledge types as well as being an invisible asset that can be created based on individuals' skills (Polanyi, 1962). In addition, O'dell and Grayson (1998, p. 3) stated that tacit knowledge is that which can be found in the heads of employees, the experience of customers and the memories of past vendors. Sveiby (1997) linked the meaning of knowledge to its capacity to act. In the same vein, Sveiby (1997) was able to identify a type of relationship between knowledge and individuals' behaviour which could indicate that powerful knowledge is a factor which allows people to take actions and to make decision. Hunt (2003) linked the meanings of knowledge

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and people's capability to self-assess (whether they do or do not possess some specific knowledge).

Hence, Hunt (2003) suggested that, although individuals absorb a significant amount of knowledge as a result of learning, knowledge remains a hidden power until a person uses the knowledge to do something – to perform some task, to understand something, to make a decision or to solve a problem. In addition, explicit knowledge is knowledge that can be easily communicated to other people as information and facts (Sveiby, 1997, p.35). Furthermore, Mohanty, Panda, Karelia, and Issar (2006) identified a new type of knowledge which is implicit knowledge which exists without being codified. However, Pathirage, Seneviratne, Amaratunga, and Haigh (2014, p. 7) suggested implicit knowledge as "*that body of knowledge which exists without being stated*".

On the other hand, Smith (2001) stated that explicit knowledge is knowledge which has been placed in written language forms to document "know-why". This knowledge is very important to create required understanding; therefore, workers who lack adequate education and training, or explicit knowledge, struggle to keep up in the job market. (p.311). According to Tatham and Spens (2011), explicit knowledge is that which is identified in detail and is defined as codified or formal knowledge, such as knowledge recorded in books, pictures, or in recording clips. In the same vein, Egbu (2013) suggested that explicit knowledge can be defined as systematic, formal, and easy to communicate so that it can explained or illustrated in a clear grammatical language.

Interestingly, the term explicit has been used on many occasions in defining KM. For example, McKenna (1997) stated that a Knowledge Management system is one that provides the user with the explicit information required, in exactly the form required, at precisely the time the user needs it. McKenna (1997) reflected the USA perspective of KM and used explicit to refer to information but not to knowledge. However, the Business Dictionary Online (Business-Dictionary, 2015) defined KM from the USA perspective as the *"strategies and processes designed to identify, capture, structure, value, leverage, and share an organization's intellectual assets to enhance its performance and competitiveness. It is based on two critical activities: (1) capture and documentation of individuals' explicit and tacit knowledge, and (2) its dissemination within the organization"* and explicit here appears as a type of knowledge which needs processes and strategies in order to be used. Serrat (2009)

used the term explicit as an element to form the definition of KM as he defined KM is an explicit and systematic management of processes enabling vital individual and collective knowledge resources to be identified, created, stored, shared, and used for benefit. He stated that its practical expression is the fusion of information management and organisational learning. The term explicit is used similarly by Skyrme (2003) in United Kingdom. He saw KM as the explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. In Japan, Uriarte (2008) understood explicit knowledge as being a part of the process to complete the Knowledge Management conversion of tacit knowledge into explicit knowledge and then sharing it within an organization (2008, p.13). Girard and Girard (2015) found that the term explicit was used many times in defining KM worldwide. He added that it seems there is a widely agreement with regard to the definition of KM.

Accordingly, due to globalisation and the shift from an information era to a knowledge era (which global markets and business firms have experienced since the 1990s), the value of knowledge to a business firm has increased rapidly (Nonaka, 1994). Knowledge has become a key asset for business firms and has paved the way for new theories such as KM. Ambrosini and Bowman (2001) and Felin and Hesterly (2007) indicated that knowledge is the key driver of a firm's viability. Maybe this perspective can be supported by the fact that modern businesses consider the creation of unique and original knowledge to be a key strategic asset resource; therefore, KS can be seen as a main element of organisational culture rather than as one of many KM activities. See section 2.4 for more information on the differences between KS as part of KM strategy and KS as organizational practice.

2.3.2 Knowledge Management in Business

It is important to mention that the purpose of this study is not to focus only on KS as part of KM practice; hence, the issue of KM will not be presented in much detail in order to reduce the level of complexity in this chapter.

According to Tsoukas (1996), in addition to globalisation, the evolvement of the use of information and communication technologies to perform business functions has made modern firms complex knowledge domains where both tacit and explicit knowledge exist throughout the firm rather than residing in a single brain or text. Liebowitz and Suen (2000) stressed that the most valuable organisational resource is the knowledge that exists in the minds of a firm's

members. Quinn, Anderson, and Finkelstein (1996) argued that if KM is a critical determinant of a firm's success, then it is very significant that an efficient knowledge-intensive process must be established to meet the demands of improving a firm's performance. According to Allee (2000), KM is the systematic, explicit, and clear management of knowledge-related activities, practices, policies and programmes within a firm.

Sveiby (2001) stated there is no specific definition that provides an understanding of KM but there are two major tracks to practicing KM; these are the information track and the people track. The information track sees knowledge management as information management. Therefore, knowledge and information are the same because both are subject to processes in management information systems. The people track, on the other hand, considers that knowledge expresses the operations that are reflected by complex, dynamic, and somewhat changing skills. In this track sharing is one of the major activities of KM (Sveiby, 2001).

Many researchers such as Davenport and Prusak (1998a) and Ford (2001) saw that the process of knowledge management can be varied but they emphasised that knowledge sharing is one of the most common processes that business firms apply as part of their KM strategy. McInerney and Koenig (2011) Linked the success of KM practices to decision making and emphasised that KM can be seen as a series of processes and not necessarily a manipulation of things. In their paper, McInerney and Koenig (2011) highlighted the use of social networking and commonly adopted web applications to increase the value of social capital and to connect practitioners with clients and colleagues.

Additionally, Liebowitz and Suen (2000) stated that decision makers in successful firms and nations are paving the way to creating and generating value from knowledge assets within their firms because knowledge and learning are essential to obtaining and sustaining a competitive advantage in today's business environment. They added that KM can be the major key in organizing different activities within the firms to increase their stability and performance. Rowley (2000) stated that only those firms which can identify, value, create and evolve their knowledge management strategy successfully will be able to perform better in the global information society. Marr, Gupta, Pike, and Roos (2003) believed that the only reason that prevents business firms from adopting KM is a lack of understanding of the KM benefits, including the possibility to enhance the productivity.

Sabri (2005, p. 126) pointed that *knowledge management is a complex discipline, and expectations need to be set correctly when claiming its benefits for the organization. Changes in Arab firms cannot be made very quickly, because they involve people's beliefs, and, hence, expecting rapid changes becomes unrealistic. Therefore, it is reasonable for Arab managers to regard time as an issue and work on it*".

Two UN reports on Human Development in Arab Countries in 2002 and 2003 in (Sabri, 2005, p. 117) stated that the current state of "knowledge" is one of the principal barriers against development in the Arab world. The reports stated that *"Arab countries still progress slowly towards absorbing knowledge and generating it in an empowering manner that will enable them to catch up with knowledge countries. They also suffer from the problem of belated development"*.

The findings in a study conducted by Skok and Tahir (2010), that sought to identify the major issues and challenges which occur as a result of Arabic culture demonstrated that Western style KM practices should be applied carefully in non-Western contexts. They insisted that the major barriers to knowledge sharing in Arabic firms are the staff themselves together with their social and cultural beliefs. Mohamed, Carrillo, O'Sullivan, and Ribière (2008) agreed with this belief by stating that, in order to practice KM in the Arabic firms, a complex mix of frameworks may be necessary, due to the large cultural differences between Arabic and Western cultures. Al-Ali (2008) carried out his study in the United Arab Emirates (UAE) and saw that the workers themselves are simply not well trained enough and are unable to make knowledge management practices work effectively. In the same vein and same context Siddique (2012) highlighted that the significant role of KM practices in UAE business firms and it has pointed that top management team, Human resource department, and a supportive cultural environment were the most vital factors that affect the implementation of KM.

Furthermore, Al-Jayyousi (2015) carried out research to develop a platform and a vision for Knowledge Management in the renewable energy sector in the Arab world. Al-Jayyousi (2015, p. 158) found that *"The poor performance of the renewable energy sector and knowledge management in the Arab world is mainly due to the nature of the central governance systems and a lack of harmony between the legal, economic and social frameworks. The framework of human leadership in the world cannot be articulated in the*

context of a nation state, nor can it be limited to this context in isolation from the moral and human responsibilities toward the planet, future generations, and to the world's poor ".

In the Libyan context, Khalifa and Jamaluddin (2012) assessed, in their study, the main factors that affect the implementation of KM in the construction industry in Libya. They identified a few challenges which can influence knowledge sharing and the implementation of KM such as the steadily increasing speed with which new technologies are evolving. In addition, and based on the findings of their study, they created a model of key success factors and they stated that top management support and knowledge sharing are significant predictors of knowledge management implementation.

2.3.3 Knowledge Management in ICT businesses

As a result of globalization many ICT business firms have started to realize the value of KM to manage their intellectual values. Regardless of the sad stories told of many firms which conceive KM to be an ICT tool that enables learning within firms and more sharing, KM in practice has become one of the most powerful business strategies to achieve better productivity and higher competitive advantage (Choy & Suk, 2005). Choi (2000) stated that knowledge and its management has been bonded to organisational performance and strategy dating back in 1982. Nevertheless, the "bond" between KM and organisational performance has become even more critical as business firms move into the era of a k-economy.

Many scholars such as Bassi (1997); Chin Wei, Siong Choy, and Yew (2009); Chong (2006); Ramachandran et al. (2008) have stressed that KM has a significant benefits for ICT firms in various ways such as its ability to improve performance, productivity and competitiveness, the decision making process, responsiveness, innovation, the quality of the services and products, the learning curve, employee retention, flexibility and cost efficiency. However, many others such as Robertson, Scarborough, and Swan (2001) have argued that many ICT business firms fail to improve their performance and competitive position after adopting KM strategies because the embedded organisational culture did not accept the changes that the KM initiatives brought to the organization. In Arab region in ICT business a study in the context of Oman carried out by Ashrafi, Sharma, Al-Badi, and Al-Gharbi (2014), it has been suggested that in order to improve the productivity and performance of a firm ICT business need to be managed effectively. Consequently, the result of their study came up with the fact that there is a lack of government support as well as a lack of reward systems in

adopting ICT business. No studies have been conducted to examine the existence and practices of KM in the ICT sector in Libya but further studies will be suggested in chapter 6 (see section 6.5).

This section discussed the concepts of Knowledge and the development of Knowledge Management, knowledge management in business and in ICTs particularly. The following section elaborates different meanings and concepts of Knowledge Sharing alongside, Knowledge Sharing in ICT firms.

2.4 Knowledge Sharing

2.4.1 Knowledge Sharing Concepts and Aspects

KS consists of two terms: 'knowledge' which has been defined in section 2.3.1 and 'sharing' which has been understood in different ways. In order to create a broader understanding of the meaning of sharing, a few dictionaries (e.g. The Oxford Dictionary, The Cambridge Dictionary, The Business and Online Dictionary) have been viewed. Interestingly, the researcher found that actions such as give, have, use, occupy, or enjoy (something) jointly with another or others, and collaborate compose the meaning of sharing.

Sharing can be a noun and, in this sense, it means the full or proper portion or part allotted or belonging to, or contributed, or owed by an individual or group. At the same time, sharing as a verb can involve technology which could suggest the meaning of sharing an electronic file or document that can be accessed by specific users on a computer network, for viewing or downloading, or making changes to it. Terms such as shared values, share ownership and so on are used in the literature to provide different understandings of the meaning of sharing. For example, Porter and Kramer (2011) identified creating shared value in a business firm as an important idea because shared value can comprise either political or operational practices that improve the competitiveness and innovation of a business firm while concurrently advancing the economic and social conditions in the communities in which it operates. They added that shared value creation focuses on identifying and expanding the connections between societal and economic progress. This suggests that sharing requires something to be shared and, at the same time, it requires context and that benefits will be acquired from the sharing. Furthermore, Table 2-1 summaries the concept of KS from different perspectives as shown below.

Table 2-1: Knowledge Sharing Concept

Author	Knowledge Sharing Concept
King (2007)	It has critical influence on the process of decision making in order to name when, where & with whom a what kind of knowledge should be shared
Ardichvili, Maurer, Li, Wentling, and Stuedemann (2006)	SK is an element of knowledge culture which is part of the OC
Oliver and Kandadi (2006)	It is indication of an organizational life method which allows individuals enjoy the process of creation & exchange of information
Bock, Zmud, Kim, and Lee (2005)	Sharing knowledge is a behaviour which is likely to be influenced by personal motivation and contextual forces.
Fong, Love, Fong, and Irani (2005)	Knowledge Sharing is a multitude of processes including exchanging knowledge (skills, experience, and understanding) and these processes take without language (socialization) or with language (externalization)
Fong et al. (2005)	It is social interaction requires crossing the boundaries (i.e. functional, organizational, legal, physical
Lawson (2003)	SK is part of the knowledge management processes
Gibbert and Krause (2002)	SK concerns the willingness of people in an X organization to communicate with others to share the knowledge they have gained or created

Hendriks (2004) was able to identify three aspects of knowledge sharing which are:

- KS as a process involves a chain of actions, activities and events.
- KS as a process involves two parties and roles which can be played by individuals or groups. One of the party offers, shows, teaches and instructs knowledge and the other party acquires and learns that knowledge.
- KS is categorised by the characteristics of the knowledge that is shared.

2.4.2 Confusion in Understanding the Term Knowledge Sharing

According to Paulin and Suneson (2015), there is no doubt that huge effort has been made since the early 1990s to examine issues relating to Knowledge Management but, at the same time, it has been found that most of the scholars who examine Knowledge Sharing issues have been understood the terms interchangeably and that they are not able to differentiate between them. For instance, sharing knowledge and knowledge transfer have been used in the literature interchangeably and most scholars are not able to provide adequate explanations of the perspectives in which the terms are used (Jonsson, 2008).

Furthermore, Jackson (2006) observed that Knowledge Sharing is one of the knowledge-based activities which require staff to bring forward new ideas and to share them to gain the expected competitive advantage. According to Garud and Kumaraswamy (2005), KS can be seen as a part of organisational practices because organisational practices are responsible for drawing companies into routines that are unpredictable within the regular changing of the business' environment. Practices can involve capturing, organizing, sharing, and using knowledge. They argued that if firms did not think about allocating Knowledge Sharing as part of the business strategy, then the business can become subject to stagnation. Hovorka and Larsen (2006) stated that staff's knowledge and skills are fundamental elements in agility. Firms adopting a KS strategy pay more attention to managing and leveraging knowledge. Agility is likely to be associated with a firm's ability to integrate, use and share knowledge. Jones and Macpherson (2006) argued that organisational strategic level mechanisms are essential in the facilitating of knowledge sharing and usage.

Swap, Leonard, and Mimi Shields (2001), state that, often, inter-organisational knowledge is shared unconsciously by employees, the transfer having unconsciously taken place through informal interaction. This implies that the sharing of knowledge can also take place even where there is no specific intention to do so. Wabwezi (2011), also found that the greater part of knowledge sharing takes place informally, even in firms in which knowledge sharing is highly institutionalized.

A few other terms such as knowledge transfer, knowledge exchange and knowledge creation have been used interchangeably in the literature (Reagans & McEvily, 2003), but the reality is that KS is different from knowledge transfer and knowledge exchange. Szulanski, Cappetta, and Jensen (2004) stated that knowledge transfer is a wider concept as it involves both the sharing of knowledge by the knowledge source and the acquisition and application of knowledge by the recipient. The term knowledge transfer is commonly used to describe

the flow of knowledge among organisational levels (through different units, divisions or firms) but not at the individuals' level.

In terms of knowledge exchange, Cabrera, Collins, and Salgado (2006) stated that a knowledge exchange comprises knowledge sharing and knowledge seeking. The difference between KS and knowledge seeking is that within knowledge sharing individuals supply each other with the knowledge that they have gained or collected, while in knowledge seeking individuals search for knowledge from others.

In terms of knowledge creation, Gladden (2009) stated that there is a common understanding in the literature that knowledge creation is part of the knowledge management process but, in practice, it seems that the term can be broadly seen as part of an organisational innovation culture because it is very much related to the Organisational ability to create new knowledge in order to gain better competitive advantages. Nonaka (1994) stated that knowledge creation involves knowledge transfer, knowledge combination and the adaptation of knowledge from different types of knowledge including both tacit and explicit knowledge. From the perspective of Cook and Brown (1999), knowledge creation and knowledge sharing go hand-in-hand in terms of practice because both require collaboration, interaction and training and are linked by the information needed to improve the quality of decisions and to establish the bases to create new knowledge.

Wang and Noe (2010) have argued that, within the topic area of KS, many different and wide-ranging studies have been carried out, that research in this topic usually involves a few other concepts and they put forward a framework to map the concepts and issues involved in the term (see Figure 2-2).
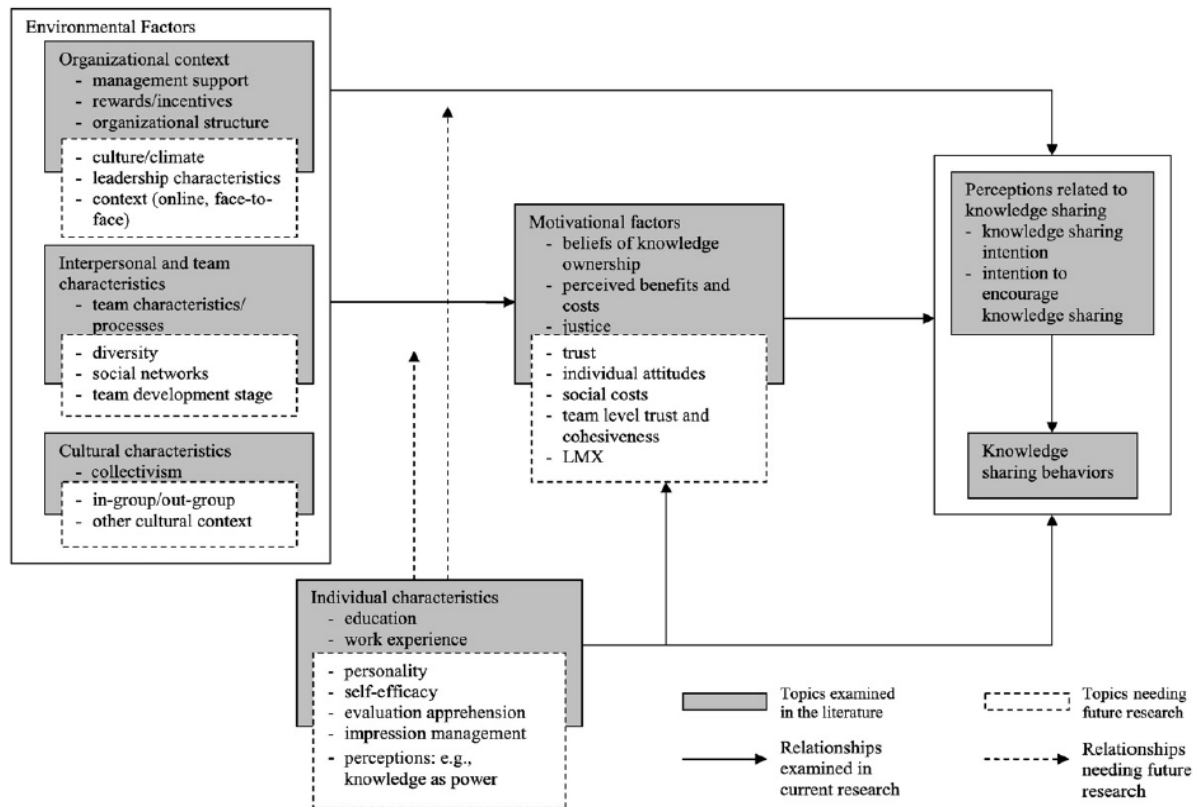
Figure 2-2: A Framework for KS research. Adapted from (Wang & Noe, 2010)

As it can be seen in Figure 2-2 Knowledge Sharing has been examined from different perspectives including cultural characteristics and individual characteristics, but more research should be carried out to examine more issues relating to personal attitudes and knowledge perceptions.

2.4.3 The Differences between Knowledge Sharing as Part of Knowledge Management and Knowledge Sharing as an Organisational Practice

In order to understand the differences between KS as part of KM and KS as an organisational practice, Dalkir (2013); Olomolaiye, Egbu, and Khosrowshahi (2005) stated that business firms tend to adopt KM alongside changes in the business environment and to effectively communicate with the modern knowledge-based economy. Interestingly, Grant (1996) saw knowledge sharing not as one of the main activities of KM but as a key element of the knowledge-based theory of a firm and Grant (1996) believed that the main motivation for the creation of a firm is its superior ability to transfer and integrate multiple knowledge streams and to apply existing knowledge to future tasks. Ambrosini and Bowman (2001) and Felin and Hesterly (2007) indicated knowledge to be the key driver of a firm's viability.

In this light, KS is seen as a major element of the KM process and the success of KS is very much related to the success of KM. Voelpel, Dous, and Davenport (2005) stated that one of the major reasons for the failure of KM to facilitate knowledge sharing is a lack of consideration of how the organisational and interpersonal context, as well as individuals' characteristics, influence KS. Maybe this perspective can be supported by the fact that modern business firms consider the creation of unique and original knowledge to be a key strategic asset resource; therefore, knowledge sharing will be seen as a main element of Organisational culture rather than one of the activities of knowledge management. Wang and Noe (2010) found that the level of KS in Chinese software companies was influenced by the evaluation and reward system implemented by the top management team. Wang and Noe (2010) found out that evaluation and evaluation plus reward had a positive relationship with knowledge sharing. Greater levels of knowledge sharing occurred in the evaluation-plus-reward condition compared with the evaluation condition. Wang and Noe (2010) also discovered that knowledge sharing was influenced by the interaction between evaluation and reward, conscientiousness, neuroticism and openness to experience.

Regardless of the theoretical identification to which knowledge sharing belongs, various studies have been conducted to examine the issues that have an influence on the practices of knowledge sharing in a business firm. Research studies undertaken by researchers such as Hendriks (2004), Lichtenstein and Brain (2006) and Al-Alawi et al. (2007) indicate that different elements within the organisational culture in a business can provide a significant influence on the process of sharing knowledge. Therefore, an understanding of what those elements within organisational culture are and how they can influence the practices of sharing knowledge in business firms is fundamental to controlling any potential obstacles during the process and to enhancing best practice. Connelly, Ford, Turel, Gallupe, and Zweig (2014) stated that employees in firms face a great dilemma every time a colleague requests knowledge; should they share their knowledge.

From the perspective of Husted and Michailova (2002), the knowledge in a firm will not be successfully shared without strong promotion systems that motivate and reward individuals who practice KS. Hendriks (2004) insisted that motivation and desire to share does not only affect the capability to share, but it also affects the way in which a firm works to create knowledge. Hendriks (2004) and Egbu, Wood, and Egbu (2010) added that the flow of

knowledge to be shared in a firm relies on the collaboration and trust which the firm's leaders motivate and promote.

2.4.4 Knowledge Sharing in ICT Firms

With regard to ICT firms, David and Fahey (2000) argued that traditional OC and systems can incorporate factors that cause serious barriers that can impede the completion of successful KS processes. They stated that OC has a significant influence on staff behaviour in knowledge creation, knowledge sharing and in using knowledge. They added that most business firms lack the culture that encourages collaborative work because employees believe that personal ownership of knowledge will help them ensure job security. Thus De Long and Fahey concluded that a lack of KS can present a serious barrier which might cause KM and KS failure.

Anderson, Park, and Jack (2007); Roth (2016) believed that OC should be embedded in the ICT firms to drive KS in order to increase competitive advantage and stability especially where there are limited resources. The sharing and managing of knowledge issues were addressed by Davenport (2005) who noted that research studies in this area looking at small firms are still limited. Furthermore, although ICT as a tool has been the focus of extensive academic papers, studying the influence of OC on sharing and managing knowledge within the context of the companies which provide ICT tools is still limited (Parirokh, Daneshgar, & Fattahi, 2008).

2.4.5 Issues relating to knowledge and knowledge sharing in ICT firms

It is critical to find adequate information that will satisfy the need for understand the types of knowledge created or used or even shared in ICT firms because there is a lack of studies on such issues. The majority of the studies conducted in the context of ICT and which focus on KS look at KS from the perspective of KM which does not link in with the main theoretical ideas of this study. Nevertheless, it has been found that in few studies that the main knowledge created in ICT business is experience-based knowledge. In a study by Chow et al. (2000) it was found that employees in private ICT firms in China refused to collaborate in sharing activities because staff thought that if they did not share the knowledge that they have they will continue to be secure in their job in the firm. Thus the more experience in the field of ICT a staff member has the more knowledge he or she will gain and, in turn, this would make him or her much sought after by business managers. Hamza and Isa (2010) stated that

regular meetings and interactions, positive relationships, hierarchy or status, and shared language are important factors that foster the sharing of knowledge among engineers in ICT firms. Hamza and Isa (2010) added that, likewise, other business firms such as? ICT firms aim to enhance the practice of KS in order to enhance the possibilities of gaining competitive advantages and better productivity

In a later study conducted by El Harbi et al. (2011) examining KS practice, again from the point of view of KM, in Tunisian ICT firms. El Harbi et al. referred to Stacy (2001)'s statement that knowledge is a process rather than a thing, and that it is an active process of relating. This indicates that there is a confusion as to what knowledge means in the context of ICT, considering the fact that knowledge and information are different (Nonaka and Konno, 1998). In the conclusion of their study El Harbi et al. (2011) identified tacit and formal (codified) knowledge wherein formal (codified) knowledge is the explicit information which can be shared from public sources while tacit knowledge is the knowledge is held by the staff which is difficult to share. El Harbi et al. (2011) added that, as in all other types of business, staff in ICT firms need to have trust and support within their organization in order to be able to share and that staff need a well established reward system to motivate them to share. Koruna (2004) stated that in his study engineers in ICT firms developed and institutionalized their own 'language' thus obstructing and complicating conversation with other team members.

Hamza and Isa (2010) and El Harbi et al. (2011) indicated that different techniques are used in ICT firms to share knowledge, namely information systems, email, meetings, conferences, seminars, learning and innovation centeres, newsletters and the Intranet. Liu and Liu (2008), looking at Taiwanese ICT companies, found that staff acquire knowledge internally via various channels rather than merely through professional communities. According to Bontis et al. (2002), ICT firms depend on the ability to communicate and to form and maintain dense networks of supportive relationships which constitute new sources of knowledge. Porter (1985) stated that this factor is only true in the ICT sector (which has been argued to be an interactive, inter-connected system organized in global production networks). Therefore, ICT firms maintain inter-organizational relationships since it facilitates access to new knowledge. Moreover, they can combine this with existing knowledge (Lane and Lubatkin, 1998). Externally, organizations exploit their external network relationships to learn about new practices and technologies (Kogut, 1988).

In ICT firms, El Harbi et al. (2011) found that managers can have a positive influence on encouraging the culture of KS and in running and developing useful internal systems for sharing information as well as for implementing efficient methods for motivating the sharing of existing external knowledge. However, El Harbi et al. (2011) also found evidence of immature national information sharing systems. The researchers linked this factor to the level of development in Tunisia and to the understandable attitudes of firms' owners. Tong et al. (2015) wrote of different facts including the fact that OC and knowledge sharing practices are strongly related in ICT firms. Human resources' professionals can play a vital role in their firms by increasing the awareness of the strategic areas that can facilitate a friendly Knowledge Sharing atmosphere, as well as enhancing Knowledge Management effectiveness. Furthermore, ICT practitioners can be more positive in helping to develop the necessary collaborative strategic directions by understanding the relevant theories and practices.

Having explained Knowledge Sharing concepts and aspects in general and, in particular, in ICT firms, the next section discusses the following: the concepts of Organisational Culture, aspects of both Organisational Culture and Knowledge, and the relationship between OC and KS in general, and particularly within ICT firms.

2.5 Organisational Culture

2.5.1 Concepts of Organisational Culture

Deal and Kennedy (1982) believed that culture is the most important factor in assessing success or failure in firms. They recognized three main key dimensions of culture. These are:

- Values, including the beliefs which live at the heart of the organization and 'culture heroes' who are the people who hold the values.
- Rites and rituals, which include the interaction routines that have representative qualities.
- The culture network, which includes information communication system and the invisible hierarchy of power in an organization.

According to Schein (2009, pp. 21-27), culture is "the way we do things around here", "the rites and rituals of our company", "the company climate", "the reward system", "our basic values". It is also "... *a pattern of shared tacit assumptions that was learned by a group as it solved its problems*". Earlier, Schein (2004, pp. 5-6) defined OC as a set of learned

responses where *"basic assumptions and beliefs that are shared by members of an organization [. . .] define in a basic 'taken-for-granted' fashion an organization's view of itself and its environment"*.

According to Schein (1991), OC has different aspects that can be summarized as follows:

- OC should have normative themes presenting social prospects and values. People's values and faiths should be centralized in order to bond an organization's groups together.

- Culture comprises not only morals and values but includes an important set of material themes such as behaviour, events and people.

- The type of social interaction and the nature of the web of communications that comprise a community should use a shared and understandable language. The used expressions and signs should be accepted by all the groups in an organization.

Schein (1991) stated that a group will not have a culture if there is no consensus, or if there is a conflict or issues that are not clear. He added that the core of the definition of culture is based on ideas of sharing and consensus; it is not something which an organization can have as an empirical choice. These ideas suggest that the values of a firm that wishes to enhance OC must be advocated by its top management people who should be able to embed values that motivate better practice and, at the same time, bond all the organization's parts together to become one system working to accomplish its aims.

In terms of organisational culture elements, Owens & Steinhoff (1989) and Wilson (2001) and Trivellas & Dargenidou (2009) demonstrated that values can be the most common element that strongly supports the bonding between individuals in any firm. Therefore, value is a major element within OC. Martin (2006) stated that an owner's culture is a vital element which plays an important role in shaping OC, in encouraging employees to adopt KS activities, and in terms of accessing key information in the firm. From the perspective of Alvesson (2012) organisational structure is another important element of OC because it has an influence on the competence of, and the management style in, a firm. He also suggested that reward systems, symbols and rituals are significant and can be considered as OC elements. Other elements of OC have been identified by different scholars, namely

motivation, rule and procedures, reward systems, stories and language (Hamaza and Isa, 2010; Korunam, 2004; Al-Harbi et al., 2011; Yeh-Yun & Liu, 2012; Uddin et al., 2013).

Ferrell, Fraedrich, and Ferrell (2016) added that OC includes norms and artefacts that include thoughts on how to resolve the problems faced by the members (employees) that exist within an organization. (Hendriks, 2004) summarised the different elements of Organisational Culture (as has been indicated by many authors and definitions) into seven main aspects, (see Figure 2-3).

Aggregate feature	Aspects of organization culture
A. Culture marks a group	1. Culture has a specific content (visible, eg. rituals and invisible, eg. basic assumptions)
	2. Culture is collective
B. Culture is individual	3. Culture is individual (needs individuals to exist etc.)
	4. Culture is related to behavior
C. Culture steers behavior	5. Culture exists in and because of its functions (provides external adaptation and internal integration etc.)
	6. Its genesis and development process shape culture (social construction, mental programing etc.)
	7. Its continued existence shapes culture (enduring, stable, etc.)

Figure 2-3: The Main Elements of Organisational Culture. Adapted from Hendriks, 2004

Amaliyah, Eliyana, and Kuntoro (2015) stated that the Denison Organisational Culture Model (see Figure 2-4) consists of four dimensions, i.e. mission, adaptability, involvement and consistency. Each dimension is subdivided into three individual measurements, so there are a total of 12 measurements. Such a model is important because it forms a pattern of behaviour and thought, and the patterns of the relationships between members of an organization and between the organization and society.
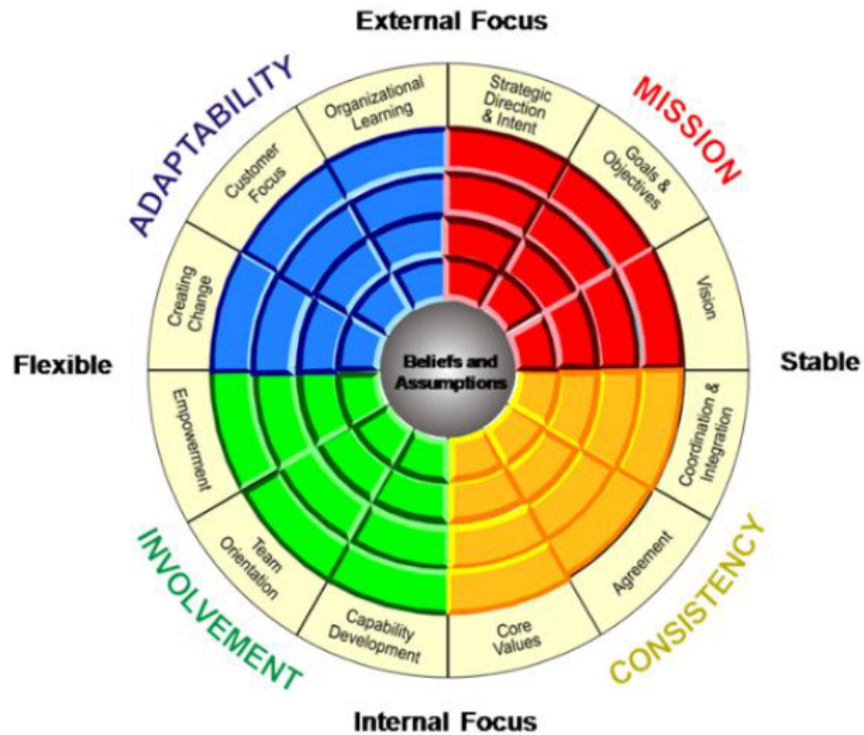
Figure 2-4: The Denison Organisational Culture Model (as presented in Amaliyah et al., 2015)

As can be seen in Figure 2-4, the figure starts with *creating change*, wherein an organization with high performance should encourage new ideas and should be willing to take a new approach in designing activities and undertaking practices.

It also involves the second measurement which is *Customer Focus* where staff should identify the needs of the customers, both internal and external. Thus, employees should constantly try to look for new and improved methods in order to meet and exceed customers' expectations.

The third measurement involves *Organisational Learning* which suggests an organization gaining knowledge such as by learning from mistakes. Thus, in this instance, it is not about "*who is to blame?*" rather "*what can we learn?*"

Fourthly, there is *Strategic Direction and Intent* which basically refers to the long-term strategy with a high priority set for operationalization of vision.

Fifthly, there are *Goals and Objectives* which requires setting a short term strategy to help each individual identify activities relating to the firms' visions.

Sixthly, there is *Vision* which defines why the business is created, what the firm is intending to accomplish and the goal of the firm.

The seventh measurement is *Empowerment* involves the organization's vision in involving the staff in making the decisions.

The eighth measurement is *Teamwork* which should be the main element supported by the firm in order to capture all the creative ideas and to enhance the quality of the activities.

The ninth measurement is *Capability development* which covers identifying the need for training, teaching, and educating staff on new rules and responsibilities.

The tenth measurement is *Core Values*. In order to achieve a high performance, firms need to encourage staff and, additionally, decision makers need to make consistent decisions and also behave consistently.

The eleventh measurement is *Agreement* wherein more open communication channels should be achieved through dialogue and deep conversations.

The twelfth measurement is *Coordination and Integration*. Staff should be able to identify how duties should be achieved and what the relationship is between duties in order to realise the goals of the firm. Furthermore, Table 2-2 summarises different Organisational Culture perspectives.

Table 2-2: Organisational Culture Concept

Author	Organisational Culture Concept
Alvesson (2012)	Organizational culture is significant as a way of understanding organizational life in all its richness and variations; OC cannot be understood without understanding the meaning of the culture.
Ashforth, Gioia, Robinson, and Trevino (2008)	OC is as significant and complex as it is difficult to understand and 'use' in a thoughtful way
Kanter (2008)	OC is all about the staff values
Grey (2008)	OC is seen as crucial
Daft (2006)	OC is either hard and solid or soft and flexible
Davenport and Prusak (1998a)	Knowledge is said to be the crucial factor behind sustainable advantage and success for companies, and knowledge issues are closely interlinked with organizational culture
Puffer, McCarthy, and Naumov (1997)	OC is all about the performance "Companies win or lose based on the cultures they create"
Albert and Whetten (1985)	Rationalistic OC is this one which focus on the people because they are the main identity of the organization
Peters, Waterman, and Jones (1982)	OC is the significant factor behind the performance of companies

2.5.2 Organisational Culture and Knowledge

As can be seen in a review of business literature, the terms organisational culture and knowledge have been interrelated on many different occasions. For instance, Davenport and Prusak (1998a) were the first to use the term knowledge-friendly culture; Janz and Prasarnphanich (2003) used the term knowledge-centred culture, and Oliver and Kandadi (2006) used the term knowledge culture.

DeLong and Fahey (2000) identified four reasons why culture can be aligned with knowledge:

- Culture is responsible for shaping staff understanding as to "what knowledge is significant".
- Culture allows people to understand the different types of relationships between knowledge levels, that is "what knowledge should belong to individuals and which should belong to the firm".
- Culture is responsible for establishing the social context for the exchanging and sharing of knowledge such as "what activities can be carried out to share and encourage knowledge sharing".
- Culture is responsible for motivating staff to create a new knowledge.

2.6 The Relationship between Organisational Culture and Knowledge Sharing

In section (2.4.3) it was stated that KS can be either part of a KM strategy or it can be organisational practice. Nevertheless, regardless of which understanding KS belongs to, various studies have been conducted to examine the issues that influence the process of KS in a business firm. Research studies such those undertaken by Hendriks (2004) ; Al-Alawi et al. (2007) and Mohd Zin (2014) indicate that different elements of Organisational Culture in a business can have a significant influence on the process of Knowledge Sharing. Therefore, an understanding of what those elements are and how they can influence the practices of KS in a business is fundamental in order to control any potential obstacles during those practices and in order to enhance better practice. Furthermore, in order to understand the relationship between OC and KS, there is a need first to understand the elements of each concept, to identify how OC can influence the process of KS and then to articulate the relationship ties.

Evans (2012) uses the term 'culture aligned to knowledge' and conceives it as a part of organisational structures and as one of the most important conditions for generating and sharing knowledge. In addition, he described OC as being fuzzy, as having flexibility, structures, extensive contacts, and an emphasis on learning, as triggering creativity, as incorporating of roles' and jobs' description, as providing an environment which enables working and learning in groups, as having clearly defined values, as being open to diversity, as having clearly defined requirements for employees, and as incorporating ancillary leadership (Evans, 2012, pp. 59-70). According to Tsai (2002), the organisational structure of any firm influences the processes of KS because the organisational structure links business units to their goals; it also addresses and standardises the procedures of authority and records policies and rules. For example, in a hierarchically structured firm, the KS processes will focus more on sharing and transferring knowledge between teams and organisational units than on the role of individuals in KS because the main reason for sharing is leveraging knowledge resources rather than innovation (Tortoriello & Krackhardt, 2010).

McDermott and O'dell (2001, p. 77) stated that they had found that, on many occasions, KS practices failed because "*people believed they were already sharing well enough, that senior managers did not really support it, or that, like other programmes, it too would blow over*". From their perspective, OC is all about the shared morals, principles and practices of the staff who communicate in a firm. It includes the visible surface elements of a firm such as policies, mission and written values and, at the same time, it also includes more profound notions such as staff behaviour and how staff interprets each other's actions. In this sense *"culture is rooted in the organization's core values and assumptions. Often these are not only unarticulated, but so taken-for granted that they are hard to articulate, invisible to organisational members"* (McDermott & O'dell, 2001, p. 77). Thus the relationship between the OC and KS can be seen as the culture of the firm being built up as a result of regular interactions between the staff and from the different types of knowledge and information existing in the firm. KS is about the provision of task information and know-how to assist others and about collaborating and communicating with others to solve problems, to create new knowledge, or to develop policies or procedures (Cummings, 2004; Dorsey, 2003).

A study was carried out by Al-Alawi et al. (2007) to investigate the influence of organisational culture on knowledge sharing. They used a survey as a tool to collect their data and they targeted public and private companies in Bahrain. The survey's outcomes

showed a positive correspondence between knowledge sharing and trust, communication, information systems and rewards. In the same context Marouf (2007) examined the influence of business and social ties on knowledge sharing in an international firm. Her study was able to show a considerable correspondence between the strength of business ties and the sharing of both public and private knowledge.

A very recent study was carried out by Al-Adaileh and Al-Atawi (2011), They aimed to investigate the impacts of national and local culture on knowledge exchanges in Saudi Arabia and to achieve this aim they used data from the Saudi Telecom Company (STC). They examined the role of cultural attributes on knowledge exchange processes within the STC. The study found that cultural attributes of trust, innovation flow, supervision, and reward had serious positive influences on knowledge exchange within the STC context. Accordingly, this study was built up based on previous studies and has an aim of contributing potentially interesting findings acquired from uncommon interesting context.

According to Husted and Michailova (2002), the success of a KS process relies mainly on the establishment of an OC that motivates and rewards individual staff who practice KS. Hendriks (2004) insisted that OC not only affects the process of KS but also affects the way in which a firm works to create knowledge. He added that the flow of knowledge to be shared in a firm relies on the collaboration and trust which an Organisational Culture motivates and promotes. (McGill & Slocum, 1994) identified four types of OC. These are the knowing culture, the understanding culture, the thinking culture, and the learning culture. According to Hendriks (2004), each type of these cultures leads to a different type of KS.

Al-Busaidi (2013) summarised the work of several scholars on the adoption of Inter-organisational Knowledge Sharing Systems that facilitate KS in knowledge-based firms. The factors that came out of these studies are:

- Personal factors, including computer competency, personal innovativeness, a lack of confidence in workers' own knowledge, workers' perceptions on the value and power of knowledge, social identity (workers are more willing to share and collaborate as long as such practices will help them maintain their social identity) and perceived benefits and costs.
- Peer factors, including peers' attitude, trustworthiness and interactivity and peers' existing inter-organisational communication and social networking levels.
- Perceived system factors, including ease of use, usefulness, compatibility and security.

- Organisational factors, including management support, organisational structure, incentives' policies and technological competence.
- Sector factors, including sector support, regulations, competitive pressures, standardisation levels and the homogeneity of organisational IS platforms in different firms in the sector (Al-Busaidi, 2013).

From the above debate it can be seen that generating a detailed picture of the elements in OC that can influence the KS process cannot be one that is applied generally for two reasons: (1) each Organisational Culture has unique elements, and (2) KS can be applied based on different theories and perspectives. In this sense, the relationship between KS and OC seems to be more context-based. Nevertheless, from viewing the current literature, it seems that there are common levels where KS processes and OC seem to interact and where more it is likely that influences seem to be initiated. These levels are individual level; management level, organisational level and sector level (see Figure 2-5).
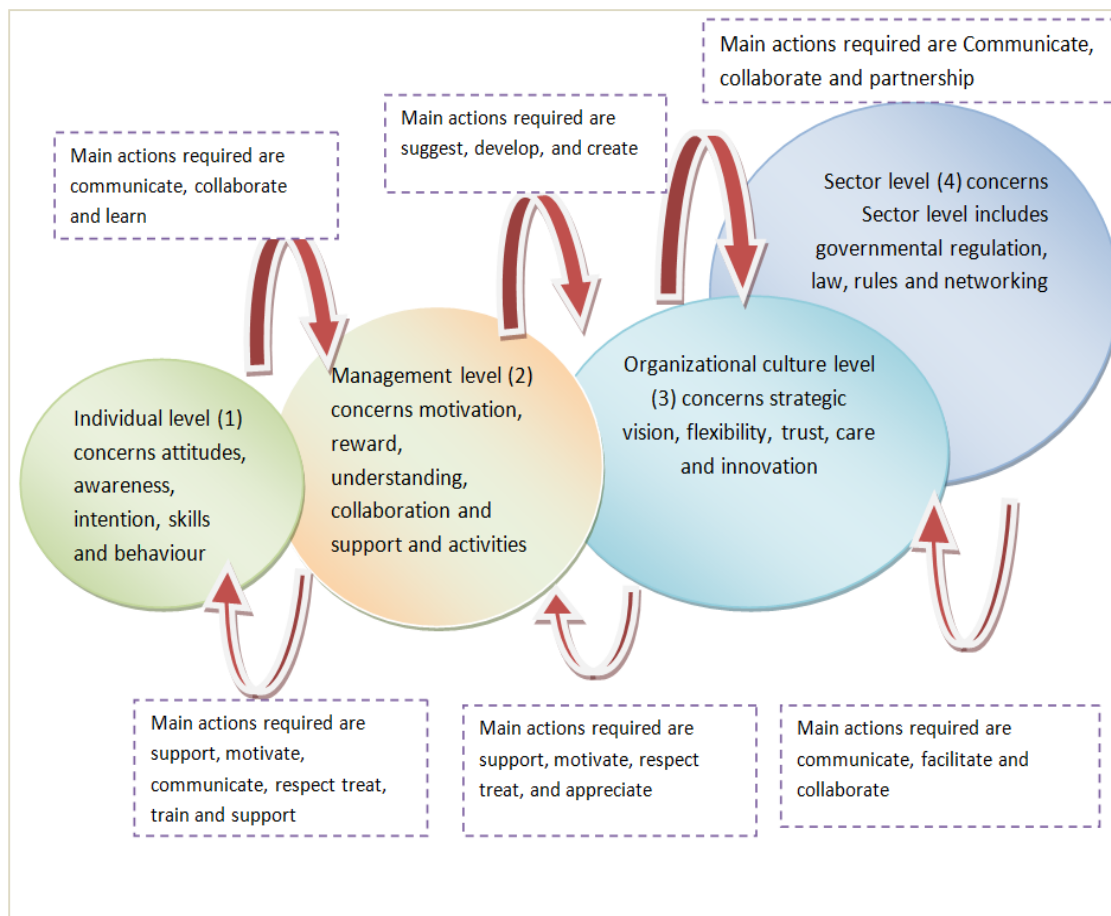
Figure 2-5: The Relationship between KS and OC, a theoretical framework

From Figure 2-5, it can be seen that the relationship between OC and KS is influenced by aspects found on all four levels, wherein the aspects of each level influences other levels through a set of actions performed by the main stakeholders in each level. Thus, the interaction between the aspects of each level via the actions of the stakeholders bonds the relationship between the KS processes and OC. Thus, these levels were selected because they include the main aspects which link the interaction between KS and OC, regardless of their context. The relationship between Organisational Culture and Knowledge Sharing within ICT firms will be elaborate in next section.

2.7 Organisational Culture and Knowledge Sharing in ICT Firms

Within the context of ICT firms and, in addition to the above factors, McDermott and O'dell (2001) stated that ICT firms that produce software products appreciate the creative aspects of the knowledge which is generated from incomplete models or designs more than ICT firms that sell off-the-shelf products. Hendriks (2004) reflected that this is due to the type of OC embedded in each firm. Bock, Zmud, Kim, and Lee (2005) and Chen, Liu, and Tjosvold (2005) linked the success of KS to the attitudes and intentions of workers particularly when they are motivated by the OC of their firm while Kankanhalli, Tan, and Wei (2005), Wasko and Faraj (2005), Al-Busaidi, Olfman, Ryan, and Leroy (2010) and Al-Alawi et al. (2007) have discussed the role of OC in actually nourishing KS behaviour and in disseminating it in order that it can take the lead in utilising worker expertise and generating opportunities.

El Harbi et al. (2011) carried out a study to examine knowledge sharing processes in Tunisian small ICT firms. Their findings showed that information and knowledge are vital factors in achieving high operational success in such companies and they considered that knowledge and its different applications play an important role in motivating better competitive advantages. They were able to highlight the positive role of managers in running and developing useful internal systems for sharing information as well as the role of efficient methods for motivating the sharing of existing external knowledge. However, evidence was also found of immature national information sharing systems. The researchers linked this to the level of development in Tunisia and to the understandable attitudes of the firm owners.

As within other developing countries, Libya's ICT businesses suffer from many weaknesses including high prices, low quality, a lack of employability, a lack of governmental support, and a lack of policies and strategic vision (Sassi, 2008). The author stressed that the ICT market in Libya will not grow without changing the way that business firms perform their activities and functions. In addition, (see also the facts mentioned in section 1.1), Libya has experienced political, social and economic changes. Opportunities must be taken to provide ICT business firms with a guideline that will lead them towards embedding the kind of OC that will enable them to gain benefits from one of their most important resources (i.e. knowledge) by sharing it.

Accordingly, ICT as a sector globally is a changeable due to the changes of the clients' needs and tests. According to Horrocks et al. (2010, p. 4) ICT "*sector is characterised by a rapid pace of development and change with continual introduction of new technologies*". Furthermore, as a result of the political and social changes accrued by not only in ICT sector but also on the level of the national culture of Libya, the changes became a fact and in order to correspond to those changes, ICT firms need to change their organisational culture in order to survive. From another perspective, in section (2.4.4) it has been addressed that knowledge sharing is one of the business management solution which can help business firms including ICT firms achieve the productivity and competitive advantages. So, in summary, the relationship between ICT sector, OC and KS is complicated and changeable but at the same time, if the relationship was understood and addressed, then the possibility for more business development and productivity can be high.

2.8 Summary

This chapter was designed to investigate the literature relating mainly to Organisational Culture and Knowledge Sharing. There was a need to address issues relating to knowledge and Knowledge Management in order to pave the way towards understanding the creation and the development of knowledge sharing. The reviewed literature included some very recent studies conducted in 2015 and some early studies conducted in the 1990s or earlier (in order to address the chronological development of the studied concepts). From the literature, it was found that the relationship between OC and KS has been examined and investigated by different scholars in different contexts. Furthermore, this relationship was articulated in a

theory based model created by the researcher (see Figure 2-5) which paves the way towards the further empirical investigation presented in chapter 4 and the findings discussed in chapter 5. However, the methodological approach towards completing the research will be presented in chapter 3.

Chapter 3. Research Methodology

In the literature, there is common agreement that research methodology is an approach which provides a researcher with the required tools to complete academic research successfully. From the perspective of Crotty (1998), in order to complete rational and coherent research, a researcher should carefully choose an approach which directs the methods which are employed in order to answer the research's inquiry. Creswell (2009) stated that research methodology is the systemic approach a researcher adopts to accomplish the research's aim. In the same vein, Silverman (2013) stated that research methodology is a specific approach which researchers select to help in mastering the execution of research including the planning, data gathering and data analysis.

This chapter is designed to discuss the methodology selected to answer this research's questions. The possible choices which were available are presented, followed by a discussion of the choices made and a justification of the selection chosen in terms of research models, research philosophy, data collection methods and data analysis techniques. Following this, there is a discussion on the research design adopted in this study and the study's processes as well as a discussion on the sampling (including a discussion on the sample of cases and the sample of the study participants). Discussions on the questionnaire pilot study, the actual distribution of the questionnaire and the process of the questionnaire's data analysis are also presented. The conducting and the analysis of the interviews and the analysis of the documents are all discussed and presented. Furthermore, research design is also illustrated. Finally, the quality of research followed by the validation criteria as well as the validation stage of the framework that has been created are addressed.

3.1 Research Models

When a decision to carry out research is made, the researcher needs to start by critically and carefully thinking about the nature of the research and the events that he or she would wish to include in the research design. Investigating the literature to extract a final and clear answer on this subject would not be possible due to the clear disagreements between scholars about the terminologies, the order and the nature of the events which should be included in a research design. For example, from the perspective of Crotty (1998), research should be divided to include epistemology, theoretical perspective, methodology and method. From the figure below (see Figure 3-1), it can be seen that Crotty (1998) distinguished clearly between

'epistemology' and 'theoretical perspective'. In this vein, epistemology represents the constructivism perspective while theoretical perspective represents ontological interpretivism.
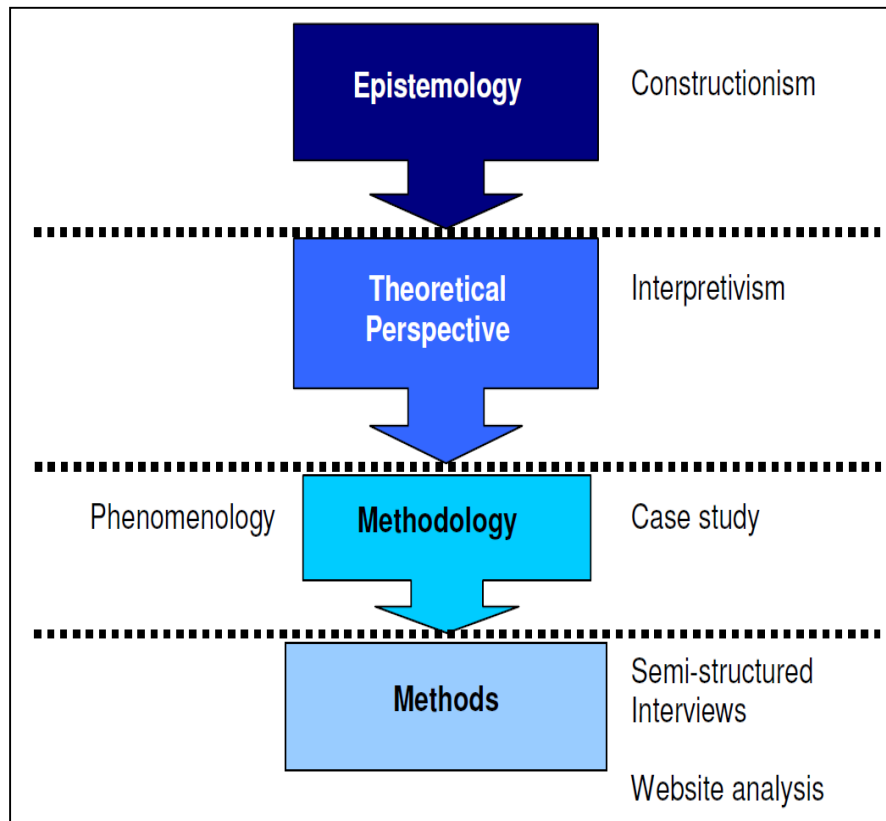
Figure 3-1: Crotty's Research Model (Crotty, 1998)

According to the nested model shown in Figure 3-2, philosophy is understood as one set of different perspectives and thus Kagioglou, Aouad, Hinks, Sexton, and Sheath (1998) did not distinguish between any specific classifications. Hence their focus was mainly on boosting the inner research approaches and research techniques. Thus, Kagioglou et al. (1998) listed only three elements: research philosophy, research approach and research technique (see Figure 3-2).
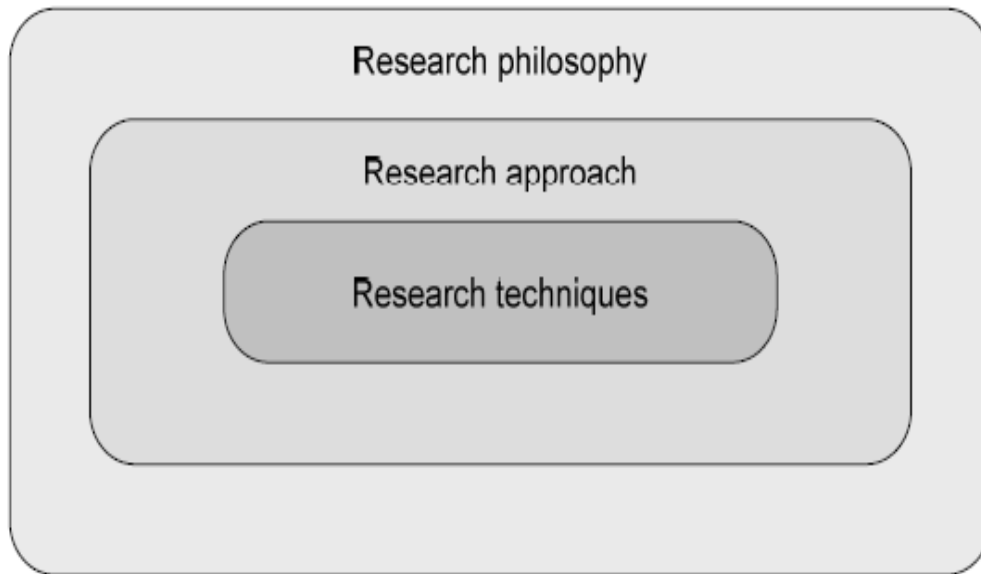
Figure 3-2: Nested Model or Hierarchical Model (Kaglioglou et al., 1998)

Saunders, Lewis, and Thornhill (2012) , extended this listing into an 'onion model' which included philosophies, approaches, choices, strategies, time horizons, techniques and procedures (see Figure 3-3).
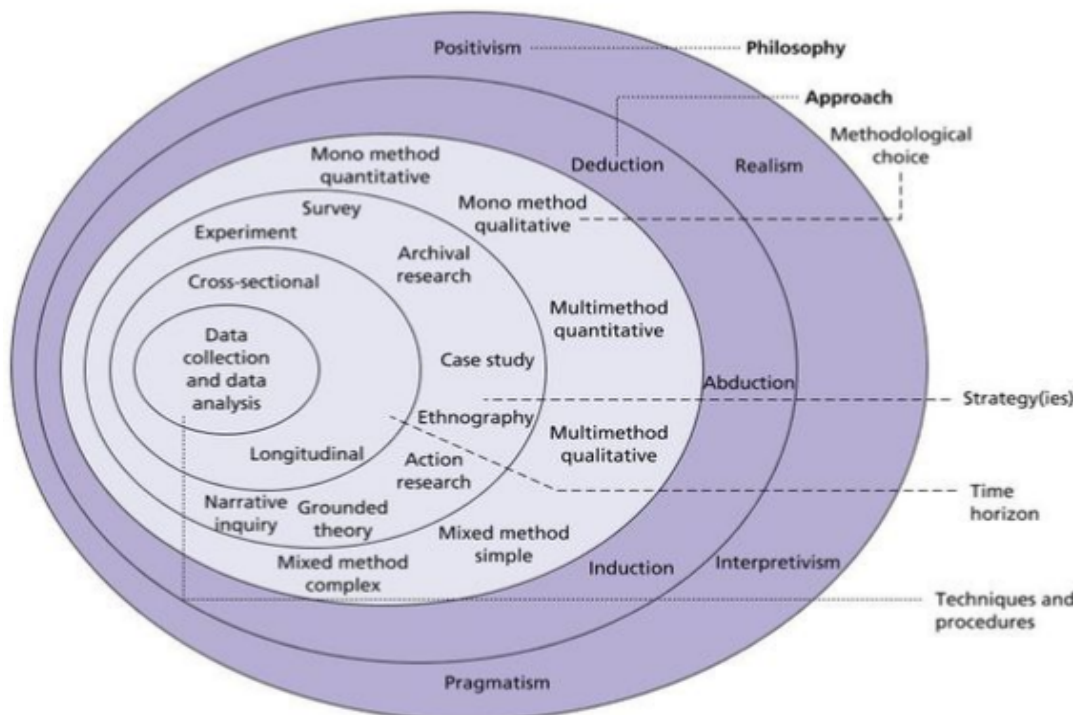
Figure 3-3: Saunders' Research Onion Model (Saunders et al., 2012)

According to Saunders et al. (2012), research philosophy has been classified into three main perspectives, namely ontology "assumption that the researcher makes about the nature of reality", epistemology "an assumption about how researchers acquire and accept knowledge about the world" and axiology "assumptions about the nature of values the researcher adds to the study" Which all belongs to the same layer (first layer) which differs from approaches which can be inductive, abductive or deductive.

Keraminiyage (2009) suggested using a combination of both the nested model and the onion research model (see Figure 3-4). This suggested development is based upon the idea that both the onion research model and the nested model are connected in three major areas. These are: research philosophy, research approach and research technique. In addition, it has been considered and believed that the term "research approaches" is an umbrella term to be the centre of the main issues which should be highlighted prior to the research journey (Keraminiyage, 2009).
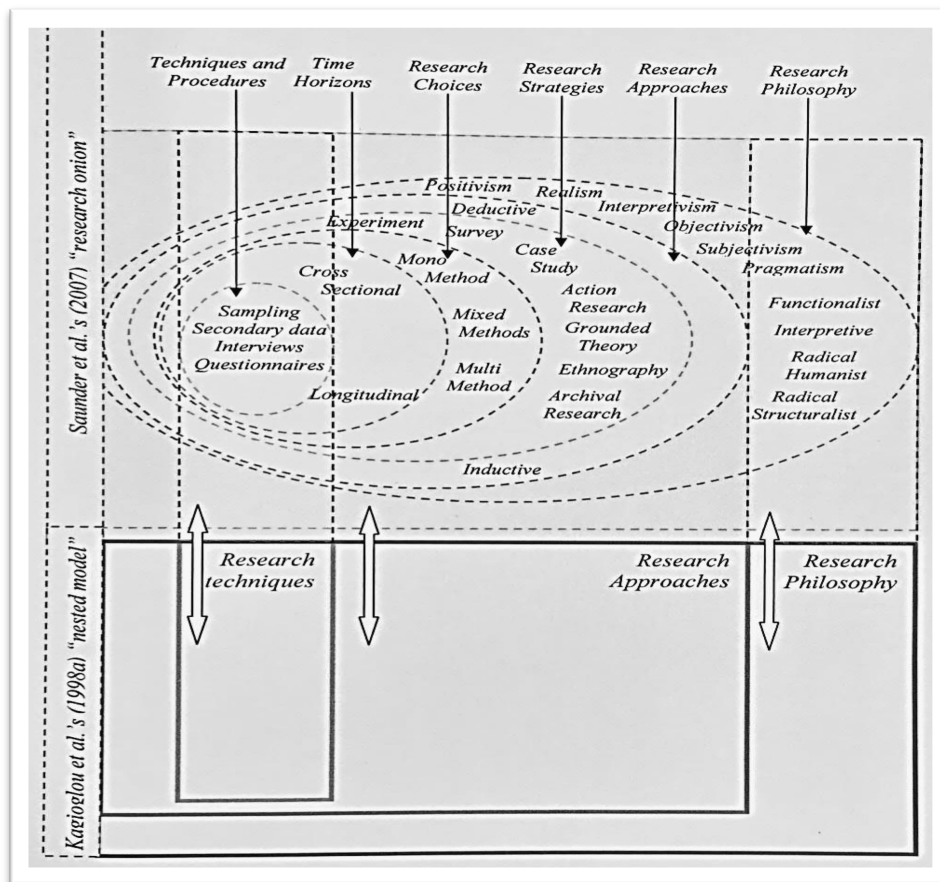
Figure 3-4: The Combined Nested and Onion Model (Keraminiyage, 2009)

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Therefore, this research follows Saunders et al. (2012) research onion model because it is a systemic model which provides a clear guideline and helps the researcher to become familiar with the up-coming stages which thus means better control and a quicker achievement of the goals of the research. Despite there being updated developments to the research 'onion model' in 2016 (Saunders et al, 2016) in terms of the terminology used, the researcher follows the Saunders et al (2012) model (see Figure 3-3) as it comprehensively provides the necessary steps required for this research.

Having discussed the research model adopted for the study, the following sections discus the content of chosen model in detail by following each layer and associated with the position of this research.

3.2 Research Philosophy

According to Saunders, Lewis, and Thornhill (2016) research philosophy is the first layer needs to be considered in any research undertaken. Also, Creswell (2013) mentioned that it is vital to understand research philosophy at the early stage of the research. Furthermore, Bryman (2012), indicated that three main philosophical perspectives which should be taken in consideration before making any decisions. These are ontology, epistemology and axiology.

Ontology philosophy refers to the formations of reality. In this sense, it is the art of being and the focus will be on "the study of what is" (Bryman & Bell, 2015).

Epistemology philosophy: the most common understanding of epistemology as a philosophy is when it refers to what should be examined as acceptable knowledge (Bryman, 2012).

Axiology philosophy goes back to Greek word 'Axio' which means 'worthy' and 'logy' has more than one meaning- it means word, reason or plan. From the perspective of axiology, the main aim is to explain what researcher values go into the research and the assumptions that are concerned with the value systems (Creswell, 2009; Miles & Huberman, 1994; Saunders et al., 2016).

3.2.1 Ontological Assumptions

According to Blaikie (2009), ontological assumptions can be either objectivist or constructivist. While objectivists understand social phenomena and their related meanings as existing independently, constructivists believe that social phenomena are generated from interaction with the social world and, therefore, they will be constantly subject to revision and change. (Easterby-Smith, 2002) saw that an idealist assumption helps the researcher gain knowledge about a specific topic from different perspectives. On the other hand, realism is objective because it exists independently of humans' interactions including thoughts or knowledge, but it is interpreted through a social context (Easterby-Smith et al., 2002). Morgan and Smircich (1980) stated that the positivist paradigm is based on the assumption that social reality has an objective ontological structure which helps in directing the quantitative mode of research. According to this perspective, individuals are responding agents to the objective environment.

3.2.2 Epistemological Assumptions

Steup and Sosa (2005) stated that the main concern of epistemological philosophy is to respond to a researcher's inquiries in terms of: the essential and adequate knowledge he/she should know, the main sources to extract that knowledge, the possible forms and structure of the knowledge and the limitations.   From Steup and Sosa's perspective, epistemology is about understanding the issues that are related to the creation and distribution of knowledge in specific areas of inquiry. While positivist assumptions tend to examine a social phenomenon using natural sciences' methods, interpretivist assumptions tend to understand a phenomenon from the perspective of the people who interact with the phenomenon and their interactions with, and opinions on, the phenomenon are of significance. The implications of such assumptions can be varied such as allowing free value and generalization. On the other hand, interpretivism is based on the assumption that reality will be shaped by social and historical facts. In this sense, there is no absolute truth as the core of this assumption is that the world builds up social foundations and meanings which are the interpretations of meanings (Bryman, 2008; Saunders et al., 2016).

3.2.3 Axiological Assumptions

Generally, the axiological assumptions theory concerns value and how this value will influence the examined research. A valid assumption will be that reality is either value free or value laden. According to Saunders et al. (2012), a value free assumption focuses on the fact that the researcher collected the data in a value free method which means that the data was independent and that the objective's position was identified and fixed. On the other hand, value laden suggests that the data are biased by the world's perspectives because they are influenced by cultural experiences and background. In this sense, value plays a vital role in understanding and interpreting the results when either objective or subjective positions are adopted. Sexton (2003) provided an overview of these philosophies and the choice variation spectrum and summarized them in Table 3-1.

Table 3-1: Summary of Research Philosophies and the Choice Variation Spectrum Adapted from Sexton (2003)

Criteria	Quantitative Paradigm	Qualitative Paradigm
Researcher's Worldview	A researcher's comfort with the ontological, epistemological, axiological, rhetorical, and methodological assumptions of the quantitative paradigm.	A researcher's comfort with the ontological, epistemological, axiological, rhetorical, and methodological assumptions of the qualitative paradigm.
Training and Experience of the Researcher	Technical writing skills; computer statistical skills; library skills	Literary writing skills; computer text-analysis skills; library skills
Researcher's Psychological Attributes	Comfort with rules and guidelines for conduction research; low tolerance for ambiguity; time for a study of short duration	Comfort with lack of specific rules and procedures for conducting research; high tolerance for ambiguity; time for lengthy study
Nature of the Problem	Previously studied by other researchers so that the body of literature exists, is known along with the variables, and existing theories	Exploratory research, variables unknown; context important; may lack theory base for study
Audience for the Study (e.g. journal editors and readers, graduate committees)	Individuals accustomed to/supportive of quantitative studies	Individuals accustomed to/supportive of qualitative studies

4.3.1.1   3.2.3.1 Philosophical stances related to the research

Ontologically, this study tends more towards idealism. The research aims and objectives seek to find the participants' varying perceptions, opinions and meanings via human interaction. This suggests that this research should not consider the phenomenon under investigation as an independent and single reality. Rather, it accepts the knowledge given by understanding the participants' interpretations of the reality. Accordingly, the subjectivism ontological position will be adopted in order to understand the social world as an outcome of the participants' interactions within a studied context.

From the epistemological perspective, this research tends more towards the interpretivism assumption. The investigation of this research is based on a phenomenon that is rooted in living and working experience. This suggests that knowledge is socially constructed through the interpretations of major participants in the practices of Knowledge Sharing. Thus the interpretivism epistemological position is adopted to gain an in-depth understanding of social reality through the study of people's interpretations and attitudes.

From the axiological perspective, this research tends more towards the value laden stance. The major assumption is that the phenomenon under investigation is interpreted with respect to the context through the direct interactions between the firms' employees. The appropriate research approach is chosen from the various alternatives for the research's purpose and the questions it intends to answer (Yin, 2003). The research questions that this study intends to answer are not only 'what' questions but also 'how' question. This means that the researcher needs to gain an in-depth understanding of the interrelationships of the concepts. Figure 3-5 illuminates the research philosophies in terms of Positivism vs Interpretivism stances (Saunders et al., 2016).

	Positivism	Interpretivism
Ontology	Objective, external and independent of social actors.	Subjective, may change, socially constructed and multiple.
Epistemology	Centre on law-like generalisation. Credible data only made available by observable phenomena.	Centre on the details of circumstances, and the truth behind these details. Subjective meanings and social phenomena.
Axiology	Value free. Therefore, the researcher is independent of the research and assume both objective position.	Values are bound. Cannot be separated (subjective). The researcher is part of what is being studied.
Most common data collection technique used.	Large samples. Very much structured, quantitative.	Small samples. In depth examination, qualitative.

Figure 3-5: comparative between Positivism and Interpretivism (Saunders et al., 2016)

3.3 Research Approach

Bryman (2012) stated that it is vital for a researcher to base the research on a theory in order to complete a research study successfully. The value of the theory comes from its influences on the design of a research project. Bryman and Bell (2015) believed that the main purpose of identifying an approach to research is to understand the nature of the interaction between the studied social phenomenon and the related theory. Saunders, Lewis, and Thornhill (2009) distinguished between deductive and inductive approaches. Saunders et al. (2009) stressed that the deductive approach requires starting with a theory (questions, hypothesis); it tends to be predictive as the researcher starts collecting evidence. Therefore, the researcher is likely to rely on the deductive approach. On the other hand, the qualitative approach utilises an inductive approach. Researchers using this approach tend to be more interpretive, beginning with the evidence and then building up a theory based on it. Furthermore, in the same sense it has been indicated that, *Within inductive approach, the theory would follow the data rather than vice versa as with deduction* (Pathirage, Amaratunga, & Haigh, 2008, p. 4). Consequently, Saunders et al. (2012); Saunders et al. (2016) extended the research approach

into third approach which called abductive approach. Abductive approach is a combination between both deductive and inductive (Saunders et al., 2012, 2016).

Based on the above discussion, it can be seen that, although this study requires an examination of the complex interaction between people (from different backgrounds) who have different concepts of Organisational Culture and Knowledge Sharing, Hence, this investigation of the real situation in ICT firms is based on the deductive approach while, in order to obtain a fuller picture of the real situation in depth and of how both concepts are conceived and dealt with, the inductive approach is also utilised. So both the deductive and inductive approaches are applicable and are needed in order to meet the aim and objectives of this study thus, abductive approach has been adopted.

3.4 Research Strategy

From the perspectives of Bryman (2008) and Punch (2005), a research strategy is the academic strategy by which researchers intend to tackle research in order to answer the research questions in a social context. In the literature, there is considerable agreement that a research strategy can be either qualitative or quantitative. Saunders et al. (2016) stated that, in quantitative research, research intends to collect data in the form of numbers whereas in qualitative research the intention is to collect data in the form of opinions, perspectives and conceptions. From the perspective of Creswell (2009), the quantitative approach allows a researcher to examine a theory or hypothesis and then the researcher collects the required evidence to either support or refute the hypothesis or the suggested theory. On the other hand, with the qualitative approach, an understanding of the studied phenomenon will occur once the meanings and opinions on the studied phenomenon have been collected from the participants. Creswell (2009) suggested that, although each approach can be used to answer specific questions and to investigate the phenomenon from a different angle, each one of these approaches has different biases and he suggested that using a mixed research methods' approach can help the researcher reduce the possible biases of each approach (see the section 3.5 on research choices for more detail).

Denscombe (2010) identified five different types of qualitative research strategies. These are: action research, grounded theory, ethnography, phenomenology and case study, and he added that each one has its own purpose. However, Easterby-Smith et al. (2008); Remenyi (1998); Saunders et al. (2016) lists experiment, survey, case study, action research and ethnography

as common research strategies can be undertaken for the research. Thereby, the selection of the research strategy needs to reflect the philosophical stance of the study as well as the research approach that has been undertaken. Accordingly, research strategies can be selected as shown in the research philosophical continuum (See Figure 3-6).
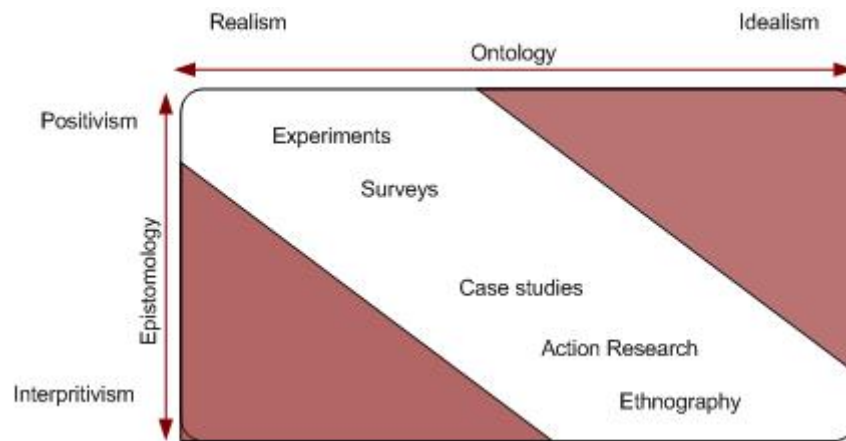
Figure 3-6: Research Strategies within the Philosophical Continuum (Sexton, 2003)

Figure 3-6 shows the position of the case study approach with regard to research philosophies, assumptions, approaches and strategies (Sexton, 2003, cited in Keamniyage, 2009). It can be seen in Figure 3-6 that the positivism and objectivism positions are taken by experiments and surveys with respect to epistemological and ontological undertakings respectively. Because the philosophical stance of this research leans to the interpretivism and subjectivism side, the use of experiments and surveys are unjustifiable. Experiments are mostly conducted in a laboratory setting under controlled environments where the context and the phenomena are separated (Yin, 2014). Experiments allow identification of casual relationships through observing the effect of the dependent variable by controlling the independent variable. Similarly, with experiments, surveys are also related to the deductive approach (Saunders et al., 2016). Collection of large amounts of data is facilitated by surveys in an economical way.

As this research falls under the interpretivism and subjectivism stance and for the purpose of this study, three different strategies were seen as possible strategies that could be used to respond to the research inquiry and, therefore, these three strategies have been examined. They are the action research strategy, the grounded theory strategy and the case study

strategy. However, it can be seen during the brief discussion for each strategy case study strategy is the most suitable one that has been selected to tackle this research.

3.4.1 Action Research

The appearance and the growth of the action research strategy started in the education setting. Carr (2006); Day et al. (2006); Kemmis (2006) stated that action research is mainly employed in research to enhance current practice by impelling the people involved in a particular context to the practical limitations of their applications. In this vein, the action research approach can be defined as the 'study of a social situation carried out by those involved in that situation in order to improve both their practice and the quality of their understanding'; this captures the essence of the philosophy underlying the action research approach (Day et al., 2006, p. 8). From the perspective of Hopkins (2014), the interesting issue concerning action research is that the participants have a role in the process and conceive the practice in order to improve it and it is also for their own benefit. Checkland and Holwell (1998), have argued that, although action research empowers the participation of the participators, the responsibility for monitoring and evaluation should not go beyond the researcher. This study investigates the relationship between Organisational Culture and Knowledge Sharing process in order to enhance KS practice in the ICT firms in Libya, therefore action research would not be a suitable strategy as the research has no intention of evaluating the current practices of Knowledge Sharing and then suggesting policies which could lead to their improvement. Thus, this strategy has been extracted from the list of possible research strategies.

3.4.2 Grounded Theory

Grounded theory (GT) is one of the most commonly used qualitative strategy in the context of social science research. Extensive and rich literature has been written to discuss this approach's process and stages (Bryman, 2008; Glaser & Strauss, 2009). The approach initially resulted from the collaborative effort of Glaser, Straus. It was introduced for the first time in 1967 (Glaser & Strauss, 1967). The approach's original philosophy suggested that following this approach allows a researcher to generate theory rather than to test a hypothesis, which indicates that data will be systemically collected and analysed to help the researcher establish an inductively-based theory. As the theory was developed and became more meticulous in the 1990s, GT was put forward as a holistic qualitative methodology or as an strategy to collecting or analysing qualitative data (Bryman, 2008). In the case of this research, selecting such an strategy could cause a serious threat taking into consideration the

unsecure and unpredictable state of Libya where the fieldwork for this research has taken place. Further, GT is used when literature is lacking in the area, which is not the situation for this study. Thus, in order to avoid any conflict which could influence accessibility to the fieldwork, this strategy has been not considered for the research.

3.4.3 Ethnography

Fetterman (1998) classified ethnography as a social science research strategy which focuses on examining closely the personal experience of participants. "Ethnography" literally means 'a portrait of a people'. Harris and Johnson (2000, p. 13) defined ethnography as "a written description of a particular culture - the customs, beliefs, and behaviour - based on information collected through fieldwork". In this research, ethnography was not chosen because the scale of ethnographic studies is normally small (e.g. a single setting) in order to facilitate an in-depth understanding (Hammersley & Atkinson, 2007). The focus of this research is on four different settings which can be dealt with more appropriately in the form of a multiple case study. Additionally, this study aims to investigate two different phenomena rather than an understanding of the culture of a population.

3.4.4 Phenomenology

Giorgi and Giorgi (2003, p. 251) defined phenomenology as "a scientific method which is descriptive because its point of departure consists of concrete descriptions of experienced events from the perspective of everyday life by participants, and then the result is a second order description of the psychological essence or structure of the phenomenon by the scientific researcher". According to Plummer (1983) and to Stanley (1993),the main purpose of using this strategy is understanding the specific through specific phenomena and how they are perceived by the actors in a situation. They added that using the phenomenological approach helps a researcher investigate specific phenomena in different contexts unlike the case study approach which allows a researcher to examine the phenomenon in one or in multiple related cases.

In this study, although the intention is to study a specific phenomenon, the focus is on investigating the relationship within the studied phenomenon (the relationship between Organisational Culture and Knowledge Sharing) in a specific context which makes the case study approach more suitable. (See section 3.4.5 for more information on the case study approach).

3.4.5 Case Study

3.4.5.1 Definitions and the Use of the Case Study

Yin (2009, p. 18) defined a case study as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". He added that such strategy has the strength to assist researchers in investigating an elaborate phenomenon in a natural setting. Denscombe (2010) argued that the case study strategy helps a researcher to examine the studied phenomena or real-life situations. It also allows the researcher to gain an in-depth picture of the relationships and processes within the phenomenon. Therefore, a case study approach is more common in qualitative studies than in quantitative studies. On the other hand, Huberman and Miles (2002) argued that the case study strategy allows the combination of both quantitative (questionnaires) and qualitative (interviews and documents) data to serve different purposes and to accomplish different aims.

Yin (2009) stated that a case study strategy should be used when questions such as "how" and "why" are being asked and that it is preferable to use this approach to answer questions about a contemporary set of events over which the researcher has no control. Yin (2009) identified three different types of case studies, namely exploratory, descriptive and explanatory. Tellis (1997) stated that an exploratory case study allows a researcher to carry out fieldwork and data gathering activities prior to the identification of the research questions and the development of the hypothesis. Descriptive cases require a descriptive theory to be established before starting the project.

3.4.5.2 The Design of the Case Study and the Unit of Analysis

In terms of the case study design, Yin (2014) stated it is vital that the case study design is identified before carrying out the research making sure that the selection takes on board the aim of the research and the questions. Identifying the design for the case study will help a researcher collect data accurately and make sense of the findings and of the link between them and the collected data. According to Yin (2009), the design can be one of four: single-case (holistic) design, single-case (embedded) design, multiple-case (holistic) design, and multiple-case (embedded) design (see Figure 3-7).
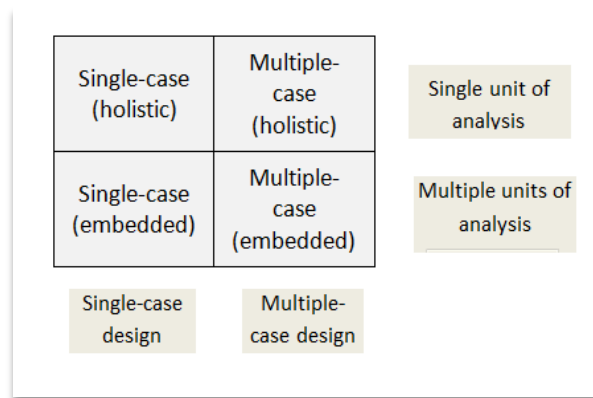
Figure 3-7: Case study design and unit of analysis (Yin, 2009)

In terms of a single design, the focus of the research undertaken will be on one case. The study can be critical, unique, representative, revelatory or a longitudinal study (Yin, 2009). A critical case can be used to extend new contribution to the theory while a unique case is used to investigate a new case. With regards to the representative case, it is usually undertaken when the case is common, thus, studying one case is adequate to obtain an understanding about other cases. A revelatory case design allows a researcher to carry out an investigation into a context or phenomenon which has not been examined previously.

In terms of the design's types; they can be either holistic or embedded. With the holistic type, the unit of analysis can be single or multiple. Such a design can be very important because of the possible threat of blocking access to the case or because of a lack of enough data to suggest valid results. In embedded design, on the other hand, the unit of analysis can be many or it can be one unit and a few other sub-units. Adopting such a design allows a researcher to examine the studied phenomenon from different levels and to search for evidence through different units but the case study should be large enough to accept such a design.

Multiple-case studies allow a researcher to examine the phenomenon in more than one case and the possibility of comparing between the case study findings will be greater than that which a researcher can achieve in a one case design. Yin (2014) claimed that the strength of such a design is that it allows a researcher to investigate large contexts with the ability to use different data collection methods including both quantitative and qualitative methods.

This research investigates the relationship between Organisational Culture and Knowledge Sharing process in the ICT firms in Libya. This does not fall within the critical, unique, representative, revelatory or longitudinal categories suitable to select single case study. Therefore, this research used the multiple-case holistic design. Furthermore, according to

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Kulatunga (2008, p. 80), "*by using multiple case studies, a researcher can increase the breadth of a study*". Furthermore, by using multiple cases' study the replication logic will achieve a better validity and a deeper understanding to the studied phenomenon (Shakir, 2002) .

In addition to that, Miles and Huberman (1994) indicated that multiple cases are conducted to increase the methodological rigor of the study by saying they enhance "strengthening the precision, the validity and stability of the findings" (Miles & Huberman, 1994, p. 29). This is mainly, because "evidence from multiple cases is often considered more compelling (Yin, 1994, p. 45). Furthermore, suggested that replication logic of multiple case design can be either a literal replication or a theoretical replication. In literal replication the number of cases is between three to four cases whereas in theoretical replication the suitable number of cases between six and eight cases. Thus this study falls under the literal replication logic because the number of cases was four where the saturation of the data collection was achieved (see section 3.7.2.1.3). Table 3-2 Shows the replication logic strategies for determining the number of cases in multiple-case designs(Yin, 1994).

Table 3-2: Replication logic strategies for determining the number of cases in multiple-case designs(Yin, 1994).

Replication logic strategies	When the --- difference between opposing theories is degree of certainty required is differences between the cases is	Initial number of cases
Literal replication	Low	3-4
Theoretical replication	High	6-8

In terms of the unit of analysis, Ragin and Becker (1992) stated that the most critical component relates to the fundamental problem of defining what the "case" is that forms the unit of analysis. According to Yin (2014), the definition of the unit of analysis relates to the way in which a researcher has defined the initial research questions. In this research the major concern is "the relationship between Organisational Culture and Knowledge Sharing in ICT firm" thus the unit of analysis will be this phenomenon.

Yin (2014) categorised reporting the findings into four categories, single case study, multiple-case study, an option for either a single-case or multiple-case study, and an option for

multiple-case study only. In this study the researcher analysed and presented the findings by adopting the last option within these categories which allowed her to present and illustrate the research findings in one set of data. Yin (2014) stated that there are different occasions where multi-case studies can be analysed, presented and discussed as one set. This is permissible especially when the researcher focuses on studying the phenomena itself but not the case. Similarly, this research the focus is on understanding the relationship between organisational culture and knowledge sharing in general but not as the phenomena was understood or existed in each case separately. Yin (2014) provided different examples such as the research carried out by Kaufman (1981) to examine the administration behaviour of Federal Bureau Chiefs in six Federal Bureaux. Although this research was conducted with different chiefs in different bureaux (cases), the data synthesised the lessons learnt from the overall experiences rather than focusing on each case separately Yin (2014).

3.4.5.3 The Selection of the Cases and Sampling

According to Yin (2014), cases should be selected bearing in mind the purpose of the research. This research develops a framework that helps ICT firms practice a Knowledge Sharing process. Therefore, the selection criteria were based on selecting the major and well-known firms within the Libyan capital which provide ICT services to users nationally. Firms in the capital were chosen because of their accessibility for data collection especially considering the unsettled situation in Libya. Accordingly, four cases were identified. In terms of selecting the participating sample, Bryman (2008) stated that samples should reflect the sector of the population (individuals) which have been selected to be the core of the investigation. Miles and Huberman (1994) stated that, in qualitative research, sampling size is less important than the samples selected for quantitative research.

Neuman (2000) identified different types of samples such as convenience sampling, purposive sampling, quota sampling, snowball sampling, deviant case sampling, sequential sampling and theoretical sampling. According to Neuman (2000), purposive samples are samples selected from fieldwork for special purposes. Neuman (2000) gave the researcher control over the sampling selection, to judge the ones that meet the specific purpose of the research. So, this research investigates the relationship between Organisational Culture and Knowledge Sharing in ICT firms in Libya.

3.5 Research Choices

It has been mentioned in section 3.2 that a social science researcher can take either the interpretivist or positivist epistemological position or either the objectivist or subjectivist ontological position (Bryman, 2008; Creswell, 2009). Accordingly, a few scholars such as Creswell, Goodchild, & Turner (1996); Tashakkori & Teddlie (2010) have stated that quantitative and qualitative research are not the only choices a researcher can make and they suggested the use of a mixed research approach which combines both approaches. According to Tashakkori and Creswell (2007, p. 12), a mixed approach tends to involve the use of both quantitative and qualitative methods. Therefore, it can be defined as "*research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches and methods in a single study or program of inquiry*". From the perspectives of Creswell (2003) and Onwuegbuzie and Teddlie (2003) both quantitative and qualitative research have their critical issues which could lead to biases; thus the combination of both approaches in one main mixed approach can be useful in order to reduce the current gaps in each approach (which could lead to biased findings) and thus could enhance the validity of the findings. Elliott (2005) stressed that mixed methods' research implies using different qualitative and qualitative methods which are planned to be clear and concise and this belief resonates with many researchers. (Bryman, 2012) stated that using different methods to collect data in the mixed research approach can bring positive benefits into the research because the weaknesses of any method can be 'offset' by the strengths of another method.

In this research, the aim is to investigate the relationship between Organisational Culture and Knowledge Sharing through the examination of actual experience by the people who work in ICT firms in Libya, and such an examination is not achievable through the methods from pure natural sciences; therefore, the researcher will adopt the mixed research method. In addition, in order to address the research question of this study, the mixed methods' approach has been identified as the most suitable research choice to be employed. Due to the complexity of the organisational culture situation in Libyan ICT firms and its influence on KS processes, one choice is not adequate enough to understand the real situation of this phenomenon. A mixed methods' choice will enable the researcher to obtain a better understanding of the phenomenon, wherein the researcher will be able to combine together

comprehensive information on the studied area. Thus, both quantitative and qualitative methods will be used, in which the findings from one method w

ill be used to explain the results generated by the other. The most appropriate design for this study is the sequential explanatory mixed methods' design. This is associated with collecting and analysing quantitative data in the first phase, followed by the collection and analysis of qualitative data in the second phase, based on the results of statistical tests for close-ended questions while using thematic analysis for open-ended questions.

3.6 Time Horizon

According to Saunders et al. (2016), the time horizon layer has been classified into cross-sectional and longitudinal. In the cross-sectional category the researcher studies one phenomenon at a particular period of time. The longitudinal category places emphasis on a specific phenomenon and observes the changes and developments over time. In this study the researcher investigates the relationship between Organisational Culture and Knowledge Sharing in a certain period of time thus this research falls under the cross-sectional category.

3.7 Data Collection and Data Analysis (Techniques and Procedures)

3.7.1 Data Collection Techniques

In this study, the researcher aims to incorporate both qualitative and quantitative research. Triangulating the methods will help the researcher increase a personal understanding of the phenomenon in question, using one approach to better understand, explain, or build on the results from the other approach. Thus using the quantitative method will allow the researcher to gain a general picture of the real situation regarding different Libyan ICT firms including business types and general perspectives on Knowledge Sharing and Organisational Culture. In addition, using the qualitative method will assist the researcher gain an in-depth understanding of the quantitative results by exploring the studied phenomenon in order to get a fuller picture. From the perspective of the researcher, the fuller picture of the research would not be gained without addressing how each method was used, what is the process of the design and what is the process of data analysis. Therefore, the sections in this chapter were presented to fulfil the purpose of clarification and harmonizing of all the use of the methods, the process of data collection and the process of analysis.

Accordingly, the following data collection techniques have been used for the study.

Firstly, in order to obtain an overall view on the concepts of OC and KS practices within the ICT firms and on the perspectives of and the influences of OC on KS in ICT firms, a questionnaire survey was carried out (see Appendix 1). Secondly, an in-depth investigation was carried out to explore the relationship between OC and KS practice within the case studies. For this, semi-structured interviews and documentary reviews were used as the data collection techniques (see section 4.2.1.7). Thirdly, to validate the findings of the study a further set of telephone semi-structured interviews were carried out with experts thus augmenting the modified framework that enhances KS practices in ICT firms in Libya (see section 5.6).

3.7.1.1 The Questionnaire as a Data Collection Technique

3.7.1.1.1 The Design of the Questionnaire

Once the investigation of the literature had been completed, the required ethical application submitted and approved, the design of the first draft questionnaire was begun on October 2013 and a copy of the suggested questions were sent to the supervisory team in the middle of November 2013. Based on the comments of the supervisory team, the numbers of open-ended questions were reduced whilst adding more closed-ended questions with a five-scale option. Further, the supervisory team recommended re-visiting the literature and extracting issues relating to the KS, OC concepts. The researcher followed the comments and reviewed an extensive amount of literature and created a table for each concept (see Table 2-1 and Table 2-2).

Once the required investigation was completed, the questionnaire was redesigned and a new version sent to the supervisory team to be approved at the end of December 2013. Once the questionnaire was approved, the final version of the questionnaire (Appendix 1) was translated into Arabic (Appendix 2). This stage was very difficult because it required a comprehensive investigation by the researcher into Arabic literature on the topic in order to extract accurate translations for the business and technical terminologies bearing in mind that there is no agreement in Arabic literature on most terminologies. This stage was completed by end December 2013/beginning January 2014 and then the pilot study was carried out.

3.7.1.1.2 The Pilot Study

According to Polit, London, and Martinez (2001, p. 467), a pilot study can be defined as a *'small scale version[s], or trial run[s], done in preparation for the major study'*. In this sense, Teijlingen and Hundley (2002, p. 33) referred to pilot studies as being *'mini versions*

of a full-scale study (also called 'feasibility' studies), as well as the specific pre-testing of a particular research instrument such as a questionnaire or interview schedule'. Furthermore, many researchers have emphasised the importance of conducting a pilot study when undertaking any research, Teijlingen and Hundley (2002) summarised some advantages of using a pilot study prior the main study. These are: testing appropriate research tools, assessing whether the interview's structure and technique are effective, determining what resources should be needed, training for the researcher by learning from mistakes, assessing the designed questions, and estimating the time that will be taken when conducting the interviews' method. In addition, Hazzi and Maldaon (2015) highlighted that a pilot study is a vital step in conducting a successful research study regardless of the type of research.

The pilot study for the questionnaire started in the first week of January 2014 with five voluntary participants who provided their feedback, suggested some amendments and requested the adding of definitions to a few of the concepts and terminologies used in the questionnaire. The suggested amendments were undertaken and the questionnaire was ready by early February 2014. Due to the fact that the researcher was not able to travel to Libya it was decided to hire an assistant. Investigation was undertaken to find the most suitable one and permission was sought for the use of an assistant from the relevant department in the University of Salford. It should be borne in mind that the use of another researcher for distributing and collecting the questionnaire does not affect the validity and reliability of this research because in quantitative data collection the researcher collects data in a value free method and the data are independent from the objective results. (This is unlike the qualitative method of data collection where the data is biased by the researcher's perspective and experience (see section 3.2.3)).

3.7.1.1.3 The sample
According to Saunders et al. (2016), in research, sampling is essential. Such requirement resulted from the limitation in obtaining information from the entire population. Sample selection is mainly relying on the research objectives. When deciding sampling technique, the researcher should not ignore factors such as time limitations, financial, and accessibility to the resources. Two strategies can be used in sampling: random sampling / probability sampling and non-random sampling / non-probability sampling. In random sampling, the chance of each element being selected from the population is usually equal, while, non-random sampling does not give an equal chance to each element being selected. Kumar

(2011) highlights that usage of sampling within a quantitative research and a qualitative research. The sampling in the qualitative research is not significant, whereas a sample is used to represent the study population in a quantitative research. Figure 3-8 illustrates some samples methods under each of the basic strategies.
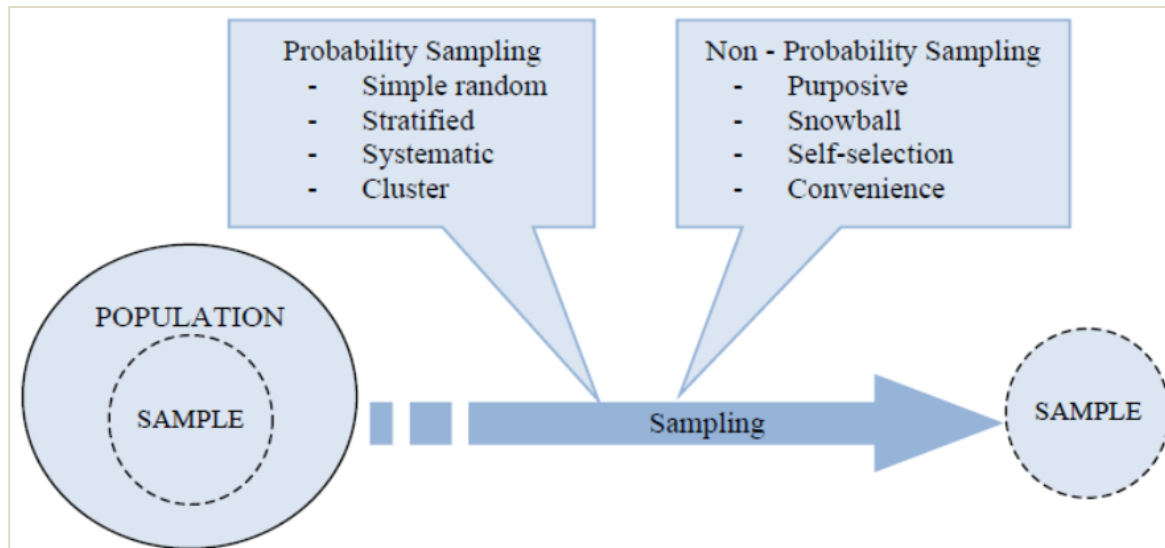
Figure 3-8 Sampling methods (adapted from Saunders et al. (2016))

Therefore, the questionnaire was sent out for distribution in the first week of February 2014. Employees who work in four ICT firms in Libya were the target population of this study. A target sample of 306 participants was selected randomly from the total population of around 1,500 employees who work in the firms. According to Sivo, Saunders, Chang, and Jiang (2006) the accepted percentage of those who undertake the face-to face questionnaire should not be less than 30% of the total. In this study 118 responses were received back. Thus the percentage of the questionnaire responses was 38.50% which is an accepted percentage. According to James E. Bartlett, Kotrlik, and Higgins (2001, p. 48) , determine sample size in any research is essential for achieving better and accurate research finding, therefore Table 3-3 presents the sample size which will be valid based on the population size. Accordingly, in this research the population size was 1500 roughly, and under categorical data (*margin of error=.05*) where t=1.96 (*t is the level of risk*) the target sample will be 306 (See Table 3-3).

Population size	Sample size					
	Continuous data (margin of error= .03)			Categorical data (margin of error= .05)		
	alpha= .10 t= 1.65	alpha= .05 t= 1.96	alpha= .01 t= 2.58	p= .50 t= 1.65	p= .50 t= 1.96	p= .50 t= 2.58
100	46	55	68	74	80	87
200	59	75	102	116	132	154
300	65	85	123	143	169	207
400	69	92	137	162	196	250
500	72	96	147	176	218	286
600	73	100	155	187	235	316
700	75	102	161	196	249	341
800	76	104	166	203	260	363
900	76	105	170	209	270	382
1,000	77	106	173	213	278	399
1,500	79	110	183	230	306	461
2,000	83	112	189	239	323	499
4,000	83	119	198	254	351	570
6,000	83	119	209	259	362	598
8,000	83	119	209	262	367	613
10,000	83	119	209	264	370	623

Table 3-3: Determining Minimum Returned Sample Size for a Given Population Size for Continuous and Categorical Data (James et al., 2001)

3.7.1.1.4 The Data Collection Journey of the Questionnaire

The researcher stayed in contact with the assistant pointed to do the questionnaire survey in order to track the progress of the data collection. Each time the researcher was in contact with the assistant the researcher's worries were expressed because there were difficulties in accessing the cases. The major reason was always the critical security situation in the country and the political conflict which meant that most of the companies were not performing normally and Firm employees frequently had difficulty in reaching their work locations. In the middle of March 2014, after almost four weeks from the beginning of the distribution, the number of the collected questionnaires did not reach more than 50 which provided extra pressure on the researcher who then decided to travel to Libya and stay there for couple of weeks in order to examine the actual problem and to attempt to solve it. The researcher travelled to Libya at the beginning of April 2014. The country during this time experienced a high wave of political conflict. She reached Libya on 11th April and immediately she visited all the targeted companies every day (where possible) in order to motivate the participants who were in sombre mood due to the general atmosphere in the country on the lack of

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security and the critical situation of various services such as petrol and electricity. In two weeks' time the researcher was able to collect another 68 completed questionnaires which made a total of 118 completed questionnaires received from the four firms. Bearing in mind 118 received questionnaires was a valid number based on the previous discussion regards selecting valid sample size from the studied population (see section 3.7.1.1.3).

3.7.2 The Process of the Questionnaire Technique

There have been some weaknesses within the process of the data collection. These can be summarized as follows:

- From the very beginning the researcher should have been more aware that she should not have included many open questions in the questionnaire. Being more aware would have saved her sometime instead of investing around two weeks without any positive major benefits while most of the questions were amended.

- The questionnaire was piloted with participants who were based in the UK. When the researcher went to Libya to hand out and collect the questionnaire, a few people claimed that some of the terminologies were not very clear and thus they experienced some limited difficulties in answering the questions. The researcher thinks that the situation would have been better if the pilot study had been undertaken with people in the Libyan ICT firms.

- Due to the personal circumstances of the researcher and because of the high costs of travelling to Libya in order to distribute and collect the questionnaire, the researcher hired an assistant. With hindsight taking such a decision was not very wise because the assistant was not able to overcome any obstacles met and the researcher ended up with double the costs (some incurred by flying out to Libya herself) in addition to stress and feelings of uncertainty as to whether the process would be successfully completed.

- The critical situation in Libya has put pressure on most of the people who were approached and they showed a lack of motivation to complete the questionnaire. One of the participants stated "I would be very surprised if people collaborate and respond to the questions; people have no energy, just look around you." He was not a unique voice, there were many voices complaining about the lack of motivation and energy, but the researcher pursued a positive attitude herself and the commitment she showed reduced the negative feelings of the participants.

Nevertheless, without the above critical issues, the process of the data collection would have been much easier and more productive.

3.7.2.1 Semi-Structured Interviews as a Data Collection Technique

In this section the focus is on the methods utilised for the data collections used in this research to collect opinions, perspectives and facts in order to understand the relationship between Organisational Culture and Knowledge Sharing practices. This section is divided into two major sub-sections: semi-structured interviews' design, the conduct and process of the analysis, and the documents' collecting and analysis.

3.7.2.1.1 Semi-structured interviews

Wethington and McDarby (2016) identified interviews as a common data collection method that widely used in qualitative research. It is the favoured method for studying attitudes, behaviours. Dunn and Hay (2005, p. 79) suggested that interviews are *"verbal interchanges where one person, the interviewer, attempts to elicit information from another person"*.

According to Saunders et al. (2016), there are three ways to conduct interviews, namely, structured, semi-structured or unstructured, and they can be conducted face-to-face, on the telephone or via email. Structured interviews follow a consistent and standardised list of questions. This set of questions are always asked in the same order (Longhurst, 2003). Unstructured interviews are usually used in the historical research. Such interview typically directed by the informant rather than by a set of questions(Longhurst, 2003; Wethington & McDarby, 2016).

Yin (2014) and Morse (2015) stated that semi-structured interviews is a common means of collecting data from case studies because it allows both the researcher and the interviewees more flexibility in terms of developing the questions and giving more information. From the perspective of Amaratunga, Baldry, Sarshar, and Newton (2002), the use of semi-structured interviews is one of the most constructive ways used by researchers in built environment research to collect qualitative data. In terms of the interview questions' design the questions are designed according to the aims and objectives of the research (see section 1.3 and 1.4). The researcher produced several drafts which were corrected and revised with the supervisory team before the formulation of the final questions. A brief explanation in both Arabic and English of the topic and the aim of the study, in addition to an explanation of its importance in the understanding of the relationship between Organisational Culture and Knowledge

Sharing in the state of Libya was sent out with the interview questions to the sample of the respondents via an e-mail attachment.

3.7.2.1.2 The design of semi-structured interviews

The researcher designed the face-to-face semi-structured interviews' questions based on themes and thus relevant questions were asked to cover different aspects of each theme. The structure of the interviews was different from context to context so some questions were omitted in particular interviews, given the specific organisational context that was encountered in relation to the research topic. The order of questions could also be varied depending on the flow of the conversation. On the other hand, additional questions were sometimes required to explore the research question and objectives given the nature of the events within a particular context. According to Denscombe (2014), semi-structured interviews allow the researcher to deal with all aspects of the research questions in more detail and, at the same time, ensures that interviewees are interpreting questions in the intended manner. Also, semi-structured interviews give the required flexibility to explore interesting or unexpected issues raised by interviewees. It is vital to mention that all the interviews were recorded after gaining permission from the participants (see Appendix 3).

In this research the main objective of the semi-structured face-to-face interviews carried out was to gather specific information regarding the understanding of the concepts of Knowledge Sharing and Organisational Culture and their related issues within the companies in the areas discussed including Organisational Culture aspects, Knowledge Sharing activities and the relationship between OC and KS. According to Saunders et al. (2016), face-to-face interviews are expected to help a researcher interact more with the interviewees in order to obtain more in-depth data and thus this means was utilised for this research. Also face-to-fact interviews help a researcher obtain an in-depth understanding of the phenomenon being investigated while giving the interviewees a chance to express what he or she has in mind (Silverman, 2013). However, conducting an interview by telephone typically is seen as appropriate only for short period regardless in which type of interviews (Harvey, 1988). In the same context, a study comparing telephone and face-to-face qualitative interviewing carried out by Sturges and Hanrahan (2004) found that there is no significant differences in the interviews. They concluded that telephone interviews can be used productively in qualitative research (Cachia & Millward, 2011). Thereby, conducting telephone semi-structured interview is a suitable choice for the validation stage in this research.

3.7.2.1.2 The pilot study

Similar to the pilot study carried out for the questionnaire survey (see section 3.7.1.1.2), the semi-structured interview questions were also piloted with three voluntary experts. At the beginning of July 2014, the researcher travelled to Libya to conduct the interviews. The purpose of this pilot study was to increase the reliability and validity of the research tools in terms of the interview questions, the time that should be allowed for the interviews, and the setting. This pilot study showed that the interview's questions were clear and could be answered; however, there was lack of control over the privacy and this needed further consideration in the actual interviews. Furthermore, in terms of time this pilot study showed that it was difficult to specify a set time for the length of the interviews (particularly in the unsettled context of Libya at the time of the interviews). Therefore, the researcher decided to allocate longer time to each interview and planned not to conduct more than one interview per day.

3.7.2.1.3 The sample

According to Saunders et al. (2016), deciding the sample size when carrying out any studied research is essential. However, Kumar (2011) stated that the selected size of the sample in qualitative research is less important than in quantitative research as qualitative research is more about quality rather than quantity. Also, Francis et al. (2010, p. 1229) suggested that "*In interviews studies, sample size is often justified by interviewing participants until reaching 'data saturation".* That means that interviews will be conducted until no new ideas emerge, in other word, when data saturation is achieved.

In this study the samples were purposely selected because the nature of the studied topic required participants to 'open up' and to have the desire to cooperate (taking into consideration the current critical security situation in Libya). Snowball sampling was also used in this research. Additionally, in qualitative research the decision made on sample size is complex in nature; the researcher has to be considered when choosing a size sample in such a type of research.

The interviews were conducted in Arabic, thus translation from the English original questions?was required. Face-to-face semi-structured interviews were conducted with 10 decision makers operating within the selected cases of ICT firms in Libya. During the stage of conducting the interviews different challenges were experienced by the researcher as listed below.

- Due to the critical security situation in Libya, it was a great challenge to find an adequate number of managers who accepted the invitation to undertake the interviews and, even for those who accepted the invitation, it was very difficult to guarantee their commitment as sometimes people needed to travel from city to city in order to avoid the killings and kidnappings.

- The interviews and their analysis were time-consuming. A lot of hard work was involved in analyzing the data. Interpreting and translating the interviews from Arabic to English was difficult and challenging.

- A further limitation was training which, in this case, meant that the researcher needed to acquire the required interviewing skills and the ability to code the text.

The recorded audio tapes were all transcribed as they sounded with all the unfinished and repeated comments, the pauses and the emotions (such as laughing) see Appendix 4.

The time and place for each interview were recorded at the beginning of each transcript.

The researcher spent a considerable amount of time in reading the data transcripts repeatedly before their translation. To ensure and enhance the quality of translation, the researcher initially read the transcripts to become familiar with them and grasp a general understanding of their contents. The aim of the further reading was to interpret and process the vocabulary and grammatical structure of words by using the best words and technical terms to deliver the concepts. Finally, there was a need to consider the individual situations and the overall cultural context. The following steps were adopted to complete the transcript stage:

- The information was transcribed from the audio records into word documents;

- Every transcript was checked again in order to enhance the quality and accuracy of the information;

- A full translation from the Arabic into English was provided;

- The translated transcripts were checked against the tapes.

3.7.3 Data Analysis Procedures

It is commonly considered that one of the important parts of any research is the data analysis because it assists to examine the gathered data and to reach at appropriate conclusions according to them. Data analysis procedures consist of examining, testing, tabulating, categorizing or otherwise recombining both qualitative and quantitative evidence to address the initial propositions of a study (Yin, 2014). Whereas the qualitative data highlights all non-numeric data or data that has not been measured, quantitative data highlights all numeric data (Saunders et al., 2016). Yin (2014) indicated that to reduce potential analytical difficulties, a general strategy for data analysis should be developed. Moreover, despite the existence of various method of data analysis, no specific data analysis has been found to accommodate case study (Petty, Thomson, & Stew, 2012; Yin, 2014). Furthermore, Easterby-Smith, Thorpe, and Jackson (2008) noted that it is important that the researcher follows to analysis procedures that are consistent with the philosophical choices of the study. Therefore, this research adopted quantitative and qualitative analysis procedures. These procedures included descriptive statistics, thematic analysis, and content analysis. Descriptive statistics were used to identify the main features of the data set and were used to analyse and present the data which resulted from the close-ended questions in the questionnaire. However, thematic analysis has been used to analyse the data collected from the open questions' findings extracted from the questionnaire and from the semi-structured interviews. Furthermore, a content analysis method was used for analysing the official documents that related to the studied cases as well as the notes taken in the framework validation phase. The section bellow discusses each data analysis procedures in more details.

3.7.3.1 Data Analysis Procedure of the Questionnaire's Results

As mentioned in many occasions in this study, the questionnaire was used as a method of three data collection methods including semi-structured interviews and document analysis. In a research where mixed research methods are used, questionnaire is usually used to gain quantitative data, however with respect to Dillman (2000), three types of data variables can be gathered from questionnaires; opinions, behaviour and attributes. While an opinion variable declares what the respondents believe to be true or false or their feelings about a studied issue; a behaviour variable indicate the experience of the respondents regarding the studied issue ; but the attribute variable declares the characteristics of the respondents such as age, education (Dillman, 2000).

In order to analyse the data collected from the questionnaire the descriptive statistics method was used. The descriptive statistics method was used to analysis and to present the data in a clear way. Shannon (2000) defined descriptive statistics as an analysis method for the Social Sciences. SPSS is one of the most popular statistical analysis software packages available. It is particularly utilised in education and research. Furthermore, Pallant (2013) pointed that the name of this statistical software has been changed and developed into IBM SPSS in 2010. Accordingly, the data entry process started immediately after the process of collecting the completed questionnaires has been done. The data was entered in Arabic and the translation into English was only applied to the outcomes of the questionnaire.

Five different areas were under investigation; the characteristic of the participants, the organisational culture conceptions, the knowledge sharing conceptions, the current practices of knowledge sharing and the relationship between knowledge sharing and organisational culture. Nonparametric tests were used, because Likert scale is an ordinal scale which allows researcher examine the level of agreement and disagreement. So A Likert scale is used to capture the opinions and behavioural variables; the opinion Likert scale to represent five scales of "agreement". So, in terms of the 5points' grading scale (strongly disagree, disagree, not sure, agree, strongly agree), 1, 2, 3, 4 and 5 respectively were used to represent the scores of these dimensions. In this way, the responses of the participants were clear showing agreement or disagreement with the statements given. If the response scored 3 then the response would be interpreted as neutral whereas if it was over 3 it would be interpreted as positive towards the variable, but for less than 3 it would be viewed as tending towards the negative. The positive responses increased as the score increased, and vice versa.

In terms of calculating the relative weight, the degree 1 was allocated to option 'Strongly disagree'; in this case the relative weight will be 20% which is commensurate with this response. The degree 5 was allocated to option 'Strongly agree'; in this case the relative weight will be 100% which is commensurate with this response. Table 3-4 shows the values assigned for the Likert scale.

Table 3-4: Values assigned for the Likert scale

Scale	Unimportant	Less Important	Moderately Important	Important	Very Important
Scale	Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
Value	1	2	3	4	5

This study used in closed questions mainly five levels which helped in producing slightly higher mean scores relative to the highest possible attainable score, compared to those produced from the use of 10 levels for example.

Accordingly, the statistical analysis was performed using the following statistical methods:

1. Frequencies and percentages in order to describe the characteristic of the samples responded to the questionnaire. It helps in determining the percentage of their responds in regards to the questionnaire's sections;

2. The Arithmetic mean and the Arithmetic average to organize the responds of the participants depending on the degree of consent.

3. Standard Deviation in order to measure the homogeneity of the questionnaire 's responses on the averages of their consent among the questionnaires' variables;

4. Testing validity and reliability of the questions used to collect data using the coefficient " Cronbach alpha " (Cronbach Alpha)

3.7.4 Thematic analysis

In terms of analysis, Denscombe (2014) stated that there are different methods to undertake qualitative data analysis based on interpretations such as content analysis, grounded theory, discourse analysis, conversation analysis and narrative analysis. In Yin (2014) added that thematic analysis is another approach used to analyse qualitative data. In this study, for the purpose of analysing the open-ended questions and interview data, thematic analysis was

used. According to Braun and Clarke (2006) the thematic analysis is a method that allows researchers to identify, analyse and report themes within data. It minimally organizes and describes the data sets in rich detail. According to Borrell (2008) thematic analysis is one of the most common methods of analysis because of the advantages mentioned by Braun and Clarke (2006). These advantages are listed below.

1- It is highly fixable;

2- It is easy to learn and practice;

3- It does not require much experience in qualitative research;

4- The results will be accessible to the educated general public;

5- It is a useful method for working within the participants' research paradigm, with participants as collaborators;

6- It can usefully summarise the key features of large body of data and or offer a 'thick description' of the datasets;

7- It can highlight similarities and differences across the data sets;

8- It can generate unanticipated insights;

9- It allows for social as well as psychological interpretations of the data;

10- It can be useful for producing qualitative analysis suited to informing policy development (Bryman & Bell, 2015, p. 97).

In addition, Braun and Clarke (2006) identified six stages in a step-by-step guide for researchers when performing thematic analysis. These steps are shown in Table 3-5.

Table 3-5: Phases of Thematic Analysis (Braun and Clarke, 2006)

Phases	Description of the process
1.Make yourself familiar with your data	Read and re-read the transcribed data
2. Start initial coding	Coding interesting features of the data in a systematic fashion across the entire data sets, collating data relevant to each code
3. Searching for possible sub-themes	Collating codes into potential sub-themes, gathering all data relevant to each potential theme
4.Reviewing sub-themes	Checking if the sub-themes work in relation to the coded extracts (level 1) and the entire data sets(level 2)
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme
6. Completing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples; final analysis of selected extracts; relating back the analysis to the research question and literature; producing a scholarly report of the analysis

In this study, the Braun and Clarke (2006) steps were followed carefully step-by-step as shown in the following:

- First step: it was stated earlier that all data were transcribed from the audio version into textual version using Microsoft office words. As soon as the data was transcribed, a full translation from Arabic into English was carried out and then all the data were collected into one folder because the purpose was creating a poll of data where all opinions, perspectives and conceptions on the studied phenomenon were collected together in the same place. Each interview was given a specific code in order to use that code when the quotations were selected to assist with the themes. The researcher started to read the transcript carefully to familiarise herself with it.

- Second step, once the researcher had become familiar with the textual scripts, she started to use initial coding (see Figure 3-8) to identify important keywords mentioned by the participants. Being new to the thematic analysis required from the researcher been attention so she would not allow herself to drive the code. The codes were generated from the data and sometime she used the same words used by the participators to represent the code.
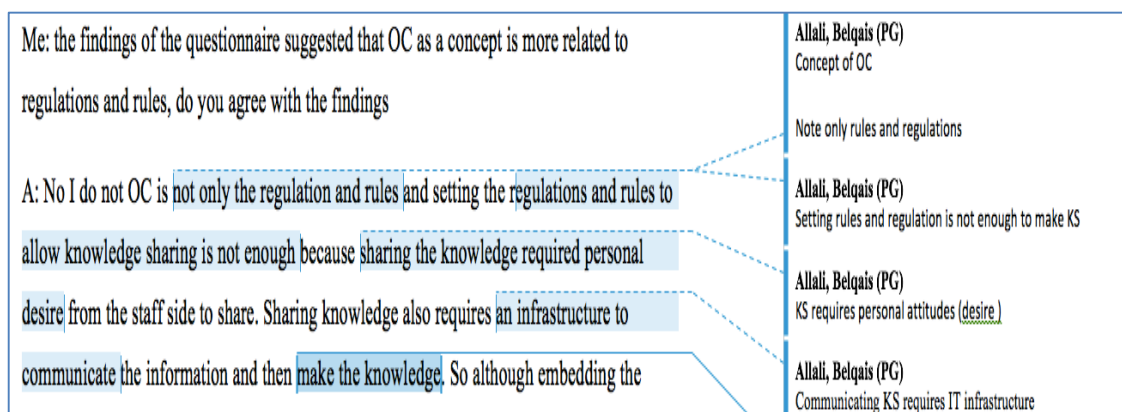
Figure 3-9: Example of the Coding Process

- Third step, once all textual data were coded, the researcher started to find the links between similar codes in order to create sub-themes. This action was driven the codes

themselves not by the researcher. In another words, the link between the codes was suggested by the codes themselves and the role of the researcher was to highlight this in sub-themes. In order to complete this step the researcher used an Excel sheet (see Figure 3-10) so that she could collect all the codes under sub-themes. The same Excel sheet was used in steps 4 and 5 to create the main themes and to finalize the themes.

	A	B	C	D
1	NUMBER CODE	Qutation	sub -theme	theme
2	INT 1	is not only the regulation and rules	oc is not regulation	the conceptions of OC
3		Setting the regulations and rules to allow knowledge sharing is not enough	organizational requirement	knowledge sharing requirements
4		Sharing the knowledge required personal desire from the staff side to share	personal needs	knowledge sharing requirements
5		Sharing knowledge also requiresaninfrastructureto communicate the inform	organizational requirement- technical support	knowledge sharing requirements
6		embedding the culture of sharing require specific types of regulations and r	organizational requirement- culture support	knowledge sharing requirements (culture

In addition, the Excel sheet also included lines from the interviews' scripts which were used later in step six (writing the report) to support the themes.

Figure 3-10: Create themes and sub-themes by using Excel sheet

- Fourth step: once all the codes were gathered underneath the sub-themes, the creation of the major themes started. The researcher created the themes as they were suggested by the sub-themes. Thus she was not responsible for making them; rather she was responsible for representing them. In other words, she did not have any intention of driving the sub-themes; rather she left the codes to do so.

- Fifth step: once the initial themes were identified, the researcher had to revisit them in order to clarify their meaning or to adjust the names of the themes to make more sense of them. This action does not mean that the researcher made any changes to the themes; it means that the themes were clarified in the light of the codes and the sub-themes.

- Sixth step: the final step in the thematic analysis was the writing of the report step. In this step, the researcher had to bring all the quotations, the sub-themes and the themes together to make sense of the data in a textual written format. The researcher was very keen that the evidence from the data spoke for itself. In other words, the themes and

sub-themes were represented as they were suggested by the codes which were coded from the textual scripts of the data. (See Figure 3-9) above for an example of the initial coding).

3.7.4.1 Documents' analysis as a data collection method

According to Yin (2014), when a researcher uses case study/studies as a research strategy for his/her study, there are five sources of evidence. Data documentation is one of them. According to Yin (2014), documents are represented by different forms such as letters, agendas, administrative documents, formal studies or evaluations (similar to research studies) and news clippings. Like other elements in the qualitative approach, the analysis of documents can be used as a complementary strategy to the other methods, such as interviews or ethnography, or as a stand-alone method (Flick, 2009). Daymon and Holloway (2010) argued that documents are important in qualitative research because access to them is often easy and low cost, and they provide information that differs from what may be gained from interviews. Furthermore, the analysis of documents can provide the researcher with access to the evidence gained by, and the thinking of, other researchers.

Scott (1990, p. 6) suggested four criteria to evaluate documents for the purposes of research. These are:

- Authenticity: Is the evidence genuine and of unquestionable origin?
- Representativeness: Is the evidence typical of its kind and, if not, is the extent of its un-typicality known?
- Meaning: Is the evidence clear and comprehensive?
- Credibility: Is the evidence free from error and distortion?

In this study documents were collected from the studied settings and from the websites of the studied cases. The documents were annotated as follows. The number of documents used to gain and analyse some information was recorded as (Doc-numbers) in each site of case study. In addition, the researcher included in the analysis different kinds of documents found in the cases under investigation. However, the number of documents from the cases under investigation was limited mainly to some annual reports and briefs on annual planning or strategic planning. In addition, although the researcher was given permission (see Appendix 3) to review some of the official documents and to share some information, she has not given permission to take away or to scan any of these copies so none of the studied documents were

included in this study. Nevertheless, the analysis of documents that were obtained was used as a complementary method to the interviews and the questionnaire. Moreover, they provided information that could not be gained through other techniques such as interviews. Therefore, the researcher used a specific form which she obtained via the literature review to assist in obtaining identified data extracted from the gathered documents as shown in Table 3-6 bellow.

Table 3-6: Document Description Form

Document Description Form	
Case study code	
Type of document	
Date of issue	
Author (code number)	
Key points extracted from the initial analysis documents	A checklist was used to identify which information should be extracted
Researcher remarks	
Date of analysis	
Level of confidentiality	

The form provided the researcher with initial ideas about what she should be concerning in order to fulfil the aim of this study. The textual data in the documents was analysed using content analysis method. Within the literature many definitions can be found of the content analysis tool (which is widely used in qualitative research). Accordingly, Weber (1990, p. 9) defines content analysis as " *a research method that uses a set of procedures to make valid infernces from text*" . furthermore, Stemler (2001) identified content analysis as "*a powerful data reduction technique*" and its importance has come from the idea that is "*a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding*". (Stemler, 2001, p. 8).

According to Kulatunga, Amaratunga, and Haigh (2007), content analysis comprises four approaches, namely: firstly, word count, by counting the frequency of the identified words;

secondly, conceptual content analysis which focuses on identifying the existing concepts or themes that can be examined in a text or sets of text (Busch et al., 1994- 2012). Thirdly, relational analysis which considers the relationships between the concepts inside the text (Busch et al., 1994- 2012), and fourthly, referential content analysis which focuses on the principal meaning of the text examined and text interpretation is based on the researcher's judgment. In this study content analysis has been used for analysing the documents as well as for the analysis of the notes that were taken during the validation of the framework (see section 5.5).

The process of documents' content analysis is as follows.
All the forms and the related documents were collected in one secured place. As the researcher was reviewing each document, she recorded the headings to be covered during the analysis process. The headings are as follows:

- The creation of the firm;
- The strategic vision;
- The organisational cultural elements;
- The knowledge sharing activities;
- The rule and regulations associated with knowledge sharing issues;
- The decision makers' roles;
- The possible actors involved in KS and OC;
- The current practice of KS.

Each targeted document was reviewed carefully searching for data that met the above headings and each time the researcher came across data belonging to any of the mentioned heading, the data was coded and analysed in a context analysis manner.

The researcher experienced a critical challenge during the selection of the documents' stage and the content analysis stage. She had to ask herself throughout all the process: what shall I consider and what shall I leave? The answers to such questions was not easy bearing in mind the different formats of the textual documents were available, namely Facebook comments, Twitter comments, printed documents and website data. All these formats were considered as documents and included a useful amount of information, thus the researcher had to have a strategy in terms of both selection and analysis in order to avoid an overload of information but, at the same time, there was a need to cover the requirements of the study. In other words,

the selection of the documents and the analysis of the documents had to work together. The researcher initially reviewed the documents, then the decision to keep or dispose was made and, subsequently, the contents' detailed analysis with respect to the headings was carried out (see figure 3-11).
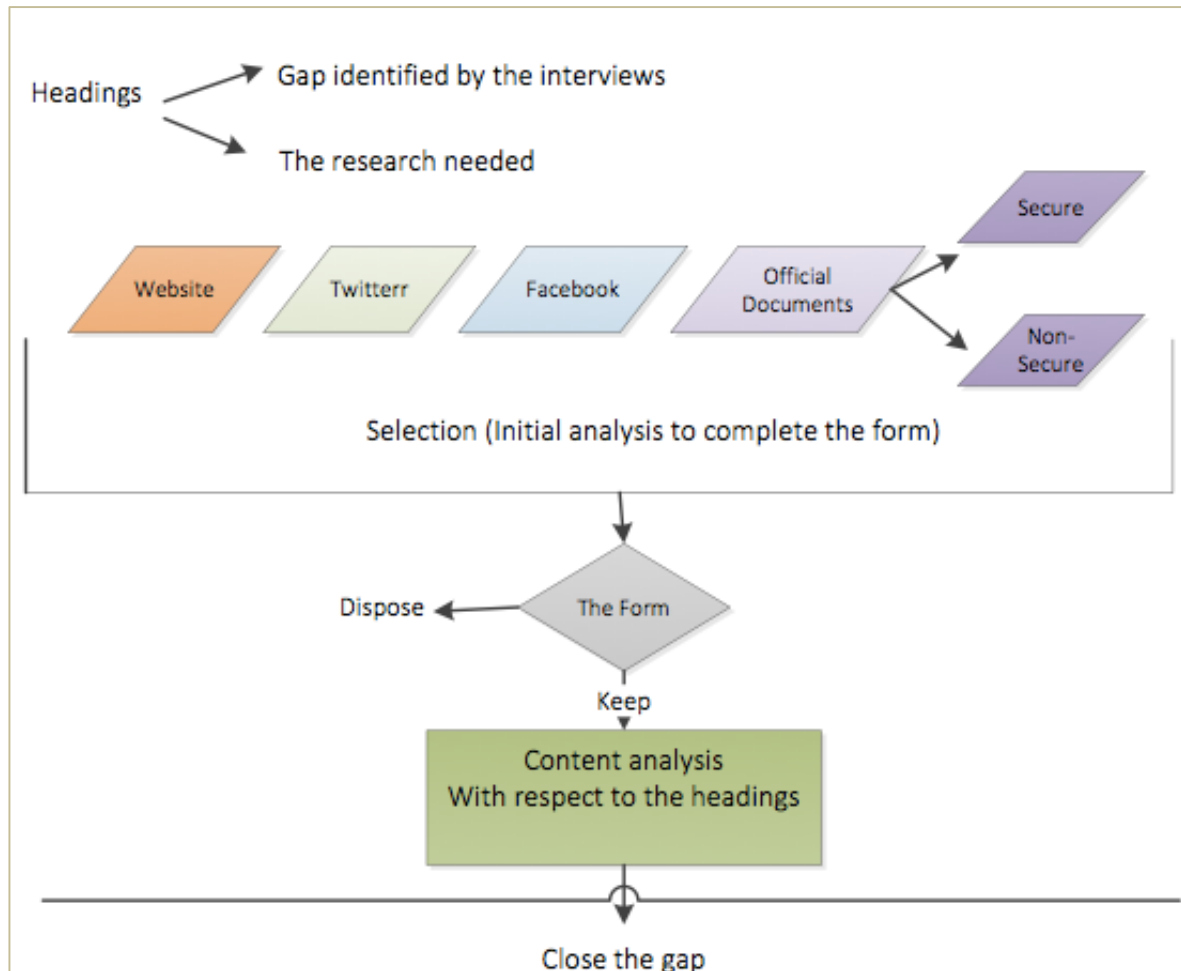
Figure 3-11: The process of documents - content analysis

3.7.5 Research Design and Process

Bryman (2008) and Creswell (2009) agreed that research design is the framework set by the researcher in order to collect the data and analyse them. In addition, the scope of the examination should be explicitly addressed and the process should be clearly indicated in the suggested framework (See Figure 3-11).

Starting up stage

Formulate the research questions: Articulate the research aim and set the objectives;

Topic selection: required regular meetings with the supervisors and extensive consultation of the relevant literature

Create the literature: Different and comprehensive information resources have been reviewed and adopted

Theory stage

Topic- related literature

Methodology- related literature

Final stage

Triangulate the methods

Document analysis

Complete the writing up
Modify framework
Validation
Create framework
Discuss the findings
Review the related literature
Present the findings

Interviews

Select case study (Multi-case study)

Select data collection methods

Data has been used to build up the Interviews questions

Seek the required ethical approval from the university

Imperial stage

SPSS software for questionnaire
Thematic analysis for interview
Content analysis for documents

Analysing collected data

Questionnaire

Contact participant

Transcript and translate collected data

Collect the data

Carry out a pilot study

Figure 3-12: Research Design and Process

3.8 The Quality of Research

According to Seale (1999), although the quality of research is an unclear concept because it has not been specified by methodological rules, there are specific issues which are considered in the literature as being related to the quality of research such as validity, reliability and trustworthiness. While reliability and validity are two main criteria that must be taken into consideration when examining methodological appropriateness, trustworthiness is about 'how can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, worth taking account of, what arguments can be mounted, what criteria invoked, what questions asked, what would be persuasive on this issue.

From the perspective of (Punch, 2005), trustworthiness encompasses four criteria which are credibility, transferability, dependability and conformability. In quantitative methodology, reliability means consistency. This means that the instrument can be retested on the same respondents at a different time and deliver the same results. On the other hand, Bryman (2008, p. 151) defined validity as an "*issue of whether an indicator (or set of indicators) that is devised to gauge a concept really measures that concept*". Validity refers to the accuracy and appropriateness of the gathered data (Denscombe, 2010).

In qualitative methodology, it has been argued that validity and reliability are affected by the researcher's perspective, which may be biased. Therefore, instead of the traditional criteria used in relation to quantitative research, Lincoln and Guba (1985) proposed alternative criteria for assessing qualitative research, namely trustworthiness and authenticity. Whittemore, Chase, and Mandle (2001) indicated that authenticity is very much related to credibility in the validity and involves the portrayal of research that reflects the meanings and experiences that are lived and perceived by the participants. Despite the argument that the meaning of the terms used to judge the research quality is different which depend on the research philosophical stances (Easterby-Smith et al., 2008). This study tends toward interpertevim stance therefore, Yin (2009) as indicated in qualitative research, some criteria should be undertaken to state the quality of the research. These criteria are: construct validity; internal validity; external validity; and reliability.

3.8.1 Construct validity

According to Miles and Huberman (1994), construct validity is based on the appropriateness of the data collection instruments. Within this study, the data collection methods were selected after a review of previous literature (such as previous studies, academic papers and conference reports). Three different data collections including in-depth face-to-face semi-structured interviews were used to assure that the most appropriate, rich and accurate information was collected for the study. Moreover, the supervisors of this study acted as arbitrators of the research method and the interview questions. Several meetings with them were conducted before the final choice of data collection instruments was approved as being valid for this research. The researcher used multiple sources of evidence and compared between them (such as the data obtained from different managers working in different settings). In addition, the researcher used a questionnaire, document analysis and semi-structured interviews as triangulation methods in order to increase the construct validity of the research.

3.8.2 Internal validity

This criterion is based on the data techniques that have been conducted to analyse the collected data. Additionally, the related literature was comprehensively reviewed to make sure that the researcher was aware of the most current updates discussed and recorded in the literature (in terms of selecting the appropriate data techniques and following the analysis process carefully). Additionally, by achieving all the research objectives the internal validity has been addressed.

3.8.3 External validity

External validity can be defined as to what extent the research findings can be generalised. In qualitative research the generation is less applicable; it can be only generalise on a theoretical proposition and not to a whole population, unlike quantitative research (Yin, 2014). In this research with selected multiple case study design the replication logic can increase the external validity of the research findings.

3.8.4 Reliability

Reliable means the process by which a study can be repeated with the same results. That can be applicable in positivism stance while in interpretivism stance can not be applied because this type of study is conducted in a non-controlling context (Easterby-Smith et al., 2008). Within the scope of this research, the decision of selecting appropriate research model to

follow the research methodology process is the keen of achieving this criterion. In addition, ensuring the participants would understand the questions in the same way will assist in increasing the reliability of the interpretivist research (Silverman, 2009) .

There is also credibility, which means to what extent the research findings can be acceptable and believable. For this, it is essential to illustrate how the interpretation has been undertaken considering any bias and the 'value-laden' in terms of an axiology stance. By taking this issue into consideration the credibility of the research can be enhanced.

3.8.5 Validation of the Framework

Once the analysis process of all data was completed and the data were presented and compared with the literature, then the findings were used to create a framework to enhance the practice of KS in the ICT firms. In order to validate the design, the structure and the comments of the framework, the researcher conducted 5 telephone semi-structured interviews (see section 3.7.2.1.1) with different participants (see section Table 5-4). Content analysis of the notes taken during the semi-structured interviews was carried out. Again the researcher prepared exact headings and the analysis conducted to meet those headings (see section 4.2.1.9).

3.9 Summary

This chapter presented a detailed account of the research onion model in terms of the research philosophy, the research approach, the research strategy, the research choices, the time horizon, and the techniques and procedures. Different data collection tools were used to achieve the research aim and objectives. Several research methods such as questionnaires, semi-structure interviews and document analysis were discussed. Different research strategies and the rationale for choosing the case study strategy in this research were explained. This study used quantitative and qualitative data collection methods, including a questionnaire, face-to-face semi-structured interviews and document analysis. The sampling methods used in this research have been explained. In addition, the chapter also provided an overview of the qualitative data analysis which was conducted using a thematic analysis. Finally, the chapter discussed research quality (trustworthiness), authenticity, validity, reliability and credibility to ensure that the research study was conducted carefully in order to obtain reliable and consistent data.

Table 3-7 shows how the objectives tackled within the data collection methods.

Table 3-7: Objectives of the research within data collection methods

Objectives	Method of Investigation			
	Literature-review	Triangulation Method		
		Questionnaire	Interviews	Document Analysis
To evaluate the issues relating to ICT, OC and KS concepts in general and also with particular reference to Libya;	✖			
To investigate the concepts and elements of OC in ICT firms in Libya;	✖	✖	✖	✖
To investigate the concepts and elements of KS within ICT firms in Libya;	✖	✖	✖	✖
To evaluate the relationship between OC elements and KS elements in ICT firms in Libya;	✖	✖	✖	✖
To develop a framework that assists ICT firms in undertaking Knowledge Sharing processes.	✖	✖	✖	✖

Chapter 4.   Findings

4.1 Introduction

This chapter aims to present the findings collected from four different Libyan ICT firms using three different data collection methods. These were questionnaire, semi-structured interviews and document analysis. The data presented in this chapter is organized based on the data collection methods' outcomes rather than being based on the studied cases. The idea behind adopting such structure is based on the fact that the questionnaire was designed to examine the existence of the studied concepts (Organisational Culture and Knowledge Sharing) in the examined cases and also to learn, to some extent, how the people understood the concepts and the possible relationship between them. Following this, and based on the questionnaire's findings, the semi-structured interview questions were developed. The interview questions were designed to extend the understanding of OC and SK meanings and, at the same time, to learn about the possible factors that influence the relationship between the studied concepts. The outcomes from the document analysis were used to clarify issues relating to the establishment of the firms and there was also an analysis of written documents that demonstrated some elements of the culture including procedures and services' elements. These outcomes were utilised as appropriate.

Accordingly, the researcher starts this chapter by presenting some of the data collected from the official documents including websites to present a summary of the background of each case. Next, the questionnaire findings are presented followed by the interviews' findings. The document analysis findings will also be used within the interviews, as needed, to support some issues mentioned by the participants. Thus, the structure of the chapter is as follows:

- A brief summary of the background to each case study;
- The outcomes of the questionnaire will be presented including the outcomes from both close-ended and open ended questions;
- The themes and sub-themes which were suggested by the semi-structured interviews' responses will be presented. The data collected from the official documents assisted in providing support, alongside the suitable quotations extracted from the interviews, for the themes and sub-themes;
- A summary of the finding by triangulating the data collection methods.

4.2 Case study backgrounds

4.2.1 Firm A

4.3.1.2   4.2.1.1 Establishment and services

In 1995, Firm A was established and registered as a private Firm. It was set up in order to cover local telecommunication needs and provide mobile services in the nation of Libya. In 2001, Firm A was transferred into the General Firm of Posts and Telecommunications. By 2007, the Firm's name was changed to its current new name and is the leading cellular communications Firm in Libya. It is one of the major subsidiaries of the Libyan Telecom and Technology Companies Ltd under the umbrella of the General Authority for Communications and Information Technology.

The Firm provides different sets of services including a credit transfer service, sending of SMSs, a voice mail service, diverting calls, an international calls' service, international roaming, printing invoices via the internet, fast services for subscribers, GPRS service, a self-service system converting between prepaid packages, a 140 E-voucher service and a suppliers' registry.
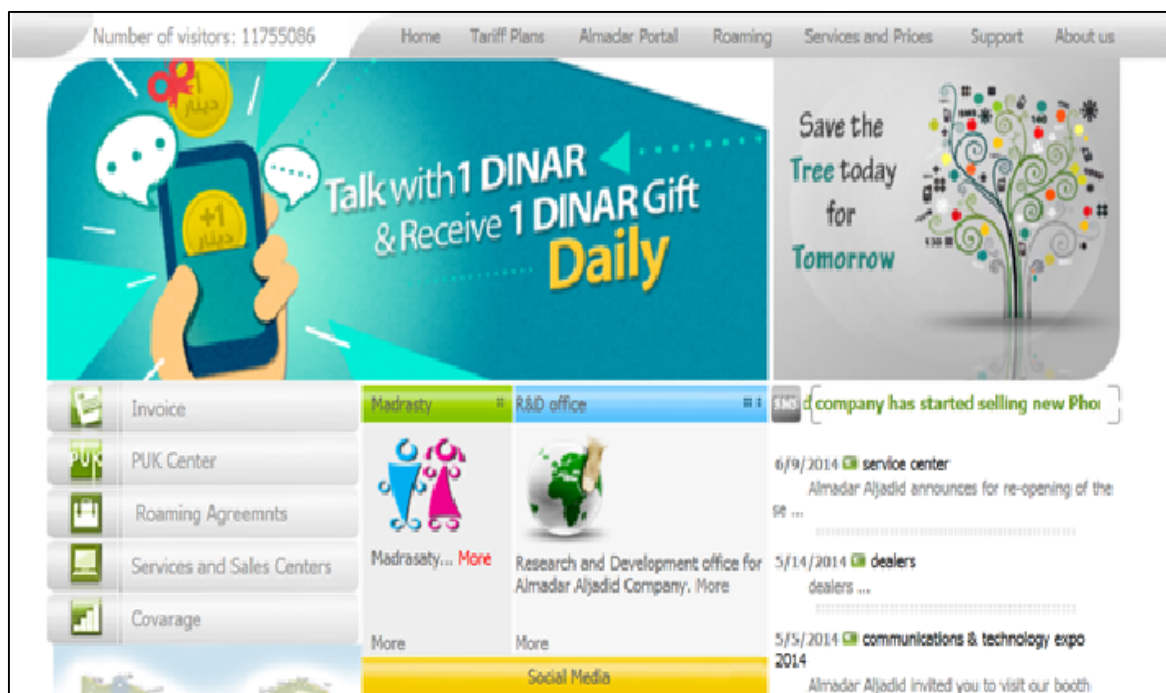
Figure 4-1: Firm A website

In the original website, the Firm used both languages Arabic and English to present its services and contents, including the name of the Firm. However, as it can be seen from

Figure 4-1 the name of the firm which was indicated in Arabic and English have been removed due to ethical consideration. The Firm also communicates with customers via Twitter, Facebook and the YouTube channel.

4.3.1.3   4.2.1.2 Cultural elements

The main aim of Firm A's culture, as it appears in the official documents, is focused on the quality of all their services, on being professional and on training, hence, the Firm sets its aims to contribute to this culture as shown in the following:

- Creating a high quality communications' environment to provide all different types of communication services for different customers including universities and the education sector;
- Enhancing the quality of services by setting up a culture of learning, training and innovation;
- Contributing effectively to the development of the national economy and to the representation of Libya in international forums concerned with communication affairs.

Firm A believes that highly professional human resources are of fundamental importance for any ICT firm to be successful. Hence, decision makers within the Firm build up their strategic vision based on the idea of training with the intention of developing human resources and professionals who are able to provide high quality in both administration and in technical support and services to all the customers across the country. For the purpose of building up their human resources and to identify their actual needs, decision makers in the Firm have designed a complete plan that articulates all their needs in order that they will be able to manage their current and future human resources. Decision makers formulate the jobs required and provide the management team with job descriptions to fulfil the current and possible future needs of the Firm.

Mangers and decision makers set up continuous and intensive training programmes to achieve the required development of the human resource capacity and to enhance the current level of professionalism to advanced levels of excellence and innovation.

The Firm does not hesitate to provide any training programmes, whatever their scope, (technical, commercial, administrative) with the hope of developing the capacity and efficiency of the professionals in their respective fields in order to serve the interests of the

Firm (as well as enabling new professionals to do their job faultlessly). Professionals who attend external training courses are requested to share with their colleagues not only their experiences, but also their knowledge and skills. Sharing can be achieved also via the firm's internal network or by completing professional reports.

Firm A's principles believe, to some extent, in the culture of sharing in order to enhance the professionals' knowledge about what is happening within the Firm. For this purpose, the Firm has developed an intranet server to allow the staff to exchange information and for the exchange of data between staff to enrich their knowledge of what is happening in the Firm more easily, faster, more efficiently and at less cost. The Firm uses internal tools called CAREERS to facilitate and speed up all internal transactions to save time and effort and reduce paper consumption. External email is used to liaise between the Firm and other professionals or other partners inside and outside Libya.

As part of every year's activities (in order to enhance the communication and relationships between the Firm's professionals) the top management team hold an open day every October to allow staff to spend all day together and be entertained through friendly and family style events. In addition, during local and religious events such as Eid and Ramadan, the top management team hold celebrations and meetings to gather together all the professionals working for the Firm across the country. The organization structure in Firm A is presented in Figure 4-2.
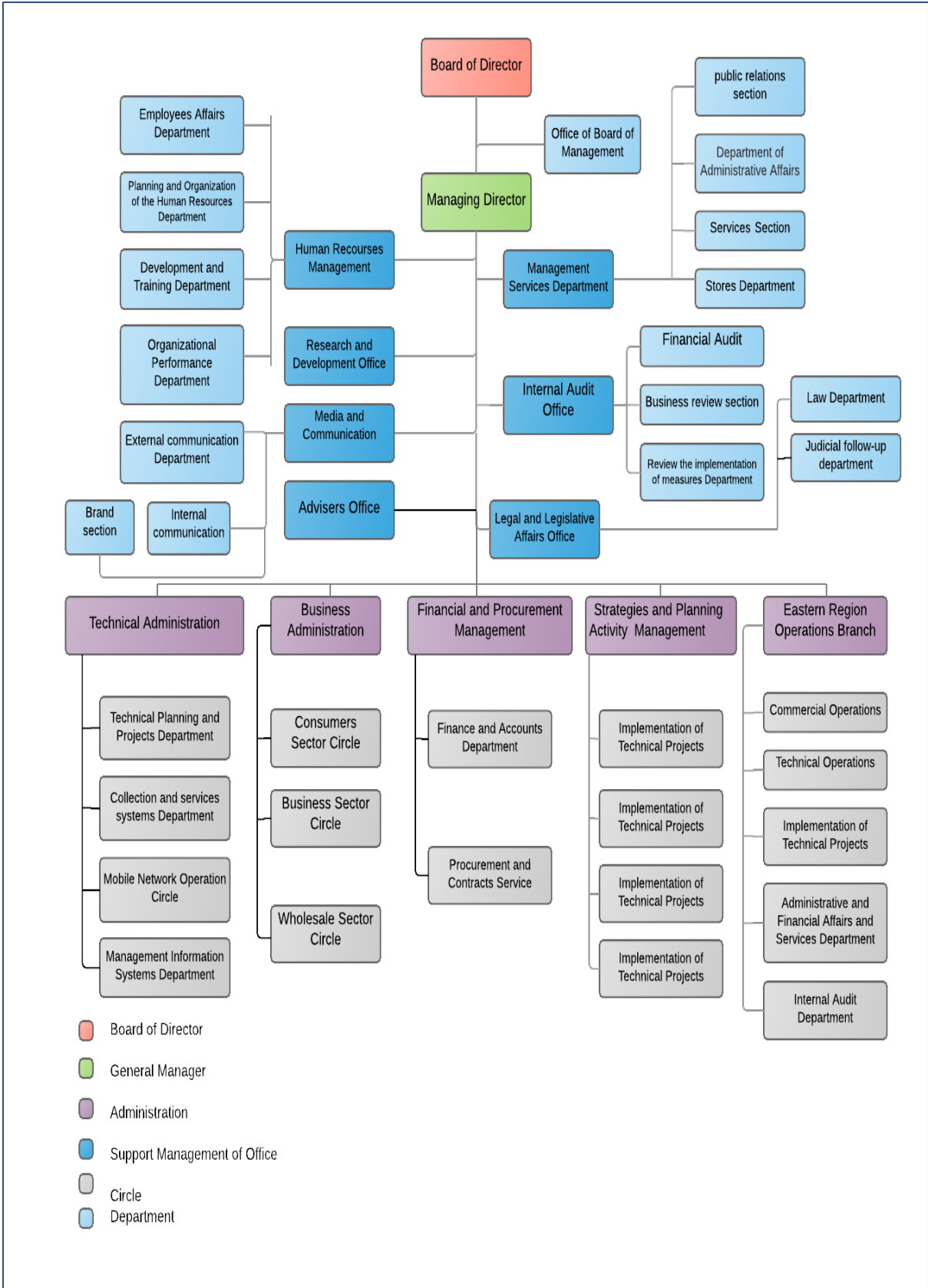
Figure 4-2: Firm A structure

4.2.2 Firm B

4.3.1.4   4.2.2.1 Establishment and services

Firm B was established in two branches (Tripoli and Misurata City) in Libya in 1998 as an Internet provider. The Firm then grew to provide (alongside the Internet services), a balanced mix of Telecom and Information Technology (IT) Enterprise Solutions and Services. Firm B started off as an Internet Services Provider (ISP) and later evolved into a provider of Information Technology (IT) infrastructure. The main services, which help the Firm build up their profits, are presented in Figure 4-3

Figure 4-3: Firm B Services

On the top of the services mentioned in figure 4-3, Firm B also provides other types of services such as servers and storage, network hardware, IP telephony / VOIP, network design assessments, telecommunication services, wireless LAN/WAN, data centre design, help desk support, customers services and support, and training services. These services are provided to support the major message of Firm B which shows the Firm's commitments towards "create(ing) and sustain(ing) superior performance by offering our customers (see Figure 4-4) better service and quality combined with innovative and imaginative management practices and techniques" (Firm B website, 2016).

Figure 4-4: Firm B Website

The Firm pays specific attention to business customers, namely those in the banking, financial services and insurance, energy, telecom & utilities, government and related services sectors and its promises to them are:

- To improve productivity with innovative and collaborative environments using voice, data and video that will allow customers to share internal and external data efficiently and effectively. The Firm provides optimization of network operations which aim to increase employee productivity and to manage risk while, at the same time, reducing overall cost with the aim of holding businesses in good stead in the long term.

- To support the workforce and distributed operations with both fixed and mobile communication systems.

- To transform legacy call centres into multi-channel contact centres for improved customer service.

It could be seen from the official documents that the major strength of the Firm is in networked IT services which are built upon an extensive and flexible MPLS network, reaching to a new city every week. Firm B is one of a few Cisco solution providers in Libya; it has access to all types of networking equipment and software which are required to meet the needs of business communications. The top management team runs the Firm business based on industry standards for Project Management. Repeatedly examined processes allow

the Firm to reach best practices and utilise cutting edge technologies in order to provide solutions and management services that ensure high-end networks.

The Firm communicates with their customers via their website or via telephone. Interestingly, the only language used on the website is English. The Firm does not show on their website any indication concerning any existence on Facebook, Twitter or any other social networking channels. The Firm has partners including Dell, SYSTIMAX SOLUTIONS, HP, CISCO and Microsoft.

4.3.1.5   4.2.2.2 Cultural elements

According to the official documents, the culture of Firm B focuses on delivering value through their presales and design, project management, and support teams, addressing gaps through acquisitions. This message was reflected in their organisational structure as seen in Figure 4-5 where the Firm created the required units and departments to handle the required duties in order to create their own specific culture. They aim to communicate to modern workplaces with modern principles. Staff are generally educated and very well trained.
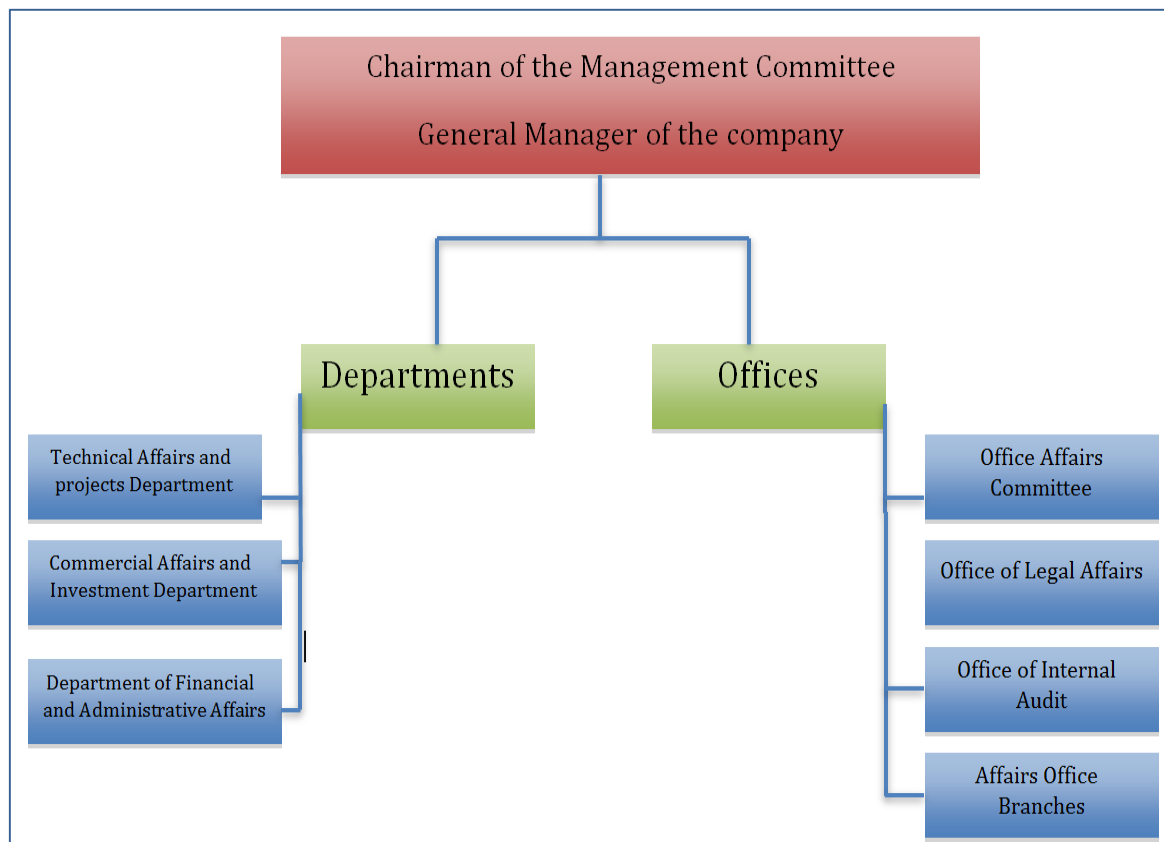
Figure 4-5: Firm B structure

The Firm believes that having a professional team is one of its major strengths because they have built their culture based on a team-working culture. The employees in the team have been able to use their strong domain knowledge and skills to communicate and work together to fulfil the needs of the customers and the mission of the Firm. The culture of Firm B is also set up to allow for a high level of competition. This element within the culture appears in the staff capacities and services. For example, Firm B provides/encourages the following to support the culture of competition:

- Cisco certified Internet experts (CCIE).
- Values' added reseller (VAR) status with many key IT infrastructure firms.
- End to end turnkey solutions.
- Highly customer centric.
- The most state-of-the-art network design available.
- Competitive prices with discounts on its equipment.
- Firm B has one of the largest teams in Libya who has certified members.

In order to achieve a high level of completion, Firm B creates exclusive strategic alliances with different well-known ICT solution providers such as Dell, SYSTIMAX SOLUTIONS, HP, CISCO and Microsoft (see Figure 4-6).

Figure 4-6: Firm B competition

4.2.3 Firm C

4.3.1.6   4.2.3.1 Establishment and services

According to the decision makers of Firm C, the Firm was established in 2005 to provide Libyan customers with mobile and connection services. Over time, the Firm has grown to become one of the leading System Integrator and licensed VSAT operators located in Libya (see Figure 4-7).
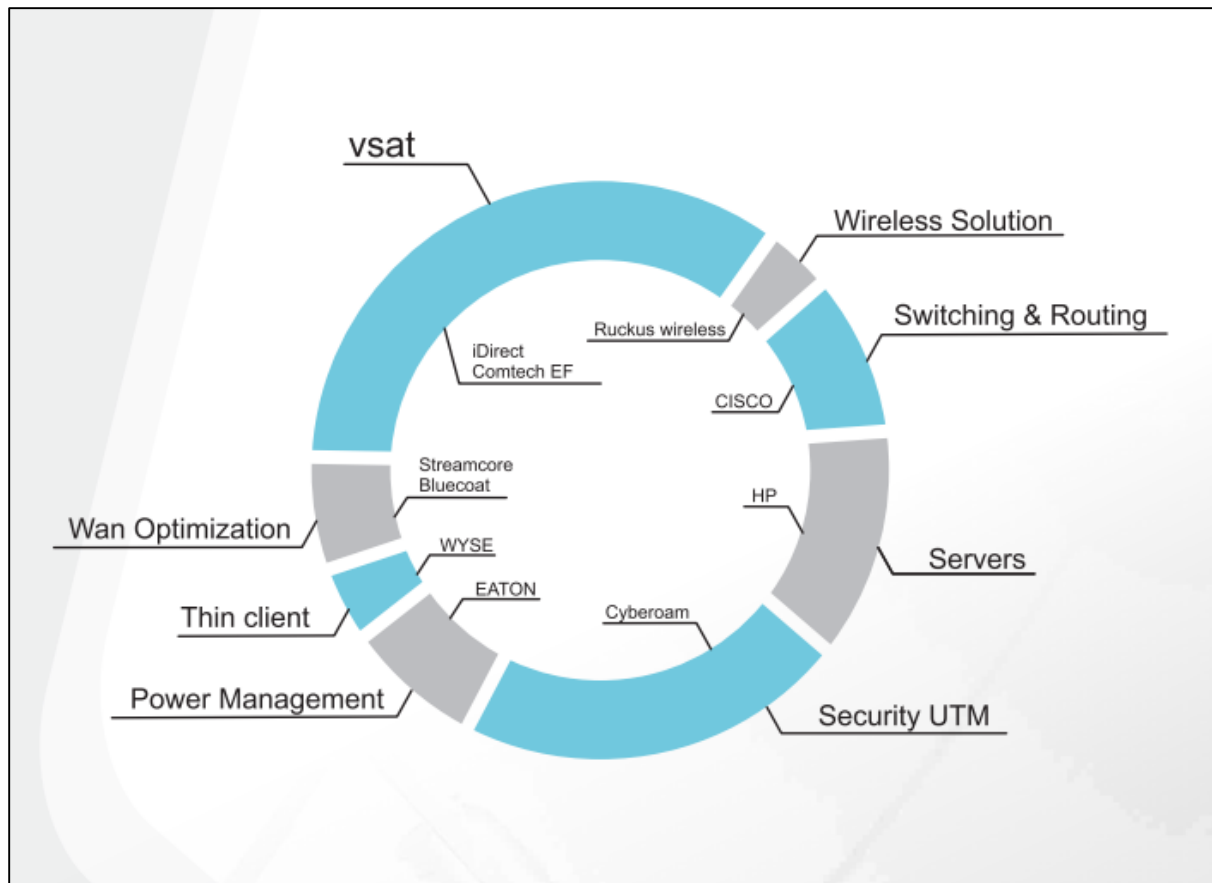
Figure 4-7: Firm C System Integrator

From Figure 4-7 it can be seen that Firm C provides different services including wireless solution, wan optimization, thin client, power management, security UTM, servers and switching and routing. By providing all these VAST services, the Firm was able to become a pioneer in providing excellent consultancy services including implementation and support and an elite portfolio of services' offerings. The Firm is also a turnkey implementer of smart facilities and intelligent buildings in the oil & gas, government and defence, commercial, hospitality, education, banking and finance and health sectors. The main promises that Firm C has made are to provide its customers with IT services and solutions with the highest

ethics, diversity and integrity in a cost-effective manner. The Firm has different channels to communicate with its clients including a website (Figure 4-8). It also utilises different types of social networks including Facebook and Twitter. All information and navigation on the website is provided in English as the only language. Customers can also use the telephone to communicate with the Firm. The major services provided by the Firm are clearly promoted on their website (see Figure 4-8).
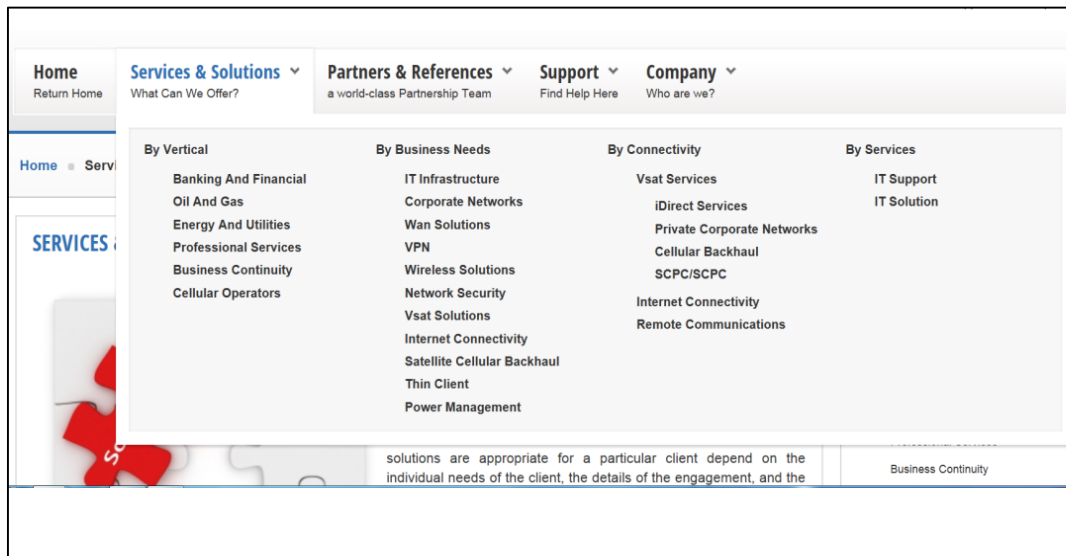
Figure 4-8: Firm C website

4.3.1.7   4.3.2.2 Cultural elements

In addition, in terms of the culture of sharing, according to (D-9), the Firm provides staff with a template which can be competed and which simplifies the process of documenting and recording. Employees must record all the risks and mistakes they experience so anyone who comes later will be able to avoid experiencing the same problems and this claim has been verified by the decision makers when they were asked about Knowledge Sharing activities (see section 4.4.2.2.1). In addition, it is important to indicate that organisational structure has not been mentioned in this section because the permissions to share the information has not been given due to ethical consideration.

4.2.4 Firm D

4.3.1.8   4.2.4.1 Establishment and services

Firm D was established in 1997 as a telecommunication technology organization. Firm D dominated the Libyan ICT sector and became the most used ICT provider (380,000 users were using the Internet penetration which is attributable to DSL and WiMAX services).

The Firm promotes its services and communicates to its customers using both Arabic and English via their website and through other communication channels such as Facebook, Twitter and YouTube. The Firm also provides an online form to be completed if a customer requires further support or another means of communication. Common communication channels such as post, physical visits and via telephone is also available. Firm C provides a wide range of services but the major services are the five services listed below. Each service includes a few other services.

Internet access solutions including:

- Dial-up internet access
- Libya DSL (ADSL2+)
- LibyaMAX (WiMAX)
- LibyaPhone (MVNO Mobile)
- Libya FTTH (Fiber to the home)
- Satellite (DVB-RCS) Access
- Data network connection solutions including:
- Data network via wireless
- Data network via VSAT
- Communication solutions including:
- VSAT
- Microwave
- GSM
- Value-added services including :
- Webhosting and e-mail services
- Network security services
- Consultation services
- Technology and communications

Firm D improved its Internet connections and its main promise is to provide high speed services across Libya.

4.2.4.2 Cultural elements

The CEO of Firm D stated in 2013 that the Firm was controlled and directed by government policy. Therefore, in the past the main concern of the director was to serve the needs of the dictator regime. Accordingly, the Firm faced real challenges in promoting its services to the local people; Libyan people were always complaining that the Firm did not meet their wishes and needs. The CEO words indicate, to some extent, the culture which dominated the Firm for a long period of its establishment (bearing in mind the local people's perspective that the Firm was established to serve the dictator's family needs which, thus, might influence negatively on the Firm's reputation). The Firm, since Libya was liberated, is fighting to change the previous negative elements of the culture inside the Firm by providing more training and human resources' support and, at the same time, it is facing external challenges such as increased demands for the services and a lack of the required infrastructure. The CEO of Firm D stated that "*W*e *have changed all of this since the revolution and we are trying to provide internet access to everyone in Libya. We have set up internet services in areas of the country that didn't use to have them before; we are increasing bandwidth and providing improved services. We are also trying to balance all our services between all the cities as previously everything was based in Tripoli, where we were principally servicing the demands coming from the government. However, now we really want to move forward and satisfy our customers' demands and increase the internet penetration in Libya. We want to play our part in improving this country. We are working towards this goal*" (Official Report, 2013).

The Firm, according to official documents, changed its structure to meet the new cultural aspects (see Figure 4-9). A human resources' department was added to enhance the culture of learning and more internal and external training courses are provided to improve the staff skills.
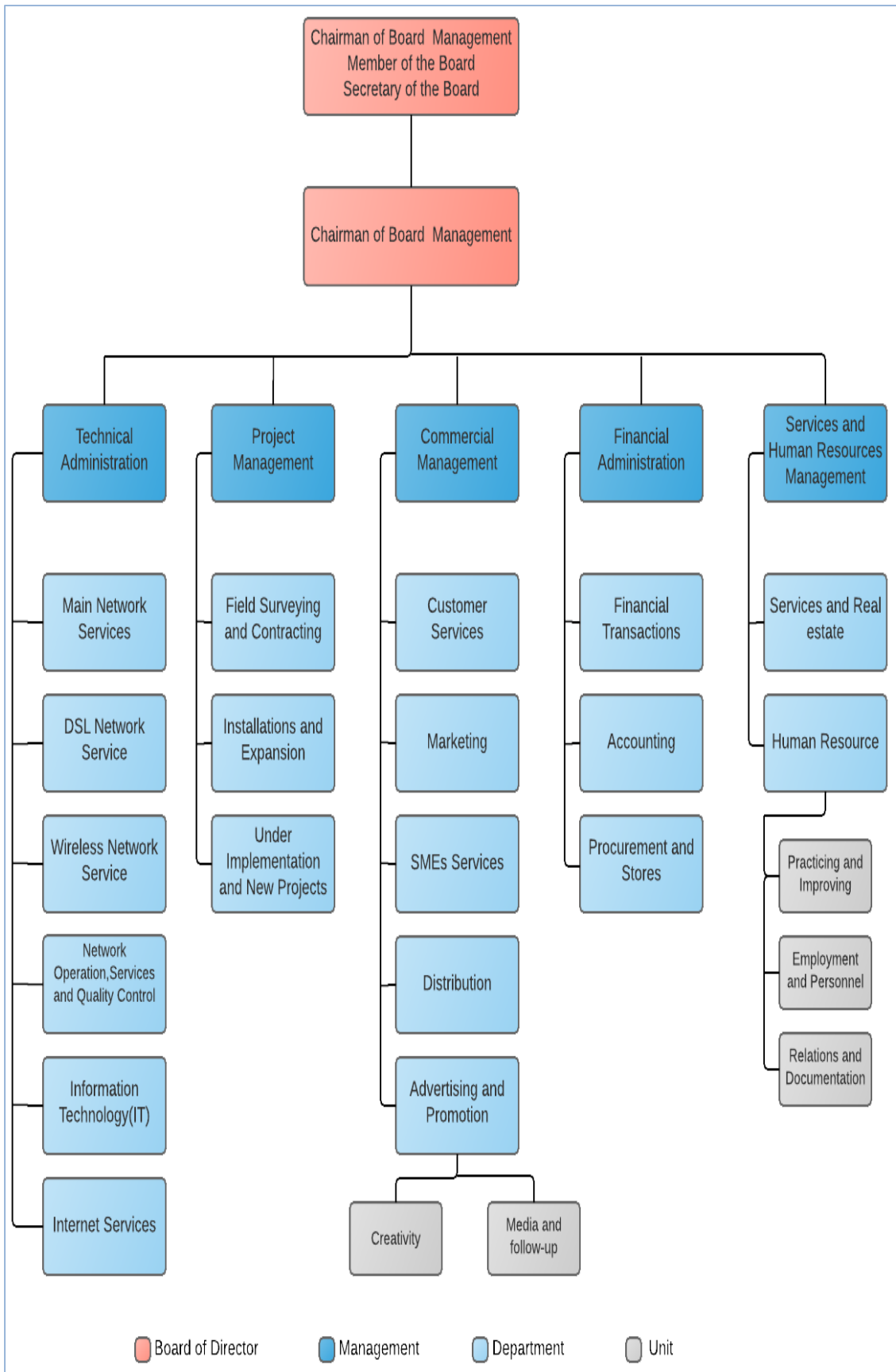
Figure 4-9: Firm D Structure

4.3 Findings from the questionnaire

4.3.2 Introduction

A target sample of 306 participants was selected randomly from the total population of around 1,500 employees who work in four different Libyan ICT firms. 118 out of 306 individuals participated in the questionnaire that was distributed in January 2014 (see section 3.7.1.1.3). The questionnaire responses were returned back by the end of April 2014. The data from open-ended questions were transcribed, translated and analysed using thematic analysis (see 3.7.4), and descriptive statistics was used to analyse the close-ended questions (see 4.2.1.8).

In order to test the validity and reliability of the questionnaire's responses Cronbach's alpha statistic has been used. Cronbach's alpha is widely used in social sciences and it is the most common measure of internal consistency (reliability). It is particularly used for questionnaires that utilise a Likert scale for the question responses, thus there is a need to determine if the scale is reliable. Table 4-1 below shows the different values of Cronbach's alpha test.

Table 4-1 Cronbach's alpha value

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

According to Table 4-2 it can be seen that the value of Cronbach's alpha coefficient was high for each dimension of the study and ranged between 0.87 - 0.88. Additionally, Cronbach's alpha coefficient was 0.87 for the total of all the dimensions. This indicates the stability of the results and their harmony with the statistical analysis results in terms of objectivity.

Table 4-2: Cronbach's alpha coefficient (The Stability Results from the Questionnaire)

Questionnaires' major dimensions	Number of examined issues	Cronbach's Alpha
OC Concepts	10	0.88
OC elements	11	0.87
KS concepts	6	0.88
The level of applications	4	0.88
Activities	7	0.87
Services provided by firms	30	0.87
Total	68	0. 87

4.3.3 The questions and their responses

In this section the main focus is on providing the responses to every question utilised in the questionnaire via a pie chart or a table to visually describe the textual information extracted from the questionnaire. In this, the researcher follows the same order of the questions utilised in the questionnaire. In order to enhance the ability to follow-up on the answers, the researcher created a sub-heading for each group of questions depending on the main purpose of the questions. For example, section 4.3.2.1 gathers together all the questions which represent the characters of the participants and their contexts and so on. At the end of each section the researcher provides a summary of the findings to help the reader understand the conclusions to each group of questions.

4.3.3.1 The characters of the participants

In this section, the findings from three main questions are presented. These are as follows.

Question 1: What is your position?

Staff

Senior Manager

Office Manager

Other (please specify)

According to the findings, the majority of the respondents were staff (at 87.3%), followed by office managers at 10.2%. The least number of responses came from senior managers at 2.5%, see Figure 4-10. This result directed the researcher toward two facts; the first one is

that the responses mainly reflect staff opinions and experiences, and the second one is that the participants of the semi-structured interviews should be senior manager and office managers (decision makers) in order to create a much more complete image of the current status within ICT firms in Libya.
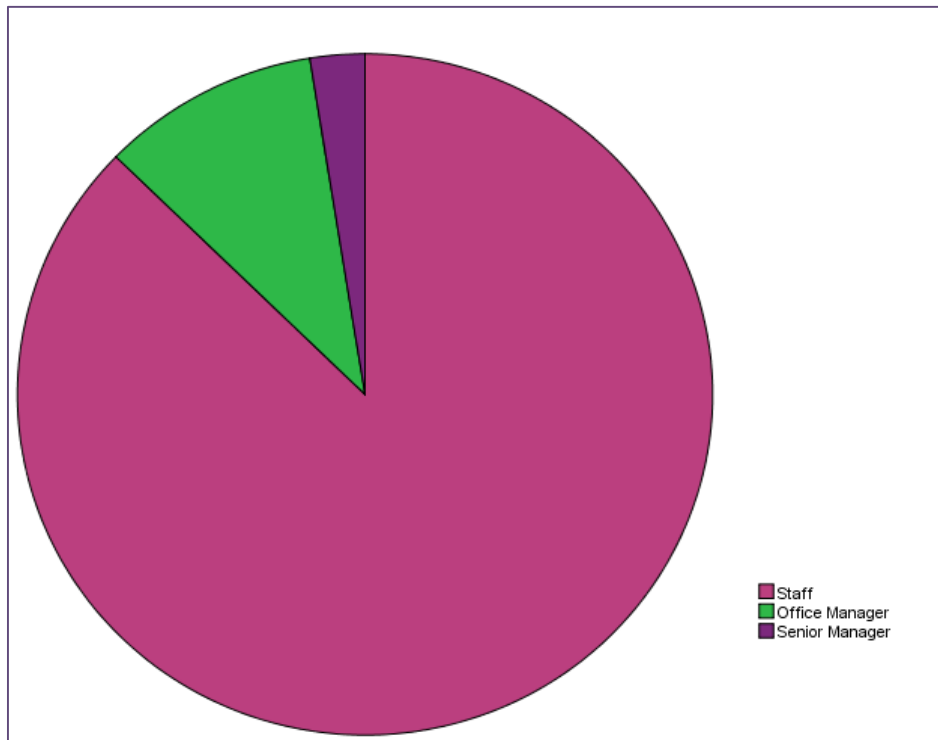
Figure 4-10: The Respondents' Positions

Question 2: How long have you been working in this firm?

Less than 6 months

Less than 2 years

2 years to 5 years

More than 5 years

Responding to "how long have you been working in this firm?" the findings show that 45.8% had been working in the firms for 5 years and more. Those who had worked in the firms for between 2 and 5 years recorded 25.4% and an equal percentage of 14.4% were recorded for those who had worked in the firms for less than six months and for less than 2 years, see Figure 4-11. This result suggests that the majority of the responders have a relatively long experience in the field of ICT which implies the fact that they are aware and understand aspects of the context and the field. This means that the results will imply some deep meanings.
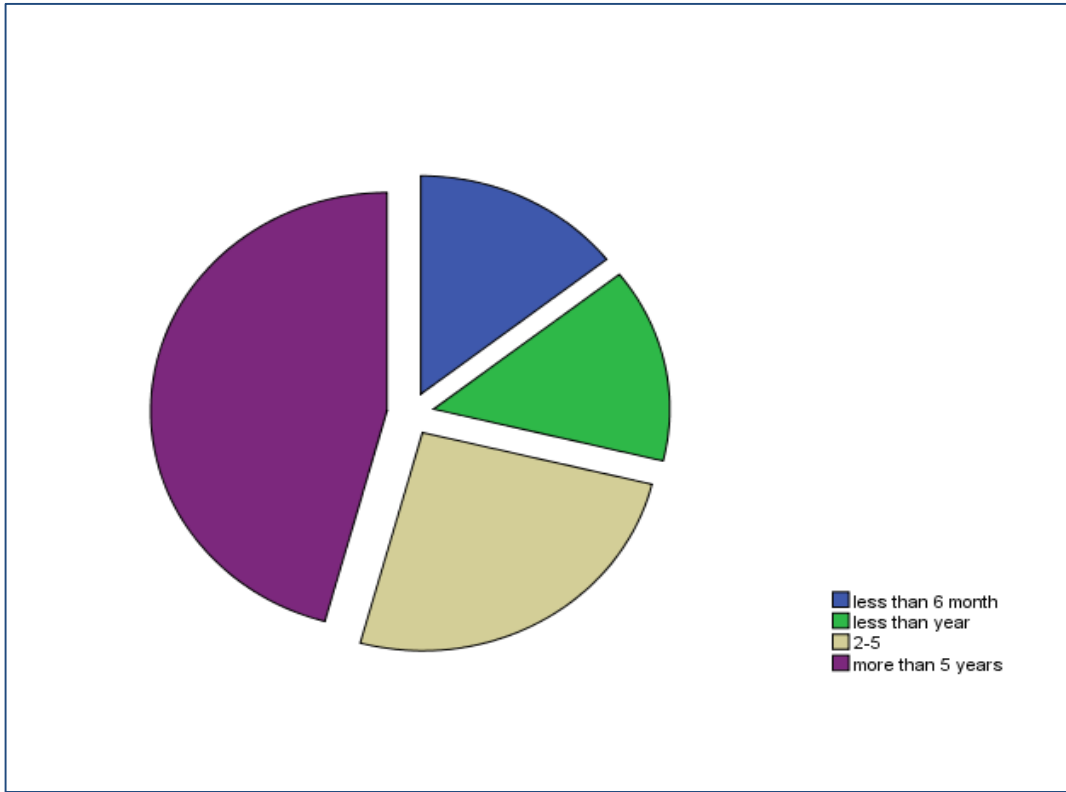
Figure 4-11: Length of the Respondents' Work Experience

Question 3: Which department do you belong to?

Human Resources

Financial Department

Administration Department

Production Department

Technical Department

Commercial Department

IT Department

Cultural and Support Department

Other (please specify)

Table 4-2 shows that the majority of the respondents came from the IT and human resources departments (18.6 %) followed by production departments with 14.4%. Respondents who belonged to other and administration departments recorded 10.2%, while equally represented by 9.3% were the respondents from the commercial and financial departments. Respondents

who belonged to the cultural and support departments recorded 6.8% and lowest percentage was recorded for the technical departments at 2.5%. This result suggests that, the perspectives and concepts provided in this questionnaire will reflect the understandings of IT and HR staff who are commonly the professionals who are in regular interaction with OC issues and KS activities and they are the ones who are responsible for implementing any KS initiatives or programmes that will engage and benefit both the Firm and its stakeholders (Fenwick & Bierema, 2008; Glade, 2008). In addition, there is growing evidence that human resources provide firms with a competitive edge which is the main core of KS (Pfeffer, 1998).

Table 4-3: The departments which employees belong to

The Department Where Participants Belong	Percentage
Human Resources	18.6%
Financial Department	9.3%
Administration Department	10.2%
Production Department	14.4%
Technical Department	2.6%
Commercial Department	9.3%
IT Department	18.6%
Cultural and Support Department	6.8%
Others	10.2%
Total	100.0%

4.3.3.2   Understanding the Concept of Organisational Culture

In this section, the main aim is to presenting the findings from the questions that focussed on understanding of the meaning of OC. The findings come from three different questions. The first question was:

Question: "***Please give your opinion about Organisational Culture concept (s)***

10 different concepts of the term OC were tested in the questionnaire. These ten concepts were as follows:

1. OC is crucial and complex to understand and does not necessarily reflect the perspectives of the staff who work in the firms;

2. OC focuses on people because they are the main identity of any organization;

3. OC is the main dynamo of an organization and reflects its identity;

4. OC is all about the staff values and culture;

5. OC is a set of regulations and obligations;

6. Each OC is unique;

7. OC is organisational structure;

8. OC is all about leadership;

9. OC is made up of staff stories and experiences;

10. OC is either hard and solid or soft and flexible.

The frequency values of the responses for understanding the concept of organisational culture is given in Table 4-3.

Table 4-4: the result concerning OC concepts

The Concept	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	16.9%	28.8%	22.3%	26.0%	6.0%
2	7.9%	18.4%	7.9%	51.0%	14.8%
3	2.7%	8.3%	17.6%	46.0%	25.2%
4	6.0%	16.7%	15.8%	43.9%	17.5%
5	5.0%	20.2%	16.7%	47.4%	10.5%
6	10.0%	26.4%	29.0%	29.1%	5.5%
7	7.0%	20.2%	9.6%	47.4%	15.8%
8	1.7%	63.1%	14.4%	4.6%	16.2%
9	8.1%	23.2%	21.4%	37.5%	9.8%
10	10.9%	23.6%	22.7%	32.7%	10.10%

Table 4-3 shows that the eighth concept (OC is all about leadership) received the highest percentage of disagreement, followed by the first concept (OC is crucial and complex to understand and does not necessarily reflect the perspectives of the staff who work in the firm). In addition, the lowest percentage of disagreement was recorded to the third concept (OC is the main dynamo of an organization and reflects its identity). In terms of the agreement with the concepts, the third concept (OC is the main dynamo of an organization and reflects its identity) received the highest percentage; followed by the second concept (OC focuses on people because they are the main identity of any organization). The lowest agreement was recorded with the eighth concept (OC is all about leadership).

The findings show that the highest percentage of the participants who were not sure about the concept was recorded to the sixth concept (Each OC is unique) closely followed by the result recorded to the tenth concept (OC is either hard and solid or soft and flexible) while the lowest percentage of those who were not sure about the concept was recorded to the second concept (OC focuses on people because they are the main identity of any organization).
The third concept recorded the highest percentage in terms of agreement, while concept eight (OC is all about leadership) recorded the lowest result.

Question: ***What do you think Organisational Culture would mean to you*?** (Refer to Table 4-4).

This question is an open question one; hence, the data was analysed using thematic analysis approach (see section 3.7.4 in chapter 3). The findings presented the suggestion that the concept of OC would not be understood without understanding the related components (see Table 4-4).

Table 4-5: the meanings of OC as seen by the participants (outcomes from an open ended question)

The concept of OC	The concept's components
OC as a unified identity of the organization	Values, rules, traditional events, regulations and rules
OC is about the values of the organization	Values and spiritual faiths
OC is understanding the strategic vision of human resources' values in the organization	Cognitive intellectual values
OC is understanding the social value of fairness in the workplace	Rules, regulations, hierarchy of the organization, conscience of the staff, social values
OC is the top management awareness of the value of fairness and equality	Decision makers' culture , decision makers' attitudes and personal values
OC is the dynamo of the organization	Regulations, events, rules, ideas, cultural values and experiences
OC is deeply based on traditional religious values and morals that shape the value of each person individually	Traditional value , religious rules and morals, personal values
OC means avoiding killing routines and being flexible	Personal values, innovation values, creative skills and experience.

The outcomes from the question "*What do you think OC would mean to you*", suggest the emergence of two themes which are the concepts of OC and the components of OC concepts.

Table 4-4 shows that eight different concepts of OC were suggested by the data and each concept has its own components. Interestingly, all the mentioned concepts suggested that value is a main component to build up the meaning of the concepts.

Question: ***Which element (s) do you think OC should include.***

Eleven elements were extracted from the literature and were provided as belonging to the concept of OC. These elements were tested in the questionnaire and the results are summarized in Table 4-5. The elements were tested in the questionnaire following the five scale approach.

Table 4-6: The Elements of Organisational Culture

Numbers	The Elements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	Values	2.7%	3.5%	8.8%	59.3%	25.7%
2	Regulation and Policy	9.7%	11.5%	6.2%	57.5%	15.0%
3	Symbols and Rituals	7.3%	21.8%	17.3%	37.3%	16.4%
4	Top-Management Culture	7.2%	10.8%	12.6%	56.8%	12.6%
5	Owner's Culture	9.0%	24.3%	10.8%	34.2%	21.6%
6	Governmental Procedures	11.7%	15.3%	21.6%	40.5%	10.8%
7	Reward System	4.4%	16.7%	14.0%	45.6%	19.3%
8	Firm Mission	5.4%	10.7%	14.3%	55.4%	14.3%
9	Organisational Structure	7.9%	7.0%	8.8%	48.2%	28.1%
10	Motivation	5.3%	7.9%	12.3%	51.8%	22.8%
11	Stories and Language	7.2%	10.8%	11.7%	51.4%	18.9%

Table 4-5 shows that the following elements namely, values, firm structure, motivation, regulation and policy, stories and language, organization mission, top management culture, all recorded over 69% agreement among the participants that they are elements of OC. The lowest percentage of agreement was recorded to the governmental procedures. On the other hand, the lowest percentage of disagreement was recorded to values (with less than 7%) and the highest percentage of disagreement was recorded to owner's culture (with less than 34%).

4.3.3.3   Understanding the concepts of knowledge, sharing and knowledge sharing

In this section, the meanings of knowledge as they were selected and identified by the participants are presented. Again, the findings are presented after their relevant questions. Three different questions were asked and the findings were as follows.

Question: ***What does" knowledge" mean to you?***

This question is an open-ended question. It was analysed using a thematic analysis method.

Table 4-7: The meanings of knowledge

The meanings of knowledge	The sources of knowledge
Knowledge is every single piece of information existing in books which can then be transferred into practice and lessons to be learned	Learned lessons, human experiences, communicated values, theoretical knowledge
Being aware of things around us to understand their reality and values	Information, observed values and experienced realities
Knowledge is acquired when humans communicate and work together	Experienced and shared values, captured ideas and experiences
A right for every single staff member who works in an organization	Pure data and information, skills and experiences
The principle matter to build up the meaning of life	Skills, cultural values, life aspects and experiences
The power of discovering un-discovered facts	Facts and ideas
Unlimited to specific ideas	Facts and ideas

Table 4-6 suggests that knowledge as a concept has different meanings and those meanings are complicated. Some of the meanings such as the third concept "*Knowledge is acquired when humans communicate and work together*" suggest that knowledge requires actions, such as communication, to be created. The findings also suggest that knowledge can be gained from different sources such as experience and practices e.g. learned lessons, communicated values, theoretical knowledge, observed issues and facts, life aspects and skills. These two major themes were elicited from the outcomes from the participants' responses.

Question: ***What does "sharing" mean to you?***

This question was another open-ended question. It was analysed using a thematic analysis method. Different themes and sub-themes were extracted as shown in Table 4-7.

Table 4-8: The Meanings of Sharing

What is sharing?	Where to share?	What to share?	What are the conditions for sharing?
Providing powerful opinions when they are needed	Workplace	Ideas, visions and opinions	Rules and regulations + personal desire
Providing a new knowledge to build upon prior knowledge regardless of the purpose of the interaction	In everyday life practices	Experience, ideas, visions and values	Desire and trust
Having the entrepreneurship to provide others with experience and learned lessons as applicable	Workplace	Information, values, learned lessons, sources of information, other people's contacts	Desire to share + trust + reward system
The art of team-working	Workplace	Various types of information, values and solutions. The shared values embedded by decision makers	Desire to share + OC
Without it humans would not have their current knowledge	Life	The shared ideas, information , experience, facts and risk takers' lessons	Desire to communicate
Using the acquired values and information in the right place/ time	Life	The shared values, information and experiences	Desire to share

Table 4-7 suggests that sharing is a complicated practice which can be adopted in a limited context such as the workplace and also in a broader context such as life. People can share different things including powerful opinions, prior knowledge and experience, learned lessons, values, etc. People need to have the desire to share different things such as ideas, experience, values, etc.

Questions: *What does the term "knowledge sharing" mean?*

This question was a close -ended question. Different options were provided following a five scale method, as presented in Table 4-8.

Table 4-9: The Meaning of Knowledge Sharing

Concept	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
KS is a behaviour which is likely to be influenced by personal motivation and contextual forces	2.1%	13.9%	2.3%	55.0%	26.7%
KS is the willingness of people in a firm to communicate with others to share the knowledge they have gained or created	2.3%	10.1%	5.6%	67.6%	14.4%
It is an element of knowledge culture which is part of OC	2.5%	17.5%	1.9%	55.8%	22.3%
It is critical influence on the process of decision making	3.1%	2.3%	23.4%	50.5%	20.7%
It allows individuals to enjoy the processes of creation and exchange of information	5.2%	12.3%	15.3%	50.2%	17.0%
It is a multitude of processes including exchange knowledge (skills, experience, and understanding) and the processes occur without language (socialisation) or with language	2.5%	14.3%	12.3%	56.5%	14.4%

According to Table 4-8, the second concept which is "KS is the willingness of people in a firm to communicate with others to share the knowledge they have gained or created" recorded the highest percentage of agreement (with more than 80%), while the third concept "It is an element of knowledge culture which is part of the OC" recorded the highest percentage of disagreement (with 20%).

4.3.3.4   Understanding the organisational issues relating to Knowledge Sharing

Three closed ended questions were asked to gain a brief understanding of the extent of the organisational support that KS receives in the studied cases. The questions and their findings were as follows:

Question: *in this firm, in which level the concept of knowledge sharing has been existed?*

Table 4-10: The levels of Knowledge Sharing in the studied firms

knowledge Sharing levels	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Organisational level	13.1%	16.8%	23.3%	39.3%	7.5%
Departmental level	7.3%	22.9%	17.7%	45.3%	6.8%
Unit level	6.5%	12.1%	11.3%	54.2%	15.9%
Individual level	5.6%	3.7%	13.9%	53.7%	23.1%

Table 4-9, it can be seen that four different levels including Organisational level, Departmental level, Unit level and Individual level were suggested. Participants with more than 75% agreed that KS was practiced among the individual level, while Department level followed by Organisational level have been recorded the highest percentage of disagreement with 30.2% and 29.9% of KS practice.

In the question: ***What events or activities does your firm carry out regarding knowledge sharing?*** Seven different activities were suggested (see Table 4-10) to check with the participants if they were available, not available or not sure.

Table 4-11: Knowledge Sharing Activities in the Studied Firms

Activities	Available	Not Available	Not Sure
Build relationships and trust through face-to-face meetings	22.3%	56.6%	21.1%
Create common ground trough education, discussion, publications, learning, job rotation	17.6%	5.2%	77.2%
Establish time and places for knowledge transfer: fairs, talk rooms, conference reports	25.5%	65.4%	9.1%
Evaluate performance and provide incentives based on sharing	20.4%	66.5%	13.1%
Educate employees for flexibility and provide time for learning	22.7%	55.2%	22.1%
Encourage non-heretical approach to knowledge; quality of ideas more important than status of source	10.9%	77.1%	12.0%
Accept and reward creative errors and collaboration; no less of status from not knowing everything	19.7%	56.1%	24.2%

According to Table 4-11, the most common activities of KS among participants that they felt were available within their firms were "establish times and place for knowledge transfer; fairs, talk rooms, conference reports" (with 25.5%). At the same time, 77.2% of them were not sure that such activity (create common ground through education, discussion, publications, teaming, job rotation) was available which is the highest percentage of the not sure options. On the other hand, 77.1 % of the participants agreed that the (encourage non-hierarchical approach to knowledge: quality of ideas more important than status of source) activity is not available.

The next question was: ***What are the services that the firm uses to encourage you to share your knowledge?***

In order to answer this question a 3 scale response was utilised and 29 options listed. The outcomes are shown in table (11). The outcomes from this question showed that 21 from the 29 services were recorded by over 50% of the participants' responses as not being available; those services are: Team seating plans / Open plan offices / Open door policy, Memo that helps in Knowledge Sharing, Firm cafeteria in the firm to share knowledge and experience, Water cooler chats being a suitable place to share and communicate knowledge, Lunch 'n' Learn sessions, Engineering forums, On-line forums, Specialist Chat-rooms, Project teams, Plasma screens, Conferences / Seminars, Expert lectures on different subject matters, Brainstorming, Conference calls / Video-conferencing, Consultants' seminars, Learning Centres / Fairs / Expos, Communities of Internet/Practice, Customers/Clients' seminars, Mentoring scheme, Apprenticeships, Team-building 'away days'. Only the Internet, newsletter and email (3 out 29) recorded over a 50% score from the participants as being available services.

In firms (such as ICT firms) services such as the Internet, email and Intranet are more likely to be available due to the type of the business such firms provide. The outcome also suggested that training in use of the available services has not been common which indicates the fact that staff might lack of awareness of the services available. In other words, services might be established but staff may not be aware of them due to lack of training. (Such issues needed to be clarified in the interviews, (see section 4.4.2.4).

Table 4-12: Services provided by the firms

Services provided by the firm	Available	Not Available	Not Sure
Team seating plans / Open plan offices / Open door policy	21.2%	56.7%	22.1%
Email	74.5%	18.5%	7.0%
Memo that helps in Knowledge Sharing	20.5%	65.3%	14.2%
Firm cafeteria in the firm to share knowledge and experience	20.4%	60.3%	19.3%
Water cooler chats being a suitable place to share and communicate knowledge	12.1%	65.1%	22.8%
Personal conversations / Drinks after work	1.1%	21.1%	77.8%
Lunch 'n' Learn sessions	1.1%	70.2%	28.7%
Internet	65.2%	12.2%	22.6%
Engineering forums	17.9%	60.5%	21.6%
On-line forums	15.2%	55.3%	29.5%
Specialist Chat-rooms	20.2%	70.2%	9.6%
Plasma screens	22.2%	60.5%	17.3%
Newsletter	62.4%	11.1%	26.5%
Induction Training	19.2%	43.8%	37%
Project teams	12.6%	65.2%	22.2%
Conferences / Seminars	23.4%	65.4%	11.2%
Expert lectures on different subject matters	10.3%	65.2%	24.5%
Web conferencing	2.3%	27.3%	70.4%
Brainstorming	5.3%	54.7%	40%
Conference calls / Video-conferencing	12.3%	54.5%	22.3%
Consultants' seminars	11.3%	77.4%	11.3%
Suppliers' seminars	19.2%	25.2%	65.4%
Customers/Clients' seminar	20.3%	66.6%	4.3%
Learning Centres / Fairs / Expos	3.9%	77.1%	19%
Communities of Interest/Practice	3.4%	55.5%	41.1%
Mentoring scheme	11.4%	54.6%	34%
Apprenticeships	17.3%	56.4%	26.3%
Intranet	45.5%	10.2%	44.3%
Team-building 'away days'	11.4%	75.4%	13.2%

4.3.3.5   Examining the relationship between Organisational Culture and Knowledge Sharing

By question: What do you think the element(s) of OC are that might influence SK?

In order to create an initial understanding as to how the relationship between OC and KS was articulated in the studied firms, a few elements of OC were selected from the current related literature and tested with the samples.

The results presented in Table 4-12 suggested that all eleven elements of OC influence KS closely and the factor values was slightly the highest rated at 85%.

Table 4-13: Elements of OC that influence KS

Influencing Factors	Percentage %
Governmental Procedures	74
Reward Systems and Motivation	76
Organization Mission	77
Stories and Language	75
Organization Structure	78
Regulation	79
Values	85
Rules	83
Symbols and Rituals	82
Top Management Culture	83
Owner Culture	84

4.3.4 A summary of the questionnaire findings

The questionnaire encompassed 6 major sections which were the participants' characteristics, the OC concept and its elements, the KS concept, the levels where KS aspects existed in the studied firms, activities and services and, finally, the factors that have an influence on the relationship between OC and KS.

From the findings it was seen that the majority of the respondents were staff (at 87.3%) and the rest of the respondents (12.7%) were decision makers (managers and senior managers).

The findings suggested that 45.8% of the participants had five years and more experience of working in ICT firms. The rest of the participants (54.2%) had less than five years' experience. The majority of the respondents came from the human resources' department and the IT department with an equal percentage of 18.6% and the lowest percentage of the respondents came from the technical department (at 2.5%).

In terms of the concept of OC different close-ended (utilising a 5 point Likert scale) and open-ended questions were asked. The close-ended questions asked about 10 different

concepts of OC as extracted from the literature and it was found that the concept of OC as being "all about leadership" recorded the highest percentage of disagreement with more than 60% disagreeing with this statement, while the concept of OC as "the main dynamo of an firm and reflecting its identity" recorded the highest agreement with more than 70% agreeing with this statement.

In terms of the close-ended questions concerning the concept of OC, the findings suggest that there are two different themes which incorporate the concepts of OC and the components of OC concepts. Interestingly, all the mentioned concepts suggested that 'value' is a main component in the building up of the meaning of the concepts.

In terms of rating the elements of OC, one close-ended question (utilising a 5 point Likert scale) incorporating 11 different elements extracted from the literature, was asked. The findings show that values, organisation structure, motivation, regulation and policy, stories and language, firms' mission, and top management culture all recorded over 69% agreement by the participants that they are elements of Organisational Culture(OC). The lowest percentage of agreement was recorded against governmental procedures. On the other hand, the lowest percentage of disagreement was recorded against values (at less than 7%) and the highest percentage of disagreement was recorded against owner's culture (at less than 34%).

In order to understand the meaning of knowledge, sharing, and Knowledge Sharing(KS), three different questions (two open ended, one close ended) were asked. In terms of the meaning of knowledge, the concept of knowledge appears to be complicated, and the participants indicated that it requires actions, such as communication, to be created. The findings also suggest that knowledge can be gained from different sources such as from experience and practices e.g. learned lessons, communicated values, theoretical knowledge, observed issues and facts, life aspects and skills. These two major themes were elicited from the outcomes from the participants' responses.

In terms of sharing, it again appears to be a complicated practice (as per the participants' responses) which can be adopted in a limited context (such as in a workplace) and also in a broader context (such as in life). People can share different things including powerful opinions, prior knowledge and experience, learned lessons, values, etc. People need to have the desire to share different things such as ideas, experience, values, etc.

With regard to the meaning of the Knowledge Sharing(KS) concept a close ended question (utilising a 5 point Likert scale) with six options was asked. The findings show that the

statement that Knowledge Sharing (KS) is "the willingness of people in a firm to communicate with others to share the knowledge they have gained or created" recorded the highest percentage of agreement (at 82%). The concept "Knowledge Sharing is an element of knowledge culture which is part of the OC" recorded 20%, this being the highest percentage of disagreement.

In terms of determining the level at which Knowledge Sharing(KS) exists a close ended question (utilising 5 point Likert scale) showing 4 different levels was asked. The results show that KS exists at the individual level recorded the highest percentage of agreement (at 67.8%) as against the organisational level which recorded 46%, this being the lowest level of agreement.

In order to examine the activities which, the studied firms practiced as a part of knowledge sharing practices a close ended question (utilising 3 scales: available, not available, not sure) was asked. Seven different options were given. The third option (establish times and place for knowledge transfer; fairs, talk rooms, conference reports) recorded the highest percentage (at 25.5%) of availability against 77.1% of not availability which was recorded in the sixth option (encourage non-hierarchical approach to knowledge: quality of ideas more important than status of source). However, 77.2% which is the highest percentage of such activity (create common ground through education, discussion, publications, teaming, job rotation) was not sure available.

Furthermore, in order to determine the services provided by the studied firms to encourage employees to share knowledge a close ended question was asked (utilising 3 scales: available, not available, not sure). 29 options were given. The highest percentage (74.5%) was given to email as available service, while more than 77% was given to services such as "Consultants' seminars" and "Learning centres/ Fairs/Expos" as not available services. bearing in mind that 77.8% of the respondents expressed that they 'were not sure' about "personal conversations/drinks after work".

Tracking the objectives that the responses to the questionnaire were able to meet, it was found that the following objectives were met:

- The current concepts regarding organisational culture in the studied ICT firms were clarified;
- The current concepts of knowledge sharing existing in the studied ICT firms were clarified;

- The elements of OC that influence the concept of KS were identified;

- Hints about the nature of KS activities were identified but further investigation would be required to learn more about this factor;

- Some understanding as to the possible weaknesses and strengths in the cultural elements and in KS practices was obtained;

- The role of the decision makers was determined, but not yet clearly identified;

- Some of the framework elements were identified, but not yet clearly demonstrated.

Based on the above conclusions, it was vital to conduct a deeper investigation in order to understand the issues raised by the responses to the questionnaire in a more illuminating way. For this purpose, in-depth semi-structured face-to-face interviews were conducted and a further analysis of the official documents was carried out. In the following section, the findings from the semi-structured interviews will be presented alongside quotations from the interviewees and information from the analysed documents as needed.

4.4 Findings from the Interviews

4.4.1 Introduction

In this section, the themes and sub-themes extracted from 10 in-depth face-to-face semi-structured interviews are presented. The interviews were conducted with 10 decision makers who work in the studied firms (see section 3.7.2.1.3 in chapter 3). The data were analysed using a thematic analyses' approach. Eight main themes alongside sub-themes and sub sub-themes were extracted from the data. These themes and sub-themes are presented in (Figure 4-12).

Figure 4-12: Themes and Sub-themes that extracted from the interviews

Themes	Sub –Theme-1	Sub-theme-2
1. The Characteristics of ICT firms	1.1. Business Nature Issue 1.2. Financial- Issue	
2. The Concept of Organisational Culture (OC)	2.1. OC is more than regulation 2.2. OC is about everything in the organisation	
3. Issues influences on the strength of OC	3.1. Environmental factors	3.1.1. The availability of govermental support
	3.2. Organisational factors	3.2.1. Organisational structure and management change 3.2.3. The Awareness to the available sources of information 3.2.4. The awarness to the culture of knowledge
	3.3. Employment's factors	3.3.1. Personal culture of the staff
4. The Concept of knwledge sharing (KS)	4.1. KS as a social activity 4.2. KS as a strategic practices	
5. Knowledge sharing requirements	5.1. Personal requirements	5.1.1. Employments' attitudes and values
	5.2. Organisational requirements	
6. Activities to share knowledge	6.1. Different set of activities	
7. Barriers to share knowlegde	7.1. Internal elements 7.2. External elements	
8. The role of decision maker in promoting Knwledge Sharing culture		

As can be seen from the above figure, different themes were extracted from the data collected from the semi-structured interviews. Underneath each theme different sets of sub-themes and sub sub-themes were identified. In the following section, the themes, sub-themes-1 and sub-themes-2 will be presented alongside quotations and texts extracted from both the interviews and the official documents. It is vital to mention that the code IN (followed by a Number) refers to the interview from which the evidence quotations were extracted thus indicating from which interviews the quotation was taken from out of the 1 – 10 interviews. For instance, if a quotation was extracted from interview 2 then the presentation in the text will be such: "the quotation"(IN -2).

4.4.2 The themes and sub-themes associated with the information gained from both the interviews and the documents

4.4.2.1 The characteristics of ICT firms

The context of this study, as mentioned in chapter three section (3.4.5.3), is the ICT firms in Libya. According to the analysed documents relating to the studied firms, all four ICT firms' documents indicated that "*unlike some other firms, ICT firms are very much related to universal development of the technology and changing the culture should be a regular practice to be able to compete and communicate more effectively.*" D (1and 3) Furthermore, the interviews with decision makers suggested that two sub-themes are important to in order define the context of ICT firms. These are related to:

4.4.2.1.1 Business Nature issue

From the perspective of one of the decision makers, ICT firms are different to other firms because "*the size of the firm is not very much related to the number of the staff working in it but rather to the number of the people who have different skills and capabilities*" (IN-1).

Another participant added that "*The development in the ICT sector is very fast and the rapid change of the business ICT environment make ICT firms under pressure to keep up a high level of development on progress*"(IN-6).

As a further explanation as to the nature of the business in the ICT firms, IN-8 stated that "*recently, we noticed a high demand from people in rural areas in Libya requesting more and better services. People are becoming more educated about ICT services and want always more and more* "(IN-8).

In order to meet the speed of the sector development and the increased demand of customers, IN-10 added that "*the ministry of ICT is requested to create a clear strategy and to set the correct regulations to help people to undertake better practices. The ministry should set the regulations and adjudge me [firm] at the end of the tax year based on my [firm] achievement and the knowledge I have shared and created* ".

For ICT firms to be able to achieve their business' goals they need to "*build their incentive system based on the team working culture where information or knowledge are the core sources of competition*"(IN-5).

The conceptions of knowledge and sharing were mentioned in the interviews which suggest that ICT businesses understand knowledge differently because, for them, it is more related to practical experience. One of the interviewees stated that "*In ICT firms, experience and knowledge are two faces to the same coin, you need to have the knowledge to practice and gain the experience, and you need to practice and experience to create more knowledge, At some points you would need knowledge more than experience. I mean by the knowledge here the theoretical knowledge. Sometimes, it would be enough for you to use the knowledge you have gained in your degree and sometime you need more advanced knowledge such as that which a researcher needs. Sometimes the type of knowledge we need to use is limited to the purpose of that usage and as the more knowledgeable you are and the more capable you are to gain better experience*" (IN-7).

However, at the same time, like other types of business, the ICT business can be influenced negatively by the security status of the country where the sector is operating. One of the interviewees stated that "*the current security status in the country limits our development. We are missing our foreign partners who refuse to come to the country and we are not able to establish new projects*" (IN-5).

From another perspective, a few participants saw that ICT firms are different to other firms because of their financial issues.

4.4.2.1.2   *Financial issue*

It was suggested by a couple of interviewees that ICT firms are different from other types of business organization because of the financial methods they use to run their firms. One of the interviewees who talked of this issue mentioned the salary issue stating that "*Comparing the salaries ICT firms pay to their employees with other employees in other sectors, you can see*

a big difference. I will give you an example: I have a sister who is a pharmacist. She does not get paid as much as one of the cleaners who work here gets. This is because we are tackling a huge responsibility. We admit both the legal and human responsibilities that our staff have and we have established our salary system to meet this aim. We aim via such a system to establish a high level of productivity "(IN-9).

In order to achieve a high level of productivity, another interviewee indicated that the reward system in ICT firms is established differently to other business firms because "*We aim to help them [the employees] see that, in general, the reward system meets their expectations. The reward system in ICT firms should be designed to enhance the productivity and innovation in a sector where high demand is always present*" (IN-3).

Additionally, the ICT business sector is different to other sectors because it undergoes regular, and sometimes unsteady, development and also because people's demand for IT services increases every day, there are increasing levels of new customers and areas seeking more coverage. This makes the competition in sector high which requires a better reward system to convince the professionals working within these companies to put in more effort in order to achieve better productivity and open the doors for more innovation.

4.4.2.1.3 The concept of Organisational Culture

From the analysis of the information received in the interviews, the concept of OC was used to refer to the meaning of OC as it is seen by the participants. The findings from the interviews suggested that people do not see and understand the meaning of OC in the same way; rather it is seen differently. IN-9 stated "*I do not think that OC has one specific meaning; it is changeable as the context of the firm changes*". IN-5 added "*when we refer to the concept of OC we do not refer to a tangible thing which can be measured equally, particularly considering the fact that the policy, aims, vision and strategies of business firms are not the sam*e". IN-8 argued that "*If you go to the sector, you will see that all the regulations are applied in the firms, but the culture of each firm is different, one from each other. So, in some firms, you can see that the staff are committed to the job, but in another organization you would see a different image*".

Nevertheless, according to the data collected from the interviews, the following meanings of OC were identified:

- OC is more than regulations;
- OC is about everything in the organization.

These meanings will be discussed in the following section.

4.4.2.1.3.1 Organisational Culture is more than regulations

Regulation and rules refer to the set of the principles employed by the decision and policy makers in order to direct and control (as well as manage) people and their activities in an organization. According to IN-1 "*OC is not only the regulations and rules*" and IN-2 added that "*OC is more than regulations and rules because humans in their nature refuse to be controlled, so they will easily break the rules and regulations as they do not like constraint*"; therefore, limiting the meaning of OC to the notion of regulations and rules would not make sense.

Interestingly, one of interviewees saw that the element of regulations and rules in OC is important in order to enhance the staff contribution to KS practices. He said "*regulations and rules are an important element of OC in order to support the process of knowledge sharing and to encourage staff to give more contribution to the shared folder*s" (IN-7).

Another decision maker admitted that regulations and rules are main element of OC especially when it comes to build up the culture of sharing, but it is not the only element of OC. He stated that " *So although embedding the culture of sharing requires specific types of regulations and rules, the rules and the regulations are not the only elements that an organization needs to consider when they create their OC"* (IN-10). On the other hand, another decision maker saw that "*OC is not about regulations only because the role of regulation is to control or maintain the relationships between the staff; it has nothing else to do with sharing or controlling the knowledge flow*" (IN-9).

Thus, OC is not only about the regulations and rules because there are further elements that shape the meanings of OC in a firm but, at the same time, rules and regulations are a vital elements of OC and they should be developed to encourage staff to contribute more to KS practices and, at the same time, control the relationships between the staff.

4.4.2.1.3.2 *Organisational Culture is about everything in the firm*

From the questionnaire's findings (see section 0), it was put forward that OC includes many elements and has different meanings. One of the decision makers stated "*OC includes everything in the firm including flowed and transferred information, the practical methods of regulations and rules, the method of equality and the events that allow staff to communicate and share"* (IN-3).

In addition, the findings of the questionnaire indicated the factor of values as one of the main elements which shape the meaning of OC. Interestingly, the meaning of 'value' seemed to be different. For instance, in the following quotation, value seems to mean regulation and policy. IN-4 said "*OC is the <u>values</u> which must <u>be followed by</u> the employees in a firm. It is the <u>values</u> that make people <u>respect their being in a firm</u> and admit the <u>values suggested by the firm</u>".*

Another decision maker linked values to the personal attitudes of the staff. He stated that "*OC refers to the employee's values and their commitment to their duties. For example, during the conflict we had to move from one place to another due to security concerns but despite this the employees insisted in coming because of their values. They care and they wanted to serve the people. Our OC is to show commitment to our customers and we always did"* (IN-2).

Values, as an element of OC, according to another decision maker, is about communication and how employees inside a firm interact with each other. He stated that "*to know the meaning of OC, you should understand the way the staff act and react. It reflects on how the professionals interact with their working environment; only via that will you be able to see the influence of their <u>values</u> and the <u>business values</u>*" (IN-9).

OC is about professionals' commitments to completing their work and to what extent they are motivated to achieve the business objectives. According to one of the participants, a decision maker, "*If you asked me about OC, I would look immediately into how the staff respond to everyday duties. For example, in some firms you will see staff self-motivated to run the business and meet the aims of the firm and the objectives of the business.....you need to observe how the staff come in in the morning to the organization; do they think about home time before they get in or they are fresh and ready to go, even to undertaken overtime. This will show you to what extent they are engaged and their commitment to the firm's community and whether they feel that they are motivated to meet the business objectives. You need to*

notice such behaviour. It is risky because with the time, it will become a main element of the OC and then will be pushed to become the main OC" (IN-6).

Thus, OC is not a simple concept which can be identified or defined easily and it takes time to undertake any identification. "*OC is like a tree; it takes time, effort and care to grow and fulfil its potential. So it cannot be changed in a day and a night particularly taking in the account the conflict and the lack of control of rules and regulations*" (IN-5).

To sum up, OC is a complicated concept because it involves many elements and the meaning of each element can be different. For example, the factor values, as a main element, shape the meaning of OC, yet the meaning of value itself can be changeable. Accordingly, building up an OC which motivates staff to meet business aims and objectives is not an easy duty and it takes time and effort.

4.4.2.1.4   *Issues' influence on the strength of Organisational Culture*

Section 4.3.2.3 presents the conceptions OC as they were suggested by the participants and it has been concluded that there is a general agreement that OC does not have only one specific meaning. The data collected from the interviews also suggests that different issues can have an influence on the strength of OC. These can be either environmental factors or organisational factors or human resources' factors. These three issues were identified as sub-themes of the major theme "issues which influence the strength of OC" and other sub sub-themes were also identified as follows.

4.4.2.1.4.1   *Environmental factors*

Environmental factors refer to the issues not related directly to the internal organization of a firm. Such factors are usually external factors over which decision makers in the firm do not have control. According to the findings of this study, government support was identified as a main factor in its influence on the strength of OC.

4.4.2.1.4.2   *The availability of governmental support*

According to (D-3) and (D-7), the Libyan government before the revolution (2011) used to provide support to ICT firms in order to serve the dictator's family. This influenced negatively on OC in the ICT businesses in terms of corruption, ignorance and opportunism. After the revolution (2011) with a consideration of the unsettled security status, the Libyan government started to support the sector and ICT firms were allowed more freedom to innovate and compete. 4 out of 10 participants in the interviews agreed that government

support is very much required in order to create a positive culture of collaboration and sharing.

One of them stated that "*From my perspective, introducing traditions and embedding them within the firms is not the management team or leaders' job, it is more that the government level which should find a way to communicate to the people to embed the traditions or maybe the religious perspectives that the government is willing to embed. Changing people's minds toward traditions and beliefs is not an easy job and the government must have a strong and well-designed programme to embed a new culture, or the culture that the government would like to embed*" (IN-3).

4.4.2.1.5 Organisational factors

Organisational factors refer to internal organisational issues which have an influence on the strength and the power of OC. As the analysed interviews ' data suggested, there are three different organisational issues that have an influence on the strength of OC. These are presented below.

4.4.2.1.5.1 Organisational structure and change management

In an earlier section (4.2), the researcher provided information about the background of each case. The background demonstrated also the organisational structure of each firm via visual charts. The issue of organisational structure was also tested in the questionnaire as a main element of OC. The findings in section 4.3.4 approved the fact that organisational structure is recognized as an element of OC. According to the interviews' findings, organisational structure was identified by a few participants as an element that has an influence on the strength of OC.

One of the decision makers stated that "*The organisational structure influences mentally on making decisions. Until this moment the decision makers think in a horizontal way when they make a decision, so this will have an influence on the decision and, in turn, will have an influence on whole culture of the firm*" (IN-9).

Another manager stated "*Our Firm follows centralization in terms of project management. Previously, the firm used to ask each department manager to carry out specific projects, but now, for a while the top management team has transferred the work to be centralized. It is quicker, but this has caused duplication because there has been no sharing between the departments. So, we found that centralization is better to make better decisions, so it has become part of the structure of the firm*" (IN-1).

From another perspective, many of the participants thought that changing the current situation in ICT firms in Libya require changing the management. IN-1 stated that "*our strategic plan should not be built upon the organisational structure but the other way around; the organisational structure should be built upon the strategic plan. Changing the culture of the organization will not be an easy job, but you whether you like it or not you must change if you want more development and better innovation*".

Hence, changing the management would not only be by changing the structure of the firm but also by motivating people to promote change by themselves. "*Change is not an easy process. During 15 years of experience in this field, I would say that if you want to bring changes to an organization, then advocate the people to promote the changes by themselves*" (IN-6).

Another decision maker added "*forcing changes does not have a good effect. If you want to change let the staff suggest the changes themselves, because people will always resist the change, but when they suggest the change the resistance will be less. Change should be started by the individuals themselves. Managers should ask them what changes we should promote and how to promote such changes. Start with the departments based on your strategic plan. The new organisational structure should be given the chance to suggest a new culture and to promote it. Sharing with the people the decision to change is the best way to promote change and is the best type of sharing requested in firms*" (IN-7).

Accordingly, change will take time and it requires commitment and effort. One of the managers stated that "*they (managers) made an earlier assumption that Libyan culture would never change and the reality is that they did not give enough time to change. They would run an activity once and if the outcome was negative, they made the judgment directly that things would never change; we need to give change time*" (IN-10).

In the same context, another decision maker said "*We need to learn that change needs time and if we want to make changes we need to invest in different activities. We can play football games and we need to invest enough funds to keep such activities running every year. Such games would enhance the relationships between the staff and it would enhance friendships"* (IN-5).

Based on above discussion, building up OC in a firm require beings aware of the organisational structure because it has an influence on the mentality of the staff; therefore,

changing the culture of a firm would not work effectively merely by changing the structure of the firm, rather it must be promoted by the staff (but taking on board the fact that change of the culture needs time, effort and commitment).

4.4.2.1.5.2 The awareness of the available sources of information

Finding information on the nature of OC is important in order to help decision makers understand the main elements and meanings of OC. One of the participators stated that "*we need to learn how to carry out research to understand our culture. I think one of the methods that managers should use to understand the influence of culture on new business is to carry out a case study that allows me to understand the main aspects of my culture and how it would influence the productivity of the business*" (IN-10).

Furthermore, it is important for managers to have access to information sources that will help them to understand different organisational cultural aspects. A manager stated "*Of course, before I create my project document, I must be aware of information about the culture the firm has, so that I will be able to build up the project based on a clear understanding*" (IN-5). Thus, accessing the required sources of information is important in order to build up a strong and reliable OC.

4.4.2.1.5.3 Awareness of the culture of knowledge

The culture of knowledge is a term that has emerged in this study to represent different types of knowledge. One of the managers said "*there are two different types of knowledge, technical knowledge and general knowledge, such as knowledge about negotiation, how to run a dialog or how to work in a team and how to create a team-building culture. The first type of knowledge can be gained via training courses and lectures, while the second type of knowledge can be gained from round table discussions or open days. Such activities would help you train people in an indirect way and thus they will be able to gain knowledge and build up new skills*" (IN-7).

Thus understanding the differences between knowledge types and the core of each knowledge type is required to understand how people preserve knowledge and how to build up OC based on managers' understanding of the culture of knowledge. One of the managers stated "*Knowledge types are different; to be able to build up a strong OC you need to understand all types of knowledge that are established in your firm. Also you should know that OC and knowledge are both built up by communication. So, you need to teach people how to*

communicate, to discuss their knowledge. In this sense, it must be a part of OC to set social events where these people come together in a new atmosphere to communicate or maybe share" (IN-9).

Another manager indicated that building up the culture of sharing requires an understanding of the culture of knowledge. "*I must be aware of the privilege of the knowledge. Knowledge has a culture and we should be aware of such a culture before building up the culture of sharing. For OC to be positive, the general atmosphere in an organization should encourage the staff to communicate*" (IN-10).

Summing up, building up OC in any firm requires an understanding of the different types of knowledge created in the firm because those types reflect the culture of knowledge. Understanding the culture of knowledge helps in creating an organisational culture that supports the sharing of established knowledge.

4.4.2.1.6 **Employment factors**

The employment factor in this study reflects the influence of the personal culture of the employees on the establishment of OC and on the strength of this establishment. As the data were analysed, the sub sub-theme of the personal culture of the staff appeared clearly as shown in the following.

4.4.2.1.6.1 *Personal culture of the staff*

It can be seen from the outcomes received via the questionnaire (section 4.2.3) that strategy and policy can be a main element of OC. One of the managers stated "*The general OC is influenced by the culture of the individuals who work inside an organization*" (IN-6). Another manager stated "*The staff's home culture and their personal values contribute to the main culture of the organization as they interact on a regular basis with the environment inside the organization*" (IN-3).

The relationship between strategy as an element of OC and personal culture is reflected in one of the manager's statement as he said "*Any action in the organization is built upon strategy and the strategy is established by the organization's members who have their own culture and, at the same time, such culture will have an influence on the future of the culture in the organization*" (IN-7).

Hence building up a strong OC would not be possible without understanding the culture of the employees. He stated "*usually a well-known organization would not be able to build up a team until they are fully aware of the culture of the staff*" (IN-1).

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From another perspective, the mentality of the decision makers (who are responsible for setting the regulations and creating strategy) is a factor which has an influence on building up of OC strength. One of the managers stated "*The mentality of managers is influenced by their culture including the education they received. At the same time, their mentality influences the way they operate and run their departments. Hence, the mentality of managers is the factor that has an influence on OC*" (IN-8).

Another manager saw that "*people's behaviour is influenced by government behaviour and also OC is influenced by people's behaviour and government behaviour. We as a firm and people as individuals are both influenced by government behaviour and culture. I think public firms/firms must run courses in OC and in people behaviour and such courses should be attended by HR to help the leadership team embed a new strong culture*" (IN-2).

Thus, OC is influenced by the personal culture of employees whose personal culture, at the same time, is influenced by OC. The influences between OC and employees are exchangeable and all cultures are influenced by the government's culture via regulations and rules.

4.4.2.2 The concept of knowledge sharing

Knowledge Sharing as a concept was tested early in the questionnaire (see Table 4-9: The Meaning of Knowledge Sharing) by providing the participants with multiple-options' questions. According to the findings from the interviews, two different conceptions of KS appeared. These are given below.

4.4.2.2.1 *Knowledge Sharing as a social activity*

The findings from the interviews suggest that KS is an activity which tends to be more social rather than organisational . "*We do share all the time, we speak to each other, we tell each other our experiences and stories when we are around the table having our tea or food*" (IN-3). Another manager stated "*sharing knowledge is a social activity which we practice every day, on our way to work, in our offices and even in our family visits*" (IN-9). So sharing knowledge is an everyday social activity that people practice without even being aware of it as a concept.

One of the managers extended the meaning of the concept as a social event by putting it in the context of an organization by stating "*When we say KS it does not have to mean reading*

books or attending a lecture. It can also mean to play games and to share your knowledge via playing. Playing games can show you how to collaborate as a team and also allows the top management team to play with the staff so that would give them a chance to understand each other. In Ramadan, and before the revolution, I used to run couple of Eftar days in nice places and invite all the staff to attend; they were sharing and eating at the same time (and laughing)" (IN-5).

From the perspective of another participant, *"Well, you cannot force people to share their knowledge especially if they are asked to undertake it"* (IN-7). Another manager stated *"I do not think embedding it as an organisational practice would be beneficial as encouraging them to do it via social interaction and activities"* (IN-8).

Thus, it is a social activity but it should be carried systematically by managers and decision makers in order to gain the expected business values from it.

4.4.2.2.2 *Knowledge Sharing as a strategic practice*

From another perspective, a few decision makers saw KS as a strategic practice carried out by an organization in order to meet business objectives and aims. Thus, when KS activities are designed they must be designed for purpose. One of the managers stated *"I shall tell you that we, in the firm, understand KS as a strategic mission that everyone should work towards achieving it. Therefore, we set the culture of the firm to enhance the culture of team working and collective services because we intend to create the culture of sharing. We divide the incentives between three individuals. Every one of them would be asked to complete specific targets "(*IN-6). Additionally, another manager stated *"you cannot think of KS as an idea without referring to the strategic vision of the firm. In other words, why, as a firm, do we need KS?"* (IN-10).

From another perspective, KS is a strategic practice because it involves a learning element. A manager said *"We are aware that we need to teach our staff how to share and they [the staff] should know that sharing knowledge means exchanging benefits. It is beneficial for the firm and for them at the same time"* (IN-1). Another manager stated *"KS [silent]KS is an issue relating to organisational practice but it cannot be random; rather it is based on a strategic vision"* (IN-2). At the same time, KS is an organisational practice because it supports a firm in its competition journey. One of the managers stated *"I think KS is an organisational practice because it will help us reduce costs and save time and reduce the possibilities of failure. It will also help us to do the required development of the firm and it must be set in the*

main structure of the firm. The top management team must adopt such a culture and embed it in the organization" (IN-4).

To sum up, it seems that there is a relationship between the first concept and the second. According to the findings, KS, as a concept, involves engaging employees in a firm in social activities which have a strategic purpose to assist in meeting the business aims and objectives. At the same time, staff should not be forced to practice in KS; rather they should be encouraged by creating different social activities that promote the culture of sharing.

4.4.2.3 Knowledge Sharing *requirements*

According to the findings of this study's interviews, in order to share knowledge there are different sets of requirements that firms should provide in order to enhance the culture of sharing. These requirements are divided into three sub-themes as follows.

4.4.2.3.1 *Personal requirements*

The personal requirements in this study refer to the personal issues of staff (including managers) which should be considered when a KS culture is prepared. These issues can be presented as employments' attitudes and values.

4.4.2.3.1.1 *Employments' attitudes and values*

One of the managers said "*Before thinking of embedding the culture of sharing, you should think about the personal culture of each employee and how they are going to respond to the new culture of sharing*" (IN-3). Another manager stated "*I think the chain of experience, knowledge and attitudes is unbreakable. Say someone has the knowledge and the experience but he/she does not have the attitude, what you are going to do with his/her knowledge and experience?*" (IN-7).

Thus, the issue of sharing is very much related to the personalities of the people who are expected to share, hence "s*haring knowledge requires the personal desire from the staff to share*" (IN-1). Employees who are prepared to share understand the value of sharing: "*We have the culture wherein we want to serve society and we have values such as scarifying self-interests to make others happy. Such values are not related to books or to written regulations; it is a culture like discipline in the house; how you were raised you would be*" (IN-9).

If staff do not have such a mentality or behaviour then embedding the culture of sharing will be challenging. "*They [the staff] have the kind of mentality which means that they do not want to collaborate. They do not see the middle line; rather they would prefer to be*

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extremist" (IN-5). To enhance the culture of sharing. A manager stated *"in our country to be able to establish a new culture of sharing we need a 'light stick' approach (pressure) as people would not work without such a force. After the revolution and due to the fast flow of the events in the country it has been very difficult to make any improvement"* (IN-6).

One of the managers who thought that the culture of sharing was embedded successfully in the firm stated "*What helped us here is that our staff has a great affiliation to the firm and they were able to keep attached to our policy which kept the firm protected and they worked hard to keep the project running. I think we were able to see during the last critical period that the strength of the relationship between us as a firm and our staff was very important. We were able to see that the commitment and the respect to the love value in the firm that motivated many staff to complete the project regardless of the security concerns. I was able to identify the individuals who love their work environment and were ready to make any change to keep the business running and those who were looking for excuses just to run away. For those who committed to keeping the business going it was a 'respect relationship' with the firm, not a relationship looking for benefits.*" (IN-4).

From another perspective, one of the managers saw that sharing knowledge requires managers to think differently about business and culture. He said "*I can tell you of a concept which is called change management. Change management here is not just about changing the way we manage firms, it is also changing the methods of our thinking. So, in order to promote sharing knowledge we are required to think in different ways about everything*" (IN-2).

Summing up, personal values, mentality and perspectives on sharing knowledge are important elements of the personal requirements which should be taken in consideration when the culture of sharing is established. At the same time, it requires managers to think beyond their common way of thinking; they need to think beyond the closed box.

4.4.2.3.2 *Organisational requirements*

Organisational requirements in this study refer to the organisationally-related issues about which a firm should learn before promoting the culture of sharing. From the perspective of one of the managers: "*Understanding the meaning of team working is a major issue and it must be understood before thinking about sharing knowledge. Staff must understand how to work with each other as a team, how to share and how to communicate*" (IN-1).

In addition, a firm should allow its employees to access the available information resources. "*There are some types of information which are not accessible to everyone such as information on deals and large financial projects. So it is not easy to allow anyone to access the knowledge you have in the firm* (IN-6).

At the same time, an organization needs to ask people their opinions before promoting the culture of sharing in order to gain their collaboration. A manager stated "*We should think and study carefully before adding any sharing aspects to the organization because employees and managers would not be happy if new aspects were added without their consultation; they would refuse to collaborate and to support it*" (IN-2).

One of the managers believed that the bonus system in a firm should be built around the culture of sharing. He said "*Some firms build up their bonus system based on KS such as encouraging staff to use e-learning tools..... Such firms encourage learning as a method of sharing and, in such activities; they are embedding the culture of knowledge. So when you practice you will be able to gain more knowledge*" (IN-9). Another manager saw that the culture of sharing requires within the organization build up "an infrastructure space to communicate the information" (IN-10).

In the same context, another manager stated "*I understand that new technology has provided us with different tools such as share point, and the personal Intranet allows you to publish everything relating to you and you have access to the regulations and information*" (IN-4).

To sum up, in order for an organization to promote the culture of sharing knowledge, it is required that the organization promotes the culture of learning and enhances team working attitudes. It is also required that the organization allows more access to its information and builds up the bonus system which will encourage staff towards sharing more knowledge. An organization is also required to provide the required tools and build up a satisfactory infrastructure space to communicate.

4.4.2.3.3   Environmental support

Environmental support refers to any issue beyond staff (personal) or internal (organisational) requirements. Some of the environmental issues relate to the government. For example, one of the managers said that "*collaboration between the government and the leadership teams in the firms must be established to allow the firm transfer of the government's perspectives to people via firms*" (IN-6). Another manager saw that "*if you are willing to establish a new*

culture of sharing you need a stable and safe environment where people are positive and able to learn new aspects and communicate. When there is a conflict, creating a new sharing culture will not work effectively" (IN-10).

To conclude, not only is governmental collaboration and support required to promote the culture of sharing, but also a general atmosphere of safety and security should be installed to promote and encourage sharing.

4.4.2.4 **Activities to share *knowledge***

According to the findings from the questionnaire presented in section 4.3.4, it was suggested that the studied firms are providing sets of activities that assist in the sharing of knowledge, namely the ones which can be considered as formal activities such as email, Intranets and the Internet. Nevertheless, the indications of informal activities were slight. Looking at some official documents, a few emails and internal communication were found inviting staff to share in social events and in some others training courses were provided but there was nothing to indicate that sharing was promoted. From the data collected from the interviews, activities organised by the firms tended to be formal activities as shown in the following.

4.4.2.4.1 Different set of activities

Formal activities refer to the activities carried out by the managers or the top management teams in order to promote the culture, or the practice, of sharing. One of the managers stated *"We provide both conferences and open day events because we believe that such events mend the gap between the staff and the management team. In the open day you can provide games which bring people together and make them familiar with each other and, at the same time, familiar with the meaning of sharing"* (IN-1).

Another manager stated that *"We have Intranet and Internet and we use email methods to communicate. We have specific events and we use shared folders. Everyone can share them and you can limit the access to them as wanted. We use shared folders to input information and documentation about each project and then it will be shared as requested"* (IN-9).

One of the firm members went further by encouraging any staff to transfer the tacit knowledge that they have into an explicit format: *"We want our staff also to share what they have in their minds so other staff will benefit from their experience and knowledge"* (IN-6).

From the perspective of one of the managers, the formal activities of sharing knowledge should be promoted at different levels. He stated that "*sharing knowledge should be applied on the level of a department and on the level of the firm and it is based on the fact that human nature tends to be greedy so people would think that if I help people, people will help me and, if any improvement was accrued, I would gain for my own benefit*" (IN-4).

Events to raise awareness were also identified by one of the managers who said "*I think we are practicing raising the awareness of the staff and encouraging them towards better development. We are encouraging unstructured methods to share and communicate and face-to-face communication wherein the staff are the ones who are suggesting sharing and changing culture. You need to listen to staff suggestions and then create your ideas and strategies in the way they and you both like*" (IN-3).

Formal training and related sharing activities were also promoted by a couple of the managers. One of them mentioned that "*We provide training, but we do not provide it to all of our staff. It is very specific training and we ask people inside the firm to train their colleagues to provide a specific theme. The major purpose of such courses is to encourage people to transfer their knowledge to others*" (IN-2). The activities of meeting and brain storming were almost mentioned by all of them. One of them stated that "*We also run a round table meeting where brain storming methods can be used to encourage staff to communicate and share their knowledge*" (IN-9).

One of the managers mentioned one-to-one face-to-face training as a method of sharing and learning. He said "*Sometimes I personally spend a lot of time with staff to teach them how to complete a well-written report. Yes, it takes time for the first couple of times, but after that they will become capable of doing it by themselves. So working with them closely and being passionate is the only way to help them learn and show them the right meaning of sharing*" (IN-5).

From the perspective of one of the managers, his firm promotes the formal activities of sharing "*via two different methods; the first one is e-learning provided by the firm and the second one is knowledge transfer*". He added that "*we have 'over generation' sharing in that older people who have been working in the sector for a long time would be asked to share their experiences and knowledge with the younger generation*" (IN-7).

One of the managers admitted that the culture of sharing is promoted and advocated but that activities to enhance such a culture have not been formed carefully. In his words, he stated "*Let us admit that such activities do not occur and have not been planned but the motivation to share is the culture of the people and the culture of the firm as people have the commitment and the need to enhance solidarity and togetherness but, on the official level, we try to ensure that all documentation and knowledge are all provided either as videos or documents on the webpage. We also share customer service advice and notes of faults are taken and shared so everyone in the firm can review and learn from them. So, to some extent, we have such a concept existing in the organization*" (IN-10).

According to all the above, different sets of activities for sharing knowledge were promoted in the studied firms such as email, the Internet and Intranets, in addition to formal training and meetings that encourage sharing and brain storming.

4.4.2.5   Barriers to sharing knowledge

Barriers to sharing knowledge refer in this study to the obstacles that are faced or might be faced in either the promoting of culture or in the activities of sharing knowledge. According to the data gathered from the interviews there are two major sub-themes concerning barriers which are either related to cultural elements or to organisational elements.

4.4.2.5.1   Internal elements

Internal elements are used to refer to the elements which can be found inside a firm which prevent the sharing of knowledge, such as the personal attitudes of the employees or a specific type of OC. In terms of personal (staff) culture, it has been suggested that selfishness is one of the major obstacles prevent the sharing of knowledge. This element was mentioned repeatedly in different ways by different managers.

For example, one of the managers stated that "*Many individuals have monopolistic behaviour towards information and knowledge. So it can be the personal culture of an individual*" (IN-1). Another one stated that "*Some of the people are capsulated and some others would share to a specific level. Those people are the experts who would give you some of their knowledge but they would not release all that they know*" (IN-5). Another manager stated "*Let me tell you something, if individuals' culture resisted team working and knowledge sharing, it will be a challenge to apply KS successfully*" (IN-7).

One of the managers believed that "*Staff do not respect the contract between them and the firm. The problem with people who work in public firms is that they think that they have the right to mess everything and act like they have control over things and they put themselves in the position that they should not be in*" (IN-9). Such obstacles are very much personally-related obstacles and they are related directly to the moral values and mentality of the staff.

From another perspective, one of the managers mentioned selfishness but mentioned it with regard to specific cultures. He said "*I have noticed that (people from east) are more selfish than others. It is not only Arabs but also Asians and Chinese; they have the capsulation culture. People who hold such a culture think that they are powerful and needed because they are able to keep the knowledge they have to themselves and we should admit that people's perspectives of life aspects and issues are very different*" (IN-10).

Hence, according to what has been stated, some staff do not like to share their knowledge because they believe that the knowledge they have is power, and they are not aware that sharing makes them more powerful. One of the managers said "*I met some people who would like to share whatever knowledge they have and, at the same time, I met people who seem to enjoy seeing people making mistakes*" (IN-9) . Another manager believed that the problem is not with the staff themselves because "*It is the firm's job to change people's attitudes. Individuals are not aware until now that sharing knowledge will help the person who firstly shares his knowledge because the person who shares will be able to visualize their ideas*" (IN-3).

Another one blamed the OC which did "*not have, until now, the spirit of team working*" (IN-8). One of the managers found that obstacles are located in both personal attitudes as well as in the OC by saying "*OC has a great influence on staff especially if the firm has a powerful culture and I mean by powerful here that it has influence. In this sense, our companies are corrupted so it is more than likely that the staff will be corrupted and the leadership will be corrupted*" (IN-6). Another manager mentioned that "*Promoting the culture of sharing requires changing management. Our people will resist change; we do not like change because we do not think that change would make our life better*" (IN-2).

A lack of communication and a lack of trust is an issue which influences the level of sharing. One of the managers stated "*The major problem in Libya now that the common OC is that*

there is no trustworthiness between the employee and the organization, or leadership or management" (IN-10). Another one added "*There is a lack of communication channels as the leaders or management team have failed to create well established channels for sharing. Communication is very important in sharing knowledge"* (IN-8).

One of the managers thought that one obstacle related to the fact that "*Our employees do not distinguish between productivity and the time they spent in the firm. To them coming every day is what they need to do but they are not doing the required effort to enhance the productivity. Yes, they spend the whole time in the firm, but the question is do they work*? (IN-3). But according to another interviewee *"The ownership of the knowledge should be respected but it should not be seen as a barrier to sharing; this means that the culture of a person would have an influence on the level and the effectiveness of sharing*" (IN-2).

Another obstacle from the perspective of one of the managers is that *"Some of the firms do not follow the regulations and they would not force their employees to apply the rules and the regulations. You would find in such firms a rebellion culture and so they would refuse to apply the regulations*" (IN-1).

However, another one stated that "*there is some technical information in the firm to which we have no access. We are not able to reach the subscribed databases, thus some knowledge and information is highly secure*" (IN-6). According to IN-8, one obstacle can relate to "*The knowledge we [the firm] hold in the firm specific level of experience which we could not share*". An interviewee stated "*We have not established well the culture of team working and transparency. I personally do think that we did not understand yet the actual meaning of OC and this will have an influence on our practice of KS. We did not know, until now, how to make a plan to enhance our culture and which elements should be worked upon to make it more powerful"* (IN-10).

In terms of current practice, one of the managers said *"From my perspective, KS exists in our firm but it has not been documented in a written form and it has not been supported by regulations and it has not been mirrored. Yes, we practice KS but we do know have any written proof of its being existence and us have not establish rules and regulations to support such practices*" (IN-10). Another one reflected on the obstacles that they are facing in their current KS practice, stating "*We do not have an open day every year to ask people what they*

think about our programmes, plans and objectives to improve the culture" (IN-9). And another one said "*We do not know how to seek feedback and how to establish a full cycle*" (IN-5).

According to above discussion, internal obstacles can be either personally related issues (relating to staff negative attitudes such as selfishness) or organisational ly- related issues, where the negative elements of OC would influence staff and, in turn, have an influence on sharing knowledge.

4.4.2.5.2 External elements
External elements are those elements which can influence the practice of KS which are outside the body of the firm. They are more likely to be related to local culture or to the political governors' bodies.

According to the findings from the interviews, a few managers named local Libyan culture as a main barrier to creating the culture of sharing. One manager stated that "*Sadly in Libya we do not have the culture of affiliation which is required to establish the culture of sharing. I would refer this to the fact that most firms are public firms and the most common culture in such firms is that the employee can take his salary whether he shows commitment to the job or he does not*" (IN-1).

Another manager stated that "*The previous government was corrupt so you will see that people have become corrupted. So it is not the people who are corrupted, rather it is the government who touched the people to become corrupted. Nepotism becomes a deep culture because the government enhanced and embedded such a culture*" (IN-4).

Another manager said "*The people in Libya do not see humans as capital but we see them as a fuel. Human capital is very important to run a successful business. One of our negative culture aspects is that people do not believe in the benefits of change*" (IN-9). From another perceptive, one of the managers warned that "*Our firms in Libya have no scientific approach to assess the elements that have influence on OC and, in turn, on KS and there are no specific methods such as meetings or activities to communicate and share our understanding and concerns as to the meaning and elements of OC*" (IN-6).

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Another manager said "*Until now in Libya we were unable to establish the culture of fairness where everyone knows what is his/her right and what his/her responsibilities are. So, when an employee asks the firm to give them their rights, they must know their responsibilities and respect the rights of the firm such as being committed to the working hours and to productivity. Establishing the culture of fairness is very important in enhancing and promoting the culture of sharing*" (IN-10).

One of the managers showed his concern regarding the educational culture in Libya and its possible influences on sharing knowledge by saying that "*Libyan society has not been built to be knowledgeable. We enforce our children to learn and gain education just for the qualifications. In the West they teach the children how to gain the knowledge from when they are very young by sharing reading times. Also, by exchanging knowledge: I share with you what I have; you share with me what you have, so it is not one-way approach. So as you read more and as you sit with, and communicate with, knowledgeable people you will be able to grow more*" (IN-5). The same manager was concerned that "*The greatest problem is that the culture needs time to change and you need people who feel that the firm means something to them and they are ready to spend effort and time to embed the change. Maybe you have an attitude which is not bad but you need to adapt it. You need to be aware of your weaknesses and change them slowly*" (IN-5).

In conclusion, different external obstacles which can exert an influence on the success of promoting the culture or the practice of KS were named and identified by the participants. Some of them linked the obstacles to the attitudes of previous governing bodies and a few others linked the obstacles to general and common attitudes within local Libyan culture.

4.4.2.6 The role of decision makers in promoting the culture of sharing

The term decision makers are used in this study to refer to the top-management professionals who are responsible for making the decisions in the studied firms. It is important to mention that, due to critical security status of Libya when the data were collected for this research, the findings presented in this section are limited to the interviewed decision makers' perspectives. Therefore, recommendations for further studies will be suggested in the conclusion chapter.

The analysed official documents showed that the decision makers are responsible for sharing their experiences and knowledge with the staff as well as being responsible for encouraging

their employees to share their knowledge. But there was no evidence that these regulations were formulated to serve the purposes of knowledge sharing.

According to the interviewees, the role of the decision makers was supportive to enhance the culture of sharing. One of the managers stated that "*My responsibility is to share information*" (IN-9) while another one saw that his role is "*To educate the staff I am working with and give them the knowledge I have used to create the project's documents. I am practically teaching them how to share and what to share*" (IN-1).

One of the managers said that "*As a project manager I would not be able to create the team who is able to work with me until I understand their culture and until I understand how to work with them*" (IN-3).

Another manager saw that his role is "*To ensure that information was documented and available to share. When I record my projects I should ask myself if I have established a risk register to record the risks, problems and learned lessons*" (IN-5). One of the managers saw that his role is controlled by the culture of the firm. He stated that "*Our role is limited to the regulations and obligations. We are soldiers in promoting the culture of the firm and if we were asked to promote the culture of sharing we will do so*" (IN-8).

One of the managers is a human resources' manager and he saw his role differently as "*We as HR managers must work on encouraging our employees to understand the culture codes of the firm and the government at the same time. We should run training courses for those staff who would like to go abroad for training purposes, to introduce them to other country cultural codes and traditions so they would not, due to a lack of knowledge, act offensively against any culture and create enemies. If you checked the CV of a successful manager, you will find out that the most successful people are those who understand and respect cultures. So when the culture of KS promoted or suggested we should be ready with our vision to help*" (IN-7).

Thus, according to both the analysed official documents and the data from the interviews, decision makers have an important role in promoting and advocating the culture of sharing in their firms by either providing a role model in practicing sharing or by encouraging their staff to share. At the same time, human resources' managers have greater responsibility as they

need to pave the way towards embedding the culture of sharing and at the same time suggest the required courses needed to explain the elements of the new sharing culture.

4.5 Summary of the findings (triangulating the methods)

In this section, with respect to the themes and their sub-themes-1 and sub-themes-2, a summary of the findings will be provided and then, based on the outcomes of the summary; the issues which will be discussed in the discussion chapter will be named and identified. The summary will be drawn up mainly based on the data collected from the interviews and the documents as well as the questionnaire. Similar issues which were identified will be addressed first and some other issues very specific to each context will be indicated.

In terms of the creation of the studied cases, the findings suggest that all of the studied cases are operating under the umbrella of the General Authority for Communications and Information Technology. The companies were created to supply Libya with Internet and telecommunication services. Interestingly, all of them were created in a close period of time, namely between 1995 and 2005. In terms of the OC elements, the findings suggest that OC in all firms includes elements of organisational structure and they are subject to amendments. For instance, in Firm C, the human resources' department was added to the original structure to enhance the culture of learning. There is a common understanding from the questionnaire and interviews' findings that OC is a complicated term which includes different elements and the outcomes focused on the fact that the factor of values is a major element that makes up the meaning of the concept of OC.

In all the cases, KS was claimed to be identified but, in reality, it was more knowledge transfer rather than knowledge sharing. In order to share knowledge internal and external training courses should provide the major enhancement in sharing knowledge. Informal activities were suggested but the major purpose of these courses was not sharing, rather gathering (to bring stuff together). In the interviews the notion of motivation towards sharing knowledge and changing the current culture dominating the ICT sector was obvious. But the same notion was not as clear in the documents, bearing in mind that different social media tools were involved in enhancing communication and sharing and that the websites in some cases provided more than one language to reach different customers. All four cases have a partnership with local and international firms. It was noticeable that "value" is a main key

element of OC but with different meanings given to that word; the meaning of value itself is changeable.

In terms of the issues that influence KS, the data suggested that there was a kind of agreement that the local culture of both the government and the staff has an influence on the culture of the firms, on the type of services provided and on the general mood inside the firms. The current critical level of security seemed problematic for all the firms, but the commitment of private firm staff towards providing services was higher. Thus, the personal culture of the staff appears to have a noticeable influence on formalising the meaning of OC in the studied firms. Training is provided internally and externally and assists in sharing the knowledge to a specific level.

There was agreement that government should provide support to enhance the creation of a knowledge culture and to enhance the practices of KS. All the documents and interviews suggested that decision makers in Libyan firms have a vital role in supporting the required culture that will enhance the sharing of knowledge and, at the same time, in providing a model of the required behaviour and skills of ideal employees who will share and communicate in a professional manner. Based on the above summary, the following table has been created.

Table 4-14: Summary of the findings

Critical Elements	Explanation
Establishment	All firms operate under the umbrella of the General Authority for Communications and Information Technology. And all firms were created in a close period of time (1995-2005)
Concept of OC	OC in all the firms includes elements of organisational culture and they are subject to amendments
Policies and Regulation	They were placed in all the studied firms
The Concept of KS	Appeared in all the cases
KS Activities	Internal and external training courses and different set of activities
Motivation to Support KS Culture	Motivation was identified in all the cases
Partnership	All four cases have a partnership with local and international firms
The Aspect of OC	"Value" is a main key element of OC
The Issues that Influence KS	General agreement that the local culture of both the government and the staff has an influence on the culture of the firms. Desire to share knowledge, workplace regulation and rules
The Personal Culture of the Staff	Has an influence on the meaning of OC
The Role of the Government in Supporting the KS Process	Important to support the process and the culture of sharing
The Role of Decision Makers	Vital to support the required culture to enhance the sharing of knowledge and, at the same time, in modelling staff behaviour and skills

As can be seen from the above table, a few critical issues were identified in relation to the main outcomes of this study which is "*Creating a framework to enhance the practice of KS in ICT firms*". Bearing in mind the focus in this study is on the following:

- Understanding the concept of OC and its related elements;
- Understanding the concept of KS and its related activities;
- Understanding the issues that influence OC and KS;
- Identifying the role of decision makers in maintaining the relationship between OC and KS.

In addition to the above summary, a few critical issues have been identified and can be synthesised as follows. Different official documents and information published on official communication channels such as Facebook, Twitter and on websites were analysed in order to understand the creation of the studied firms as well as to examine if there is any written evidence that can indicate any critical elements that need to be addressed.

In terms of OC, in some firms (rather than other firms) the culture of ignorance and corruption seems to be common. This was aggravated by the recruitment system used in public firms. For example, a firm which needs only 100 employees to run the business and to operate it would employ 400 employees, the majority of them would not come to the job or waste the working hours' time. There was a comment by one of the employees on their concerning one of the studied cases. He stated "*If you have no job to do, let other people who are busy do their job. People who have nothing to do are causing troubles and conflicts to those who are busy because they have nothing to do expect pick on mistakes*" (IN-4).

It was obvious from the system of holidays adopted by the public firms that the culture of laziness was common and, at the same time, a lack of strategic vision influenced not only the productivity of the firms but also the staff motivation to come in in the morning with clear vision of what they needed to achieve.

The negative feelings also seemed common among the employees who did most of the duties and jobs. On the Twitter account of one of the studied cases an employee stated that "*I am fed up, it is not fair at all, and they do nothing and get paid the same amount as the rest of us*". Thus the people who work could become further frustrated and some may be attracted to also

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be lazy. When the researcher asked the decision makers how they think the firms can be different from each other, one of them stated that the concept of the culture of laziness is not very common in some firms and added that "*The main culture, in any firm, should be based on the benefits of giving and taking. The culture must be aimed towards development and innovation to satisfy the founding body [Pausing] I think the first things that must change in some firms are the recruitment system and the holiday system in order to encourage people to think about their benefits. Our regulations and rules are still controlled by those set by the previous regime, but we keep trying to do better"* (IN-1).

Another decision maker stated that "*Our people in Libya are used to seeing working in firms where employees have the chance to gain a scholarship, car or whatever. So it is the firm's business to build up the firm's structure. The biggest issue which can cause a failure in a organization is negative culture and where does the negative culture come from? It comes from the bad inflaming by a corrupted political system"* (IN-5).

On the other hand, one of the participants stated that "*some firms know how to formulize the rules and regulations that guarantee their rights first. For example, the productivity in some firms will be higher than others because the punishment system is more difficult"* (IN-10). In order to verify his comment, the researcher reviewed some of the employment contracts issued by different firms and noticed that the way that some firms followed in order to set their regulations and rules seemed fair for everyone.

For example, employees were allowed 28 days' paid holiday with a notice period of 2 weeks and were allowed sickness days but under the condition of providing professional health reports. From the analysed documents, it was noticeable that the leadership and the management team had a higher authority over the staff so employees tended to show more commitment to the firm (Internal report, (D-2). It was clear that such control was given to the management team by the regulations and the law, thus when an employee signs the contract with the firm he/she accepts giving to them a higher power of control over his/her duties .

One of the employees stated that "*From my perspective, if by any chance an employee was able to fight for his rights then the firm would always have a way to get over it. You should think now about the employee who would think that the firm's team is unjust because they emphasised the firm's rights and they neglect the employee's rights. Such a matter would*

generate a negative energy towards the firm and the management. I think this one of the problems. Some firms seek their rights first"(IN-7).

Nevertheless, another employee in another private firm stated that "*In private firms, the one who works takes but in public firms everything is corrupted. If you have a close relationship to the manager you would be able to monopolise everything*" (IN-9). The culture of private firms is based on the fact that "the regulations and the rules must be applied over all employees equally to be able to embed the culture of equality and fairness in the firm" (D-3).

Decision maker IN-4 stated that "*Some staff will allow themselves to take everything for themselves, so their personal attitudes have an influence on the culture of the firms. I would like to mention here as well the influence of regulation on our personal life and personal style. Let me give you an example. Before the revolution the way that people used to dress when they came to work is very different to now. Employees were committed to the normal western style of dress; after the revolution different styles started to appear such as the Afghani dressing code (the Islamic dressing code) which we did not use to see before. I do not know if it is the freedom that the revolution has generated as the previous system used to arrest such people, or because of the mess and people have started to act like they have no control*" (IN-4).

So, it seems that the revolution of 2011 has freed Libyans from different restrictions in the workplace which they used to experience in the previous era. Nevertheless, further research is required to understand the factors that lead to such a change in the behaviour especially within public firms.

Chapter 5.   Discussion

5.1 Introduction

Chapter 4 presented the research findings collected from four different ICT firms in Libya (by using three different data collection methods) in order to understand the relationship between Organisational Culture and Knowledge Sharing. The chapter also included the suggestion that a framework should be created which will assist ICT firms in enhancing and empowering their practices. Furthermore, in section 4.5, the researcher summarized the findings and identified the common and the critical issues relating to the concepts of KS and OC. The chapter also focused on the issues which seem to have an influence on the relationship between both concepts and on the issues that have an influence on the practice of Knowledge Sharing.

This chapter aims to conceptualise the research findings and presents an integrated framework of the findings in order to serve the aim of this study. Furthermore, this chapter compares the emerging findings with existing Knowledge Sharing models, and then builds up the KS framework that will assist ICT firms in Libya to achieve better practices of Knowledge Sharing. Ultimately, the validation process of the framework will be discussed alongside the final amended diagram.

In order to reach to the conclusion of creating the framework, this chapter is divided into three sections. The first section compares the summarised findings resulting from this study with current KS literature, focusing on the components of KS models, second section focus on creating the framework, and the third section presents the outcomes of the framework validation phase besides the amended framework.

5.2 Comparing the findings with the current KS models

5.2.1 Introduction

Resulting from the summary of the findings (as given in section 4.5), a set of critical elements was identified as issues to be considered when looking at Knowledge Sharing practices and Organisational Culture as a phenomenon. These issues are the establishment of ICT firms in Libya, concepts of OC, policies and regulations, the culture of the owner, the concept of KS, KS activities, motivation to support a KS culture, partnerships, the aspects of OC, the

elements that influence KS, the personal culture of staff, the recruitment system and corruption, the role of the government in supporting the KS process, and the role of decision makers. For the benefit of this chapter, and in order to present the findings in a more coherent way, these critical issues will be gathered underneath four main headings. These headings are ICT sector-related issues, Organisational Culture-related issues, Knowledge Sharing-related issues, and Decision Makers-related issues.

5.2.2 Opinions expressed within the literature concerning the critical elements suggested by this study

There is a comprehensive body of literature on Knowledge Management (KM) and on Knowledge Sharing (KS) which covers all the critical elements relating to KS practices and processes. Covering most of the issues discussed by the literature is beyond the interest of this study. Hence, the focus here will be on the issues which are suggested by this study within the studied sector (with a consideration of other sectors as needed).

5.2.2.1 ICT sector-related issues

When making a comparison between the ICT sector and other sectors, in terms of creation, then the ICT sector appears relatively young. Kramer, Jenkins, and Katz (2007) stated that, although the ICT sector came into being as little as 20 years ago, the reality is that the ICT has touched in some form the majority of people and businesses around the world. Kramer et al. (2007) added that the services and technologies provided by the sector cover not only hardware and software services but also applications, telecommunication services and content. In this study (and with respect to the categories suggested by (Gonzales et al., 2012) the studied cases tend to be services' and telecommunication firms rather than producers of ICT technologies.

 In terms of the development of the ICT sector in the Arabic region, Dutta and Coury (2012) stated that the growth of the ICT sector in the Arabic region goes back to the middle and the end of the 1990s and that its influence is more in Arabic oil producing countries rather than in others in the region. According to Dutta and Coury (2012), there is a big gap in terms of the development of the ICT sector between Arabic countries. While oil producing countries, such as Bahrain, Qatar and Kuwait, record high levels of usage of the Internet, countries such as Syria, Algeria and Egypt had no or very little access to the Internet in 2001 (see Figure 5-1)
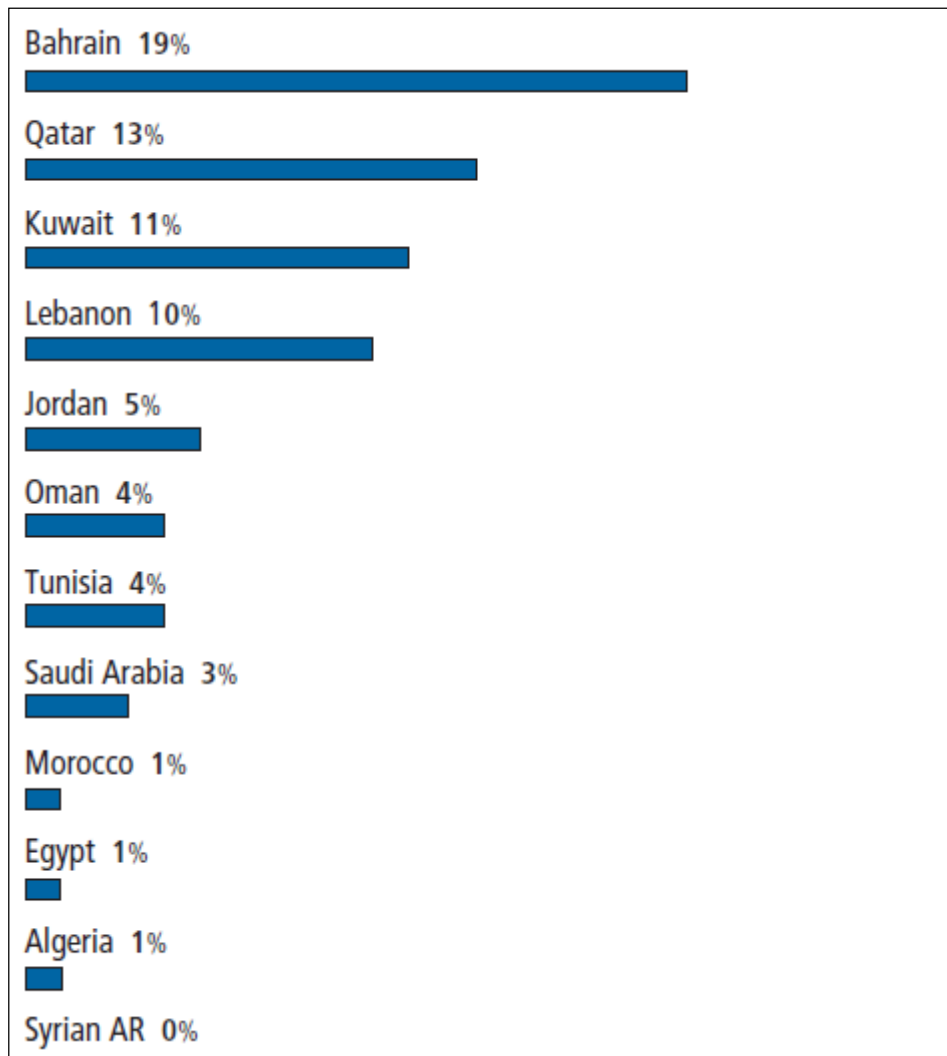
Figure 5-1: The average use of the Internet within some Arabic countries in 2012 (Dutta & Coury, 2012)

In Libya the establishment of the ICT sector started in the late 1990s and its development was linked to the development of services and the demands of users. Mobile phone penetration in Libya has increased dramatically over the last decade, from one percent in 2001 to 71 percent in 2010, indicating multiple subscriptions per person (International Telecommunication Union (ITU, 2012)) .Jones, Kennedy, Kerr, Mitchell, and Safayeni (2012) argued that although, after the revolution in Libya in 2011, the ICT sector (which was monopolized under Colonel Gaddafi's regime) still suffers from being in an unstable state, the liberalization of the media regulatory landscape, combined with continued infrastructure developments, could result in significant improvements in the sector.

In August 2015 the Libyan Post Telecommunication Information Technology firm (LPTIC), which has played a significant role in the broader restructuring of the telecommunications sector in Libya, proposed Key African Telecommunications Investments in order to transfer Libya into a knowledge-based economy, bringing with it both social and economic benefits, and demonstrating the market leading capabilities of the firm.(LPTIC, 2015).

5.2.2.1.1 Establishment of ICT firms in Libya

According to the findings of this study, the studied ICT cases have been pioneer firms in providing ICT services to the nation of Libya since 1995. Zubi (2013) stated that the telecommunications' service started in Libya by the end of 1995. Access to the services at the beginning was for the benefit of those who were close to the dictatorship authorities. The services were then opened to the public in early 2000 and in 2001 the number of users hit 300,000 users. The number increased rapidly to become around 850,000 by mid-2003.

According to the findings of this study, all the studied cases were working under the umbrella of the General Authority for Communications and Information Technology. This fact was confirmed by Zubi (2013, p. 9)who added that all tech-communication businesses in Libya are controlled by the General Authority for Communications and Technology. From the perspective of Elzawi, Kenan, Wade, and Pislaru (2013) Libya's revolution in 2011 has had a negative influence on the country's economy including the telecommunications sector. It has been recorded that the ICT sector lost around US$1 billion. Elzawi et al. (2013, p. 45) stated that "reconstruction efforts are underway, and at an estimated 76% GDP growth, the country's economic output is expected to return to pre-war [revolution] levels". The findings of this study suggest that Libyan ICT firms are on a mission to enhance the quality of the provided services (taking in consideration the critical security level of the country up to the time of writing this thesis).

5.2.2.1.2 Partnerships

According to the findings of this study, all the studied cases are intending to establish positive partnerships with overseas ICT firms. If such partnerships occur, they will open the door towards new investments and more development to both the sector and the services. Hamdy (2007) stated that the Libyan government has become more interested in partnerships and in cooperation since the UN embargos against Libya ended. In addition, the Connelly and Kelloway (2000), which was launched in 2004 with the aim of developing partnerships with African countries (including Libya), developed a strategic plan in 2013 which included a

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comprehensive description of the nature of partnership strategic programmes (including partnerships within the ICT sector) and the possible methods of development. In the (ENP) Connelly and Kelloway (2000, p. 11) document it stated that "Libya has decided to change the balance between the private and public sectors. In an effort to develop private companies, it created in 2009 an SME development fund and opened a first incubator for start-up companies. It intends to open many more such incubators. It has established a cooperation partnership with Singapore with a view to acquiring information, knowledge and skills for developing a full-fledged SME policy in Libya" Hence, the nature of the partnerships and the level of development are very much related to the type of policies and programmes that the Libyan government promotes and, at the same time, to the organisational culture of the business sector in Libya.

A study carried out by Twati and Gammack (2006, p. 175) in order to understand the *impact of organisational cultural innovation on the adoption of IS/IT* concluded that, in the business sector in general and in the banking and oil sectors in particular, Libyan people seem to be resisting change; at the same time, top-management professionals and decision makers were not aware of the type of education and training that is needed to help staff adapt to change. The authors added that it appeared that these professionals and decision makers were influenced by their societal culture and they were not aware (although they were more educated and had more connections with foreign companies and partners) that the adoption of information technology (IT) and information systems (IS) can open more doors towards competition and innovation. In this sense, the decision makers and strategic designers in the ICT sector should be aware of the larger context of the Libyan business sector and understand the factors relating to societal culture before making deals and creating any partnerships.

5.2.2.2 Organisational culture (OC)-related issues

5.2.2.2.1 *The concepts of OC and the personal culture of staff*
The findings of this study suggest that conceptions of OC can be varied and that it can cover everything in an organization. Cunningham, Sarayrah, and Sarayrah (1994, p. 1) defined Organisational Culture as "the pattern of shared beliefs and values that shapes the meaning of an institution for its members and provides them with the rules for behaviour in their firms".

According to Tharp (2009), although OC as a concept is very complicated and can be defined differently, most of the provided conceptions included three main common attributes which seemed to tie the various conceptions together. He stated that "delving deeper, three common attributes seem to arise across the varying perspectives within sociology, psychology, anthropology, and management science. One is that the concept of shared meaning is critical; secondly, is the notion that organisational culture is constructed socially and is affected by environment and history. The third common feature among the many definitions is that organisational culture has many symbolic and cognitive layers - culture is thick and resides at all levels" (Tharp, 2009, p. 5).

Interestingly, in this research it was found that the personal culture of individual staff members which, in turn, makes up the culture of the large nation of Libya, was one of the symbolic and cognitive layers. The rigid culture of the owner of the major firms (namely, the dictator) has had an influence on the personal, moral and value systems of individuals who have become more self-centred and less fair and committed. There has been a feeling that the firms did not serve the interests of the Libyan nation, rather they served the interests of the dictator. According to Bolton, Brunnermeier, and Veldkamp (2012), the dictatorial culture of ownership or leadership can reduce the level of sharing and satisfaction among staff members and can lead to more corruption and less commitment. Bolton et al. (2012) added that "there is no point in assigning a leader that is a good listener in an organization that has a hierarchical and dictatorial culture. Vice-versa, appointing a very resolute leader in a democratic firm in an attempt to bring about greater coordination could be costly, as this may clash with followers' incentives to take initiatives. These observations have often been made and are well understood in the management literature" Bolton et al. (2012, p. 23). This critical element seems strongly related to the next element which concerns policies and regulations.

5.2.2.2.2 *Policies and regulations*

According to the findings of this research, the role of policies and regulations appears constantly not only as a main element of OC but also as a critical element which has often been challenged by staff due to the critical situation of Libya after the revolution in 2011. Before discussing how regulations and rules can be challenged by employees and why, it is logical to understand the meanings of policies and the nature of the relationship between OC and policies and regulations.

According to BS 7799, the main aim of an information security policy is ''to provide management direction and support for information security'' (Cruthirds, 2006). Thus policy is about demonstrating a firm's directions. According to Hutchings and Weir (2006), policy refers to either actions that need to be taken, or procedures that need to be adopted, or a statement that should be declared. Procedures should be understood as events which should be followed up by firms in order to meet their aims and objectives. In this context, Hutchings and Weir (2006) argued that policies and procedures in a firm are vital elements to impose actions and behaviour on all the parties involved in the organization's environment. They suggested that some model such as The Moses Model (which is a cultural - religion-based model) can be seen as a framework, adding that "policies and procedures should be arranged to ensure that conceptual ideas of top management are effectively interpreted and logically communicated to the employees" (Hutchings & Weir, 2006, p. 279). This suggests that regulations and procedures will not play their roles in shaping the culture of firms if top management do not follow, respect and communicate them on a continuous basis.

In this study, the majority of the respondents did not agree that OC is about regulations and procedures only and a few comments indicated that regulations and procedures have not been followed on many occasions (particularly after the revolution when there was a lack of security and safety). International Business Promotion, (Inc, 2015) in their book "Libya Electoral, Political Parties, Laws and Regulations Handbook - Strategic Information, Regulations, Procedures (World Business and Investment Library)" stated that the dictatorship in Libya had an influence on every aspect of the culture within the Libyan nation and destroyed, to a great extent, individuals' responses to the law and regulations and encouraged the law of power and authority leading to more nepotism (Toy, Brown, & Miles, 1988). Arabs tend to use more short term plans than the long term plans which make them more likely to reject rules and procedures. They do not prefer to preplan their activities; rather they prefer that things happen impulsively. Hence, when regulations and rules are suggested and are embedded within Libyan firms such characteristics should be considered in order to improve the commitment to rules and regulations.

5.2.2.2.3 *The culture of the owner*
According to the findings of this study, all the studied cases were owned nationally by the Libyan government which was monopolized by Colonel Gaddafi's regime. In addition, it was argued in sections 5.2.2.2.1 and 5.2.2.2.2 that the larger nation of Libya has been impacted

upon by the culture and the authority of the dictator who controlled and dominated the country. Wyman (2010, p. 2) stated that an "ownership culture creates a situation in which behaviour is guided more by values than by rules; even when "nobody is watching, people treat each spending decision as if they were, in fact, the owner". Thus, in a dictatorship environment (where the regime does not secure the protection of individual rights and freedoms as well as a level of economic development) the level of commitment and employment satisfaction as well as engagement is low because employees do not feel that the benefits from the business are shared; rather the business and the benefits are all controlled by the authority of the dictator (Pisheh, 2011).

Accordingly, on a few occasions, the interviewed decision makers indicated that the level of commitment and engagement by staff was low. This can be linked to the deep influence of the dictator's ownership of the ICT businesses in particular and the nation of Libya in general. Such a factor should be taken into consideration in the current movement toward democracy.

5.2.2.2.4 *Aspects of Organisational Culture (OC)*
According to the findings of this study, the factor 'values' is a core aspect of OC but it is understood as a changeable concept. For instance, personal values are different from one person to another and are also different to leadership values, an owner's values and cultural values but, at the same time, all values are connected because (as mentioned earlier in sections 5.2.2.2.1, and 5.2.2.2.3) staff behaviour in a firm is influenced by 6 layers of culture (including the owner's culture). The fact should be noted that culture is a shared pattern of assumptions, values and behaviours. Some of these values can be characterized as individualistic or collectivistic (Hayajenh, Maghrabi, & Al-Dabbagh, 1994; Trevithick, 2008).

Trevithick (2008) stated that differences in staff values can be a significant barrier to maintaining collaboration and communication. Very similarly, as shown in the findings of this research, ICT professionals and decision makers have different understandings of the meanings of value which can prevent necessary communication and better KS practices. Tacit knowledge "is highly personal and hard to formalize, making it difficult to communicate or to share with others. Subjective insights, intuitions, and hunches fall into this category of knowledge. Furthermore, tacit knowledge is deeply rooted in an individual's actions and experience, as well as in ideals. Hofstede (2005) agreed that different national cultures affect organisational culture differently. Therefore, the value of national culture will have an influence on the value of individuals and, in turn, on organisational culture".

Nonaka and Takeuchi (1995a, p. 8) In this context, it would make sense that individualistic values, or emotions, should be taken in consideration when ICT firms set frameworks to share knowledge. So 'value' in this case is not only the core of Organisational Culture but is also a main element which staff need to communicate about, understand and share in order to create a positive environment where both culture and practice advocate knowledge sharing. In addition, values have a different influence on organisational culture than on national culture with collectivistic values Table 5-1 explains the differences between collectivism and individualism (Hofstede, 2005).

Table 5-1: The differences between Individualism and Collectivistic (Hofstede, 2005)

Individualistic Organizational Cultures	Collectivistic Organizational Cultures
• Employees operate according to their individual interests that goes along with the employer's interest. • Utilizing family connections within the organization is perceived negatively. • Rewards are based on individual performance. • Task is more important than personal relationship.	• Employees operate according to their group interests. • Family connections are utilized for benefit of the organization. • Rewards are based on group performance. • Personal relationship is more important than the task.

Weir (2003) identified different contradicting values that influence Arabic culture (but without noting if one has a major influence). These values include: determinism and freewill; past oriented values and future oriented values; creativity and traditions; heart and mind; shame and guilt; openness and introversion; obedience and rebelliousness, and individualism and collectivism. Hofstede (2005) argued that Arabic culture is found to belong to a collectivism culture rather than to individualism.

This study suggests that values are in the core of OC and, at the same time, values shape humans' tacit knowledge and are a main element of individual personal culture, national culture and workplace culture. It was obvious that staff and decision makers in the ICT companies were not able to create a shared value culture. According to Jarche (2013) shared values, heroes and heroines, rituals and ceremonies, and a shared cultural network and shared organisational culture create a sense of identity, community, and a sense of belonging amongst an organization's members (see the literature review section for more information).

Also, as reflected in the research findings, differences in values decide the attitudes of individual ICT staff and can result in barriers to improving tacit knowledge. Such issues should be considered when a framework that looks at enhancing the practice of Knowledge Sharing (KS) is created.

5.2.2.2.5 *Nepotism and the recruitment system*

The findings of this study suggest that nepotism can be a serious issue when it comes to recruiting people to work in the ICT firms. According to the Oxford Dictionary (Dictionary, 2008) nepotism is defined as "favoritism shown to relatives or friends, especially by giving them jobs." In the organisational context, nepotism can seem acceptable because, according to Ford and McLaughlin (1986), nepotism can improve the level of communication and collaboration because it helps in building up a family-related environment and it can be highly positive whereby the main collectivism values of the culture are common. Toy et al. (1988) warned that nepotism can cause a chain of problems including strains caused by mixing professional relationships and family relationships and that sometimes, when it comes to utilising a reward system, close family members to the manager can benefit unequally from the rewards. According to (Scoppa, 2009), "nepotism" in the business sector originally meant hiring the business owner's relatives and the scope of concept then was extended to refer to blood relations.

In Arabic firms, nepotism seems to be very common. Hayajenh et al. (1994, p. 61) even claimed that some Arabs recognize success, in general, as *Nepotism tends to foster a positive family-type environment that boosts morale and job satisfaction for all employees, both relatives and non-relatives*. 'Wasta' is another word for nepotism. According, Hutchings and Weir (2006) wasta is the translated word of mediation and it means using the power of "connections" or "who you know" and gaining preferential treatment for a person who is ineligible for it. From the perspective of Barnett, Yandle, and Naufal (2013) "wasta" is visible in everything and everywhere from the way in which governments interact with businesses to the way in which public policy is formulated. In this study, it was found that such practices (nepotism and wasta) have an influence on the engagement and the commitment of the staff in the ICT firms.

According to a PhD research study carried out by Farahmand (2013, p. 5), "nepotism affects the quality of human resources in a firm as candidates are hired due to their affiliations and family ties rather than their requisite skills. A situation may arise in which the potential recruits do not well suit the job specification unlike the other candidates who are

appropriately qualified". It has been presented in chapter 2 (section 2.3.1) that the main tacit knowledge within firms is held by staff who are the major source of resources in firms. Tong et al. (2015) found that Knowledge Sharing practices in ICT firms in China was influenced not only by Organisational Culture but also by the level of job satisfaction. Tong et al. (2015, p. 25) added that "trustworthy behaviour motivates speedy knowledge sharing communication and a friendly environment increases work performance".

5.2.2.3 Knowledge Sharing (KS)-related issues

5.2.2.3.1 *The concept of Knowledge Sharing*
Referring to what has already been stated in the literature review chapter (see section 2.4), Knowledge Sharing is defined in its broadest sense as a term that "refers to the communication of all types of knowledge which includes explicit knowledge or information, the 'know-how' and 'know-who' which are types of knowledge that can be documented and captured as information, and tacit knowledge in the form of skills and competencies." (Al-Hawamdeh, 2003, p. 81). Thus, it is a knowledge (which is a complicated term) which should be shared (in a complicated process) to achieve the goal of knowledge sharing (which is a complicated concept). All these issues and complications are taken in consideration during the discussion in the following sections.

According to the questionnaire's findings each concept of knowledge, sharing and knowledge sharing is understood differently. In chapter 4, Table 4-7, the findings suggest that the meanings of knowledge are complicated. However, the conclusions from the questionnaire suggest that individuals can gain knowledge from different sources including textual sources (such as theories and practical sources) as well as experience and practices. Trevithick (2008) stated that the sources of knowledge are varied and that knowledge is very much related to its context. He added that sources of knowledge can be either theoretical (such as books or written sources) or practical (such as experiences). According to the findings of this study, knowledge encompasses many components such as learned lessons, communicated value, theoretical knowledge, observed issues and facts, life aspects and skills. Furthermore, knowledge can provide benefits to firms in the form of enhanced learning, productivity, quality, communication, innovation and creativity. According to Haas and Hansen (2007), different types of knowledge have different benefits. In their study of 182 sales' teams in management consulting companies, Haas and Hansen (2007) were able to find that sharing codified knowledge in the form of electronic documents saved time during tasks but did not

improve work quality or signal competence to the clients. On the other hand, sharing personal advice improved work quality but did not save time. The findings of the questionnaire suggest that, in order to be able to create knowledge, firms need to be able to learn from their mistakes, to share, to communicate openly and to understand facts beyond the common way of seeing and reading (thinking outside the box). Creating knowledge requires from firms seeking, sharing, communicating, learning, observing and understanding different aspects of workplaces and life.

Nonaka and Takeuchi (1995a) stated that sharing knowledge in firms requires the carrying out of different activities and providing training and the required education in order to gain the required competencies to practice knowledge sharing (further discussion is provided in sections 5.2.2.3.2 and 5.2.2.3.3).

In terms of the concept of sharing, the questionnaire findings suggest that sharing involves providing powerful opinions, prior knowledge and experience, learned lessons, and values. The context of sharing is varied; thus the context can be as limited as a workplace or it can be as broad as life. People need to have the desire to share different things such as ideas, experiences, values etc. Sharing involves different actions such as advising, collaborating, exchanging, communicating, working in groups and creating channels of connections. The benefits of sharing are varied such as making better decisions, improving practice, improving the level of communication, and making life experiences better.

Interestingly, the concept of knowledge which requires the highest agreement rate is the concept which suggests that KS is "the willingness of people in a firm to communicate with others to share the knowledge they have gained or created". According to Lamont and Molnar (2002), people's desire to share their knowledge can be related to negative stereotyping between groups and a subsequent lack of interest or desire to share knowledge. Alexandre, Martin, Wei, Tim, and Reed (2006) argued that "in more hierarchical and ''vertical'' cultures top managers' need for control over the information flow, and the desire to restrict access to critical information by lower-level employees could lead to significant organisational barriers to knowledge sharing". Ismail Al-Alawi, Yousif Al-Marzooqi, and Fraidoon Mohammed (2007) stated that they found in their study that staff would be willing to share their knowledge that is related to work but that they have no desire to share their personal-based knowledge. In the same study, the authors found that staff willingness concerning sharing knowledge is influenced by the level of trust as well as by the setup of

communication, information systems, rewards and that organisational structure is positively related to knowledge sharing in firms.

In this study it was found that, in order to be able to share, the culture of knowledge should be planted as a main element of Organisational Culture so staff will understand the value and the need for knowledge and start sharing it. Accordingly, this study also suggests that Knowledge Sharing can be a social activity as well as a strategic process. This suggests that employees do not need to be controlled by specific systems and procedures to share rather that the space of sharing should be more open and communicative bearing in mind that ICT companies have two different types of staff, expert IT staff and administration staff. This suggests that some boundaries, in terms of accessibility to knowledge, can be set up. The boundaries which should be used (and where and how they should be set up) could be the core of further studies to be carried out in the future (see the conclusions chapter section 6.5).

5.2.2.3.2 Knowledge Sharing (KS) activities

The findings of this study suggest that there are two different types of activities where knowledge sharing takes place, formal and informal. Formal activities include lectures, trainings and meetings and the informal activities can involve informal meetings and informal events. Cummings and Teng (2003) stated that, regardless of whether they are formal or informal, the types of activities that firm sets up to support Knowledge Sharing practices should be understood and structured. He added that, in order to support Knowledge Sharing, an firm requires the use of three interdependent types of knowledge-sharing activities, namely:

- Activities focused on assessing the form and embeddedness of knowledge;
- Activities focused on establishing and managing an administrative structure through which differences and issues between parties can be accommodated and reduced, and
- Activities focused on transferring knowledge.

According to the above discussion, the issue is not which activities to practice but it is about where and how to suggest those activities and how to assess them.

5.2.2.3.3 Motivation to support a Knowledge Sharing (KS) culture

According to the interviews' findings within this study, there are three areas of support that are required to be able to support the process of Knowledge Sharing. These are at the staff

personal level, at the management level and governmental support. It was mentioned earlier that the personal culture of staff should be assessed in order to understand their culture and values and then training courses and educational opportunities should be designed to meet their needs. Connelly and Kelloway (2000); Davenport (1994) added that training has a significant influence on the knowledge-sharing process. Often employees do not use knowledge sharing technology and tools simply because they are not sure how they work or do not understand what actions they are expected to practice. Smith and McKeen (2009) found that the amount of training needed to change behaviour is always underestimated. Some firms have implemented formal mentoring and coaching programmes to address this need, some have not, and Smith and McKeen (2009) have suggested that the top-management team is responsible for undertaking the required research and observations in order to come up with the correct training needs.

5.2.2.4 Decision makers-related issue

5.2.2.4.1 *The role of decision maker*
Although, the issue of training is one of the most critical issues relating to Knowledge Sharing, it is not the only one. Schein (1996) suggested that the characteristics of the culture of management have an influence on the ways that training courses are designed. He added that the characteristics of the culture of management can be as presented in Table 5-2.

Table 5-2: The characteristics of the culture of management (Schein, 1996)

Sub-Culture	Characteristics
Exclusive Culture	- Have a world-view - Focuses on financial survival and growth - View employees as cost centre rather than capital investment - Views hierarchy as a symbol of status and control
Engineering Culture	- Focus on "people free" solutions and their ideal solution is the one that works effectively without the interventions of humans - They are stimulated with Puzzles and problems - Prefer linear, cause-effect thinking - They overdesign for safety
Operators Culture	- Focus on people oriented solutions. - They focus on the interdependencies of different elements in a process that makes them highly value collaboration. - They expect surprises in technical solutions, no matter how carefully it is designed by engineers.

Yousef (1998) suggested that it is not only management styles which should be considered but also the culture of the style because each style has a different culture. In the Arabic context, it was stated earlier that 'wasta' is a serious issue and it has influences on decision making (for example, Cunningham et al. (1994); Weir (2003) stated that wasta is an important management issue within Arabic firms and it should be considered when deals and strategies are made).

Acknowledging the critical role which management plays in supporting the Knowledge Sharing process is important because it helps framework designers understand from where the practice of Knowledge Sharing should start. It was indicated by Smith and McKeen (2009) that the employees in their study consistently stressed the significance of the role of managers in communicating the values of knowledge-sharing and of practicing what they advocate. Managers are the ones in charge of identifying times for training and sharing; they are responsible for determining job assignments which can optimize or stunt learning.

Surveys have shown that only 43% of business managers (including executives) have a clear understanding of the value of knowledge sharing (Eckhouse, 1999).

According to Phillips (1999), regular communication by managers on the value of knowledge-sharing is essential to the development of knowledge sharing behaviour. Communication includes speaking and writing and management should always pay attention to the quality of any communication and collaboration. Smith and McKeen (2009) stated that a management team is responsible for combining and improving training and higher quality standards with an emphasis on respect for, and trust in, the workers. Smith and McKeen's study stated that when support had to be given, managers should support as much or more than the workers. All important data should be shared with workers and suggestions for improvement should be carefully demonstrated. Finally, higher bonuses and other incentives should be given to assure further knowledge sharing (Gupta & Govindarajan, 2000).

The role of the governments in supporting Knowledge Sharing has not been widely identified and so further studies have been suggested in the conclusions' chapter (see section 6.6). Nevertheless, based on what has been discussed in section (5.2.2.2.4) in relation to the role of national culture in the meaning and practices of Libyan firms, the suggestions of this study should assist in raising awareness of the cultural barriers which prevent sharing and the creation of educational training and programmes in order to enhance awareness of the value of sharing knowledge. Furthermore, the Libyan government can communicate and cooperate with experts in KS to set up required regulations and rules to support the process of KS.

5.3 Learning from the literature: Knowledge Sharing models and frameworks

For the purpose of completing this section, a considerable number of published research studies and papers which focus on creating Knowledge Sharing frameworks and models were reviewed and the following issues were identified:

- None of the reviewed papers considered the ICT sector as the main context of their study.

- Some of the proposed frameworks were suggested by ICT or management professionals such as Harold Jarche who is an international consultant and speaker. His projects aim to assist business owners in the development of their business. Jarche (2013) put forward a

Knowledge Sharing framework based on his knowledge and experience. Such frameworks and models were not part of the analysis process in this thesis because the nature of them and the motivation for the development and creation of them could be different to the focus of this study.

- Only a few papers are concerned with Knowledge Sharing as a part of Knowledge Management practices and processes (e.g. Sabherwal and Becerra-Fernandez (2011)). The models or frameworks suggested by such papers were ignored because the grounds of these research studies were based on the fact that Knowledge Sharing is a main part of the Knowledge Management process while the assumptions of this study is that Knowledge Sharing can be either a practical or strategic decision.

- There was overlapping in the use of the terms 'model' or 'framework'. As the papers were reviewed it was found that both terms were used to refer to the same meaning of 'providing guidelines'. For the purpose of this thesis, papers which suggested models of Knowledge Sharing were also included in the analysis.

Taking on board the fact that comparing in detail all the selected models (including their related components) is beyond practical possibility and considering the fact that none of them followed a similar research approach and none of them attracted the same audience, it was decided that creating a table that provided an outline of information including the components would be a more applicable approach. Creating such a table reduces ambiguity and enhances the understanding of what other researchers have suggested in different sectors in the area of Knowledge Sharing (See Table 5-3).

Table 5-3: Different models and frameworks in the area of Knowledge Sharing

Author(s)	Model title	Context of the study	Components
Lin, Tan, and Chang (2008)	Model of Knowledge Flow Barriers	Taiwan healthcare sector	Five mutually related main categories (see figure 5-2): knowledge source barriers knowledge flow context barriers knowledge transferred barriers organisational context barriers knowledge receiver barriers
Hall (2005)	Interprofessional Teamwork Model	Canadian healthcare sector	Three main dimensions: "do you see what I see" values education systems
Lodhi (2005)	Cultural Based Model	Pakistan Higher Education sector	Four main components (see figure 5-3) communication channel individual attitude group attitude value
Supar, Ibrahim, Mohamed, Yahya, and Abdul (2005)	Model of KS Critical Factors	Higher Education Institutions in Malaysia	Consists of categories of four elements (see figure 5-4): cultural factors technological factors communication factors organisational support factors
Ismail and Yusof (2008)	KS Model for Public Organisations	Health sector in Malaysia	Three dimensions: technological organisational (five issues: structure, culture, reward & recognition, work process and office layout) individual (awareness, trust, personality and job satisfaction)
Egbu (2013)	Framework for improve knowledge sharing in the provision of floating support service	sheltered housing in England	procedures, people, planning and tools are the main aspects that effect implementing knowledge sharing in the studied context

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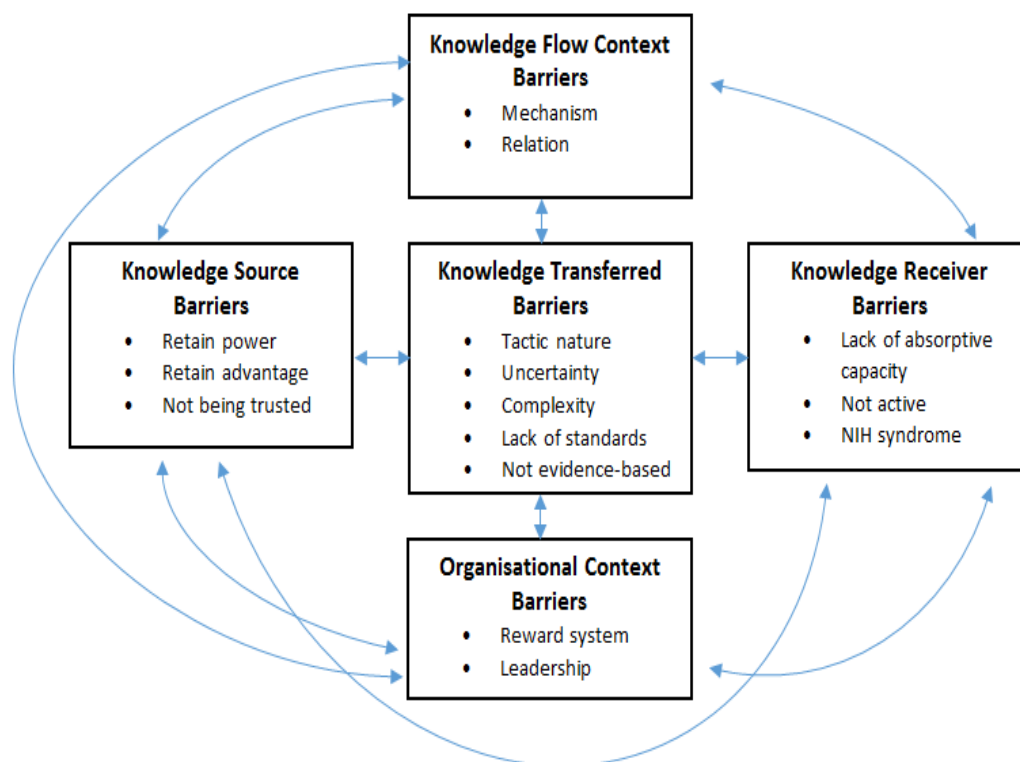
Figure 5-2: Knowledge flow barriers model (Lin et al., 2008)

As can be seen from above figure 5-2, Lin et al., (2008) have suggested that knowledge flow faces five correlated barriers: knowledge source, knowledge receiver, knowledge transfer, knowledge flow context, and the organisational context. The model directs professionals who work in the healthcare sector towards identifying barriers in order to improve the process-based evidence practice. In relation to this study, the model was able to indicate different types of barriers in different internal and external areas relating to the practical evidence of Knowledge Sharing processes, but it did not suggest any practical solutions towards overcoming those barriers. In addition, of relevance to this study, Lin et al. (2008) identified similar barriers e.g. organisational context barriers (see section 4.4.2.5).
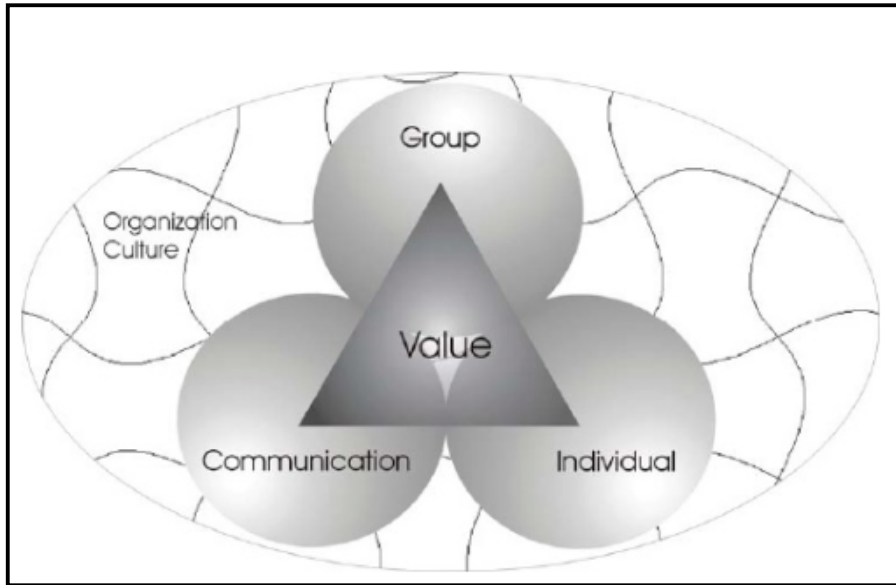
Figure 5-3: Culture-based Knowledge Sharing model (Lodhi, 2005, p. 70)

Unlike (Lin et al., 2008)'s model, Lodhi (2005, p. 70) identified a culture-based KS model (see Figure 5-3) In this model, Lodhi (2005, p. 70) indicated that value is the core link between group attitudes, individual attitudes and communication attitudes. Thus, true knowledge is embedded in human cognition and human interaction at various levels and depends on knowledge that creates value. The culture that facilitates this human interaction leads to the creation of value. In relation to this research, value appeared as a main element that creates the meaning of Knowledge Sharing and Organisational Culture, but the meanings of value were varied and more complicated as the context of value changed.
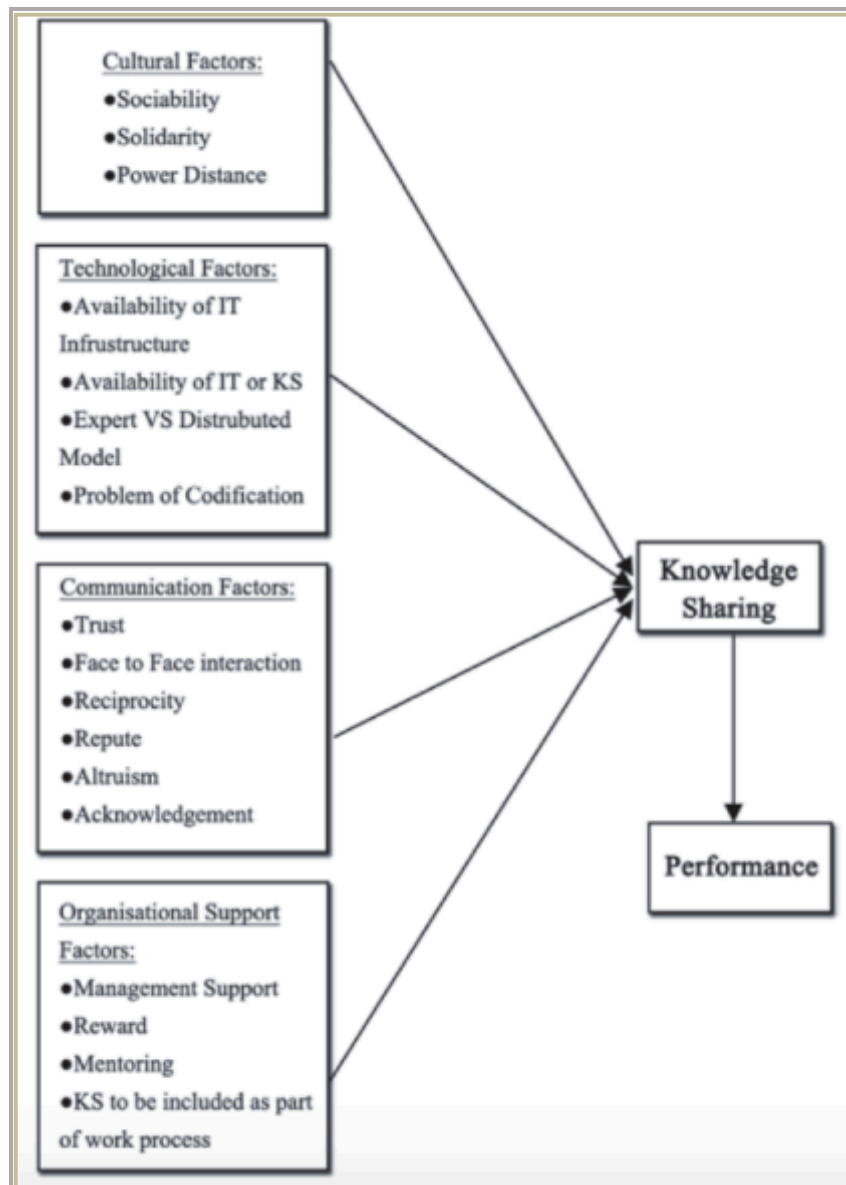
Figure 5-4: Supar et al. (2005)'s model of KS critical factors

As can be seen from (Figure 5-4), Supar et al. (2005)'s model of Knowledge Sharing consists of different categories including cultural factors, technological factors, communication factors and organisational support factors. The findings of Supar et al.'s study suggested that management support, solidarity, expert versus distributed model, and knowledge sharing are all issues relating to the practice of knowledge sharing and should be considered in work processes. In addition, the use of IT for the purpose of knowledge sharing and mentoring activities is positive and Knowledge Sharing is positively related to performance. This study found that culture (regardless of its meaning) can be an important factor that has an influence on the process of Knowledge Sharing, hence support is required from different sources including the government.

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As different models and frameworks of Knowledge Sharing have been compared and discussed, with respect to the findings of, and the context of, this study a ***STEP BY STEP Framework for Knowledge Sharing*** is the suggestion of this research.

The STEP BY STEP Framework for Knowledge Sharing is different from other frameworks for the following reasons:

1- Unlike the other frameworks presented in section 5.3, the framework provides practical steps towards understanding KS and the related actions and activities required to enhance its practice.

2- Libyan ICT firms customer-services retail businesses as Libya does not produce ICT products (see section 2.2.1). This extends the framework's potential to be applied in other similar contexts inside and outside Libya (but further assessment would be appropriate).

3- The STEP by STEP framework for KS is designed to be easy to follow with clear steps and actions and the actors' possible roles are identified.

4- The STEP BY STEP framework for KS is supported by guidelines which simplify the practices and reduce the levesl of ambuguity.

5- The STEP by STEP framework for KS is built on the idea that KS is not merely KS practice but also organisational practice, which extends the meaning of KS as a business practice.

The basis of the STEP by STEP framework for KS and its components will be presented and justified in the following section.

5.4   STEP BY STEP Framework for Knowledge Sharing

5.4.1   Introduction

It has been discussed earlier in this chapter (see section 5.2.2.2) that Libya as a nation and country has been influenced by the culture of neglect, dictatorship and corruption for over 40 years. Accordingly, such a culture has influenced negatively on every day aspects of Libyan people's lives and businesses and changing such a culture will take time and will require systemic efforts and education. From another angle, like all other sectors in Libya, the Libyan ICT context is not stable due to the current political conflict and thus the idea of a STEP BY STEP Framework for Knowledge Sharing is advocated.

The findings of this study suggest that the 'actors' who are staff, decision makers, human resources departments, and governments (namely those working in human resources and development) have influence over both Organisational Culture and Knowledge Sharing. Hence, it was believed that they should be main elements in the framework. Furthermore, Organisational Culture and Knowledge Sharing are found to be complicated conceptions, hence assessing major issues relating to them such as values and rules and regulations is vital before the implantation of a framework. Such actions and more were considered as main elements in the framework. In order to understand the relationship between actors and actions in the framework process arrow lines were utilised. In addition, arrow shapes were used in the framework (see Figure 5-5) to demonstrate the need for communication and collaboration in the application of the framework.

The STEP BY STEP Framework for Knowledge Sharing suggests that the Knowledge Sharing process should be implemented based on two approaches; the short-term approach and the long-term approach. Each approach has a message to deliver. While the short term approach aims to enhance awareness of the personal and cultural values' role in creating the culture of Knowledge Sharing, the long term approach aims to embed the culture of knowledge sharing and enhance the practicing of it in the ICT firms. Although both approaches have different aims, both aims are linked with each other and serve the purpose of creating the culture of Knowledge Sharing.

In addition, while the short-term approach deals with the immediate needs and requirements, the long-term approach considers the requirements in the long term. Both approaches link together to create the entire whole of the framework which concerns the creation of the culture of Knowledge Sharing. Both approaches consist of six main elements which are:

- The actors including the human resources manager in the Ministry of Communication in Libya, the human resources managers and staff in each firm, the decision makers in each firm and the staff in the firms;
- The actions including assessing, communicating, collaborating and developing. The actions will be verified based on each context's needs;
- The activities including training, seminars and communication;

- The main message, bearing in mind that each approach has a unique aim but that both aims are linked in order to accomplish the same aim of creating a culture of Knowledge Sharing in the ICT firms;

- The interactions which represent the relationships between the actors and the actions (presented in Figure 5-5 as arrows).

- The levels which represent the different layers of the approach whereby actors should move to different actions at a time when actors are confident that such actions can be completed. Therefore, three different levels have been elaborated:

  Level-1: which creates the area of communication and understanding because the findings suggest that there is a lack of communication between all the participants (actors) which, in turn, has an influence on the process and activities of KS practices.

  Level-2: the actions required to assess and identify KS activities and processes as well to understand the OC aspects. The decision makers and human resources' department will be responsible for identifying the actions presented in Figure 5-5.

  Level-3: is the higher level of involvement where government should be collaborating in order to complete the process and to enhance KS practices.

The following sections will describe each approach and then the final diagram showing the entire *STEP BY STEP Framework for Knowledge Sharing* will be presented.

5.4.2 The framework approaches

Before going ahead to describe the elements of each approach, it is important to understand that the required time to accomplish the aim of each approach is very much related to the time and effort spent by the actors as well as to the circumstances of the context. Nevertheless, the researcher assumes that the short-term approach should not take more than a year to accomplish its aim and that a 5 years' plan should provide an adequate amount of time to accomplish the aim of long-term approach.

5.4.2.1 Short term approach's elements

The aim of the short term approach is **to raise the awareness of personal and cultural values in order to create the culture of Knowledge Sharing**. In order to achieve the aim of the short-term approach, the following actions are required:

- Assessment of the meanings of the values of the staff by organizing meetings, formal and informal events, undertaking seminars and research.

- Assessment of the aspects of OC by creating a strategic research unit as part of the human resources' department to carry out research relating to the organization.

- Assessment of KS training needs.

- Communication that is open and regular in order to understand the concept of KS and OC.

- The setting up of rules and regulations by working closely with the government.

- Creation of educational and training programmes to raise the awareness of KS in order to modify staff and managers' behaviour.

- Encouragement of the culture of commitment and motivation by enhancing current reward systems to encourage productivity and engagement in order to enhance staff satisfaction.

- Identifying required plans and strategies.

- Identifying the possible formal and informal activities that encourage the sharing of knowledge.

- Identifying the possible risks relating to KS.

- Identifying shared values.

The main actors in the short term approach are human resources' department managers and the staff in each firm, the firm's top-management team (decision makers) and the human resources' department in the Ministry of Telecommunications in Libya to increase the connection between all the human resources' departments within the sector to create a broader culture of KS. The main focus should be on both personal values and cultural values. Furthermore, each actor should be aware of the local requirements of each context before undertaking any action. A high level of collaboration and communication is vital to gain the best from the suggested actions.

5.4.2.2 Long term approach's elements

In the long term approach, the aim is to embed the culture of KS and to practice it. This will be achieved through following actions:

- Practicing formal and informal training.

- Supporting change management processes.

- Advocating the culture of knowledge.

- Practicing identifying formal and informal activities in order to share knowledge.
- Modifying the weaknesses in the organisational culture.
- Supporting newly established ICT firms in the sector and sharing knowledge.
- Setting a risk management plan in place.
- Deploying the required IT tools and infrastructure.
- Practicing shared values.

For the long-term approach, the same main actors as in the short-term approach should be present and the actions suggested in the short-term approach should be on-going but with less stress involved. In addition, Figure 5-5 below demonstrates both approaches together with their elements.
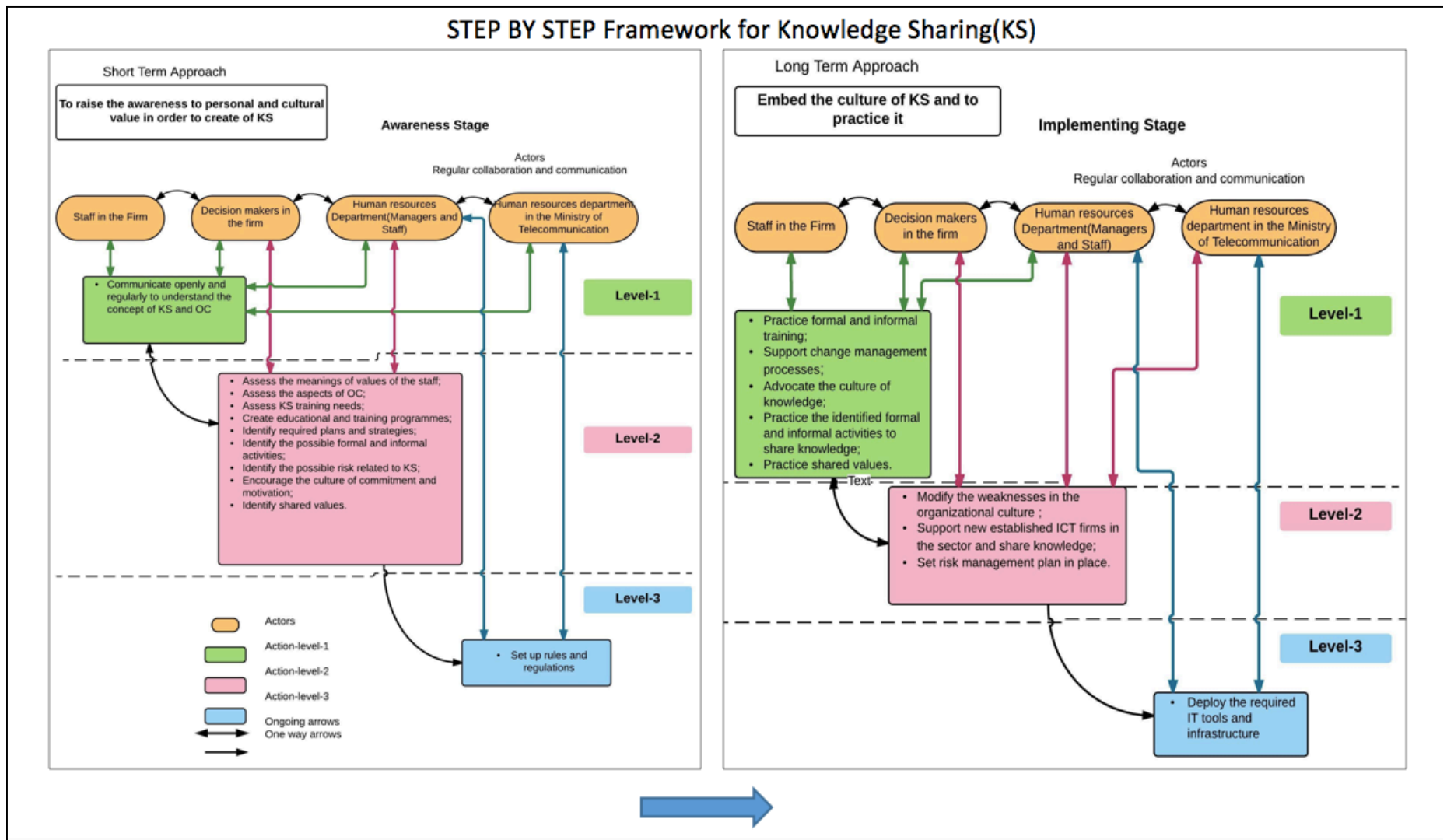
Figure 5-5: The STEP BY STEP Framework for Knowledge Sharing as presented by the researcher

5.5 Validation and refinement of the findings

Based on the empirical findings obtained from the responses to the questionnaire, the semi-structured interviews and the document analysis and following the findings' comparison with the literature, the researcher was able to develop a STEP BY STEP framework for Knowledge Sharing (see chapter 5 section 5.4.2). The framework suggested that enhancing the practice of knowledge sharing in ICT firms in Libya requires that the decision makers in these firms perform two approaches (a short-term approach and a long-term approach). The approaches are interrelated and the actions and the actors in each approach are consistent.

In order to verify and validate the framework and to assess all the related components, namely, the clarity of the framework (to what extent it is clear), the structure of the framework, the reliability of the approaches, the actions and the process, the applicability of the actions, the validity of the process and the levels of the difficulties in terms of the applications (utilizing a five scale measurement, namely, very difficult, difficult, normal, simple and very simple), a few professionals (purposely selected) from the academic context and from the studied firms were invited to participate in semi-structured telephone interviews.

 An invitation letter (see Appendix 5) was sent to them via email and, once the agreement to participate was received back, the framework was sent to them and this was followed up by a telephone interview. Seven professionals, academics and previous participators were invited to participate in the validity interviews.

 Only five of them agreed to participate, Table 5-4shows the characteristics of the participants who contribute to the validation phase. Two of the participants were selected from the main data collection phase, had demonstrated detailed knowledge and familiarity with Knowledge Sharing KS and Organisational Culture (OC) and mainly those who showed interests during the data collection phases for further support. The interviews with these participants were conducted in Arabic. Therefore, a translation of their responses was required. In order to enhance the effectiveness of the findings of this study, new participants were selected based on their academic knowledge and experience of KM, KS and OC and they were all based in the UK.

Considering that they were new to the research project, the participants in this validation phase were contacted in advance and provided with all relevant information as regards the research problem, the data collection methods and the findings in order to ensure that they had some degree of familiarity with the subject under investigation. In most cases, a pre-dialogue meeting was organised to discuss the relevant issues of the study and to clarify what was required during the validation phase. It is worth noting that the academics were selected based on their track record and their heavy involvement within the ICT industry.

Table 5-4: The characteristics of the participants who contributed to the validation phase

The Firm	Position	Participated in the main research?
ICT firms	Human resources manager	NO
The university / information management field	Researcher	NO
The university / computer engineering department	Lecturer	NO
The ICT firm	Manager	Yes
The ICT firm	Manager	Yes

The arrangement to conduct the interviews was made via email communication which occurred immediately after the pre-interviews' meeting with each participator. The telephone interviews took place at a convenient time for each participant. Notes were taken at the time of the interview (which varied in terms of time from between 20 to 25 minutes). In the interviews, the following questions were asked:

- What do you think about the clarity of the framework, is it clear enough?
- What do you think about the structure of the framework? Why?
- What do you think about the applicability of the actions and process? Why?
- What do you think about the actors involved in the framework? Why?
- Do you think that the aspects of OC which relate to KS practices were located in the framework?
- Do you think the framework in its current design will help in enhancing the current practice of KS in ICT firms? Why?

- Do you have any suggestions?

The data collected from the phone semi-stretchered interviews was manually analysed using a content analysis approach. See section 3.7.4.1 chapter 3

In the following sub-section, the purpose of each question and the related responses (together with appropriate associated quotations) will be presented.

5.6 Validation of the STEP BY STEP framework for Knowledge Sharing

The aim from the first question which was "What do you think about the clarity of the framework, is it clear enough?" was to identify to what extent the framework is clear in terms of the title, general outlook and the language used. Four of the five participants agreed that the framework is clear and easy to understand and that the design is not complicated. One of the participants stated "I like the way you presented the framework and the way linked between the actors and the actions". Arabic participants requested an Arabic translation of the framework. One of them stated "Well, I can, myself, understand English but if you want to use the framework in Libyan ICT firms, you need to provide an Arabic version. (Laughing.) Not all managers and staff can understand English." In terms of the title, one of the participants suggested that "STEP BY STEP Knowledge Sharing framework would be better titled instead of STEP BY STEP Framework for Knowledge Sharing".

The second question asked "What do you think about the structure of the framework?" followed by "Why?" This question aimed to investigate the response to the framework's outlines and to the skeleton of interlinked components (including the shapes and the colours used in each approach). All five participants indicated that the structure of the framework is clear and easy to follow and the shapes used are suitable for purpose. One of them stated that "I was interested in the shapes you used to differentiate between the actions and the actors, but I think you need to use different shapes to present the levels and the aims of each approach." In terms of the colours used to present each component in the framework, one of the participants requested the use of lighter colours stating that "Do you not think that the colours you used are very dark; brighter colours would be better."

In the third question, namely "What do you think about the applicability of the actions and process?" (Followed by the question "Why?"), the aim was to examine to what extent the

participants thought that the suggested actions in each approach (and its related process) are applicable in real life. Interesting conversations ensued about each action and process (together with a discussion on possible barriers and obstacles).

One of the most important questions was asked by one of the participants who queried "What if the actors, namely the staff, resist cooperating, what you will do?" The researcher asked the respondent for his suggestion. He suggested that a personal and face-to-face consultant (the consultant should be familiar with the cultural factors as well as physiological factors which might lead to resistance) must be located within the workplace so that the manager can use the consultant to support him or her with difficult employees. He also suggested that a specific unit of support should be linked to the framework and it should be brought about by the human resources department because the human resources department has access to employee information and they also have access to training and possible channels for support. This respondent also suggested enhancing the role of the reward system to increase the level of contribution by employees especially in short-term approach where the staff will still be new to the changes.

Another respondent asked about the change management actions and suggested that, in between both approaches, a period of change management should take place. He added that awareness seminars and education should be provided in the short-term approach so that actors could gain a better idea about the importance and benefits of change management in order to enhance the practice of KS, taking into consideration the current critical situation in Libya. Another respondent suggested the need for a 'How–to-do' guideline which would include a description on how to achieve every action, e.g. how to advocate the culture of knowledge. Also, she suggested that definitions of the terms involved in the framework should be provided, stating that "I think it will be very useful if you give your actors a clear definition of each term you used in the framework".

In the fourth question "What do you think about the actors involved in the framework?" the main aim was to identify the participants' opinions regarding the actors involved in the framework. All the respondents agreed that the indicated actors are important in the enhancement of KM because each one of them has a specific role. Two of the respondents were interested in involving the human resources department in the ministry of ICT. He stated that it was "interesting that you thought about linking the human resources department in the ministry to the rest of the actors and to some of the actions".

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Another one added "the current actions carried out by the actors are acceptable but I believe, in practice, more actions will be generated".

In the fifth question "Do you think the aspects of OC which relate to KS practices were located in the framework?" the aim was to examine whether the relationship between OC and KS was addressed clearly in the framework. The responses to this question were interesting in terms of the participants' understanding of the concepts of OC and KS. Three of the respondents were interested in assessing the values in the firms and expressed the importance of such an action, not only to enhance the culture and then the practice of KS, but as an important action to change the culture in the firm .One of them stated "This is [i.e. assessing value] a very important action not only to improve the practice of KS but to change the current culture in our firms".

Another respondent was interested in the idea of assessment in general, as a starting point in the short term and then moving into the implementation stage in the long-term. This respondent stated "I think it is very true that firms need to start by assessing the needs and understanding the concepts." Two of the respondents suggested a covering letter (or maybe an introduction) to explain to the firms the influence of OC on the KS process and suggested reading lists should be provided to help managers with some information resources in order to create trainings.

The sixth question was "Do you think the framework in its current design will help in enhancing the current practice of KS in ICT firms. This was followed by the question "Why?" The aim was to examine, to what extent, the respondents thought that the framework would enhance the practice of KS. All of the respondents agreed that the framework provided a positive opportunity to enhance not only the practice of KS, but also to promote changes in the culture in the firms. However, all of them suggested that further follow up research should be carried to modify the framework if needed, and further suggestions recommended providing seminars and workshops for the managers to create a shared understanding of the concepts of KS and OC and the relationship between both concepts.

With respect to the comments and suggestions provided by the respondents, the required amendments to the STEP BY STEP framework for KS are listed as follows:

1. Modifying the colour;
2. Modifying the shapes used for the messages;
3. Modifying the title of the framework;
4. Add in 'change management ongoing process' within the period of both approaches;
5. Create a guideline which includes a description of the framework, a 'How-to-do' guideline and definitions of the terms used. In Appendix 7;
6. Translate the framework into Arabic. In Appendix 6.

The researcher meets the requirements of recommendations 1-4 and in Appendix 6 and Appendix 7 recommendations 5 and 6 were addressed.

STEP BY STEP Knowledge Sharing Framework
Refer to "The framework-HOW-TO-DO Guideline"
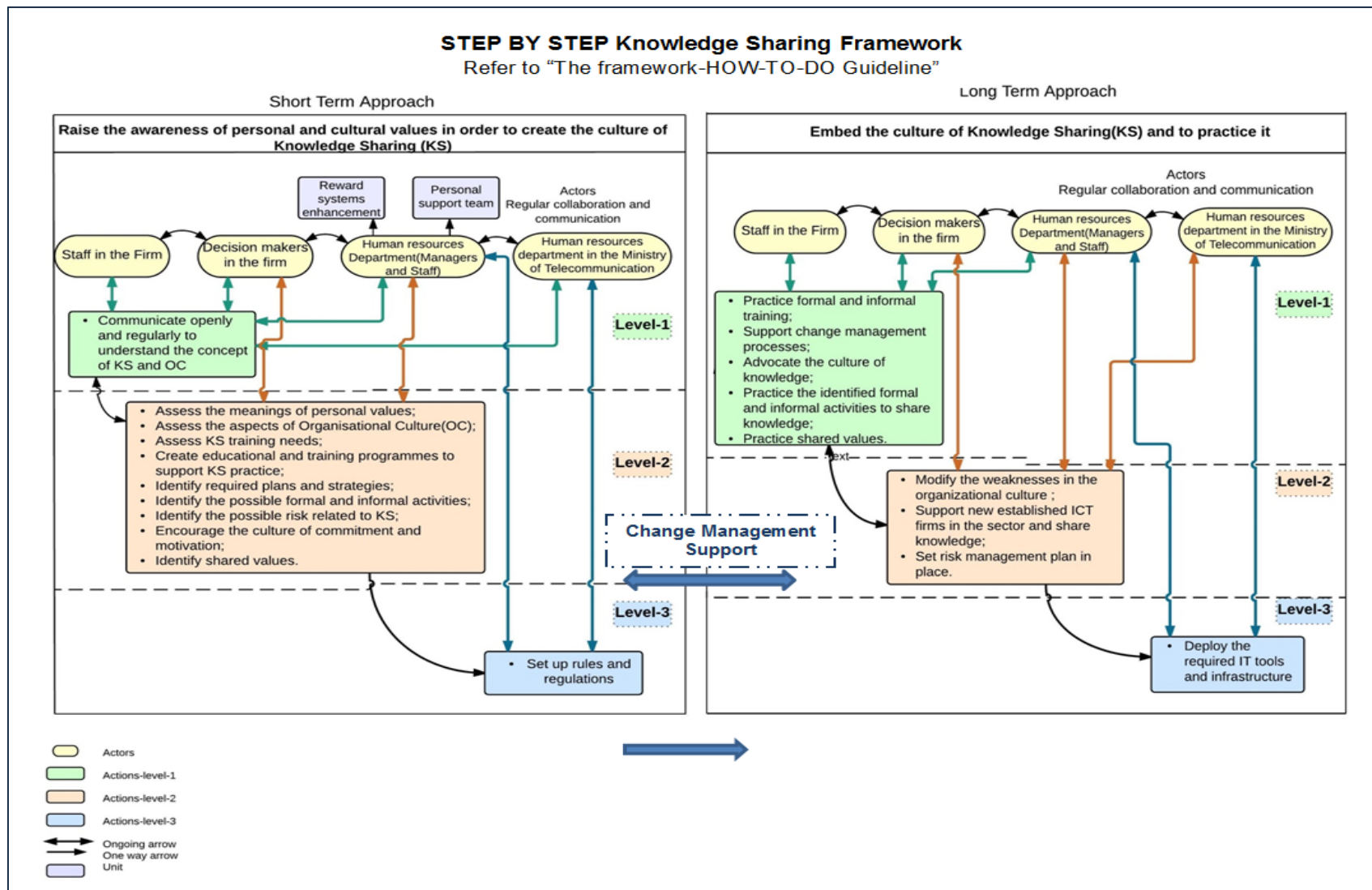
Figure 5-6: The modified framework

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5.7 Summary

The main aim of this chapter was to discuss the summary of the findings presented in (section 4.5) in the previous chapter. The summary suggested that different layers of cultures (including national culture, personal culture and ICT sector culture) shape the meanings of Organisational Culture and Knowledge Sharing and can cause serious barriers to sharing knowledge effectively. Furthermore, this chapter has shown that the meanings of values are also varied and that, in turn, leads to confusion about what to share and how. In addition to the role of rules and regulations, the role of decision makers seems vital in order to support the process and activities of Knowledge Sharing as well as in advocating an Organisational Culture that motivates Knowledge Sharing. Training was available within the ICT firms studied but it was not used effectively due to a lack of strategic vision. Different models of Knowledge Sharing have been reviewed and discussed. Additionally, the components of each model were identified and connected to the findings of this study. Furthermore, the research suggested a STEP BY STEP Framework for Knowledge Sharing to meet the needs of ICT firms in Libya. Ultimately, the framework is validated by a means of semi-structured interviews with five experts with provided the amended framework. The research journey, the answer of each research objectives, implications of this study, alongside a further study direction, will be the core of the next and last chapter in this thesis.

Chapter 6.   Conclusion

6.1 Introduction

The findings of this research have proved that there is a significant relationship between Knowledge Sharing and Organisational Culture. This relationship was addressed in a framework that was developed with the purpose of enhancing the practice of KS in ICT firms in Libya. This research was started with the aim to "*investigate the relationship between Organisational Culture and Knowledge Sharing processes in ICT firms in Libya to enhance Knowledge Sharing practices*" and a set of objectives was developed in Chapter 1.

This chapter presents, firstly, the main conclusion and recommendations of this research (in section 6.2). Secondly, a story of the research journey (in section 6.3) which illuminates the researcher's experience of how the PhD journey was achieved with an acknowledgement of the studied context's unsettled situation. Thirdly, the chapter explains how the research objectives have been accomplished (in section 6.4). Section 6.5 addresses the implications of this study and, in section 6.6, a general recommendation for further work and recommendations to enhance the practices of KS within Libyan ICT firms will be provided.

6.2 Main Conclusion and Recommendations

In chapter 4, a summary of the findings of this study was presented in Table 4.13. These findings were used to create the framework presented in section 5.4. This study puts forward more comprehensive findings which can assist in generating further recommendations. Hence, the aim of this section is to address the main findings of this study and to make related recommendations. In order to fulfil this purpose the researcher will classify the different concepts involved in this study (namely, ICT business, OC, KS, the relationship between OC and KS, and KS frameworks) into a separate section for each one and then, at the end of each section, recommendations will be put forward.

6.2.1. Findings relating to the ICT sector

As the ICT literature was reviewed it was found that, unlike other types of business, the ICT business is changeable due to the nature of the business (the product keeps changing) and the customers' demands (the mood and the taste of the customers are changeable). Rapid change

in the ICT sector is not local or limited to a specific country but is worldwide. Hence there is a need for a high level of flexibility in order to satisfy the needs of businesses and the wishes of the customers. Business decision makers need to be aware of the different types of pressures that rapid changes bring to the business.

In Libya, the ICT sector was established initially by the Libyan's dictatorship in order to satisfy the dictator's family wishes (see section 5.2.2.1.1). After the 2011 revolution managers' understanding of the ICT sector in Libya and the needs of customers has changed. These changes were reflected in a speech by the Libyan government which expressed their wish to make the ICT sector in Libya a leading sector (section 1.3)

From the data presented in section 4.2, it can be seen that the ICT sector in Libya tends to be more retail-customer service businesses rather than ICT production businesses. The history and backgrounds of the studied ICT firms demonstrate that the firms all focus on providing different ICT services but not on producing ICT constituent parts. This makes the situation of the ICT business in Libya critical because Libyan ICT firms are not independent in terms of making ICT products. Thus, ICT firms in Libya do not produce mobile phones; they sell them and connect them to the network. ICT firms in Libya have partnerships with other worldwide ICT production companies to provide communication services. These facts indicate that decisions made in the ICT firms is very much related to meeting the customers' needs based on what other ICT production companies provide. Thus the firms and their customers are consuming the products rather than producing the product.

In the light of the above facts, recommendations to the decision makers in the ICT sector would be as per the following.

1- Enhance the Libyan ICT firms' staff in their knowledge of the nature of the changes happening worldwide and provide them with clear instructions as to how to respond to such changes. Such enhanced awareness can be achieved by running training or seminars' sessions.

2- There is a significant need to establish innovation centres connected to the departments of computer engineering in all universities in Libya in order to enhance the chance of creating ICT products that meet Libyan needs locally.

3- Further studies on understanding customers' moods and the current weaknesses in the sector are recommended.

6.2.2. Findings relating to OC, KS, and relationship between OC and KS

Literature on the topics of OC and KS has been comprehensively reviewed. A few presentations and academic papers have highlighted the different aspects of each concept and have explained the relationship between OC and KS. The fact that there is an established relationship between OC and KS has been identified. The fact that OC has an influence on KS has been discussed (see sections 2.6 and Appendix 8). The literature review showed that there is a lack of studies concerning the relationship between OC and KS in ICT firms. Also the literature review presented the fact that KS has been generally seen as part of KM processes but the fact is that KS can be an organizational practice (section 2.4.3).

In the Libyan ICT firms' context, the findings presented in chapter 4 demonstrate that OC and KS are understood differently in the Libyan ICT context (sections 4.4.2.1.3. and 4.4.2.2) and that a vital relationship exists between OC and KS (sections 4.5 and 5.4).

OC in the ICT firms is influenced by the local culture of staff, by government and by Libyan culture (section 4.4.2.1.4). OC in Libya is resistant to change due to the nature of the establishments concerned (section 5.2.2.1.1). The culture of the Libyan staff in the ICT firms demonstrates different problem areas (see section 4.4.2.3.1.1). The findings show that decision makers in Libyan ICT firms have an important role in promoting changes within OC and in enhancing the level of communication between the management and the staff (section 4.4.2.6). Also the findings suggested the ICT firms can be open to change and this has been proved by new HR departments being added to some of the studied cases (sections 4.4.2.1.2.1. 4.4.2.2). The main challenge faced by OC in Libya is the unsettled security situation in Libya due to ongoing military activities which, naturally, make staff and businesses feel unsettled (section 4.5.). The security issue will also have an effect on KS.

From the perspective of KS, ICT firms in Libya seem to conduct different activities of KS, both formally and informally, without any recognition or plan for them to be sharing activities. In other words, the activities undertaken have not been planned as KS activities so no strategic consideration is shown to, or presented by, them (section 4.4.2.4). The findings of this study also show that decision makers have an important role in enhancing the mood and culture of KS among the staff (section 4.4.2.6). In order to enhance KS activities in the

firms different types of requirements must be acknowledged (section 4.4.2.3). Considering the internal and external barriers mentioned in section 4.4.2.5, it is vital to secure the relationship between OC and KS as well as enhance current practice.

According to the findings in chapter 4 the relationship between OC and KS is articulated by the meanings and the practices of each concept. Hence, in order to understand the relationship between OC and KS in any context, there is a need to assess and understand each concept and how it has been presented in a firm. According to the findings of this study, KS seems to be a very cultural concept. As much as OC is influenced by the different types of cultures (including personal, government and local culture), KS is equally influenced by such factors. KS is not only the activities applied or practiced in an organization in order to share knowledge for the purpose of enhancing productivity and competitive advantages; it is also the culture of the staff, the managers, the government and the organization. Securing or bonding the relationship between OC and KS is very much related to understanding KS as a culture.

In the light of the above the following recommendations are put forward:

1- The OC and KS concepts need further investigation in other related contexts, such as within government and other ICT firms.

2- The fact that KS is more than just activities should be addressed by the decision makers and HR managers in order to create the required training and awareness sessions in order to create discussions and understanding.

3- Decision makers should have a clear strategy on sharing so that they are able to create activities that enhance the level of sharing in practice.

4- Further studies on the role of the government and other possible actors should be undertaken as suggested in section 6.6.

6.2.3 The findings relating to the KS Framework

The literature review demonstrated that a few KS frameworks have been created to support the practice of KS (5.3) but none of them have been created from data concerning ICT firms. In this study, the data was collected from ICT firms with the purpose of assisting the staff who are working in this context with their enhancement of KS practices. As the data was collected, analysed and used to create the framework it was

recognized that the framework can be used to enhance the practice of KS in business organizations and nothing with any particular applicability to ICT firms was identified. Maybe this is because the ICT firms in Libya are customer services' retail firms rather than ICT production firms or maybe this is because the focus of the research was not on which type of knowledge the staff share but actually was on the sharing practices within the ICT firms, thus the focus was on business-based practice which can be applied in any business context. Further investigation can be carried out on the established framework (section 6.6) to further examine the validity of the STEP BY STEP framework in other business contexts.

6.3 The research journey

The journey of this research began three and a half years ago, namely in October 2012, with the aim of investigating the relationship between Organisational Culture and Knowledge Sharing processes in ICT firms in Libya in order to create a framework to enhance the practices of KS in ICT firms in Libya. The researcher was aware from the very early stages that the journey would not be easy and that the challenges would increase as the research grew due to the unsettled situation in Libya. She always prepared herself for the worst scenarios; therefore, she had a risk management plan in place. For example, as she knew that the critical situation in Libya would prevent her from conducting face-to-face interviews in the validation stage, she was prepared to deal with the situation by gaining participants' telephone numbers and contact information in order to arrange another way of conducting the interviews if she was not able to gain access to the participants in person. The researcher believes that conducting research in countries where conflict exists means that a researcher has to have a risk management plan in place in order to avoid the research project becoming a failure.

6.4 Achievement of research objectives

As was mentioned in chapter 1 (section 1.4), a set of objectives were developed to meet the aim of this research. Overall, there were five research objectives that were achieved through four types of input, namely the literature review, the questionnaire survey, the semi-structured interviews, and the document analysis. This section provides a brief summary of the key findings (already presented in the relevant chapters) to demonstrate the achievement of all the objectives of the research.

These objectives were:

- To evaluate the issues relating to ICT, KS and OC concepts in general and with particular reference to Libya;
- To investigate the concepts and elements of OC in ICT firms in Libya;
- To investigate the concepts and elements of KS within ICT firms in Libya;
- To evaluate the relationship between OC aspects and KS elements in ICT firms in Libya;
- To develop a framework that assists ICT firms in undertaking knowledge sharing processes.

See Table 3-7 in chapter 3 that shows how the objectives were tackled within the data collection methods.

6.4.1 To evaluate the issues relating to ICT, KS and OC concepts in general and with particular reference to Libya

In order to achieve this objective a comprehensive literature review in both languages (Arabic and English) was undertaken. Reviewing the Arabic literature was important because it allowed the researcher to identify the related terminologies and how those terminologies were used and adopted in the Arabic literature. Different books, articles, academic papers, professional blogs and experts' websites were reviewed. Reviewing the literature was not an easy task due to the large number of papers and studies representing different perspectives and different understandings. For example, different meanings for ICT have been pointed out. ICTs can relate to IT services (such as mobile and telecommunication services), ICT skills (such as digital and computer skills), ICT tools (including education and teaching tools such as Blackboard) and to the ICT sector in general which serves the business of ICT services, tools and applications.

In terms of the concept of Knowledge Sharing, it has been perceived by a few scholars as organisational practices and, on some other occasions, it has been seen as the practices of knowledge management. Hence, taking into consideration the lack of awareness as to how KS is understood in Libyan ICT firms and to avoid any prior assumptions, the decision was made to address KM literature as a relevant concept rather than a major concept.

The focus was on understanding KS as a concept with respect to all other relevant concepts

including KM. Understanding, and then addressing, the concept of OC proved to be challenging, especially when it came to the Arabic literature due to linguistic theoretical differences. In addition, when it came to searching the literature, in order to create the underlying concepts, the researcher was open to all thoughts and beliefs, so she read comprehensively.

This helped the researcher not only to create the required understanding but also to gain the skills which enabled her to differentiate between perspectives. It also enhanced her assessment and evaluation skills and, thus, when it came to writing the thesis, she was confident that she would be able to combine different aspects together to create a clear image of each concept.

One of the most important issues at this stage was the development of confidence and the feeling of reassurance. The researcher, at the beginning when making choices concerning the topic, had a kind of uncertain feeling about the meanings and the conceptions. However, at the end of this stage, the researcher became more aware of the possible meanings of the studied conceptions not only in English but also in Arabic. This, in turn, enhanced the motivation towards conducting a further empirical investigation and to gain more energy towards completing the next objectives.

6.4.2 To investigate the concepts and aspects of OC in ICT firms in Libya

In order to achieve the second objective, the researcher felt that she could invest the theoretical understanding she gained from completing the first objective into designing her questionnaire and the questions in the semi-structured interviews (as well as asking different questions during the interviews confidently). Contributing to different conferences with either presentations or theory-based papers (see section 2.6) helped the researcher to not only articulate her theoretical knowledge but also to pave the way towards the empirical phase of this study.

Adopting the case study approach with three different data collection methods was a wise decision in terms of meeting this objective. Empirically, three data collection methods from different case studies with different participants enhance the possibilities of a deeper understanding because the collected data were rich and comprehensive. Furthermore, in the case where perhaps one of the data collection methods was not able to gain the required information, another method would be able to assist in gaining the information required.

In this study, within this objective, the initial purpose of the questionnaire was to gain an initial understanding as to how the concept of OC was viewed in ICT firms.

From section 4.3.2.2 it can be seen that eight different concepts of OC were suggested by the data and each concept has its own components. Interestingly, all the mentioned concepts suggested that value is a main component that assists in defining the meaning of the OC. However, from the semi-structured interviews, the meaning of OC was identified under two major themes. Those themes are "OC is more than regulations" and "OC is about everything in the organization". The first theme suggests that OC is not only about the regulations and rules but that there are further elements that define the meaning of OC in a firm, although, rules and regulations are fundamental elements of OC and they should be developed in order to encourage employees to contribute more to KS practices in their firms (see section 4.4.2.1.3.1).

Furthermore, section 4.4.2.1.4 discusses another major theme that relates to the OC concept which is the "issues which influence the strength of OC". Under this theme there are three sub-themes which were identified as follows: environmental factors, organisational factors, and human resources' factors.

6.4.3 To investigate the concepts and elements of KS within ICT firms in Libya

Similar to the second objective, the third objective was achieved through different data collection methods namely, the questionnaire and the semi-structured interviews. In order to understand the meaning of knowledge, sharing, and Knowledge Sharing, three different questions (two open ended, one close ended) were asked in the questionnaire. In terms of the meanings of knowledge, the concept of knowledge seems to be complicated and the participants indicated that it requires actions, such as communication, to be created. The findings also suggest that knowledge can be gained from different sources such as from experience and practices (see section Table 4-6).

In terms of sharing, it again appears to be a complicated practice which can be adopted in a limited context (such as a workplace) or in a wider context (such as in life). People can share different things including powerful opinions, prior knowledge and experience, learned lessons, and values. People need to have the desire to share different things such as ideas, experience, and values (see section Table 4-7). With regard to the meaning of the Knowledge Sharing concept the findings indicate that the "the willingness of people in a firm to

communicate with others to share the knowledge they have gained or created" recorded the highest percentage of agreement from the participants (see section Table 4-8).

However, the findings from the interviews suggest two main concepts of KS. These are: KS as a social activity and KS as a strategic practice (see section 4.4.2.2). From the interviews' findings there is a relationship between the first concept and the second concept of KS. Accordingly, KS as a concept involves engaging employees in a firm in social activities which have a strategic purpose in assisting in meeting the business goals. At the same time, staff should not be forced to practice KS; rather they should be encouraged by creating different social activities that promote the culture of sharing (see section 4.4.2.4).

In order to share knowledge there are different sets of requirements that firms should provide in order to enhance the culture of sharing. These requirements are divided into three sub-themes as follows: personal requirements, organisational requirements, and environmental support (see section 4.4.2.3.2). In respect of KS activities, different sets of activities for knowledge sharing were promoted in the studied firms such as email, the Internet and Intranets, in addition to formal trainings and meetings that boost the sharing of knowledge (see section 4.4.2.4).

Another major theme has been extracted from the interviews, namely "barriers to knowledge sharing" which refers to the obstacles that are faced or might be faced in either supporting the culture of sharing knowledge or in the activities of KS. Under this theme there are two sub-themes which are called "Internal elements" and "External elements". For internal elements, barriers and obstacles can be either personally-related issues (staff's negative attitudes such as selfishness) or organisationally-related issues (elements of OC such as roles and regulations can influence staff and, in turn, can have an influence on sharing knowledge). The external elements can be either obstacles relating to the attitudes of previous governing bodies or other general attitudes within local Libyan culture that influence the success of enhancing the culture of KS (see section 4.4.2.5). Additionally, "the role of decision makers in promoting a Knowledge Sharing culture" was another major theme that has been considered as an outcome from the document analysis and the interviews. Additionally, human resources' managers have a vital role in the embedding of the culture of knowledge sharing in firms (see section 4.4.2.6).

6.4.4 To evaluate the relationship between OC aspects and KS elements

Similar to the previous objective, various data collection methods have been undertaken in order to meet this objective although the documents' analysis did not help much in understanding the relationship between OC and KS. The documents' analysis was very useful in understanding the concept of OC (including the establishment of, and the background to, each case). Thus, each one of the data collection methods played an important part in completing the research and in meeting the objectives. From the research findings it has been found that it is important to consider the issues required in the assisting of the creation of the culture of knowledge sharing within firms; therefore, recognising the aspects of OC is vital. Using the questionnaire (utilising a close-ended question) and, in order to create an initial understanding as to how the relationship between OC and KS was articulated in the studied firms, a few elements of OC were selected from the related literature and tested with the samples. The results suggested that all the chosen elements of OC have a close influence on KS and "values" was rated slightly the highest element (see section Table 4-12). Furthermore, "issues' influences on the strength of OC" was one of the major themes that were extracted from the interviews. This theme was extended into two main sub-themes, namely environmental factors and organisational factors (see section 4.4.2.1.4). Generally, there are sets of OC factors that articulate the relationship between OC and KS within ICT firms in Libya.

Moving from the theory-based stage addressed in objective 1 into the more empirical practices experienced by the researcher in order to accomplish objectives 2, 3 and 4 generated different types of feelings. It was not anymore about uncertainty and confusion, rather it was about the understanding of, and the clarifications to, the conceptions and the related aspects and elements in the studied context. Accomplishing the objectives was motivated by the need to learn and understand and to identify the critical issues that needed to be addressed in the framework's creation (objective 5). Happiness, as well as curiosity, were the most dominant feelings that assisted in accomplishing objectives 2, 3 and 4.

6.4.5 To develop a framework that assists ICT firms in undertaking knowledge sharing processes

This objective was necessary in order to integrate all the outcomes from the previous 4 objectives into one final objective which met the needs of the studied context. In other words, the value of this research would have less influence without introducing this objective in the

studied cases whereby, hopefully, other cases would benefit from the outcomes. It is important to accept the fact that the outcomes from the previous 4 objectives would not fulfil the aim of this research without introducing a framework that enhances the practices of KS in the studied ICT firms.

This objective was accomplished after the final findings from the questionnaire; the semi-structured interviews and the documents' analysis were discussed and compared with the literature. Different subjects within the literature needed to be reviewed because not all the issues which were examined in chapter two (the literature review chapter) appeared in the findings; the issues were related but were not always the same, or possibly some of the issues needed further emphasis. All these steps paved the way towards achieving this last objective of the study. Creating a framework with the claim that the framework will enhance the practice of KS in Libyan ICT firms is a huge and, at the same time, risky claim. In other words, anyone could ask 'How do you know that the elements you addressed in the framework will help in enhancing the practices of KS?' The answer from the perspective of the researcher is that no such claim can be 100% definite but, as the major issues addressed by the research outcomes were included in the discussion chapter and then appeared in the framework, therefore, the expected influences from the framework should be promising in enhancing the practice of KS. At the same time, the researcher does not claim that the framework is perfect. Therefore, a validation examination was conducted to enhance the framework and further studies will be recommended in order to carry out more evaluation and an examination of the practices in the ICT firms in Libya. All these recommendations and further suggestions are provided in section 6.5.

The drivers for the process of this objective were the need to make sense of the outcomes for the end users of this study, the importance of the findings, and how these findings should be addressed and presented in the best way in order to achieve the final aim of this study. These drivers developed as the researcher gained more support and knowledge from different sources. For example, the researcher attended one of the PhD training sessions that addressed the seven key factors for a successful PhD. The most important two key factors are supervision and persistence. In terms of the supervision, the researcher was aware that she needed to maintain a healthy and responsible relationship from the very early stages of this study. She was very careful to create clear and straightforward communication channels with any academic staff involved in the research including the proof reading professional.

Of course, the main professional factor in the PhD journey is the supervisor and his or her comments and directions can have a great influence on the success of the journey. The researcher was aware that commitment, regular contact, attending support sessions, and contributing to conferences were all important elements that should be considered/ undertaken. Kearns and Gardiner (2006) indicated that 10% of successful PhDs rely on intelligence and the remaining 90% is based on persistence.

6.5   Implications of this study

When a research reaches its end new issues and implications can be identified as a result of the investigation. These implications should have a direct influence on the contributions of the research and they should aim to address the issues which can be of concern for others or the issues which would inspire further investigation. While contributions can have an impact that is limited to only the studied area and topic, implications can have broader influences in different areas (see Figure 6-1).
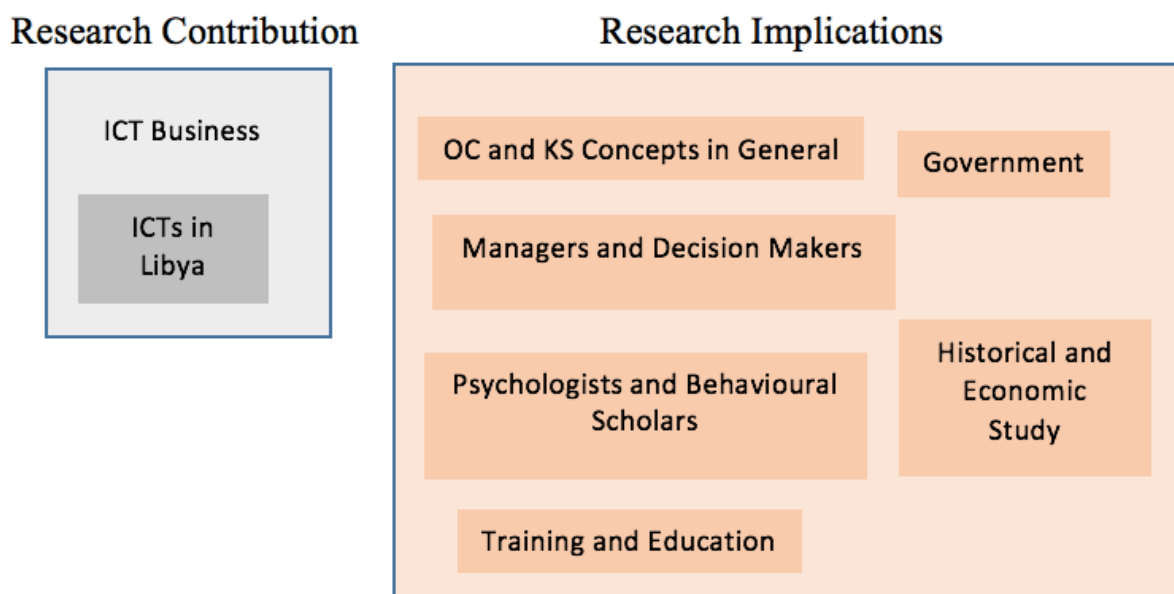
Figure 6-1: Differences between the research contribution and the research implications in this study

As can be seen in Figure 6-1 , the main contribution of this study was expected to be of use to ICT businesses in terms of the way that OC and KS are understood (see chapter 1). The outcomes of this study indicated that OC has an influence on work practices and on the productivity of staff. Therefore, managers and human resources' departments (not only in the

ICT sector but also in other sectors) can benefit from the outcomes of this study in order to enhance the level of commitment and contribution from employees to the businesses.

Decision makers in the government in Libya can benefit from this research in their mission to meet the knowledge economy's needs and, at the same time, their mission to educate the professionals working in the ICT sector in Libya concerning the new concepts (to them) of OC and KS in order to pave the way towards promoting the ICT sector as a leader for economic and cultural change, bearing in mind that this mission of the government was one of the motivations to conduct this research.

Furthermore, decision makers and managers in human resources' departments can benefit from the outcomes of this study by understanding the issues which can have an influence on the shaping of the meaning of OC. Also managers will be able use the knowledge provided in this study to create training courses or possibly to create formal and informal events to enhance the collaboration and communication between staff.

Psychologists and behavioural scholars can also benefit from this study because the study addresses some issues relating to Libyan characteristics and how culture, values and faith influence the way in which Libyan staff think and behave. The study also includes some historical information to present some events relating to both pre- and post-Libyan revolution; therefore, this study can have some future implications for historical and economic studies.

6.6 Future Studies

As mentioned in section, the implications of this study can extend in more than one direction, hence the suggested further studies presented in this section not only cover studies on OC and KS issues within the ICT sector but also other issues identified in this research. Hence, it is suggested that further studies could examine the concept of Organisational Culture and Knowledge Sharing in other different sectors and firms. In this study, in section 5.2.2.3, it was suggested that employees do not need to be controlled by specific systems and procedures to share, rather that the space of sharing should be more open and communicative bearing in mind that ICT companies have two different types of staff, expert IT staff and administration staff. This suggests that some boundaries, in terms of accessibility to knowledge, can be set up. The boundaries which should be used (and where and how they should be set up) could be the core of further studies to be carried out in the future. In

addition, this study indicated that knowledge can be understood differently and there are various sources where knowledge can be created. It is beyond the scope of this study to examine in-depth the meanings and sources of knowledge as well as understanding knowledge needed in ICT firms so further studies are suggested to tackle such areas of research.

Furthermore, it is suggested that the role of governments in supporting Knowledge Sharing has not been extensively identified and so further studies could enhance the understanding of such a role. This study has demonstrated a lack of studies in the Arabic context in general and in Libya's context in particular in terms of examining the existence and practices of KM in the ICT sector, thus further studies should be conducted to tackle this area of research.

From another angle, it seems that the revolution of 2011 has freed Libyans from restrictions, in terms of behaviour, in the workplace which they used to experience in the previous era. Nevertheless, further research is required to understand the factors that lead to such changes in behaviour especially within public firms. Furthermore, studying the meanings of employees' personal values and attitudes, and to what extent a nation's culture can shape them, could provide an interesting area for research. Finally, this study is the start in a long road of research towards enhancing the practices of KS in Libyan ICT firms; therefore, further studies could be taken towards evaluating and developing the STEP BY STEP framework.

6.7   Summary

The journey of this study comes to an end with a feeling of positive satisfaction that the main aim and objectives of this study were all accomplished and met in an academic and professional manner. This does not indicate an assumption that this study does not have its weaknesses, but it assures that all the issues which could be controlled were considered and managed as well as possible. The weaknesses of this study can be very much related to the samples' size. Although the size of the sample is valid, the researcher wishes that the environment would have allowed her to conduct more investigation in order to gain better knowledge. In a more settled environment further data could be collected and an in-depth validation of the framework could be carried out. But, in the circumstances in which this study was conducted, access to the data was very much limited to what has been achieved by

the study. Because of this and because the researcher was aware that further direction and work is required to enhance the framework in the future further suggestions for future research in this area was provided in this chapter.

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Appendixes

Appendix 1	Questionnaire in English language
Appendix 2	Questionnaire in Arabic language
Appendix 3	Research participant consent form
Appendix 4	Sample of transcribed interview
Appendix 5	Invitation email to conduct phone based interview
Appendix 6	Arabic version framework
Appendix 7	HOW –TO- DO guideline framework
Appendix 8	Related Publications

Appendix 1

Questionnaire in English language

The research title: the influence of organisational culture on sharing knowledge processes in ICT firms in Libya

Introduction

Dear contributor: First I would like to thanks you for agreeing to participate in this study, which aims to study "The relationship between Organisational Culture and Knowledge Sharing in ICT firms in Libya". Your participation is very important to me and it will have positive influences on the quality of this research; it is very valuable and commendable. Second, I would like to assure you that there will be no negative future consequence to your participation, no personal information will be sought or communicated you and that you have the right to withdraw or not to answer any question you do not wish to answer. You can also communicate with me personally on my email *b.allali@edu.salford.ac.uk* or e-mail my supervisor/ Joint supervisor to clarify any confusion on *k.p.keraminiyage@salford.ac.uk U.Kulatunga@salford.ac.uk*

Please read the question carefully and answer as required. I and my supervisors have worked hard to simplify the questionnaire and attempt to design the questionnaire to help you gain knowledge while you are participating. So, please enjoy this opportunity as much as possible. Thank you again and I look forward to the participation in the future interviews.

Section one (Please tick the appropriate answer)

- What is your position?

- Staff
- Senior Manager
- Office Manager
- Other (please specify)

- How long have you been working in this firm?

- Less than 6 months
- Less than 2 years
- 2 years to 5 years
- More than 5 years

- Which department do you belong to?

- Human resources
- Financial department
- Administration department
- Production department
- Technical department
- Commercial department
- IT department
- Cultural and support department
- Other (please specify)

Section two

Please give your opinion about Organisational Culture concept (s) by ticking the appropriate boxes below

OC concept	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Crucial and complex to understand and it would not necessarily reflect the staff who work on the firms perspectives	☐	☐	☐	☐	☐
Focuses on people because they are the main identity of any organization	☐	☐	☐	☐	☐
It is the main dynamo of the organization that reflects its identity	☐	☐	☐	☐	☐
It is all about the staff values and culture	☐	☐	☐	☐	☐
It is set of regulations and obligations	☐	☐	☐	☐	☐
Each organisational culture is unique	☐	☐	☐	☐	☐
Organisational structure	☐	☐	☐	☐	☐

It is all about the leadership	☐	☐	☐	☐	☐
It is made of staff stories and experiences	☐	☐	☐	☐	☐
Either hard and solid or soft and flexible	☐	☐	☐	☐	☐

What do you think Organisational Culture would mean to you?

Which element (s) do you think OC should include. Please tick the boxes below as appropriate

Elements of OC	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Values	☐	☐	☐	☐	☐
Regulations and policy	☐	☐	☐	☐	☐
Symbols and Rituals	☐	☐	☐	☐	☐
Top management culture	☐	☐	☐	☐	☐
Owner culture (the owner is the authority who established the organization)	☐	☐	☐	☐	☐
Governmental procedures(it includes all persuaders and events produced by the government)	☐	☐	☐	☐	☐

Reward system	☐	☐	☐	☐	☐
Organization Mission	☐	☐	☐	☐	☐
Organisational structure	☐	☐	☐	☐	☐
Motivation	☐	☐	☐	☐	☐
Stories and language	☐	☐	☐	☐	☐

Section Three

- What does" Knowledge" mean to you? *(please provide your own answer)*

- What does" Sharing" mean to you? (please provide your own answer)

What does the term " Knowledge Sharing " mean to you? Please tick the boxes below as appropriate.

Concept	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
It is a behaviour which is likely to be influenced by personal motivation and contextual forces	☐	☐	☐	☐	☐
It is the willingness of people in an organization to communicate with others to share the knowledge they have gained or created.	☐	☐	☐	☐	☐

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
It is an element of knowledge culture which is part of the OC.	☐	☐	☐	☐	☐
It has critical influence on the process of decision making.	☐	☐	☐	☐	☐
It allows individuals to enjoy the process of creation & exchange of information	☐	☐	☐	☐	☐
It is a multitude of processes including exchanging knowledge (skills, experience, and understanding) and these processes occur without language (socialization) or with language.	☐	☐	☐	☐	☐

- In this firm, in which level the concept of Knowledge Sharing has been existed? *(Please tick the appropriate answer)*

knowledge Sharing levels	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Organisational level	☐	☐	☐	☐	☐
Departmental level	☐	☐	☐	☐	☐
Section level	☐	☐	☐	☐	☐
Individual level	☐	☐	☐	☐	☐

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- What events or activities does your firm carry out regarding Knowledge Sharing?

Activities	Available	Not available	Not sure
Build relationships and trust through face-to-face meetings			
Create common ground through education, discussion, publications, teaming, job rotation			
Establish times and places for knowledge transfers: fairs, talk rooms, conference reports			
Evaluate performance and provide incentives based on sharing			
Educate employees for flexibility; provide time for learning; hire for openness to ideas			
Encourage non-hierarchical approach to knowledge; quality of ideas more important than status of source			
Accept and reward creative errors and collaboration; no loss of status from not knowing everything			

What are the services that the firm uses to encourage you to share your knowledge? *(Please tick the appropriate answer)*

Services provided by this firm	Available	Not available	Not sure
Team seating plans / Open plan offices / Open door policy			
E-mail			
Memo that helps in sharing knowledge			
Firm cafeteria in the firm to share knowledge and experience			
Water cooler chats to be suitable place to share and communicate knowledge			
Personal conversations / Drinks after work			
Lunch 'n' Learn sessions			
Internet			
Engineering forums			
On-line forums			
Specialist Chat-rooms			
Plasma screens			
Newsletter			
Induction Training			
Project teams			
Conferences / Seminars			
Subject matter expert lectures			
Web conferencing			
Brainstorming			
Conference calls / Video-conferencing			
Consultants' seminar			

Suppliers' seminar			
Customers/Clients' seminar		234	
Learning Centres / Fairs / Expos			
Communities of Interest/Practice			
Mentoring scheme			
Apprenticeships			
Intranet			
Team-building 'away days'			

Section Five

- What do you think the element(s) of OC are that might influence SK? *(Please tick the appropriate boxes below)*

Elements influencing SK	**Answer**	Elements influencing SK	**Answer**
Values		Stories and language	
Regulations		Reward system and Motivation	
Symbols and Rituals		Organization Mission	
Top management culture		Organisational structure	
Owner culture (the owner is the authority who established the organization)		Governmental procedures(it includes all persuaders and events produced by the government)	

Would you like to take part in the interview phase of this research? If so, please provide your email address, or any other contact details you prefer.

Your name:

Email address:

Phone:

Other contact details:

Thank you for your value participating

Appendix 2
Questionnaire in Arabic language

<u>استبيان عن تأثير الثقافة التنظيمية أو ما يعرف بالمنظماتية على عمليات مشاركة المعرفة في شركات التكنلوجيا والاتصالات في ليبيا</u>

<u>مقدمة الاستبيان</u>

عزيزي/عزيزتي المشارك/ة في الاجابة على هذا الاستبيان. أود أن أشكركم بداية على موافقتكم على المشاركة في هذه الدراسة والتي تهدف لدراسة مدى " تأثير الثقافة التنظيمية على عمليات مشاركة المعرفة في شركات التكنلوجيا والاتصالات في ليبيا " واعلموا أن مشاركتكم ستحدث فرقا في سيرورة البحث وأنها قيمة جداً ومشكورة. أرغب في أن أؤكد لكم أن لا ضرر مستقبلي سيترتب على مشاركتكم، ولا معلومات شخصية سيكون عليكم تقديمها وأنه يحق لكم الانسحاب أو عدم الإجابة على أي سؤال لا ترغبون بالاجابة عليه. كما يمكنكم التواصل معي شخصيا على بريدي الالكتروني *b.allali@edu.salford.ac.uk* أو علي بريد استاذي المشرف *k.p.keraminiyage@salford.ac.uk*

U.Kulatunga@salford.ac.uk

أرجو قراءة السؤال بتمعن والاجابة حسب الطلب. لقد عملت جاهدة لتبسيط الاستبيان وبنفس الوقت على تصميم استبيان يقدم لكم معرفة جديدة فأرجوكم استمتعوا بهذه الفرصة قدر الإمكان. أشكركم مرة ثانية وأتطلع لمشاركة غنية

الفقرة 1

(رجاء وضع اشارة X عند الاجابة التي تناسبك)

- ما هو موقعك الوظيفي؟
  - الموظف ☐
  - مدير قسم ☐
  - مدير مكتب ☐

- منذ متى وأنت تعمل في هذه الشركة
  - أقل من 6 أشهر ☐
  - أقل من سنتين ☐
  - 2 سنوات الى 5 سنوات ☐
  - أكثر من 5 سنوات ☐

- ما هو القسم الذي تعمل فيه؟-
  - الموارد البشرية ☐
  - قسم المالية ☐
  - قسم الإدارة ☐
  - قسم الإنتاج ☐

- قسم الدعم الفني ☐
- القسم التجاري ☐
- تقنية المعلومات ☐
- الادارة الفنية ☐
- أخرى (يرجى التحديد) ☐

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الفقرة 2

يرجى إعطاء رأيك حول مفهوم الثقافة التنظيمية وذلك بوضع علامة في المربعات المناسبة أدناه كما تراه مناسبا

مفهوم الثقافة المنظماتية	أوافق بشدة	اوافق	لا اوافق	لا اوافق بشدة	لست متأكدا
معقدة ولا تعكس بالضرورة طرق تفكير الموظفين الموجودين في المنظمة					
تركز على الموظفين العاملين في المنظمة لأنهم الهوية الرئيسية لأي منظمة					
هي العنصر الرئيسي المحرك للمنظمة والمعبر عن هويتها					
هي كل شيء عن القيم وثقافة الموظفين					
هي جملة من القوانين والتعيينات والقرارات الادارية					
هي فريدة من نوعها					
هي الهيكل التنظيمي للمنظمة					
هي كل شيء عن القيادة الادارية					
هي حصيلة قصص الموظفين وخبراتهم العملية					
تكون إما حديدية وصلبة أو لينة ومرنة					

من خلال المفاهيم الواردة أعلاه ما هو برأيك مفهوم الثقافة التنظيمية ؟

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ما العناصر التي ينبغي أن تشملها الثقافة التنظيمية. يرجى وضع علامة في مربعات أدناه كما تراه مناسبا

عناصر الثقافة التنظيمية	أوافق بشدة	اوافق	لا اوافق	لا اوافق بشدة	لست متأكدا
القيم					
اللوائح والسياسات					
الطقوس الاجتماعية و العادات والمعتقدات الدينية					
ثقافة القيادة الادارية العليا					
ثقافة المالك(المالك هو الهيئة المنشاة للمنظمة)					
الإجراءات الحكومية(كل ما يتعلق بقرارات الحكومة)					
نظام المكافأة					
مهام القيادة الادارية					
الهيكل التنظيمي للمنظمة					
الحوافز					
اللغة والعبارات المستخدمة داخل المنظمة من قبل العاملين وقصصهم وخبراتهم					

الفقرة3

ما ذا تعني المعرفة لك؟ (يرجى تقديم الإجابة الخاصة بك)

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ما ذا تعني مشاركة بالنسبة لك؟ (يرجى تقديم الإجابة الخاصة بك)

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ما ذا تعني مشاركة المعرفة بالنسبة لك ؟ يرجى وضع علامة في مربعات أدناه كما تراه مناسبا.

مفهوم مشاركة المعرفة	أوافق بشدة	اوافق	لا اوافق	لا اوافق بشدة	لست متأكدا
وهو السلوك الذي من الممكن أن يتأثر بالدوافع الشخصية والبيئة المحيطة بالموظفين					
هو رغبة الموظفين في المؤسسة بالتواصل مع الآخرين لتبادل المعرفة التي اكتسبت أو خلقت					
هو عنصر من عناصر الثقافة المعرفية التي هي جزء من الثقافة التنظيمية					
لها تأثير حاسم على عملية صنع القرار					
هي تسمح للأفراد التمتع بعملية الإبداع وتبادل المعرفة					
هي جملة عمليات معقدة من ضمنها عمليات مشاركة المعرفة بما فيها الخبرات والمهارات وتاثرها بالتنشئة الاجتماعية					

- **في هذه الشركة هل تعتقد أن هناك أي مستوى من مستويات مشاركة المعرفة؟ (يرجى وضع علامة في الإجابة كما تراه مناسبا)**

مستويات مشاركة المعرفة	أوافق بشدة	اوافق	لا اوافق	لا اوافق بشدة	لست متأكدا
المستوى مجلس الادارة العليا					
مستوى الإدارة					
مستوى القسم					
المستوى الفردي					

أي من الانشطة تقوم بها هذه الشركة لتشجيع مشاركة المعرفة (يرجى وضع علامة في الإجابة كما تراه مناسبا)

الأنشطة التي تقوم بها شركتك والمتعلقة بتنفيذ أو تشجيع مشاركة المعرفة	موجودة	غير موجود	لست متأكد
بناء العلاقات والثقة من خلال الاجتماعات ؛ وجها لوجه	☐	☐	☐
إنشاء أرضية مشتركة من خلال التعليم، والمناقشة، والمنشورات والعمل كفريق واحد	☐	☐	☐
تحديد زمان ومكان لنقل ومشاركة المعرفة مثل إقامة معارض و تسهيل قاعات للمناقشة ودعم اعداد تقارير المؤتمرات	☐	☐	☐
تقييم الأداء وتوفير الحوافز على أساس المشاركة	☐	☐	☐
تثقيف الموظفين وتحريضهم على المرونة، وتوفير الوقت للتعلم؛ ودعم الانفتاح على الأفكار الجديدة	☐	☐	☐
تشجيع النهج غير الهرمية للوصول إلى مصادر المعرفة، و تشجيع تطوير نوعية الأفكار المشاركة	☐	☐	☐
قبول ومكافأة الافراد الذين كانوا سببا في الأخطاء الإبداعية والذين ساهموا بدعوة الاخرين على التعاون والمشاركة	☐	☐	☐

الفقرة4

ما هي الخدمات التي توفرها هذه الشركة والتي تعتقد انها تساعدك على مشاركة المعرفة؟ (يرجى وضع علامة في الإجابة كما تراه مناسبا)

الخدمات التي توفرها خذه الشركة	موجودة	غير موجود	لست متأكد
السياسات والخطط المرنة ونظام المكاتب المفتوحة لدعم مفاهيم المشاركة			
البريد الالكتروني			
تقديم برمجيات تساعد علي مشاركة المعرفة			
توفير كافيتريا في العمل لمشاركة الأفكار			
توفير اماكن شرب وبرادات مياه لتكون بيئة للاحاديث الجانبية والمشاركة			
السماح بفرصة لتناول وجبة خفيفة وتبادل الاحاديث			
دعوة الموظفين لتناول وجبات خفيفة ومشاركة الافكار			
الانترنيت			
منتديات مغلقة للمهندسين			
منتديات وشات اون لاين			
غرف شات خاصة بالشركة (Chat Room)			
شاشات مرئية بلازما			
النشرات الاخبارية اليومية والاسبوعية			
التدريب المستمر			
تشجيع الانجاز الجماعي للأعمال			
مؤتمرات / ندوات			
محاضرات يقدمها خبراء			
عقد المؤتمرات على الشبكة الالكترونية			
تشجيع العصف الذهني			
الدعوة إلى المؤتمرات بالفيديو والهاتف			

محاضرات يلقيها الاستشاريين	
محاضرات يلقيها الموردين	
محاضرات يلقيها الزبائن	
دورات ومحاضرات تأهيلية مدعومه ببرامج محدودة	
إنشاء مراكز التعلم و معارض	
تشجيع بناء مجتمعات على شبكة الانترنت مثل مجموعة الفيس بوك	
انشاء نظام اداري لتوجيه ومراقبة ودعوة العاملين للمشاركة	
تشجيع التدريب المهني هي وظيفة حقيقية مع التدريب حتى تتمكن من كسب بينما تتعلم والتقاط بعض مؤهلات	
إنترانت: هي شبكة إنترنت عادية تستخدم ذات التقنية المستعملة في الإنترنت، لكنها مصغرة بحيث تسمح للأعضاء المسجلين بمنظمة أو مؤسسة ما فقط	
يوم عمل جماعي بهدف المشاركة	

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الفقرة5

ما هو برأيك عنصر أو عناصر الثقافة التنظيمية التي قد تؤثر على مشاركة المعرفة؟ (الرجاء وضع علامة في المربع حسب تقديرك)

عناصر الثقافة التنظيمية	اجابتك	عناصر الثقافة التنظيمية	اجابتك
القيم		طبيعة اللغة المستخدمة داخل المنظمة من قبل العاملين وقصصهم وخبراتهم	
اللوائح والسياسات		نظام المكافأة و الحوافز	
الطقوس الاجتماعية و العادات والمعتقدات الدينية		مهام القيادة الادارية	
ثقافة القيادة الادارية العليا		الهيكل التنظيمي للمنظمة	
ثقافة المالك(المالك هو الهيئة المنشاة للمنظمة)		الإجراءات الحكومية(كل ما يتعلق بقرارات الحكومة)	

هل ترغب في المشاركة في مرحلة المقابلة؟ إذا كان الأمر كذلك يرجى تقديم عنوان بريدك الإلكتروني

الاسم : --

عنوان البريد الإلكتروني:--

الهاتف:: --

شكرا لمشاركتك القيمة

Appendix 3

Research participant consent form

The relationship between Organisational Culture and Knowledge Sharing in Information Communication Technology firms in Libya

CONFIDENTIALITY STATEMENT

All responses given as part of interviews, questionnaire survey and documents will be treated with utmost confidentiality and will be available only to the researcher and supervisor of the project. Excerpts from the interviews, questionnaire and documents will be used for research publications, but under no circumstances will your name or any identifying characteristics be disclosed in such publications.

This confidentiality statement will be signed by both the participant and the researcher in order to ensure that data obtained will only be used for the above research, and will not be disclosed to any other person, or be used for other purposes.

Name of participant   :   Name of researcher: Belqais Allali

Signature   :   Signature   :

Date   :   Date   :

Thank you for your cooperation

RESEARCH PARTICIPANT CONSENT FORM

The influence of organisational   culture on sharing knowledge in small information communication technology firms in Libya

Name of researcher   : Belqais Allali

Researcher's email address : b.allali@edu.salford.ac.uk

➢ I confirm that I have read and understood the information sheet for the above study and what my contribution will be.

Yes	No

➢ I have been given the opportunity to ask questions (face to face, via telephone and e-mail)

Yes	No

➢ I agree to take part in the interview/questionnaire survey

Yes	No	NA

➢ I agree to the interview discussion being tape recorded

Yes	No	NA

➢ I understand that my participation is voluntary

Yes	No

➢ I understand that I can withdraw from the research at any time without giving any reason

Yes	No

➢ I understand that if I withdraw from the research, responses given by me will not be used for the study

Yes	No

Appendix 4

Sample of transcribed interview

Me: the findings of the questionnaire suggested that OC as a concept is more related to regulations and rules, do you agree with the findings

A: No I do not OC is not only the regulation and rules and setting the regulations and rules to allow knowledge sharing is not enough because sharing the knowledge required personal desire from the staff side to share. Sharing knowledge also requires an infrastructure to communicate the information and then make the knowledge. So although embedding the culture of sharing require specific types of regulations and rules, the rules and the regulations are not the only elements organization needs to consider when they enhance the practice of knowledge sharing. For example, I am working in project management if the information resources I have used to create project document provided different meaning or terminologies to those adopted by the firm, a problem will be generated. At this stage it is my responsibility to share the information and also to educate the people I am working with and give them the knowledge I used to create the project's documents. Understanding the meaning of team working is a major issue. Staff must understand how to work with each other as a team, how to share and how to communicate. The role of the regulation is to control or maintain the relationship between the staff, but it has nothing else to do with sharing. Staff in the organization must be taught how to share and they should know that sharing knowledge means exchange the benefits

Me: how would you yourself define OC?

A: to me it is based on the rule and regulations but at the same time it is reflecting the way that the staff act and react. It reflects how the staff interact with their working environment. Usually well-known organization would not be able to build up the team until they are fully aware to the culture of the members. As a project manager I would not be able to create the team who is able to work with me until I understand their culture and until I understand how to work with them.   The general OC is influenced by the culture of the individuals who work inside the organization. The staff home culture and their personal values are contributing to the main culture of the organization as they interact in regular bases with the environment inside the organization. The mentality of the managers are influenced by their culture including the education they received at the same time their mentality is influencing on the way they operate and run their departments. Any action in the organization is built upon the

strategy and the strategy is established by the organization members and at the same time it will influence on the future of the culture in the organization.

Me: How long have you been working in this firm

A: since 1998

Me: and before working here what have you been doing

A: I have worked in the private sector

Me: what are the main services provided by this firm

A: we provide commercial services as we are profit organization, we provide different IT service such as data transfer

Me: and what is your main role

A: I am a project manager I run and carry out the projects for the firm. Our Firm follows the centralization in terms of the project management, previously the firm used to ask each department manager to carry out specific projects, but since a while the top management team transfer the work to be centralized. It was quicker, but this caused duplication because there was no sharing between the departments. So, we found that centralization better to make better decisions

Me: do you consider yourself as a decision maker

A: yes, I make a draft decision and then I suggest it to the committee board meeting to make the final decision. We have a regular meeting and then we make the decision

Me: what are the elements that influence on OC

A: I think the rules and the regulations and the owner leadership are the main elements because based on these both elements we make some time very critical decision that would influence on the future of the firms that is why I gave them more credits. I would also consider the organisational structure, the organisational structure is influencing on the mentally of making the decision, until this moment the decision makers think in horizontal way when they make the decision, so this will influence on the decision.

Me: so what are the weaknesses and the strengths in the current OC

A: A weakness is that we do not have until now the spirit of team working. For OC to be positive, the general atmosphere in the organization should encourage the staff to communicate. Also, the OC must be studied carefully before adding any new lines or services to the organization because managers would not be happy if a new line was added and the staff refused to collaborate to support it. I think one of the method managers should use to understand the influence of the culture on the new business is to carry out a case study that allows me understand the main aspects of my culture and how it would influence on the

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productivity of the business. So studying the OC is vital before carrying out any project. Also in terms of marketing the business, it is very important before suggesting the marketing activities to study the OC because you do not want to suggest any activity that is not accepted by the staff. Of course before I create my project document I must be aware to the information I have to build up the project and to the level of sharing I am allowed and also expected others to do. I must be aware to the privilege of the knowledge who is expected to reach to what. the knowledge have a culture and we should be aware to such culture before allowing the sharing, The knowledge we hold in the organization would have a specific type of experience which we could not share

Me: so are you telling me that not everyone is able to share knowledge

A: I said that the knowledge has a privilege, there are some types of information which is not accessible to everyone such as deals and large financial projects. So it is not easy to allow anyone to access the knowledge you have in the firm, because it will influence on your level of competition. So for example, the five years' financial strategic plan should not be accessible to anyone because the competition level of the firm would be influenced by the information provided in it. As far as you know there is some technical information in the firm we have no access to it. We are not able to reach to the subscribe databases, some knowledge and information is highly secured. I understand that the new technology provided us with different tools such as share point and the personal Intranet allows you to publish everything related to you and you have access to the regulations and information

Me: from your perspective what are the issues that could be a barrier to share the knowledge

A: the major barrier is the staff behaviour and the mentality of the staff. Many individuals have monopolistic behaviour toward information and knowledge. So it is the personal culture of each individual. Our culture encourages appearance and individualism in the achievement is highly appreciated. The problem from my perspective is not that people would like to be well known and wanted rather, they monopolise the knowledge. Individuals are not aware until now that sharing the knowledge will help the person who shared his knowledge first because the person who share will be able to visualized their ideas.

Me: what do you think would help in raising people awareness toward sharing the knowledge

A: I can reach with you here to a concept which is called change management. Changing management here is not about changing the way we manage firms, but also changing the methods of our thinking. People will resist the change; we do not like the change because we do not think that the change would make our life better. Staff would think about the change as it is going to make him lose the job or someone else would take his position. Or someone

would think that I have been working in this section for 20 years if they changed now I would not be able to cup with the change. Change is not an easy process. During 15 years of experience in this filed I would say that if you want to bring changes to the organization advocate people to promote the changes by themselves. Enforcing changes would not make you any good. If you want to change let the staff suggest the change by themselves, because people will always rest the change, but when they suggest the change the rest will be less. Our strategic plan should not be built upon the organisational structure but the other way around the organisational structure should be built upon the strategic plan. Changing the culture of the organization would not be an easy job , but you like it or not you must change if you want more development and better innovation . Change should be started by the individuals themselves, managers should ask them what change we should promote and how to promote such change, start with the departments and then in the structure based on your strategic plan. The new organisational structure should be given the chance to suggest a new culture and promote it. Sharing the people, the decision to change is the best way to promote change and the best type of sharing requested in firms

Me: there are some activities which can carried out in the organization to encourage sharing knowledge sharing,

A: yes

Me: which one of these activities are you currently practicing to share knowledge

A: I think we are practicing raising the awareness of the staff and encourage them for better development and we are encouraging unstructured methods to share and communicate and face to face communicate where the staff is the one who suggest to share and change of the culture. You need to listen to the staff suggestion and then create your ideas and strategies in the way you like

Me: how do you see KS in your organization?

A: from my perspective KS is excited in our organization but it has not been documented in written forms and it has not been supported by the appreciated regulations and it has not be mirrored yes we practice KS but we do know have any written proof of its being and we did not establish the rules and regulations to support such practices. We have Intranet and Internet we use email method to communicate. We have specific events and we use shared folder everyone can share them and you limited the access to it as wanted. We use shared folder to input information and documentation about each project and then it will be shared as requested,

Me: so do you think that staff are aware to these folders

A: I am sure that the one who needs them will be able to access them and find them as I told you we are willing not only to share out folders but also the archive and some information located in the databases and hard copies. We want our staff also to share what they have in their minds, so other staff will benefit from your experience and knowledge. I want the staff to learn from their lessons. We have had many risks and I want all the staff to learn about them. Some countries used the risk register to tell us which knowledge to share and how to benefit from sharing. So, we will be able to share even if it was a small amount of sharing.

Me: as a manager, what is your current role in terms of knowledge sharing

A: as a project manager my main duty is to ensure that information was documented and available to share. When I record my projects I should ask myself if I established a risk register to record the risks, problems and learned lesson. There is a template which can be competed it simplifies the process of documenting and recording. So, we must record all the risks and mistakes we experienced so anyone comes later will be able to avoid experiencing the same problems. Doing such practice will help us reduce the costs and save the time and reduce the possibilities of failure. I think sharing the knowledge is very important practice to help the development of the firm and it must be set in the main structure of the firm. Top management team must have adopted such culture and embedded it in the organization

Me: so do you agree that OC would influence on the process of KS

A: let me tell you something, if the individual culture rests the team working and knowledge sharing, it will be challenge to apply KS successfully. Copyright of the knowledge should be respected but it should not be seen as barrier to share, this means the culture of the person would influence on the level and the effectiveness of sharing. The role of regulations and rules is to support the process of knowledge sharing and to advocate staff for more contribution to the shared folders. We need to understand the culture of the organization in order to apply better practice. Unlike some other firms, ICT firms are very much related to universal development of the technology and changing the culture should be a regular practice to be able to compete and communicate more effectively. The development in the ICT sector is very fast and the rapid change of the business ICT environment. I would like to inform you here that the size of the firm is not very much related to the number of the staff working in it rather to the number of the people who have different skills and capabilities

Me: how do you think the current political changes influenced on the business of the ICT firms?

A: listen, we have positive influences and we have negative influences. To be honest with you as a Firm we have not more constraint as we used to have, so there are no more excuses to be made, we should now think outside the box and innovate new ideas. The ministry of ICT is requested to create a clear strategy and to set the correct regulations to help people do better practices. The ministry should set the regulations and adjudge me at the end of the tax year based on my achievement. The negative point is the security obsession; the current security statues in the country limited our development. We are missing our foreign partners who refused to come to the country and we are not able to establish new projects. What helped us here is that our staff has great affiliation to the firm and they were able to keep attached to our policy which kept the firm protected and they worked hard to keep the project running. I think we were able to see during the last critical period, that the strength of the relationship between us as a Firm and our staff was very important. We were able to see that the commitment and the respect to the love value in the firm motivated many staff to complete the project regardless the security concerns. I was able to identify the individuals who love their work environment and ready to make any change to keep the business running and those who are looking for excuses just to run away. It is loving relationship but not benefit relationship.

Appendix 5

Invitation email to conduct phone based interview

Dear Sir/Madam,

My name is Belqais Allali I contacted some of you earlier 2014 to carry out an interview regarding understanding the relationship between Organisational Culture and Knowledge Sharing. For those who I have not been in contact with them, a brief background about the research is available as requested. Bearing in mind that I will have a fair conversation with you prior to the interview to make sure you are fully aware of the research.

I am contacting you now to conduct phone-structured interview to verify and validate STEP BY STEP FRAMEWORK (see the covering letter please). It will be very much appreciated if you send me your availability for no more than 20.min interview in your convent time.
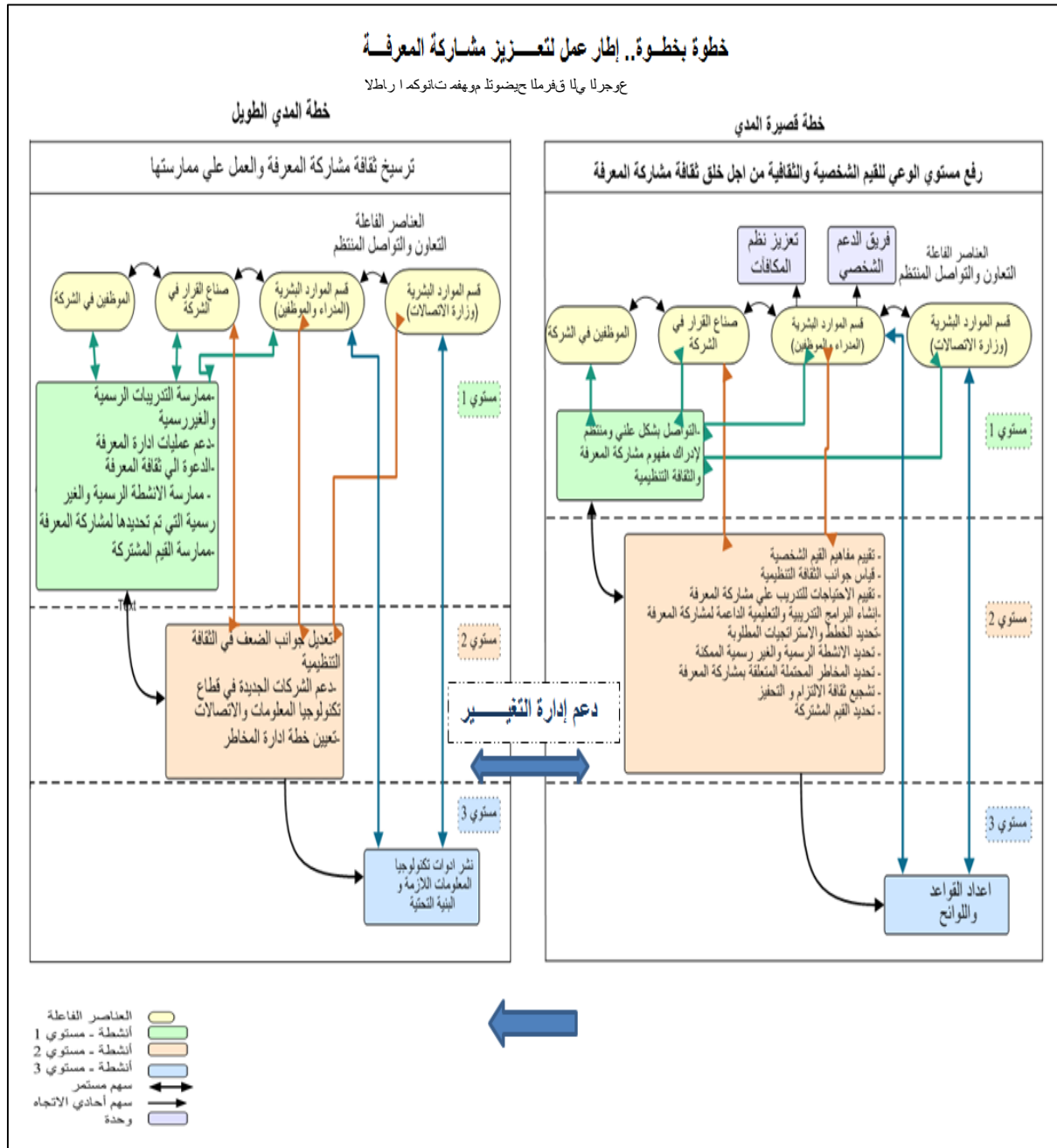
I would like to thank you positively for your collaboration and looking forward to hear from you.

Please note that I attached with this email a covering letter that includes background about the framework and the interviews' questions.

Sincerely,

Appendix 6

Arabic version for the framework

Appendix 7

HOW –TO- DO guideline for the framework

The framework – HOW –TO- DO guideline

Introduction

As the result of an empirically-based study conducted within the context of Libyan ICT firms, a STEP BY STEP Knowledge Sharing Framework was created with the aim of developing the practices of Knowledge Sharing within the ICT firms. The framework consists of two approaches (the long-term approach and the short-term approach) and, in each approach; a set of actions should be taken by different actors in order to accomplish the aim of the framework. In order to help the decision makers (as well as the practitioners) to fully understand and then implement the framework, a HOW-TO-DO guideline has been created. The guideline provides definitions of terms and a HOW-TO-DO map.

Definitions of terms:

Framework: a framework is a detailed structure, or skeleton which outlines or interlinks concepts or actions which support a particular approach (s) to accomplish a specific aim. It is used as a guide but, at the same time, it can be modified as needed to meet specific requirements.

Approach: the meaning of approach in this framework is limited to the strategy. In other words, it is a strategic vision which involves people, actions and processes to present a specific message in a specific period of time through specific actors, actions and processes.

Short-term approach: a short -term approach means applying the message of the strategic vision during a short period of time (no more than a year of time).

Shared values: shared values are organisational and personal values that are usually developed by an organization's leadership and then supported and adopted by the other employees of the organization. The values are shared and followed by all members of the organization when acting on behalf of the organization. They may also be referred to as core values.

Long-term approach: a long-term approach means implementing the message of the strategic vision during a long period of time (no more than 5 years of time).

Aim: aim is the objective that the approach is intending to achieve.

Actors: actors are the people who are in charge of taking actions.

Actions: actions are the acts or the activities tackled by the actors to implementing the message

Arrows: arrows represent the processes which will take the place between the actors and the actions.

Level: the term level is used to represent the different layers of the approach where actors should move to different actions at a time when actors are confident that such actions can be completed.

HOW- TO- DO guideline:
The HOW –TO-DO guidelines provides a list of activities that should be implemented and practiced by the actors to compete the actions.

In the short term approach the actions comprise the following activities.
- Communicate openly and regularly to understand the concept of KS and OC
Communication which can be achieved either by setting up seminars, workshops or online facilities where all staff can share their ideas about the concepts of KS and OC.
- Assess the meanings of personal values
- Assess the aspects of OC
- Identify shared values
The personal values and the shared values OC and KS can be assessed by carrying out specific firm-based research where different concepts can be examined and then the collected data can be analysed to identify the meanings of each concept. This can be organised by either an internal department for research or by an external research department.

- Assess KS training needs

Training needs can be assessed by either studying the development of the market and then suggesting training for new skills relating to Knowledge Sharing, or by asking the staff what support they need. It is important for the HR department to have a vision and to have regular interaction with the research department.

- Create educational and training programmes to support KS practice

Based on the outcomes of the first few actions (assessment and observations) a training programme can be developed.

- Identify required plans and strategies

In order to identify the required strategies the HR department, with support from managers, needs to study and review current strategies and then develop new strategies in the light of the new understanding of the concepts and needs which emerged from the assessment actions.

- Identify the possible formal and informal activities

Based on the assessments of the concepts and the identification of the training needs, managers and the HR department can work closely together to design different activities for KS and then pilot them.

- Identify the possible risk related to KS

Project managers and HR managers should work together to assess the possible risks that might face the development of KS practices.

- Encourage the culture of commitment and motivation

The HR managers and project managers need to set up different activities (such as seminars or maybe games) to enhance an awareness of commitment and then enhance motivation. Creating a reward system (taking on board each firm's own circumstances) can provide a very powerful incentive.

- Set up rules and regulations

Conducting regular meetings with HR in the Ministry and proposing the planned outcomes of assessments.

Long-term approach
- Practice formal and informal training

  To be identified by Human Resource Department
- Support change management processes

The change management process should be supported by conducting seminars, workshops or meetings to keep the employees up-to-date with the issues relating to change management in the firm and employees should be listened to if they have any concerns.

- Advocate the culture of knowledge

Time for reading should be encouraged, as well as enjoying the new experience of building up both tacit and explicit knowledge; for example, sharing ideas as to how to make a report is an example of transferring tacit knowledge into explicit knowledge. Giving employees specific time to read a new book or to enjoy a new practical experience will enhance tacit knowledge.

- Practice the identified formal and informal activities to share knowledge

   To be identified by Human Resource Department
- Practice shared values

Shared values can be practiced by organizing public or group events and then discussing issues relating to shared values.

- Modify the weaknesses in the organisational culture

Weaknesses can be modified by considering them when strategies are defined.

- Support new established ICT firms in the sector and share knowledge

New ICT firms can be supported by inviting the new staff to few days experiencing current practice or by organizing exchange activities with employees who have more experience in such field.

- Set risk management plan in place

   To be discussed with project developed manager.
- Deploy the required IT tools and infrastructure

   To be discussed with IT department.

Appendix 8

Related Publications

Allali, B., Kulatunga, U. & Keraminiyage, K. P. (2014). The relationship between knowledge sharing and organisational culture: a theoretical framework. Built and Human Environment Review: Special Issue on Culture and People in Science and Technology, 7(1).

Allali, B., Keraminiyage, K. & Kulatunga, U. (2013).The role of organisational culture in managing knowledge in information communication technology small firms in Libya. Paper presented at IPGRC 2013: International postgraduate research conference, University of Salford.

Allali, B., Keraminiyage, K. & Kulatunga, U. (2014). The influence of Organisational culture on sharing knowledge in small information communication technology firms in Libya, in: 'International Conference on Construction in a Changing World, May 2014 Sri Lanka', University of Salford, Salford, UK. Conference details: CIB 2014 International Conference on Construction in a Changing World.

Allali, B. & Kulatunga, U. (2015).Applying a case study approach and triangulation methods in data collection in the ICT context in Libya, in: Association of Researchers in Construction Management (ARCOM) Doctoral workshop, 10 April 2015, Dublin Institute of Technology, Dublin, Ireland.

Allali, B. & Kulatunga, U. (2015). The Conceptions of Knowledge and Sharing from the Perspectives of the Libyan ICT Small Firms' Employees: The Findings of an Open-Ended Questions' Questionnaire. IPGRC 2015: 12th International postgraduate research conference, University of Salford.