UNIVERSITY OF KWAZULU-NATAL

AN ANALYSIS OF THE ROLE OF COMPETITIVE INTELLIGENCE (KNOWLEDGE MANAGEMENT AND BUSINESS INTELLIGENCE) IN GLOBALISATION OF SAUDI ARABIA ICT FIRMS

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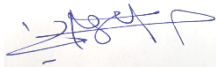**Supervisor: Professor Manoj S. Maharaj**

2019

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(In the name of Allah, the most gracious and the most merciful)

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Glossary of Acronyms

BI   Business Intelligence

BPM   Business Processes Management

BPMS   Business Process Management Systems

BRICS   Brazil, Russia, India, China, South Africa

CDSI   General Authority for Statistics

CI   Competitive Intelligence

CITC   Communication and Information Technology Commission

CSC   Council of Saudi Chambers

CSFs   Critical Success Factors

GCC   The Cooperation Council for the Arab States of the Gulf

GDP   Gross Domestic Product

ICT   Information and Communications Technology

IS   Information System

IT   Information Technology

KAP   Knowledge, Attitude and Practice

KM   Knowledge Management

KMS   Knowledge Management System

MNC   Multinational Corporations

OI   Organisational Intelligence

OLAP   Online Analytical Processing

PESTEL Political, Economic, Sociocultural, Technological, Environmental, and Legal

SAGIA   Saudi Arabian General Investment Authority

SAICT   Saudi Arabia Information and Communications Technology

SAMA   Saudi Arabian Monetary Authority

SEM   Structural Equation Modelling

SI   Strategic Intelligence

SMEs   Small and Medium-Sized Enterprises

TOE   Technology, Organisation, Environment

Abstract

This study explored the role of technological, organisational, environmental and attitudinal factors in facilitating the globalisation of Saudi Arabian ICT companies. In particular, the study focused on identifying the drivers of globalisation, especially knowledge management and business intelligence, and steps Saudi ICT companies should take before expanding their businesses outside of Saudi Arabia. A mixed-methods approach was adopted. A total of 81 ICT companies registered with the Communication and Information Technology Commission (CITC) in Saudi Arabia participated in this study, including the three largest ICT operators in Saudi Arabia, namely STC, Mobily, and Zain. Publicly available data from the Saudi stock exchange and other sources were analysed in respect of the three large ICT companies. The CITC organisations were surveyed via questionnaires. A quantitative analysis of the survey data viewed through the lens of the Technology, Organisation, Environment (TOE) framework and the Knowledge, Attitude and Practices (KAP) model was undertaken, while a qualitative analysis of the documentary data from the three large companies was viewed through the TOE lens only. It was identified that the efficiency of software used in organisations helps them to globalise at any time and that competitive intelligence tools (KM and BI) are also very important. The organisational context is important; large ICT companies can globalise their activities while smaller companies have difficulties in doing so even though they recognise the potential economic benefits of regionalisation and globalisation. Regarding the environmental context, a country's legislation helps and supports companies to globalise their activities. This is clearly noticeable in the three telecommunications operators, which have no obstacles to prevent them from operating in any country in the world. Finally, ICT and the attendant networked applications have accelerated the integration of the world's economy through the globalisation of businesses. These effects are also felt by Saudi ICT companies, which are reconsidering their roles as regional economic players.

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

Business enhancing technologies continue to evolve rapidly, enabling improved decision-making, increased productivity and consequently higher profitability. Business intelligence (BI) and knowledge management (KM) tools, collectively referred to as competitive intelligence (CI) are pre-eminent amongst these technologies. The need to engage in competition with international information technology firms emanates from international economic challenges and total quality management requirements that accelerates global economic integration, especially in the fields of IT development. IT and telecommunication technology firms are propelled "to globalise their business activities in order to achieve the best possible market positioning" (Mahmutović, Hadžiahmetović & Talović, 2014, p. 1639).

Globalisation is a manifestation of the twenty-first century. Developing countries are becoming increasingly competitive through the globalisation of politics, economics, culture, and technology. The business sector is witnessing a rapid shift and changes as a result of the development of information and communication technology. ICT is the driver and catalyst for globalisation.

Although Saudi Arabia enjoys a strong economy, it still depends almost entirely on the petroleum sector. The services sector contributes approximately 39.4% to the Saudi GDP, and within this sector, the ICT sector contributes about 6% annually (CITC, 2015). While the ICT sector performs mainly service-oriented functions, many organisations recognise the value of globalisation and seek to achieve this through first regionalising and then internationalising their businesses.

The globalisation of telecommunication businesses can enhance economic activities in a manner that broadens and deepens their economic reach and change the nature of work in a dynamic fashion (Harvey and Novicevic, 2002). The globalisation trends in IT firms will, by necessity, induce a spirit of competitiveness in these firms worldwide as a prerequisite to engaging in a thriving economic activity that guarantees survival and success in the IT market (Fawzy, 2002; Oman, 1999; Porter, 2008; Wignaraja, 2004).

In this context, too, Giddens (1991) identified globalisation as a process of decoupling space and time, consequently bringing forth instantaneous communications, knowledge, and culture that could be shared globally at the same time with a similar impact. Likewise, Robertson

(1992) defined globalisation as the "accelerated compression of the contemporary world and the intensification of consciousness of the world as a singular entity" (p. 6). With all these definitions summed up, globalisation can be thought of as process of integrating economic, technological, organisational, environmental, socio-cultural and political forces into the global market and through the powers of a global society. This global society has started to appear as an interspersed body that functions symmetrically through the enhanced employment of technology, and the exchange of information all over the world. In point of fact, experienced company executives in international businesses "believe the world is a lot more globalized than it actually is" (Ghemawat, 2017, p. 4). For globalisation to exercise its impact, ICT companies should work as powerful instruments that exceed beyond the limits of time and space. Overstepping time and space are the prominent feature of the globalisation of information and technology, thereby helping to carry off all impediments and limitations of geography, language, and culture.

As Oman (1999) suggested, globalisation refers to ridding barriers that impede global economic activities from expanding the scope of reciprocal relationships between local IT companies and global entities in the field in a manner that would help increase movement of resources, technology, workforce or human capital and financial capital as well as direct investments in IT. In this way, globalisation is a process that involves a constant and dynamic set of procedures that work to provide an amenable environment in which IT firms can fairly and competitively take advantage of various and plentiful business opportunities (Easterly, Williamson & Banerjee, 2004; Thoumrungroje & Tansuhaj, 2007). As such, King (2006) found that IT companies that have a global vision and enact it through resources exchanges at the levels of human capital and information infrastructure suggesting that IT labour and technology exchanges are the main drivers for globalisation in the domain of IT and telecommunications.

In this vein, Mahmutović, et al. (2014) adeptly noted that for integrating a global economic vision into the local market of ICT, there should be a continuing process of deregulation and development of ICT companies in a fashion that would encourage these ICT firms taking their business globally so that they can achieve the best position in the market.

Easterly, Williamson, Banerjee (2004) noted that evidence is now growing to indicate "high trade flows between the Old World and the New" (p. 66). They further contended that financial capital and human capital, or skilled labour, could flow more from poorer countries to the richer countries due to the availability of sufficient and affluent wages, and so is the case with

increasing 'foreign direct investments' that flow with high rates of return in capital to the advantage of the richer world. This can be explicated further, in cases other than those described by Easterly et al. (2004) by noting that globalisation of ICT firms should help to facilitate an organisational environment that proffers a myriad of business opportunities to these firms. These business opportunities help domestic companies to compete in the international markets. However, competition in global markets can only be possible by observing and understanding as well as interacting with the global trends and attending to globalisation factors such as transnational movement of capital and skilled labour, international trade flows, domestic trade accumulation, land and natural resources and cross-national income ratios brought in by globalisation. Eventually, globalisation of trade would practically help ICT firms to make appropriate and successful business decisions in the local and global markets.

These rapid changes and development in ICT, referred to as the global 'information revolution', have led the Saudi Arabian government to put in motion four successive five-year strategic plans terminating in 2024, designed to ensure that Saudi Arabia will be able to compete on an equal footing with developed countries by the end of this period. This means that Saudi Arabian industries are willing to change from a production-based economy to a knowledge-based economy, or knowledge economy (Alothman and Busch, 2009). In other words, the Saudi government has implemented a long-term strategy for the Saudi economy that started in its Eighth Development Plan 2005-2009 to transfer to a knowledge-based economy by the year 2024. The aim of the government is to decrease its heavy dependence on oil and to enhance the service sector to contribute more significantly to the GDP (Ninth Saudi Development Plan, 2009-2014).

The economy of Saudi Arabia (SA) is primarily based on crude oil. This is a limited natural resource and as the world moves towards alternative sources of energy, it is imperative that the country looks to diversify its economy to remain competitive. The drop in crude oil prices has increased the determination of the Saudi government to move in this direction, i.e. to diversify its economy. Many regional economies have started on this path and are beginning to see the benefits of diversification driven by information technology. As a dominant regional economy, Saudi Arabia can become a leading knowledge economy. Knowledge management (KM), and business intelligence (BI) are an integral component of any globalisation effort and need to be thoroughly understood in the context of the country, especially within the information technology sector. To the best of the researcher's knowledge no study such as this one has been conducted within the ICT sector in Saudi Arabia.

1.2 Background of the study

The integration of KM and BI is important for business success, but only a few researchers pay attention to this, especially in the developing economy context (Fitriana, Eriyatno and Djatna, 2011). This study addresses CI (KM and BI) from a Saudi Arabian ICT perspective.

While it is clear that the interaction and integration between BI and KM is not well studied, it is also true that the difference between these two technologies is to some extent confusing and unclear. Evidence of such confusion in many industries can be seen from the survey conducted by OTR Consultancy, which showed that 60% of the respondents did not understand the difference between the two (Herschel and Jones, 2005). Despite this confusion, Zarghamifard and Behboudi (2012) have found that KM and BI share the same objectives, which include the desire to improve decision-making and to enhance the competitive advantages of organisations. This is true even though both focus on different kinds of data; KM focuses on unstructured data and on a social model whereas BI focuses on explicit knowledge and is technology-oriented.

This study will be beneficial since it will be conducted in a developing country, namely Saudi Arabia, which will provide a different perspective from similar enquiries undertaken in other contexts. Other developing countries may also benefit from such a study. Additionally, the stated aim of the Saudi government to move the economy from oil dependence to a services economy makes this study timely and necessary, especially after the decrease in oil prices.

1.3 Research problem

It is a fact that ICT is instrumental in the growth of economies, not only in government sectors but also in industry sectors. In 2012 the World Bank data showed that Saudi Arabia ranked 50th compared to its previous place in 2000 which was 76th in the knowledge economy (World Bank, 2012). On the other hand, Saudi Arabia was ranked 29th in the Global Competitiveness Index (2016–2017), as opposed to 25th the year before (The Global Competitiveness Report 2016–2017, 2016). In 2015, Saudi Arabia ranked 41st in the ICT Development Index (IDI), up from 56th in 2010 (International Telecommunication Union, 2015). It seems clear from these statistics that the government of Saudi Arabia and the private sector have begun to appreciate the value of ICT and the significance of competitiveness in the international market after the decline of the oil price in 2014. ICT is an essential component in competitiveness in the new knowledge economy (Alam & Mohammad Noor, 2009).

This study investigates the role of BI and KM in the globalisation intentions of Saudi Arabian ICT companies. The research reported on here fills the knowledge gap that exists in the literature regarding the important interaction between KM and BI in developing countries, especially Saudi Arabia. Whilst the two technologies are still in their infancy in different industries in the country, they have to some extent already been implemented in large-size companies such as Saudi Aramco[1], Saudi Telecom Company, SABIC[2], Saudi Airlines and some medium-size companies. How CI impacts on an organisation's performance in the achievement of competitive advantage, decision-making, productivity, as well as profit, is also investigated.

As a point of departure, knowledge is key to the achievement of enhanced competitive advantage and it is a catalyst in making the right decisions and increasing the efficiency of production thereby increasing profits. Knowledge can be regarded as the intellectual capital of any organisation (Zarghamifard and Behboudi, 2012), and facilitates the sustainability of competitive advantage in an economy where there is a great deal of uncertainty (Nonaka, 2007). Accurate and timely knowledge is a key factor for improving business performance (Cody, Kreulen, Krishna and Spangler, 2002). Furthermore, organisations realise the importance of knowledge as an intangible asset and strategic resource (Hanandeh, Alajlouni and Alnawafleh, 2012). McCarthy (1999) points out that KM and BI share some common objectives, but there are differences in the manner in which their aims are achieved. The differences are: (a) BI employs opportunity analysis which is a useful decision-making tool; and (b) the value of KM lies in its ability to prompt the organisation to identify, capture, and reuse knowledge and in particular knowledge that results in best practice in such a manner that it saves the organisation time, effort, and resources. This translates into cost savings. However, Shehzad and Khan (2013) point out that KM and BI are influenced by the internal environments of organisations; the business environments have to encourage management and employees to play a vital role in sharing their knowledge which is important for organisations of all sizes. Knowledge management (KM) and Business Intelligence (BI) thus stress the value of knowledge for decision-makers (Cody et al., 2002).

Despite a solid ICT infrastructure, the growing use of the internet and implementation of information technologies in many organisations in Saudi Arabia, there remains a dearth of studies that consider the relationship between BI and KM. Even though KM is implemented in

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[1] Saudi Arabian Oil Company

[2] Saudi Basic Industries Corporation

some large organisations it is still in its early stages of development in business as well as in the government sector (El Emary, Alsereihy, and Alyoubi, 2012), and it could be said that this also applies to BI, hence the importance of this study.

Business is expected to expand in different industries in the country in the next few years. This has led many organisations to invest in and depend heavily on IT to gain competitive advantage. Many organisations use technologies to expand their businesses, and they now need to know the trends in the market so that they can make the right decisions at the right time. Some organisations know the value of KM and BI, whilst others do not. Some still value only one of the technologies, and implement only this one. Very few organisations, it seems, have combined the two technologies in their business management operations.

1.4 Research objectives

This study has the following objectives:

1. To identify the readiness of SAICT companies in terms of IT competence.
2. To determine the organisational factors which influence the globalisation intentions of SAICT organisations.

3. To determine the environmental factors which influence the globalisation intentions of SAICT organisations.

4. To find out how knowledgeable the management of SAICT companies are about globalisation.

5. To describe the attitude of the management of SAICT companies towards globalisation.

6. To determine the practices that SAICT companies are implementing in relation to globalisation.

7. To identify the factors which influence SAICT organisation in regard to globalisation.

1.5 Research questions

1. What are the characteristics of SAICT organisations?
2. What technological factors facilitate or inhibit SAICT organisations in globalisation?
3. What environmental factors facilitate or inhibit SAICT organisations in globalisation?
4. What knowledge do SAICT organisations have about globalisation?
5. Does SAICT organisations' knowledge about globalisation influence their attitudes to globalisation?
6. What practices do SAICT organisations implement in relation to globalisation?

7. What are the factors, which influence SAICT organisations in regard to globalisation?

1.6 Hypotheses

Hypotheses are known as guesses that are formulated to predict how to solve the research problem. They also provide explanations and interpretations of the phenomenon at issue. The hypothesis also directs the researcher's thinking to potential sources of information that may help the researcher to solve a problem or several sub-problems, which will help the researcher to solve the main research problem (Leedy & Ormrod, 2015). In this context, this study aims to explore the role of technological, organisational, environmental and attitudinal factors in facilitating the globalisation of Saudi Arabian ICT companies. Therefore, through knowing the importance of adopting and using competitive intelligence's tools (knowledge management and business intelligence) in influencing SAICT organisations' globalisation decisions, this study uses the principles of TOE and KAP model, but the hypotheses of the study will be based on TOE only. Thus, null and alternative hypotheses were built based on TOE model. Therefore, the following theories are suggested in this study

Hypothesis 1

H_{1o}: Technological factors do not influence SAICT organisations' globalisation decisions.

H_{1a}: Technological factors influence SAICT organisations' globalisation decisions.

Hypothesis 2

H_{2o}: Organisational factors do not influence SAICT organisations' globalisation decisions.

H_{2a}: Organisational factors influence SAICT organisations' globalisation decisions.

Hypothesis 3

H_{3o}: Environmental factors do not influence SAICT organisations' globalisation decisions.

H_{3a}: Environmental factors influence SAICT organisations' globalisation decisions.

1.7 Significance/importance/contribution of the study

Studies on the interactions between KM (Knowledge Management), and BI (Business Intelligence) are very limited in general, and especially so in developing countries. This can be deduced from the misunderstanding of the differences between KM and BI (Herschel and Jones, 2005). In addition, the literature on technology and its relationship with globalisation from the Saudi Arabian perspective is limited.

Combining the TOE (Technology, Organisation, Environment) framework and the KAP (Knowledge, Attitude and Practice) model is another motivation for conducting this study. The TOE framework is used to evaluate the adoption or implementation of technologies at the firm level, while the KAP model has been used to identify an organisation's knowledge, attitude, and practice towards globalisation.

This study will thus enhance understanding of the interaction between KM and BI technologies towards globalising SAICT organisations. The study is opportune since Saudi Arabia embraces the service sector as a sustainable driver of economic development, and failure to conduct such a unique study will result in a knowledge gap that could be detrimental to Saudi national development plans. Results from this study could also be applied to neighbouring countries.

This study is to the best of the researcher's knowledge, not only the first study of its kind in Saudi Arabia, but also in the Middle East.

1.8 Research methodology

A mixed method research design has been employed for the study to gather data from multiple sources that seeks to study the factors, which influence globalisation of Saudi ICT firms. This means that quantitative and qualitative methods have been used for collecting as well as for analysing the data. Leech and Onwuegbuzie (2009) define mixed methods research as a method that deals with quantitative and qualitative data in term of collecting, analysing, and interpreting either in one study or in different studies that investigate a phenomenon being under investigation. Quantitative data was collected through a questionnaire, using closed as well as open-ended questions. Additionally, secondary data from the three large companies, namely STC, Zain KSA, and Mobily was collected from publicly available sources.

Berg (2007) maintains that there are advantages and disadvantages in developing structured questionnaires and case studies. The main advantages are that the participants provide more detailed information in their answers and they can express their opinions. A disadvantage is that "qualitative research takes much longer, requires greater clarity of goals during design stages, and cannot be analysed by running computer programs" (Berg, 2007, p. 2). Another demerit is that qualitative data is also more difficult to analyse, and it takes more time to organize and codify the data.

Open-ended survey items and case studies were harnessed to collect qualitative data to triangulate and support the quantitative data from the quantitative study. In this vein, Yin (1994)

contended that utilizing multiple sources of empirical data and research evidence allows researchers to address broader and deeper perspectives about the investigation at issue as well as to contribute to the triangulation of findings.

This study design, therefore, falls within the category of mixed-methods analysis research, which Tashakkori and Teddlie (1998) described under the taxonomy of 'dominant-less dominant' designs where "the quantitative and qualitative data are collected at the same time and analysed in a complementary manner" (p. 47). In this study, the dominant design is represented by the qualitative methods and content analysis and is complemented by the less dominant design that corresponds to the quantitative analysis of the quantitative survey study.

The study undertook a census of the entire population of 81 ICT organisations listed with the CITC, consistent with Creswell (2012). The results obtained from the analysis of the respondents' data may be generalised to the population of all ICT companies in Saudi Arabia with confidence (Watt & Berg, 2002).

1.9   Overview of the dissertation

This study consists of seven chapters. Chapter one gives an introduction to the study, the research problem, the research question as well as the research objectives. The importance of the study and research methodology are also explained.

Chapter two sheds light on the literature on knowledge and its significance. It gives a brief history of globalisation, and clarifies the definition of globalisation and its drivers. It discusses competitive intelligence and its tools, knowledge management and business intelligence. Finally, a brief overview of Saudi Arabia is given.

Chapter three explains the theoretical framework of the study, highlighting some IS theories. The TOE framework and KAP model for the study are explained in detail. The research model is discussed and illustrated.

Chapter four presents the research methodology, the research approach, which is a mixed method approach, and the research design. The data collection instruments and data analysis are also discussed. Lastly, the study site, target population, sample, reliability and validity, and statistical analysis tools are explained in detail.

Chapter five presents the analysis of the collected data and the findings. The statistical techniques used are discussed in detail in this chapter.

Chapter six gives a summary of the findings. The key results are categorised into seven sections addressing each of the research questions.

Chapter seven concludes the research with limitations and recommendations emanating from the study as well as recommendations for further research.

1.10 Conclusion

This chapter explained the need for a study conducted in the context of Saudi Arabia's planned economic diversification. In particular, the study's focus on knowledge management and business intelligence as catalysts or drivers of ICT business globalisation, was motivated. Moreover, the interaction between knowledge management and business intelligence as tools of competitive intelligence, was introduced. A brief introduction to the TOE and KAP theoretical frameworks underpinning the study was presented together with a description of the research methodology employed. Finally, an overview of the thesis was presented. The next chapter presents the literature review.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Business globalisation, primarily through ICTs, is rapidly changing the world. Geographically dispersed countries are virtual neighbours, which allows multinational corporations to enter new markets without much difficulty. Many industries have taken advantage of the potential of ICTs to transfer their business not only regionally but also globally. This trend is most prevalent in the ICT sector itself. This study consequently concentrates on how competitive intelligence can assist Saudi Arabian ICT companies to globalise.

This chapter highlights knowledge as an essential strategic resource for any organisation. The role of competitive intelligence tools (knowledge management and business intelligence) in globalising organisations in general, and ICT organisations in particular, is discussed. Finally, a brief overview of Saudi Arabia is presented.

2.2 Knowledge and its importance

Govender and Pottas (2007) argue that knowledge puts any organisation in a position of power if it is wisely used. Organisations should therefore pay more attention to the knowledge they already possess because it is the major driver in achieving growth and gaining competitive advantage (Lee, Wang & Lim, 2009).

The significant increase in information content in the last twenty years has largely been driven by globalisation and digitalisation. Organisations which have properly strategised and set themselves appropriate competitive goals can use this information growth to their advantage. In this context, Porter and Millar (1985) suggest three key ways in which the information revolution affects competition:

1. Competition rules are altered because industry structures change;
2. New ways to compete give companies competitive advantage;
3. New businesses can emerge from existing operations.

Knowledge is key to enhanced competitive advantage, and is a catalyst in making the right decisions and increasing production efficiency, which results in increased profits. Knowledge facilitates the sustainability of competitive advantage in an economy where there is much uncertainty (Nonaka, 2007). Knowledge can be regarded as the intellectual capital of any organisation (Zarghamifard and Behboudi, 2012), and accurate and timely knowledge are key factors for improving business performance (Cody, Kreulen, Krishna and Spangler, 2002).

Furthermore, organisations realise the importance of knowledge as an intangible asset and strategic resource (Hanandeh, Alajlouni and Alnawafleh, 2012).

Knowledge, skills, technology and globalisation are interlinked. In Freidman's book (2005) entitled *The World Is Flat*, he identifies ten factors which he believes have 'flattened' the world and made knowledge transfer faster than ever before. They are (a) 11/9/89 – the fall of the Berlin Wall, (b) 8/9/95 – Netscape going public, (c) workflow software, (d) uploading, (e) outsourcing to India, (f) offshoring, (g) supply-chaining, (h) insourcing, (i) in-forming, and (j) 'the steroids': wireless, Voice over Internet Protocol (VoIP), exchanging and transferring files via mobile devices and iPods, and the ability to work remotely. On the other hand, Hustad (2004) states that both knowledge and skills are important for organisations in the global economy especially after the transfer from an industrial economy to a knowledge economy. The importance of knowledge, skills, and their relationship to globalisation has become clear. Knowledge and expertise enable any organisation regardless of kind or size to go global, and the introduction of ICT accelerates this process across continents and markets increasing productivity and profits (Aggarwal, 1999; Hustad, 2004).

2.3 Globalisation

2.3.1 Brief history of globalisation

The term globalisation in the modern context first appeared in the literature in the late 1970s and early 1980s (Robertson & White, 2007). After the fall of the Berlin Wall in 1989, the term gained increasing prominence (Ibid). Historically, according to Brooks, Weatherston, and Wilkinson (2010), globalisation went through four stages:

- The first stage reached its peak in the 1880s as a result of the enhancement and development in transportation in all aspects, as well as the support of communication represented by the telegraph and telephone in the late 1800s which helped to transfer information and helped organisations to conduct their business more quickly.

- The second stage reached its peak in the early decades of the twentieth century. In this phase, countries under European colonial rule were considered suitable places to establish international branches and some American companies entered European markets. This stage ended in 1929 with the collapse of the economy that led to a global depression.

- The third stage started at the end of World War II when tariff obstacles were reduced and international trade increased. The end of the war revived the world economy which in turn allowed the United States to become the dominant influence in terms of globalisation.

- The fourth phase was introduced by two factors: (a) the connection of personal computers via the Internet and the advent of mobile services, and (b) the political and economic responses to these technological changes, which freed up individuals and businesses allowing them to harness their full potential.

2.3.2 Definition of Globalisation

Extant writings on globalisation were short of providing a logical and integrated definition of the concept. This indicates that any proposed definition of globalisation is challenging because each country defines it according to its own political, economic and military positions. In organisational terms, companies define globalisation according to their strategies and strengths versus the competition. In this regard, Robertson and White (2007) state that third world countries may not be able to agree to take the definitions of globalisation proposed by the developed world. On the other hand, this study adopts the closest definition to the business environment. That is, in this sense, globalisation covers economic integration among countries of the world through investment and trade as well as the production of goods and services to promote international competition (Schumpeter, 2012). In this vein, Easterly, et al (2004) defined globalisation "as the free movement of capital, labor, and goods across national borders" (p. 41).

Other condensed definitions that could be of relevance here highlights the process of expediting the integration of global markets in a fashion that leads to the creation of in an integrated, unified global market that transgresses national economic boundaries (Gupta and Choudhry, 1997; Orati and Dahiya, 2001; Passaris, 2006; Porter, 1998). This, in turn, spans a series of processes such as global production and consumption of services and products, growth and circulation of technologies, and relocation of experienced labour to ICT firms. These processes work together in a way that helps to hand over cutting-edge ICT in order to reach a fruitful integration of a multinational and multicultural human labour. Once achieved, these processes would be naturally conducive to strategically deploying the economic profits and social paybacks of diversity (Passaris, 2006; Schumpeter, 2012).

The Oxford Dictionary defines globalisation as 'the process by which businesses or other organisations develop international influence or start operating on an international scale' ('Globalisation', 2017). The Cambridge Dictionary defines globalisation as 'a situation in which available goods and services, or social and cultural influences, gradually become similar in all parts of the world' ('Globalisation', 2017). In the Cambridge definition, globalisation is

seen as an actor or an influencer that has made human activities available all over the world. Hustad (2004) defines globalisation as 'acting and living (together) over distances, across the apparently separate worlds of national states, religious, regions and continents.' According to Akpan (2003:265) it is 'the integration of national economies, politics, ideas, culture, and people into one seamless whole spread over territorial borders, ideological divides, civilizations, classes, and races.' From these definitions, it is clear that globalisation not only affects organisations, but also individuals in cultural, social, political, and other ways. To get an accurate picture of these definitions, it is necessary to understand the different kinds of globalisation.

2.3.3   The globalisation of technology

Motivators for developing and globalising ICT are varied and intertwined, constantly bringing forth changes in ICT firms worldwide (Ajobo, 2015; Lee, 2005; Pires, Stanton, and Salavrakos, 2010; Selmier, 2013). In this regard, too, Bankes and Builder (1991) presented an overview of the developments that were helpful to initiate change in the ICT sectors. Given the roles of these information and communication media in inducing political and social change, a new era has come where transactional markets rather than governments are the powers that mould socio-economic and political changes where wealth and power currently hinge upon information and human capital investment (Arias-Hernandez, 2008; McIver, 2019; Veréb & Ferreira, 2018). Consequently, by dint of the new ICT, wealth and power are currently moulding e-banking, e-shopping, electronic stock trading, online auctions, online monetary dealings and online learning and trading. Events are changing rapidly in the world of information technology.

Economic globalisation has made the world today a big market, especially after the easing of barriers and restrictions in the exchange of goods and the transfer of capital from one country to another. Today, companies may be established in any part of the world and at the same time manage production in another part of the world. With technology, companies can run their businesses, connect their branches anywhere in the world with their parent enterprises, and make use of resources available to them in every country where they have a foothold. The field of technology is one of the most developed and developing industrial areas, and globalisation has played a major role in its development.

In the new global economic conditions, companies must constantly build and improve their competitive advantage rather than relying on legacy or comparative advantages (Domazet, 2007; Fawzy, 2002; Porter, 2008; Wignaraja, 2004). In this regard, Ghemawat (2017)

contended that companies should revaluate and reinstall structural changes in their organisations to improve their performance to adapt to their global strategies through creating region-based structures. Then they can take advantage of similar conditions in the neighbouring countries and create front-back structures to focus on localising their services and products from a global eye. The improvement of performance as such is only feasible by supporting integration in research and development, production, support functions, technology adoption and acceptance, and developing up-to-date IT platforms. Furthermore, Ghemawat (2017) believes that …

> "companies should renew their commitment to tools that strengthen
> connective tissue throughout the corporation: a strong culture, internal
> diversity and mobility, and so forth" (p. 8).

On the other hand, in the context of the globalisation of technology, Parida and Wincent (2019) call on companies to conduct more analytical and empirical research so that they can know new perceptions and trends of digitalisation and circular economics to invent and develop new types of competitive advantages. This is essential, given that the competitive advantages are temporary and unsustainable in the long run and given the insights from technological learning and economic transformation in developing countries that underscore the explanatory role of alternating state- and market-led industrial policy approaches and their associated cumulative processes of "exploration" and "exploitation" (Fuentes & Pipkin, 2019, p. 113). For example, a company fails to maintain its competitive advantage when it increases by 20%, while the competition increases by 30%, and when a company increases its competitiveness, that will be at the expense of its long-term stability (Scott & Quaglia, 2019, p. 198). The reason could be that creating and sustaining competitive advantage requires ICT firms' managers to study their organisations' internal strengths and weaknesses, opportunities and threats through SWOT analyses, thereby boosting up strengths and mitigating weaknesses to future procedures (Rothaermel, 2016, p. 206).

Moreover, ICT firms do not gain excessive competitive advantage by developing a single factor, but by continuously improving and combining different competitive factors over time, including organisational, environmental, technological and motivational-attitudinal factors (Kotler, 2004). Competitive advantage in ICT firms necessitates the creation of optimal strategic fit between an ICT firm's internal strengths and weaknesses and external opportunities and threats, now that an ICT firm's profitability is assessed by both the firm's organisational

structure and internal conditions as well as by the industry's effects (Rothaermel, 2016, p. 207) as suggested in the Figure 2.1 below:
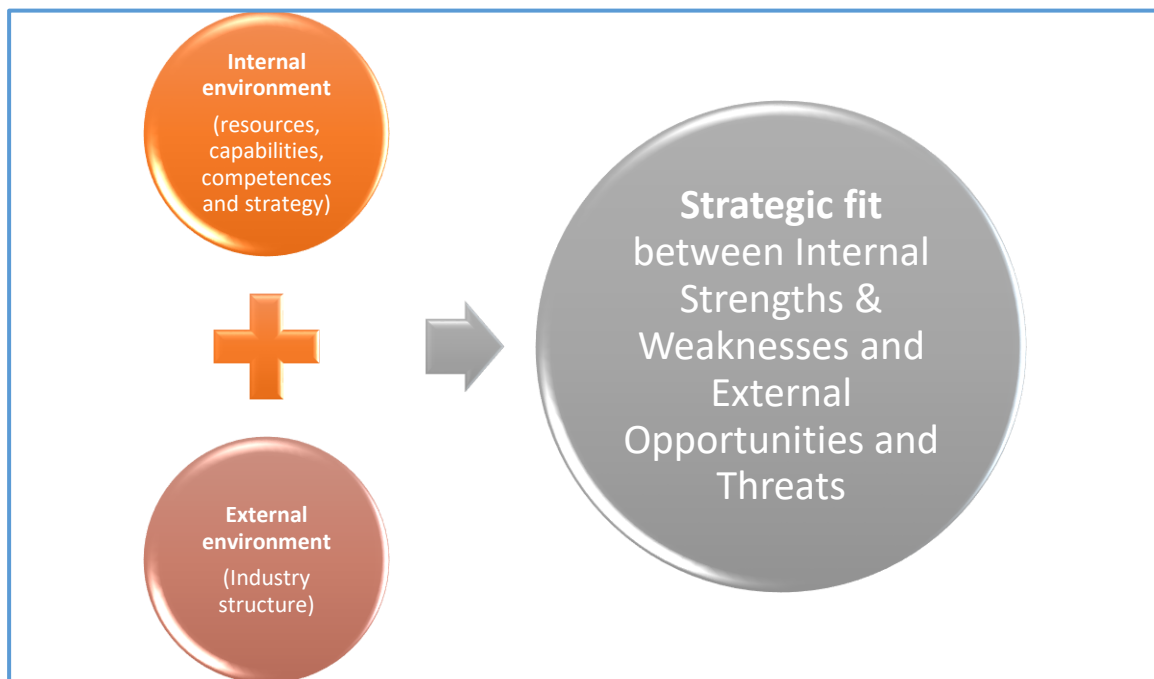
Figure 2- 1: The interactional relationship between internal environment, external environment and competitive advantage in ICT firms. (Adapted from Rothaermel, 2016)

Therefore, it is imperative for an ICT business to base its competitive edge on quality, flexibility, design, reliability and Internet connectivity and networking in order to improve its resources, IT capabilities, workers' competencies and strategic development of the firm. Furthermore, retaining the extant levels of competitiveness and improving its competitiveness entails investment in the intangible assets such as research and development, technology, management, entrepreneurial skills and employee skills, business organisation, market development, and information technology and communication (Fawzy, 2002). In other words, internal factors such as resources, capabilities and competencies and external factors such as the conditions and structure of the ICT industry worldwide work together to influence the status of the business in local firms. As Rothaermel (2016) indicated, "both external and internal industry factors can alter industry structures." (p. 218)

An ICT company must be consistent with these trends in order to achieve operational efficiency and improve its competitiveness. Otherwise, this would lead to a competitive disadvantage, and if it persists at that level, it would not be competitive (Domazet, 2007), which would jeopardize its survival on the market.

As a result, globalisation brings with it new challenges and opportunities for businesses, while at the same time encouraging them to improve their competitiveness by gaining access to many of the factors necessary to create and strengthen competitiveness.

By the same token, Porter (2008) aptly observed that ICT firms need to have a wide and open access to opportunities to acquire raw materials, capital and knowledge from all over the world. As well, they need to develop and support the fields of activity abroad, and to employ cheaper labour and cheaper capital, which contributes to creating a competitive advantage for these firms. In addition, globalisation facilitates access to new technologies, new skills, new markets and new sources of funding and, more than ever, offers better opportunities for future growth latent in competitive advantage (Al-Roubaie & Alvi, 2014; Al-Roubaie & Al-Ameen, 2015; Beliz, Basco, and de Azevedo, 2019; Parilla, 2017; Rothaermel, 2016; Wignaraja, 2004). This is because "the world is moving fast and long-term challenges globalisation, pressure on resources, ageing - intensify." (European Commission, 2010, p. 159; Wignaraja, 2004; Al-Roubaie & Alvi, 2014; AL-Obaidy, 2012; Annunziata & Bourgeois, 2018). Therefore, Al-Obaidy (2012) observed that "Recent trends in development studies have focused on building knowledge capacity to foster economic growth and promote development" (p.57). Thus, investment in knowledge generation and spreading assists developing countries to compete in the global markets by producing high-tech products and manufactured goods when these firms functionally use competitive intelligence through business intelligence and knowledge management.

Their positive effects on the economy are the reason why an increasing number of companies (not only large but also small and medium-sized enterprises) are seizing the opportunities of globalisation and striving to be present internationally, even if they face urgent challenges (Al-Roubaie and Almubarak, 2017; Mukherjee, 2018; Parilla, 2017; Sarhan, Xia, Fawzia, Karim, & Olanipekun, 2018). According to Al-Roubaie and Almubarak (2017),

> SMEs could play a leading role in knowledge localisation and deepening integration in the global economy. In the knowledge economy, the role of the public sector is to facilitate economic development by providing the necessary infrastructure to increase market flexibility and maintain confidence in the economy. In view of the recent socio-economic challenges facing the Middle East, restoring economic confidence in the economies of the region is essential for strengthening market flexibility and enhancing productivity. (p.2)

It is clear, therefore, that globalisation increases the availability of resources for business success and growth (Gabel, 2014; Mičić, Totić and Halilagić, 2018; Thoumrungroje & Tansuhaj, 2007) and offers businesses worldwide greater business opportunities (Aggarwal, 2008; Gabel, 2014; Kerr, 2016; Zakaria, Fernandez and Schneper, 2017). Globalisation experiences, according to prior research findings, positively moderate the relationship between internal factors in ICT firms such as environmental munificence and the cultural and economic backdrops as well as the organisational resources that work to enhance growth in ICT companies in their proximate and distant environments, that is locally and globally (Zakaria, et al., 2017, p. 198). This is particularly important for companies in developing and transition countries that operate in a weak and undeveloped economic environment that does not provide many of the key factors in their competitiveness (Gupta, 2017; Natchia, 2009; Lan, 2003; Lan, 2003; Zakaria, et al., 2017). One of these competitive advantage factors is technology. In this regard, Rothaermel (2016) adeptly noted:

> Today, technological innovation is in many industries the most important driver of competitive advantage. Reasons for the increasing importance of innovation in many industries include deregulation, globalization, rapid technological progress (e.g., advances in IT, biotechnology, and nanotechnology), and accelerating diffusion rates for technology-based products. These factors combine to increase the competitive intensity of almost all industries. Even in industries that are thought of as mundane, like the steel industry, technology has become one of the key differentiating factors in determining firm performance. In general, traditional industries, once considered low tech, are increasingly becoming technology intensive industries. (p. 222)

There is no doubt that the aforesaid globalisation processes also influence ICT companies in Saudi Arabia as elsewhere in the world, in most cases, to the best advantage of these companies (e.g. Lan, 2003; Kerr, 2016; Natchia, 2009; Stojanov and Medić, 2001, Domazet, 2006, Mahmutović & Kulović, 2010, Hadžiahmetović, 2011). Globalisation offers Saudi ICT companies many opportunities to improve their competitiveness, such as acquiring the resources, knowledge, technologies, raw materials and funds needed, networking with foreign partners, promoting the international market etc. that in particular will touch on the growth of local businesses through the internationalization of these firms' activities.

However, if Saudi ICT companies actually seek to be competitive and play a major role in the international ICT market, these firms must urgently adapt to global challenges and accept the

principles of globalisation and business practices. Global enterprises exist in telecommunications firms in particular (Mahmutović and Kulović, 2010) as these companies are the first to exploit the opportunities offered by globalisation. Despite numerous books dealing with the subject of globalisation, its impact and the resulting business opportunities for business, empirical research on the subject of this paper is patently scarce (Aggarwal, 2008; Kerr, 2016). In fact, empirical studies do not provide complete support for explaining many aspects of globalisation (Ghemawat, 2017). In this context, research in particular has little interest in how companies respond to the opportunities offered by globalisation and how and to what extent they use these opportunities to do business in the international market and increase their competitiveness.

Archibugi and Iammarino (2002) indicate that new technology plays a major role in making all forms of globalisation possible. Without airplanes, computers, satellite communications and television, it will not be possible to increase the exchange and transfer of information from one place to another. Such technologies have led to the rapid spread of knowledge transfer, which has made the modern world distinct from the past.

Stephens (1999) points out that multinational companies seeking to take advantage of an investment in knowledge and technology on a global basis should restructure their organisations, not only starting with staff members, but also their information systems and technology structures, so that they can attain and maintain a competitive advantage in global markets.

Akpan (2003) argues that there is a strong relationship between ICTs and globalisation primarily due to efficiency, effectiveness, and lower communication costs. Globalisation catalyses IT through intensified competition and accelerating the diffusion of technology supported by Foreign Direct Investment (FDI).

Mann (2003) identifies the benefits of globalising software and IT services:
- It will lead to reducing the price of components.
- It means that IT and tasks can be done overseas.
- It will enhance IT use and transfers to new sectors.

Outsourcing and offshoring are also major benefits of globalisation. For example, India is a country which has pioneered outsourcing which they learned from EDS, an American company which offered IT services in 1962, and globalised services such as financial accounting in 1976.

The success of EDS led Hewlett-Packard (HP) to purchase EDS in 2008, and in 2009 it changed its name to HP Enterprise Services. Indian companies recognised the opportunity to adopt new technologies, which could turn India into a major business partner of the Western nations (Ebert, 2011).

Developments in IT increased the high demand for India's service sector, and encouraged local and foreign organisations to outsource their functions to Indian companies. Recently, Indian companies have also started to provide software development, market research, and medical diagnostics. Other businesses in finance and telecommunications sectors outsource their services such as call centres and data processing to compete globally (Al-Roubaie & Alvi, 2014; First Research Industry Profiles, 2019). According to The First Research Industry Profiles Report (2019), "as much of the developed world is experiencing market saturation, growth in mobile subscriptions is expected to come mainly from India, China, Pakistan, Indonesia, and Bangladesh, as well as Sub-Saharan Africa and Latin America." (p.1). Retrospectively, Indian companies such as Wipro and Infosys have globalised and opened offices in the US as result of the Indian government reducing restrictions on capital exit to foreign countries, and at the same time accelerating the acquisitions of foreign companies. These efforts have enabled Indian organisations to acquire high-value US companies. An example of this is the purchase by VSNL (which became Tata Communications Limited) of Teleglobe International Holdings for more than $250 million in 2005 (Alejandro, et al., 2010).

In 2007, figures showed the total world spending on IT was over $1.2 trillion, and in 2011, it reached $1.5 trillion. US business represented 38% of the world total, which gives it the potential to attract many organisations and countries willing to provide IT offshoring services.. Meanwhile, according to Gartner (2017), the worldwide IT spending reached about $3.4 trillion in 2016 and $3.5 trillion in 2017 (Gartner, 2017). Statistics on Information technology (IT) worldwide spending forecast from 2005 to 2020 show that spending on IT is on the increase as is shown in figure 2-2 below (Statistica, 2019).
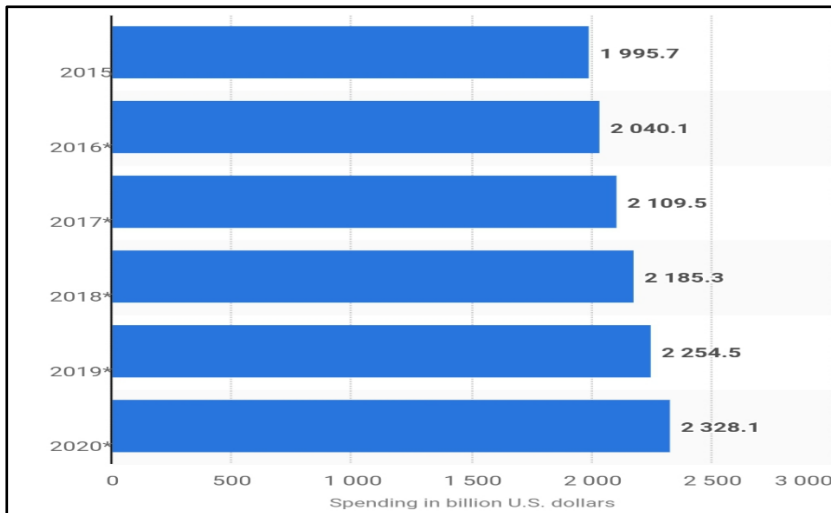
Figure 2- 2: Information technology (IT) worldwide spending forecast from 2005 to 2019 (in billion U.S. dollars) (Statistica, 2019).

Saudi Arabia is the largest IT market in the Middle East, being a maturing market with a growing demand for more sophisticated IT services, including outsourcing, cloud computing and smart services (Saudi Arabia Information Technology Report - Q2 2017, p. 9). The SA IT Report (2017) further asserts that supportive demographics, with the population aged 15-64 forecast to increase at a CAGR of 1.8% over 2018-2021. Figure 2-3 below shows the status of IT in SA:
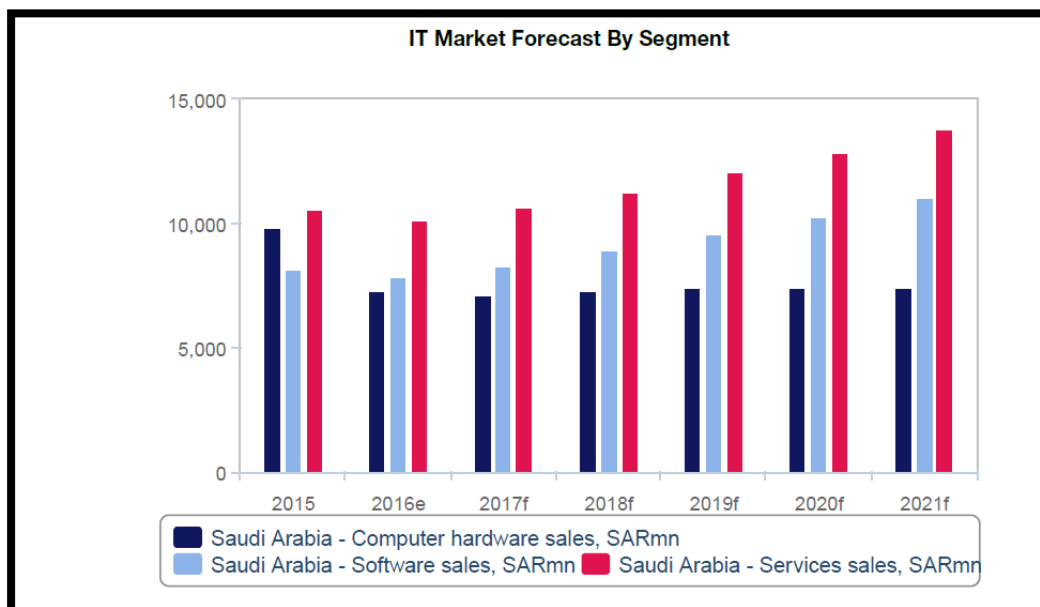
Figure 2- 3: Saudi Arabia Information Technology Report Q2 2017 with courtesy by BMI Country Industry Reports (2017)

Gabrielsson and Gabrielsson (2004) identify three reasons for globalising technology in general and ICT companies in particular which are the following:

1. The similarity of market needs all over the world as well as the presence of regional customers.
2. Great competition between ICT companies because their businesses and activities are conducted on a global scale.
3. Technical standardisation in ICT, which accelerates globalisation in the ICT industry.

Yip (1989) indicates that there are three phases that companies should follow to globalise and become integrated into worldwide markets, which are:

a. Developing a strategy in the company's country.
b. Internationalising the strategy by expanding the company's business and activities.
c. Globalising the strategy, which means integrating and expanding the international strategy worldwide.

Gabrielsson and Gabrielsson (2004:662) state that 'globalising international' is a new term to describe a certain approach of globalisation. They define 'globalising international' as 'a company that has first internationalized its businesses within the home continent after the domestic period and only then started to globalize outside its home continent.' Scholars give the example of widely known ICT companies that have used and applied this term in their businesses, such as Nokia, a Finnish company, and Ericsson, Swedish company. Both companies started off by developing international business, and later concentrated on telecommunication in the 1990s. The Finnish ICT company went through two stages; the first one was when they internationalised their businesses, and then they globalized their companies. During the first stage, the company concentrated on restructuring their businesses, and in the second stage, they started to implement business strategies to globalise. The process of internationalisation starts when companies proceed to become involved in global markets.

There is no doubt that ICT is the major driver of globalisation, which leads companies, regardless of their activities and size, to expand their business beyond their countries of origin. According to Borghoff many factors, such as the advent of the Internet and the rapid evolution of ICT, enable companies to go global. Furthermore, the support of technology in general and ICT in particular, has facilitated not only companies but also countries to transfer to a knowledge economy (Borghoff, 2011).

Managing and developing knowledge and knowledge transfer strategies in alignment with global business strategies drives the development of information technology capabilities in ICT firms (Akpan, 2003; Ebert, 2011; King, 2006; Stephens, 1999; Yip, 1989). For this to take

place, ICT companies need to enact, adopt, accept or develop their own global visions in the light of available resources or from a resource-based perspective. Having enacted the appropriate vision, these companies need to develop globally appropriate strategies to put into effect the enacted or adopted global vision. ICT companies, having already enacted a global vision and suggested their executive strategies, should work harder on investing in their sophisticated IT capabilities by careful planning of available resources, including financial capital and human capital. Given an effective investment in IT capabilities, ICT companies should make use of their human resources and the ability to exchange information globally to motivate and enhance their global IT capabilities in a way that is consistent with the enacted global vision and resource exchange strategies.

An essential factor is that an increased flow of qualified personnel across multi-national and global ICT firms can prompt these firms to develop their own global visions. It can also induce these companies to adopt effective strategies for globalisation and sharing IT capabilities, transfer of knowledge, expertise, and efficient performance in the production, distribution and recycling of IT products and services. For this to happen, standardisation of data about IT people and capabilities need to be meted out across ICT firms worldwide (Gibson, 2018; King, 2006; Palovic, 2017; Skaria, 2018).

2.3.4   Internationalisation vis-à-vis Globalisation

Malecki and Veldhoen (1993) point out that small organisations are exposed to global problems due to lack of expertise and skills at various levels, such as management, including employees, supervision, and production. This is consistent with Kaufmann's argument (1995) that SMEs do not have enough resources, capabilities and market power over multinationals, so they cannot internationalize themselves. Therefore, larger companies will have the ability to increase their resources and face the risk as well as developing their bargaining power compared to those small businesses when these companies develop their entrepreneurial characteristics, competitive advantages, resource management, customer relationship management, quality management, and marketing competencies (Al-Roubaie, et al., 2017; Blake, 2018; Ratny & Tian, 2019; Erramilli, 1990; Masse, Ochoa-Zezzatti, García, Mejía, and Gonzalez, 2019).

In this regard, the resource theory has proposed how small and medium enterprises would have a distinct advantage in international markets as well as different classifications of resources. On the other hand, Amit and Schoemaker (1993) classify resources into six categories: (1) financial, covering size and type of capital; (2) physical, that includes location, transport and

access to raw materials; (3) human resources, that include employees and management; (4) technology which covers products and processes; (5) reputation which includes what has to do with image, customers' loyalty and trust in companies; (6) finally, organisational resources which are related to management systems that are applied and practiced in the organisation.

For the purposes of this study, the researcher has classified the means of internationalization as tangible and intangible. Tangible or concrete internationalisation means that ICT firms should level up to the expectations of global markets in terms of: (1) industrial quality (Holmlund & Kock, 1998); (2) higher involvement in research and development (R&D); (3) sales ratio (Burgel & Murray, 1998); (4) higher ratio of employees devoting at least 50% of their time to development of new products, finance and financial services, capital resources (Holmlund & Kock, 1998); (5) reception of business supplements (Westhead et al., 2001); (6) having access to venture capital (Burgel & Murray 1998); and (7) material resources such as machinery, buildings, equipment, raw materials and transportation.

On the other hand, intangible resources include: (1) reputation (image, brand, loyalty, trust, goodwill) (Zahra et al., 2000); (2) networks with wide area networks (Oviatt & McDougall, 1994); (3) technology networks (Zahra et al., 2000); and (4) relationships with research institutes, universities and various expert organisations and social networks; (5) software sources including knowledge of existing technology, production processes, machinery, marketing, buyers and suppliers (Holmlund & Kock 1998) and staff.

Given this, internationalization could refer to a firm's capabilities to export its products and services as by trading in the global market, but globalisation could be the interaction of local ICT firms to respond to the global market indices and standards while they develop to get greater access to a broader audience of customers, especially when these companies utilise effective marketing strategies (Hicks, 2018). In other words, globalisation refers to the ongoing endeavours and interactions of the public and private sectors to the advantage of integrating economic, organisational and environmental variables in an ICT firm through enabling and facilitating cross-border movements and transfers of people, capital, data, goods and services, given that capitalism is the spurring "engine of globalisation by the way of firms pursuing global markets as a means to increase their sales and higher production runs to supply global markets bringing significant economies of scale and thereby raising profit margins" (Zekos, 2003, p. 5). Globalisation is, in this sense, the means of blooming the digital economy through the work of multinational enterprises (MNEs), cyberspace and e-commerce. Globalisation and

e-commerce as a tool entails reducing or eliminating visitor visa requirements, tariff and non-tariff barriers, liberalizing investment regulations, creating uniform intellectual property regimes and improving connectivity through better transport and digital infrastructure (Alvarez, 2016; Lundan, 2017). Globalisation is necessary to ensure economic growth and to face the growing challenges and threats that humanity faces, such as air and ocean pollution (Kovalcíková, 2014; Skubiak, 2012). For example, microplastics and the threat of global climate change. Globalisation has allowed rapid economic development and wealth creation, but has also created significant income inequality. Governments must therefore not only support globalisation, but also the equitable distribution of wealth. In this regard, Kovalcíková (2014) observed that:

> Globalisation is a product of the people and an informed and pragmatic approach towards the threats is crucial. If prevention and self-responsibility prevail, people might start looking to the future more positively, with broader hope and enthusiasm, through a shared lens of cooperation to improve living standards globally.

On the other side, internationalization can be interpreted as an attempt by companies to do business in one or more foreign countries (Sargent, 2017). This may include activities such as sourcing, producing and selling materials, components, goods and services. Companies are becoming internationalized by entering into dependency agreements with companies abroad, by creating joint ventures with other foreign strategic or financial investors or with local partners to carry out joint activities in one or more countries, or by creating their own subsidiaries, such as purchasing or sales offices, or operational sites through foreign direct investment through pursuing greater diversification of export agenda and developing new productive partnerships beyond traditional sectors and to increase the competitiveness of firms. (Drauz, 2013; Cakmak, 2018; Xu, 2016).

2.3.5 Outsourcing

A key aspect of globalisation, which drives growth in the world economy, is outsourcing, which Ritzer and Lair (2007) define as organisations purchasing non-core goods or services from outside suppliers. Host and supplier organisations and countries benefit from these outsourcing relationships, as evidenced by the surge in the Indian IT sector which has exported in excess of US$17 billion in software and back office services since 2005 (Ritzer & Lair, 2007).

In this context, Oshri, Kotlarsky, and Willcocks (2015) argue that the revenues of Information Technology Outsourcing (ITO) were more than US$ 250 billion, whereas Business Process

Outsourcing (BPO) exceeded US$ 140 billion. Furthermore, these authors state that Brazil, Russia, India, and China are the main countries to offer offshore IT and back-office services. In terms of India, in 2008 the country exported US$ 40 billion of such services which accounted for 65% of the ITO and 43% of the BPO market, while China exported about US$ 5 billion, Russia managed US$ 3.65 billion and only US$ 800 million for Brazil. Moreover, Oshri, Kotlarsky, and Willcocks (2015) believed that India will be the powerhouse of both ITO and BPO in the next five years and will be able to preserve its share of 65% of the global market.

In a similar vein, Abu-Musa (2011) conducted an empirical study to examine the possible benefits and risks of IS/IT outsourcing in Saudi organisations. The organisations were selected from the Saudi Stock Exchange, and the Saudi Chambers of Commerce Index. The organisations represent different sectors among which are the retail sector, banks, the health care sector, government units, and service industries. The findings show that most of the organisations either partially or completely outsourced IS/IT activities, and that they priced these activities on a cost basis or at fixed rates. The majority of the organisations outsourced their hardware and software development, and trained their employees regionally for what was specifically needed in the Saudi business environment.

In this context, too, Sohail (2012) conducted an empirical study that aimed to examine the usage and factors, which drive IT outsourcing in Saudi Arabia. The study targeted all companies in Saudi Arabia, especially ones with relevant activities in the IT field. The target respondents were managers involved in decision-making regarding IT functions. Acknowledging the challenges faced by researchers in Saudi Arabia when collecting primary data, including but not limited to the closed nature of Saudi society and companies, and a general unwillingness to participate in surveys the author reported that 34% of the companies outsourced IT services for a period of one to three years, 32% for more than five years, and 12% for less than a year. The results confirm that outsourcing IT services cannot be considered a new phenomenon. The results also showed that large companies with more than 5,000 employees are the most outsourced firms. As for the level of commitment to IT outsourcing, the results showed that half of the respondents' companies had limited commitment, while 26% were moderately committed to IT outsourcing. Overall, the results indicate that firms in Saudi Arabia have limited commitment to IT outsourcing. Finally, Sohail (2011) concluded that organisations can gain many benefits from IT outsourcing, the major one of which is sustaining competitive advantage.

On the other hand, Sohail (2012) conducted another study designed to introspect employees' perceptions of IT outsourcing and its impact on their organisational performance in Saudi Arabia. The findings revealed that employees considered IT outsourcing largely as a positive development, and pointed out that they generally had favourable attitudes towards job security as a consequence of IT outsourcing.

Although outsourcing, particularly in India, has facilitated the work of many international organisations including some from Saudi Arabia, in particular with respect to information technology and reduced operational costs, it can never be completely relied upon. As a result, some reports have predicted the death of outsourcing. In *The Economist* magazine (January**,** 2013), a Florida-based consulting firm for outsourcing called Hackett reported on the expectation that the migration of services to India and other offshore sites such as China and Brazil would slow down after 2014 and be completely halted by the year 2022. This prediction is based on two reasons. The first is that the most significant offshore jobs are no longer available; there is an expectation that US and European banks as well as financial services companies have already offshored 80% of their work to India and other locations. The other reason is that many of the jobs that may have been offshored by Western companies in the coming years will have been completely eliminated as a result of improvements in productivity.

From the point of view of the researcher, the predictions referred to in the *Economist* article may be ratified under the current US government, especially after proclamations made by US President Donald Trump during his electoral campaign and subsequent statements that he would seek the return of factories and US companies from abroad to America. However, this is a small possibility and would be difficult to apply on the ground, especially since such a trend will have a negative effect on American companies, especially those linked to India such as major US international companies like Microsoft and IBM.

In this regard, Mann (2003) states that the role of software globalisation and IT services and the widespread dissemination of IT in all parts of the American economy will lead to a second wave of productivity growth. Mann (2003) argues that human capital in the United States is a fundamental factor in this wave. She comments on the projections, which indicate that many jobs will be lost abroad, and argues that these projections have ignored the fact that the globalisation of software and IT services and their deployment in new sectors and companies, will contribute to increased demand for jobs in the United States, especially skilled IT workers. In addition, she attributes the reason for the economic expansion in the United States during the

nineties to firstly, the effective use of IT through investment in the IT sector, and secondly, the globalisation of IT devices. In conclusion, the globalisation of software and services, the promotion of the use of IT, the transformation of activities into new sectors and the creation of jobs are in fact interdependent. The US economy may however be at risk in the event of breaking international linkages either by reducing globalisation of software and services, or by restricting investment, or because of a lack of skilled staff.

In this context, a study by Amiti and Wei (2009) are consistent with results of Mann (2003), in which they found services offshoring had an impact on the increase in productivity and labour productivity in the United States between 1992 and 2000. Moreover, a study by Winkler (2010) on the impact of services offshoring on productivity and employment in Germany during the period 1995 to 2006 show positive influence on labour productivity which increased from 9.5% to 20.1%. At the same time, services offshoring led to reduction of employment from -0.8% to -2.6% during that period in the German manufacturing sectors.

2.3.6 Offshoring

Offshoring is defined as the process of migrating business processes from (expensive) developed economies to countries like India, China and elsewhere for lower costs but similar quality (Solli-Sæther and Gottschalk, 2010:11).

An example of an SAICT company which offshores its business and activities is the National Technology Group (NTG), located in Riyadh, Saudi Arabia, which was founded in 1984. Nowadays, it has 20 subsidiaries in the Gulf Cooperation Council (GCC), Egypt, Pakistan, Sri Lanka, Turkey, India, Morocco, and the US. It has more than 3,500 employees and 2 billion SR in revenue (NTG, 2017). As a result of its achievements, the company was selected by the World Economic Forum (WEF) to be among the list of World Global Growth Companies in 2014 (Arab News, 2014). It provides IT related financial and banking services, business-to-business services, call centres, KM and a stock market portal (Bloomberg.com, 2017).

Also, there is what is called offshore outsourcing. Ritzer and Dean (2015) define offshore outsourcing as a company transferring its activities or work to other companies in other countries. Many Middle Eastern ICT companies have sought to globalise their activities and services beyond the borders of their home countries. The most prominent of these companies are discussed below.

2.3.6.1 Saudi Telecom Company – Saudi Arabia

STC, based in Riyadh, is one of the largest telecommunications companies not only in the Middle East but also in Africa, based on the company's market capitalisation of more than US $13 billion in 2016. Since its beginning in 1998, the company has grown to 100 million customers worldwide. The company is customer-focused and strives to be at the forefront of the knowledge economy. It has a fibre optic network of 137,000 km across Asia, the Middle East, and Europe. In addition, the company's activities and services cover 99% of Saudi Arabia. The STC company also wholly owns a telecom operator in Bahrain, and is responsible for the management of Viva Kuwait. It also holds 35% shares in Oger Telecom, a UAE telecom company, as well as holding shares in telecom companies in countries as diverse as Turkey, South Africa, Malaysia, and India (Saudi Telecom Company, 2017).

2.3.6.2 Mobily – UAE

The Etisalat Group is based in Abu Dhabi and was established on October 5, 1976 as the UAE's first telecommunications service provider. It now has more than 160 million subscribers in more than 16 countries across the Middle East, Africa, and Asia. Currently, the group's capital is more than US $40 billion, and it is one of the most profitable telecommunications companies in the world. The company was the first in the region to experience and deliver fifth-generation services in the UAE, and this distinction of using new and diverse technologies has made the company achieve a significant share of the market. With the expansion of the company's operations in Africa, Asia and the Middle East, particularly Saudi Arabia, Egypt and Nigeria, it has made it possible for millions of subscribers to take advantage of broadband services and access to the Internet. The company also has subsidiaries in India, Bahrain, and Saudi Arabia (Etisalat, 2017).

2.3.7 The impact of investment in ICT

With the rapid development of ICT as a result of globalisation, many countries in the world, especially third world countries, are seeking to improve their ICT infrastructure by boosting up the quality of their services, ultimately to have a competitive advantage that will stimulate economic growth (Khalili, Lau, & Cheong, 2014). In this way, researchers argue that many organisations, both small and large, as well as multinational corporations, are seeking to invest in ICT.

In a similar tone, Samimi, Ledary, and Samimi (2015) noted that in the nineties of the 20th century, an increased investment in ICT has consistently led to a robust positive relationship between economic growth and information technology. Therefore, not only did countries but also organisations of all sizes resort to investing in the various fields of ICT. Some governments, especially in the African continent, have helped companies, small and medium-sized enterprises, to invest in ICT to increase employment rates and income, due to the lack of sufficient foreign investment by large and multinational companies. This noticed lack in investment erupted in the first decade of the 21st century due to a global financial crisis that has destabilised and partially curtailed ICT development endeavours worldwide (International Telecommunication Union, 2009; Noor, Kamardin & Ahmi, 2016).

There are several additional reasons that indicate why investment in ICT is significant. Prior research provided insights into the functional support ICT investments bring forth into the industry of telecommunication technologies, being developed not only as a strategic development tool but also to optimise business intelligence and competitive advantage of ICT firms (Kvochko, 2013; Noor, et al., 2016; Willcocks and Lester, 1991) through brushing up on their business processes and augmenting organisational performance and hence business profitability in these firms (Gunasekaran, Love, Rahimi & Miele, 2001). Previous studies confirmed several facts about investment in ICT, primarily amongst which is that these investments cut down on expenses and costs in the industry as well as raise up and enhance profitability and productivity of ICT companies through bettering organisational performance (Arabyat, 2014; Makinde, 2014; Zhang, Huang and Xu, 2012; Leckson-Leckey, Osei & Harvey, 2011; Noor, et al., 2016), increased productivity of employees (Liang, You & Liu, 2010), efficiency as in costs, time and effort (Safari and Zhen, 2014; Romdhane, 2013) and diffusion of innovations (Spyros and Euripidis, 2014). In addition, some developing countries have achieved high productivity rates in recent decades as a result of investment in ICTs (Dedrick, Kraemer, & Shih, 2013).

Furthermore, the study of Tarutė and Gatautis (2014) showed the impact of ICT investment on organisations. They classified the effect of ICT investment into four groups namely performance, growth, expansion, and new products. Each group consists of several dimensions as illustrated in the Figure (2.4) below.
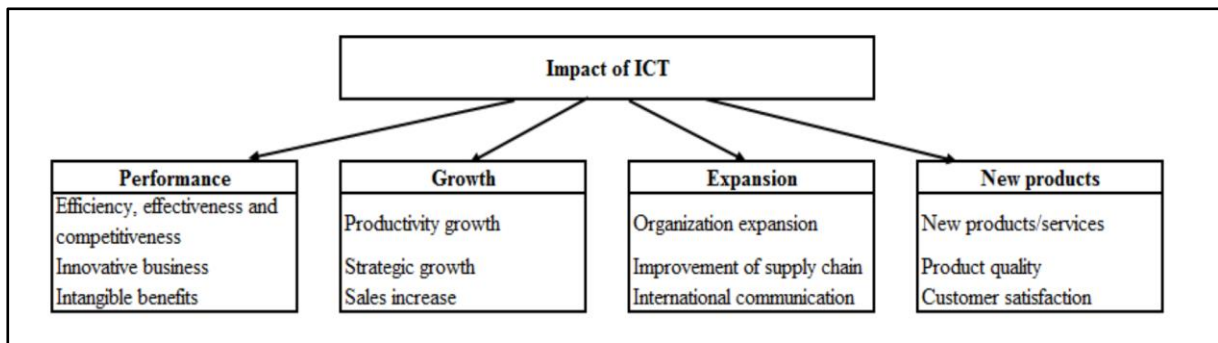
Figure 2- 4: The effect of ICT investment, (Tarutė & Gatautis, 2014:p.1221)

Therefore, it is noted that investment in ICT has an impact on improving the performance of the organisation as well as further expansion and growth once the organisation has created the necessary ICT infrastructure to be able to compete.

2.3.8 Drivers of Globalisation

Different stimuli cause organisations to operate their businesses and activities globally. Yip, Loewe and Yoshino (1988) identify external and internal drivers of industry potential that facilitate global strategies for globalisation. The external drivers are (a) the market, (b) the economy, (c) the environment, and (d) competitive factors. Figure 2-5 illustrates these external drivers. The internal factors are (a) structure, (b) management processes, (c) people, and (d) culture. Figure 2-6 illustrates these internal factors.
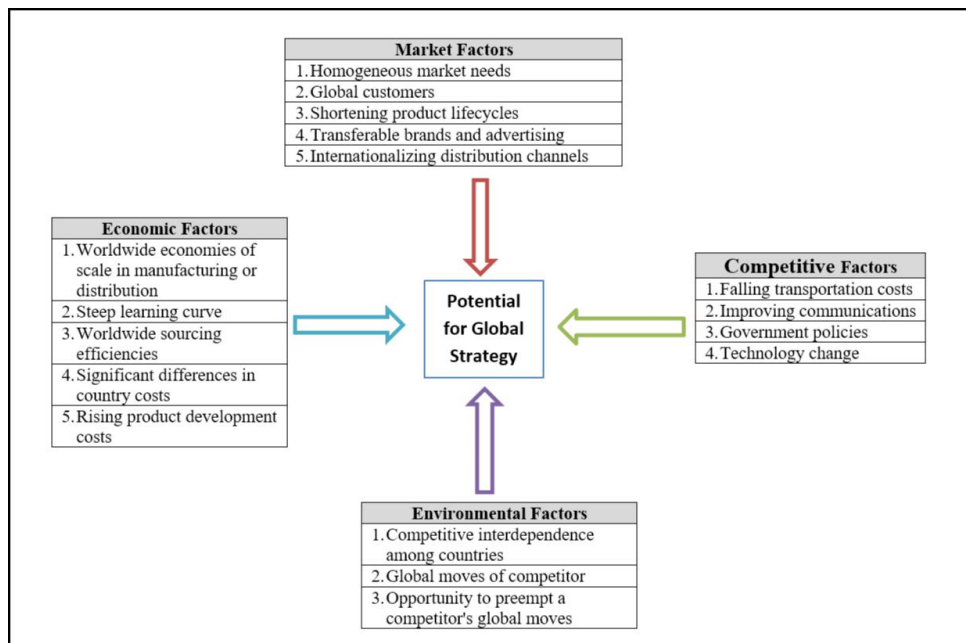
Figure 2- 5: External Drivers of Industry Potential for Globalisation (Yip, Loewe, & Yoshino, 1988:p.40)

Structure
1. Centralization of global authority
2. Absence of domestic/international split

Managment Processes
1. Cross-country coordination
2. Global planning
3. Global budgeting
4. Global performance review and compensation
5. International groups and forums

Ability to Develop and Implement Global Strategy

People
1. Use of foreign nationals
2. Multicountry careers
3. Frequent travel
4. Actions and statements of leaders

Culture
1. Global (vs. national) identity
2. Worldwide (vs. domestic) commitment to employment
3. Interdependence (vs. autonomy) of businesses

Figure 2- 6: Internal Factors that Facilitate a Global Strategy (Yip, Loewe, & Yoshino, 1988:41)

2.3.9   Why do companies globalise?

Moving to the global market and competing globally is itself an art because it is part of a strategy. By strategy, we mean future planning and looking ahead. There are many kinds of business strategies at the individual level, at the corporate level as well as at the state level. However, what is of concern here are organisational strategies, especially market expansion strategies, not only locally or regionally, but also globally. Therefore, a so-called global strategy emerged.

The word strategy originates from the ancient Greek word *strategos*, which means 'art of the general'. Many researchers believe the word has military roots dating back to about 500 BC, citing actions and strategic principles, which refer to the Chinese military leader Sun Tzu. Thereafter, it seems that strategic military principles have been applied to business competition, leading to the emergence of so-called strategic management since the 1960s (Peng, 2009:8).

Without addressing the details of this debate, the researcher believes that defining the term 'strategy' will remain a subject of discussion, and there will be continued debates in the future as a result of globalisation and rapid development in information technology. Three main

schools of thought have emerged, namely plan, action, and integration. Each of these schools tries to define strategy from its own perspective as indicated below.

- Strategy as a plan: is mainly strict formal planning, as in the military.
- Strategy as action: is fundamentally reflected in the corporate business style.
- Strategy as integration: is not just about a plan or action, but it is important that the strategy integrates all the elements of each school of thought.

In light of this, several definitions have emerged according to the three schools' respective viewpoints. For the purposes of this study, the definitions closest to the business environment and organisation will be used, as follows:

Strategy as plan: "A set of concrete plans to help the organisation accomplish its goals".

Strategy as action: "The creation of a unique and valuable position, involving a different set of activities... making trade-offs in competing . . . creating fit among a company's activities".

Strategy as integration: "The analyses, decisions, and actions an organisation undertakes in order to create and sustain competitive advantages" (Peng, 2009:9).

As can be seen from these definitions, 'strategy' from an organisation's perspective means comprehensive and broad planning that takes all aspects of global changes into account so that all the company's objectives, or at least some of them, are achieved to make the organisation competitive. In this vein, Peng (2009:10) defines strategy as "a firm's theory about how to compete successfully".

Moreover, a global company or a multinational corporation (MNC) is an organisation that operates all of its activities around the world according to a global strategy in order to serve its domestic and international clients (O'Brien, 2002). Marquardt and Snyder (1997:105) define global organisations as "organisations that operate as if the entire world were a single entity, and are integrated so that their activities capture linkages among countries." It can be deduced from these definitions that organisations implement and practise global strategies which treat the world as a single entity. Hout, Porter and Rudden (1982) state that organisations which want to make their business global should set and implement long-term global strategies which focus on the whole world as one market, not multiple markets, and should then arrange strategies for domestic companies. With regard to such a global strategy, Yip (1989:33) states that business

can gain the following benefits: (a) reduced cost, (b) improved quality of products, (c) enhanced customer preferences, and (d) increased competitive leverage.

Marquardt and Snyder (1997) describe some thoughts of the CEOs of MNCs about globalisation. For example, Jack Welch, CEO of General Electric, thinks that companies would die unless they go global. On the other hand, Dave Whitwam, the CEO of Whirlpool Corporation, believes that managers should adopt a global mindset. He insists that all workers in his companies should think globally: "You must create an organisation where people are adept at exchanging ideas, processes, and systems across borders" (Marquardt & Snyder, 1997:104). Furthermore, Marquardt and Snyder also state that companies go global after implementing and applying initiatives that improve and develop the required steps. These are the culture, structure, and strategy of the organisation, and the communication channels within the organisation. In addition, companies go global as a result of similar demands from customers in different countries who are looking for quality and price. Halkos and Tzeremes (2007) consider the high demand for the ICT market as the major driver for any organisation to go global. Similarly, Twarowska and Kąkol (2013) cite the following reasons for globalisation:

- To gain a competitive advantage
- To grow or expand their business
- To attract new clients
- To reduce budgets and to improve profits
- To hire cheaper labour in countries that have a lower cost of living
- To depend less on local and national markets.

It can be understood that the main aim of globalising business is to expand markets and attract new customers, which in turn reflects in the profit of the organisation. In other words, multinational corporations (MNCs) always seek profits and to cut costs through cheaper outsourcing to gain a competitive advantage.

2.3.10 Processes before organisations go global

Before a company goes global, it should apply strategic analysis. Among the available tools is a PESTEL analysis. PESTEL is the abbreviation for political, economic, sociocultural, technological, environmental, and legal. Carpenter and Dunung (2011) state that a PESTEL analysis is a significant tool extensively used by organisations to study the external environment to know and predict its business position in the foreign market. Furthermore, a PESTEL analysis guides a company to understand and have a vision of their business as well as to identify the

opportunities and threats that they might face (Carpenter and Dunung, 2011). Next, each PESTEL element is briefly discussed. Companies that choose to transfer their business from local to global markets can use these features as guidance or analysis as suggested by Carpenter, Bauer and Erdogan (2014) as follows:

- Political factors to be considered are (a) type of government; (b) stability of the political environment; (c) stability of security in the country; (d) local taxation policies, and how these affect the business of the organisation; and (e) involvement of the government in trading agreements, both regionally and globally.

- Economic factors to be considered are (a) the organisation should monitor interest rates; (b) the current level of the inflation rate, forecasts for the future, and its effect on the company's business; (c) the GDP and its future forecasts; and (d) the exchange rates between markets and its effect on importing and exporting.

- Social factors to be considered are (a) local lifestyle trends; (b) current demographics; (c) distribution of education and income; (d) dominant religions and their effect on customers; (e) number of languages spoken in the country; (f) population of the country and its growth rate; and (g) percentage of foreigners in the country.

- Technological factors to be considered are (a) the funding for research by government and industry; (b) the maturity level of the technology (e.g. ICT infrastructure, the penetration of the Internet and mobile services); (c) the development and evolution of technology; (d) the distribution of technological services; and (e) the initiative and efforts of the government and industry towards developing technology.

- Environmental factors to be considered are (a) the country's environmental issues; (b) the environmental problems related to the industry; (c) the climate of the country and its effect on workers and production; (d) the influence of the activities of international pressure groups on organisations' business; and (e) global warming laws and regulations affecting business.

- Legal factors to be considered are (a) the protection and rights of individuals and groups; (b) the laws and regulations that facilitate investing and expanding business in the country; (c) the legislation of the country; (d) the rules towards monopolies and private property; and (e) the consumer, employment, and worker laws.

The next section discusses some of the technologies and organisational factors that are important for companies and how they enable them to globalise.

2.3.10.1 Technological factors

2.3.10.1.1 Websites

Shin and Huh (2009) indicate that the importance of a company's website lies in that it helps corporations to communicate and interact with customers all over the world. Thanks to the Internet, multinational organisations can market their products and services and enhance their relationship with their clients globally. Companies gain many advantages from having websites, which are an inexpensive method to reach customers globally and to sell products. It is also considered as an effective communication method between marketers and clients as well as playing a role as a 'transaction platform'.

Reichheld and Schefter (2000) state that organisations need to adopt effective e-commerce strategies to target customers globally. One of these e-commerce strategies is building trust with their clients. To increase customer loyalty, an organisation can gain their confidence by sharing valuable information on their website. The other strategy is effective structure of the websites and their design, which affects customers and can play a role in attracting and keeping them.

2.3.10.1.2 Social Networking

Assaad and Gomez (2011) argue that social networking is used by companies to enhance and improve interactions with their customers regarding products or services. Moreover, they indicate that there are some benefits of using social networking in addition to the companies' websites. Such benefits are a better understanding of their clients, and stronger relationships with them, as well as knowing their opinion and ideas about products and services provided by the company.

2.3.10.1.3 Cloud Computing

Nezhad et al. (2009) point out some of the benefits that organisations gain from implementing cloud computing to globalise their business. These are:

- Reducing the amount invested in hardware and software resources. Instead of purchasing new hardware and software, organisation can have them from cloud computing services providers;
- Lowering the cost of upgrading and maintaining systems. Because cloud computing service providers will update the virtual hardware and software that are needed by organisations

for their business which in turn reduces the cost of updating and maintaining the hardware and software of the systems that are physically in-house in the organisations.

- Offering greater availability of computing resources for individuals and the business. Cloud computing services providers have different types of application that suit business and individual which are according to the requirements of business;

- Having different varieties of software and applications that are needed by organisations. Such as network management, database management, or business intelligence;

- Allowing the organisation to dispense with additional or urgent technical issues such as installing IT infrastructure and instead concentrating on innovation and services that add value to their business. It will make companies more focused on development, innovation, creativity and better services to their customers, which will be reflected positively on their business

Providing such service to targeted organisations either locally or globally is a major contributor towards business internationalisation.

2.3.10.2 Organisational factors

2.3.10.2.1 Company size

The size of a company is an essential indicator of the strength of the company. It also represents the image of the organisation. Some studies focus on the impact of company size, exporting, performance, competitive advantage, and growth. Moen (1999) and Chung (2003) state that large companies can compete more effectively than small ones in international markets. Greater resources give larger organisations a competitive advantage in the international market. However, smaller companies can be equally competitive if their technological level or product characteristics are unique.

In this regard, this study also investigates the globalisation potential of SMMEs in Saudi Arabia. In the Saudi context, according to Jeddah Chamber (2016), there is more than one definition of SMEs, but the most common one is illustrated in Table 2-1.

Table 2- 1: Current Definition of SMEs in Saudi Arabia

Current Definition of SMEs in Saudi Arabia		
Enterprise Category	No. of Employees	Annual Revenue
Micro	1 – 2	Less than USD 27,000
Small	3 – 49	USD 27,000 – 1.3 million
Medium	50 – 200	USD 1.3 – 13.3 million

(Source: Jeddah Chamber Report, 2016)

2.3.10.2.2 The experience of the organisation

The experience of the organisation in the local and international markets is a vital factor in the success of the organisation and a strong indicator of its ability to gain competitive advantage. Mokhtari et al. (2013) argue that organisations with more than a year's experience in business have more knowledge of various markets.

2.3.10.2.3 The role of knowledge management and business intelligence to assist companies in globalisation

Knowledge management and business intelligence tools and technologies play a major role in helping companies to make decisions that help them improve performance, achieve revenue and profitability, and ultimately gain competitive advantage and expand activities. ICT plays an important and key role in facilitating knowledge management in globalised organisations that operate through alliances and partnerships (Rao, 2005). Technology is seen as an enabling factor for the implementation of knowledge management. Therefore, in order for organisations to work towards achieving objectives, they are required to implement an infrastructure that supports knowledge management to the requirements of the organisation. Knowledge management infrastructure requirements include, for example, "[O]rganisation-wide access to KM architecture, Web-based applications, groupware, data mining tools, mobile devices, worldwide access, high performance, user friendliness, a standardized structure, and an easily administered controlling system" (Madanmohan, 2005:1).

Furthermore, Madanmohan (2005) points out that the twenty-first century is characterised by economic and political turmoil, innovation, a coherent organisational structure, an interest in intellectual capital, and a high turnover rate of employees, as they leave their organisations for new jobs or retire. In this regard, knowledge management serves as a risk management system, helping to increase production and innovation more efficiently while playing the role of knowledge conservation or retention. Knowledge management tools and technologies are numerous and different. They include content management systems used for tasks such as lessons learned, customer knowledge, and knowledge management for human resources.

One of the organisations that uses a content management system competently and efficiently is Accenture, which provides consulting services in many fields, including digital, technology and operations. Its services are directed at energy, health, and financial institutions, and it provides services in more than 120 countries (Accenture, 2018). Consulting services companies in the fields of ICT can provide advice and practical technical solutions to problems with the digital

systems operation, such as redundancy, information flow, and duplication, as the technology develops in order to assist professionals to access and exchange information on many topics such as project methodologies, contracting and customer learning. Such innovations in ICT systems could allow the ICT companies to expand and deliver its services globally (Rao, 2005).

The importance of knowledge management in organisations can also be observed in Kuwait, one of the GCCs. Al-Athari and Zairi (2001) conducted a study on the role of knowledge management in Kuwaiti organisations and found that knowledge management plays a significant role in increasing customer satisfaction as well as increasing profits. In addition, knowledge management system plays an active role in the development of the organisation. In addition, it was found that the good and useful ideas of their organisations come from the knowledge of the organisation and the staff. Finally, it was found the internal journals used by Kuwaiti organisations are the most important means to facilitate the exchange of knowledge among the employees of the organisation.

In the context of other GCC, Boumarafi and Jabnoun (2008) conducted a study on the relationship between knowledge management and organisational performance in organisations in the United Arab Emirates. They investigated knowledge management dimensions such as organisational culture, organisational and technical infrastructure management and support, incentives and visual clarity to find out how these improve organisational efficiency, customer satisfaction, decision-making and financial profits. The findings show that the dimensions of knowledge management are good indicators of the role of knowledge management in improving performance in UAE organisations. The findings also reveal that there has been widespread improvement in organisational culture and organisational and technical infrastructure, as well as the support of top management. The authors argue that globalisation, the rapid development of information technology and fierce competition have a direct impact on the performance of organisations who must have the potential to compete locally and globally.

Although knowledge management is a major factor and helps in the transfer and expansion of companies from local to global, or at least local expansion, there are some obstacles and challenges that can only be overcome by effective inter-organizational mentoring, possibly feasible through globalisation, knowledge management and business intelligence (Gisbert-Trejo, Landeta, Albizu and Fernández-Ferrín, 2019). Taylor and Schellenberg (2004) have conducted a study on the difficulties and challenges faced by multinational companies to

implement knowledge management, especially after merging with another competitor. The knowledge economy focuses on the use of the organisational intellectual property to compete effectively and efficiently. Information infrastructure is thus the catalyst for knowledge sharing. Knowledge management focuses on three factors: people, processes, and technology. While technology is a major factor and knowledge management cannot be implemented without it, it should not be seen as the only support. The study also carried out a survey on the implementation of knowledge management, which showed a potential weakness, if an organisation lacks the right culture that promotes mutual trust and cooperation. Organisations, therefore, need to create social capital that helps employees feel connected through active networks (Nahapiet & Ghoshal, 1998; Oprescu and Eleodor, 2014; Piercy, et al., 1998; Ratny, et al, 2019). Connecting employees through building personal relationships and developing a culture of sharing and inter-organisational mentoring (Gisbert-Trejo et al., 2019) is more important than connecting them through physical communication via IT.

On the other hand, the organisational structure of multinational organisations plays a major role in leveraging knowledge assets. Qualitative and quantitative data in Taylor and Schellenberg's study was collected through a survey of five corporate sites in Europe. The sample for the study was taken from the sales and marketing department of telecom companies in five European countries: Switzerland, the United Kingdom, Germany, the Netherlands, and Belgium. The results showed that managers should assess the knowledge management capabilities implemented in their companies considering two factors, namely the culture and infrastructure that support the implementation of knowledge management. The findings showed that there are challenges faced by telecommunications companies, especially those operating in a fiercely competitive environment in global markets. One of the challenges is the ongoing competition between organisations, which has led to low levels of confidence and openness, especially after mergers. In addition, there may be a weakness in the information infrastructure if there is insufficient trust, if the time it takes to access information is too long, and if the ease of using the system is not at an acceptable level. Even apart from mergers, there is a lack of efficient interpersonal communication in many organisations. The study suggests that organisations need to devote time to creative thinking and learning from past mistakes. At the same time, regarding mergers, top management must address the potential impacts on knowledge sharing and need to ensure that this will not disrupt the processes at least in the short-term because it can weaken the personal networks or openness of the merged organisation to participate with the new colleague companies (Taylor & Schellenberg, 2004).

It may be noted from the above that top management plays a major role in implementing knowledge management and overcoming the obstacles and challenges, which face implementation. Therefore, the managers in charge of knowledge management need to foster and instil in the staff a culture of knowledge sharing so that this becomes normal and natural over time (CEN, 2004). This exchange of knowledge depends on effective communication. Ragab and Arisha (2013) believe that top management should activate communication strategies and introduce knowledge management, its importance, and its relevance to the strategies of the organisation, and at the same time seek qualified staff to manage the knowledge management activities of the organisation. The organisational structure must be taken into account as it may be either an incentive or an obstacle in the process of knowledge transfer. Claver-Cortez et al. (2007) point out that a flat organisation with few hierarchical levels is considered to be the best supporter of communication and transfer of knowledge. Another important factor that plays a vital role in the success of knowledge management is the organisational culture, which should be activated within the organisation. This study used the most common definition in the literature to define organisational culture. According to Schein (2004, 17) organisational culture is

> ..a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

In this context, Al-Adaileh and Al-Atawi (2011) conducted a study on the impact of organisational culture on knowledge exchange at the Saudi Telcom Company, STC. Their study identified features of corporate culture which included openness, creativity, collaboration, and exchange and sharing of knowledge. The study concluded that the attributes of organisational culture have a significant impact on the exchange and dissemination of knowledge in the context of STC. It can be noticed that there is a relationship between organisational culture and knowledge sharing in the propensity to use knowledge management within an organisation, which underscores the critical role of organisational culture.

A study conducted by Yeo and Gold (2014) in three large companies in Saudi Arabia found that trust only has a negative relationship or put in other words, has no impact on knowledge sharing, while characteristics such as collaboration, openness, management support and incentives do have an impact on knowledge sharing. Perhaps the main reason for lack of

confidence in sharing knowledge is the presence of a highly heterogeneous but harmonious workforce. The reason from the researchers' point of view is that these labour forces are mostly foreigners, and conglomerate based on nationality. Every nationality seeks to support its own members by sharing their tacit knowledge among themselves; they fear that sharing their implicit knowledge with people other than their fellow citizens may cause them to lose advantage and thus their jobs. Therefore, Holste and Fields (2010) emphasise that personal relationships between employees based on mutual respect, as well as respect for each other's professionalism, may be a catalyst for sharing implicit knowledge.

Choy and Suk (2005) point to the importance of implementing factors that enable knowledge management to promote an organisation and help it achieve competitive advantage locally and internationally. This includes employee training and participation; IT infrastructure; the commitment of top management; the creation of motivated workers to find, use, and share knowledge; a respectful organisational culture; and the creation of IT-based knowledge transfer. Companies need to pay more attention to knowledge management, especially since it has become a business phenomenon that plays a vital role in the success of companies in global markets. Apart from the role knowledge management plays in participating in a knowledge-based economy, it also catalyses technological innovations for enterprises and makes them more efficient, which means that companies can compete better in local and global markets and stay in business.

Similarly, El Emary, Alsereihy and Alyoubi (2012) conducted a study to examine the implementation of knowledge management at STC through the support of a programme called LEAD (Leadership, Education and Development) which was introduced by the company to help to increase its international operations, win customer satisfaction, and provide solutions to all centres in the world. The main objective of designing a knowledge management model is to share problems and solutions between technical teams and sales departments so that the company can deal with challenges that threaten its growth and profits. The findings of the paper showed that a large number of employees, especially in middle management, see the need to use knowledge management solutions because it helped them to perform their work effectively, which was reflected in customer satisfaction. The findings also showed that the implementation of knowledge management with the help of the LEAD programme helped the company to avoid technological challenges and to have better knowledge of the business activities of competing

companies, which was reflected in increased global operations. The study has shown the importance, role and effectiveness of knowledge management if it is well implemented.

Relevantly, Amir and Parvar (2014) conducted a study on the potential of harnessing knowledge management to increase productivity, performance, and competitiveness in organisations in Saudi Arabia. The study used a grounded-theory strategy that provides accurate information on the implementation of knowledge management. Data was collected from semi-structured interviews with 24 senior management employees from 19 of the largest companies in Saudi Arabia. These companies operate in different sectors of aviation, IT outsourcing services, software production, manufacturing, and banking and petroleum services. Of these enterprises, six are multinational corporations. The study focused on the fact that many organisations are interested in improving their productivity to be competitive in the market, and that competitive advantage is no longer dependent on tangible assets such as natural materials or materials production, but on intangible assets such as knowledge management, applied in a cycle that helps organisations to be more productive and competitive. Moreover, as knowledge management is essential for organisations, the study indicated that global companies which have projects related to knowledge management accounted for 80% of the sample. The study also focused on an important point, which is the importance of organisational learning (OL) in organisations. OL is one of the main knowledge management objectives that helps organisations to maintain competitive advantage and stay in local and international markets. OL improves employee performance and efficiency, as well as offering incentive to encourage employees to learn and share knowledge. The findings showed that the willingness of employees to share knowledge and participate in knowledge sharing activities is the most important factor affecting success in the implementation of knowledge management. OL also gives organisations competitive advantage while improving the performance and efficiency of employees through learning and sharing their experiences. This is in line with what the literature discussed in the study, namely that OL, the exchange of knowledge, and learning among organisational staff are catalysts for the organisational development and expansion both locally or globally.

In this vein, too, Rostami (2014) points out that knowledge management and business intelligence in organisations is important in improving the value of the qualitative and quantitative information used to make the best decisions that serve organisational objectives as well as improve performance. By using business intelligence, the quality of information is

improved, enabling top management to know the position of their companies compared to other competitors, and helps them to identify changing trends in local and global markets. It also allows organisations to understand changes in the behaviour and preferences of their domestic and international customers, and to identify the circumstances surrounding them in local and global markets. Business intelligence has become a significant tool for organisations to analyse data to assist decision makers in organisational operations. Knowledge management, in parallel with the use of business intelligence tools, gives organisations a competitive advantage to stay in the market. Increasing income and profits are mostly the result of customer satisfaction who show loyalty to organisations. Knowledge management plays an effective role in assisting organisations to deliver better services, improve product quality, and respond quickly to customers, and is compatible with BI in reducing costs. The benefits that organisations can derive result from the freedom of ideas flowing through the company, which also supports innovation.

However, Lu (2009) argues that knowledge management is a fundamental element in the globalisation process. The reason is that multinational corporations plan, design their products, services according to national needs, and then sell them globally. However, presently, products and services provided by multinational corporations result from the involvement of knowledge management in the globalising process which helps companies to satisfy customer demands where they expect to achieve financial benefits and expand into larger markets. It also assists companies to develop new global services much faster than before, to be aware of the velocity of the global market as well as the origin country, which in turn reflects positively on companies' management abilities.

Furthermore, O'Brien and Kok (2006) conducted a study on the role of business intelligence in improving the profitability of the telecommunications industry in South Africa. The study sample included the major telecom providers in South Africa. The results of the study showed that business intelligence is a key pillar in the telecom sector to remain competitive. Through business intelligence, organisations can identify strategies and make the best decisions that contribute to increased production. Business intelligence also enhances the survival of organisations by looking for opportunities and determining the current and future threats, which face the organisation. Business intelligence helps companies to understand the trends among current and potential competitors, and offers market analysis both local and global. Business intelligence also helps companies to keep abreast of new information technology, political,

economic and social changes, and how these changes affect the future. Business intelligence is thus an important indicator which organisations can use to expand their business either locally or globally.

On the other hand, the top management of an organisation plays a major role in supporting the organisation and achieving its strategic objectives, in competing with other organisations, and in expanding its activities (Boshkov, etal., 2019). Daryaei, Oskou, and Soltani (2013) conducted a study in Iran on knowledge-based companies to find what the role of knowledge management and business intelligence and the relationships between them are, and what the role of top management was in using both technologies in the organisation. The findings showed that companies need to manage business intelligence and knowledge management more than ever before because the use of this technology increases the ability of firms to improve their services to customers. It also indicated the importance of support from top management. The acquisition and use of advanced technologies in a company play an effective role in enabling companies to conduct their business according to the plans prepared. The authors point out that companies will not be able to gain a competitive advantage by relying on IT infrastructure unless there is continuous support from top management, particularly when there is direct and indirect impact from the leadership of organisations on ICT regarding purchasing and implementing the latest technologies.

In this line of research, Hamdi (2013) conducted an evaluation of the role of using business intelligence through knowledge management in organisations and what leads to making the right decisions and adding value in the company. The evaluation shows that competition among organisations leads them to increase their share of the market or at least maintain their share, otherwise they face crises and lose the economic war. Therefore, in the face of change and to avoid future crises, companies need to secure their survival through the implementation of knowledge management and business intelligence. Both technologies help organisations to sustain competitive advantage and to stay in the competition field.

Arguably, however, Gangadharan and Swami (2004) point out that organisations need access to information that helps them monitor activities and evaluate performance, especially in the increasingly competitive global marketplace. The information is needed to analyse the marketplace accurately and promptly to know about financial processes, customers, and products as well as problems that face other organisations, and opportunities that can be exploited. Thus, organisations need business intelligence to help them make the right decisions

to understand their own processes and the competition in the market better. In this research, Gangadharan and Swami (2004) have presented a case study of business intelligence in an electrical and electronic components manufacturer in India. The company has nine production plants supplying retailers all over India, and faced problems in predicting sales, production, and distribution. The company feared that poor service delivery and increased inventory of products could result in significant losses to the company, which could lead to a loss of customer loyalty. The first phase began with a comprehensive analysis of the system followed by the development of appropriate prototypes. The second phase began with the implementation of business intelligence in their old systems. The objective of the project was to establish a central source of information that provided strategic business knowledge in various countries of the world in a coherent manner by creating a comprehensive data warehouse focusing on four main transactions: (a) processing of orders, (b) inventory analysis, (c) purchasing, and (d) sales and service. The company has subsequently integrated its new business intelligence system with the intranet to provide access to the company from all over the world. The system was implemented using several programmes, including managing the system data warehouse so that employees can access the requested information easily. Another programme runs all queries and analyses commands. There is also a programme that provides a detailed analysis of the employees' need for a data warehouse. The implementation of this business intelligence system has helped decision makers to improve performance and respond quickly to all issues as they arise. The system has also contributed to alerting employees when any critical value changes so that they can respond to the information and find out how to make the right decisions immediately. Employees can access information that was previously unavailable as a result of the lack of IT infrastructure, especially about profits and costs. Dealing with business processes such as sales, inventories, financial systems, production, trend analyses, and demand tracking efficiently via the implemented business intelligence system has increased revenues by 36%. Business intelligence is therefore a technology that is considered a source of competitive advantage which can transform a company's operational data into commercial assets that contribute to making the right strategic decisions promptly, and is reflected in an improvement in performance and customer maintenance.

In addition, Al-Shubiri (2012) conducted a study that focused on the exploration and use of business intelligence in fifty companies in Jordan. The study emphasises the importance of business intelligence as a tool that helps organisations refine information and make the most efficient decisions, especially in light of the knowledge economy, which is measured by

intellectual capital. The study, which took place from 2006 to 2010 on companies listed on the Amman Stock Exchange, addressed the analysis of competitive intelligence, and the fact that it is related to business intelligence. The study pointed out that competitive intelligence is a systematic and ethical method to collect, manage and analyse external information that can affect an organisation's plans and decisions to compete in the market, whether locally or internationally, by understanding and knowing its competitors and the competitive environment. The findings indicate that the knowledge economy has a great impact on the performance of Jordanian companies, making them competitive and able to enter international markets. The study also showed that applying business intelligence to organisations is necessary because it plays a crucial role in helping them to make decisions, especially in light of the fierce competition not only at the local level but also on a global scale.

The strategic impact of business intelligence tools on an IT consulting company that serves customers worldwide was investigated by Sharma and Djiaw (2011). The study was applied to the company's business intelligence group. Its headquarters are in Singapore, and it was established in 1997 with more than 280 employees, followed by subsidiaries in Malaysia and India. The company has a strong international reputation as a specialist in consulting in several areas, principally business intelligence. The study used primary and secondary sources for collecting the data. The primary source was conducting interviews and workshops with major executives, while the secondary data was collected from the company and other IT sources. The findings show that business intelligence is an important activity in which the overall performance of the organisations is improved. It also supports organisations in identifying their own strengths as well as the gaps in the business environment. The results also show that business intelligence has the expected result of optimal and efficient implementation of an organisation's plans, which fulfills its aspirations and expectations. Among the results are (a) helping the company to make the best decisions, (b) helping to better deal with customers and knowing them much better, (c) responding faster to key business issues, (d) increasing profits and lowering costs, and (f) expanding its market. The findings also show that business intelligence helps a company to formulate plans and future goals, including plans for spending on the company's projects. Business intelligence enabled the company to transform its core competencies into competitive advantages, and the company improved its overall performance.

Moreover, Mudzana and Maharaj (2015) also point to the benefits, which can be achieved because of adopting and implementing business intelligence. Such benefits are increased sales,

reduced costs, better services and products, and making the right decisions to achieve competitive advantage.

A good example of these concepts in action is the organisation Infosys. Infosys is one of the companies that have embraced the implementation of knowledge management and have benefited from it by improving performance and increasing their global business activities. It is known that the company offers solutions in several areas, notably information technology, especially IT outsourcing. However, the company felt that opportunities were narrowing and shrinking, especially after an increase in competition and high wages of employees in countries such as India, which contributed to the departure of employees from the mother company to look for better opportunities in India or elsewhere (Chari and Gill, 2015).

The company's strongest period was the eighties and nineties, especially in terms of its focus on back-office services and programming, which is easily sent outside India. This period has had advantages in terms of competition in the business.

1. During these decades there was a global demand for programming, web design and back office services, the Internet was booming and beginning to spread, and there was a state of anticipation and preoccupation with the year 2000 (Y2K) resulting in an increased demand for programming which outstripped supply.

2. At the time, the number of graduate engineers in India was higher than in the United States, and they received only a fraction of the income that programmers in the United States received.

3. The company has been able since its first days to adopt and instil a culture of 'customer delight' and this helped it to build a good reputation in service delivery.

Furthermore, Chari and Gill (2015) explained that after ten years of development, and because of the global political and economic circumstances and rapid changes and developments in information technology, the company has had to rethink its business model, especially since the variation in the wages of Indian programmers and their American counterparts has declined. Also, the demand for programming has become lower, and a number of companies in other countries have begun competing for such business at lower prices.

Consequently, Chari and Gill (2015) state that, for these reasons, the firm has become pessimistic about the future of its business, so it has changed some of its strategies; it offers

information technology consulting, and concentrates on products, platforms, and solutions (PP&S) which focuses on customer management and social networks. It can therefore be said that the company saw that client projects deliver enough revenue for the enterprise, but the requirements of designing a successful application that serves the end user is much riskier, especially in terms of those applications that require full and detailed knowledge of the target market, as well as experience and familiarity with dealing with customers and knowledge of the latest developments in relation to global information technology.

These changes, namely political and economic developments, the evolution of information technology, and increased competition among organisations to acquire the largest market share in the global market, have made the company seriously consider investing in its knowledge management assets and practices. Infosys has established a knowledge management department under the Department of Education and Research to implement this trend (Chari and Gill, 2015). This was designed to achieve five objectives:

1. Focus on reusing knowledge.

2. Enable competitive advantage by facilitating functional efficiency.

3. Continue to use knowledge to improve quality.

4. Use knowledge assets to obtain the high quality knowledge that serves the company in its consulting and commercial contracts.

5. Follow the same method and methodology of universities in their quest to benefit from research and studies to enhance their brand.

Kaur (2016) states that the company's knowledge management system can be accessed through an internal network called Sparsh, which has many classifications such as technology, project management, culture, and methodologies. The company followed a model in creating a knowledge management system which is called 'learn once, use anywhere'. Sparsh's knowledge management system is managed through three knowledge repositories:

- The Knowledge Shop (K-Shop)
- The Process Asset Database (PAD)
- The People Knowledge Map (PKM)

The Knowledge Shop (K-Shop) is the most widely used on among the company employees. All of them can access it through the internal company network and everyone can share

experiences, ideas, and solutions to technical problems. It also includes a search capability that enables the user to search the entire repository.

The Process Asset Database (PAD) collects the results of projects, including the work and plans, type of customers, their names and locations. The database can help with information which can be used in similar future projects, and to facilitate the identification of goals for future projects.

The People Knowledge Map (PKM) is a guide to expert knowledge shared in various fields. Through this repository, an employee can search for the expert in a particular area through the system based on the Internet. The repository is concerned with employees and it helps them to communicate with experts to solve many problems related to technology which contributes to speed of delivery.

The implementation of knowledge management in the company contributed to the following:

- Increased efficiency of teams working on projects led to faster responses to customer requests.
- Improved productivity with fewer defects in the product or services offered to clients.
- Knowledge management has enhanced the concept of teamwork by sharing knowledge among teams so that each team can benefit from the other teams, and this applies to all team members.
- Knowledge management has been instrumental in mitigating the risks of company projects, as well as facilitating and using other modern and improved business models.

The implementation of knowledge management in Infosys has thus resulted in knowledge of local and international market trends, as well as making the company move to new markets which is expected to reflect in increased sales and contracts, and an increase in financial revenues which will be reflected in the company's investments (Kaur, 2016).

It should be borne in mind that Infosys was a global company prior to the implementation of knowledge management, that it has a worldwide reputation, and is a leader in providing IT outsourcing services. However, the implementation of knowledge management in the company has undoubtedly contributed to an increase in its profits and at the same time the expansion of its business in the world. Knowledge management has also given the company an opportunity to gain a foothold in many countries of the world, for example the Middle East through its offices in Dubai and Sharjah, making it easy to reach the rest of the Gulf and Arab countries.

As can be seen from the literature surveyed above, it is clear that knowledge management and business intelligence are necessary tools and technologies for organisations. In order to benefit from this technology, an organisation must take into account the main factors, which, when present in the organisation, can enable globalisation of the business. These main factors, which the literature identifies, include:

- Support from top management
- Organisational culture
- Trust within the company and between employees
- Knowledge sharing – especially implicit knowledge
- IT infrastructure

From the literature, it is apparent that the outputs of knowledge management and business intelligence, if implemented in organisations optimally, include the following:

- Making the best decisions;
- Improving performance;
- Enhancing and increasing productivity;
- Increasing revenues and profits;
- Reducing costs;
- Gaining competitive advantage;
- Monitoring and knowing the trends of competitors;
- Knowing the strengths and weaknesses of the organisation;
- Enabling creativity and innovation;
- And gaining customer satisfaction and winning their loyalty.

These outputs are fully consistent with the reasons Twarowska and Kąkol (2013) cite for companies that go global, namely competitive advantage, development, business expansion, new customers, reduced costs and increased profits, and reduced dependence on local markets for profit.

Next, competitive intelligence and its tools are discussed, namely knowledge management and business intelligence, as well as how these tools assist ICT organisations in managing globalisation.

2.4 Competitive intelligence

2.4.1 Intelligence

The evolution of data to information, knowledge, intelligence and eventually into wisdom is not well understood, although it is acknowledged that this transformation does take time (Liebowitz, 2006). Figure 2-7 illustrates the intelligence hierarchy and how data is transformed into wisdom. Organisations need knowledge so that they can survive in the competitive market. In this regard, the importance of environmental scanning emerges as a supportive factor for the success of any organisation.
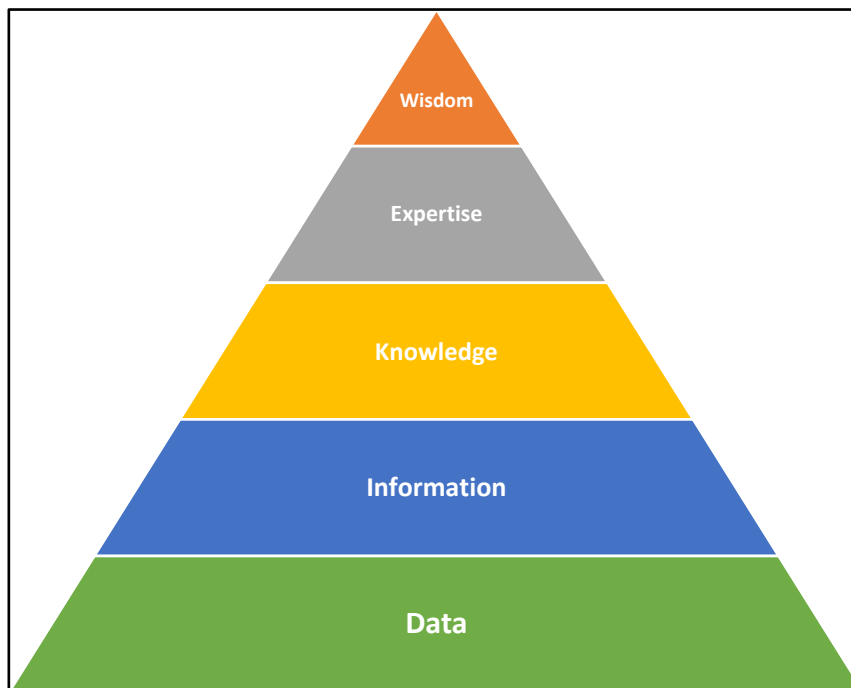
Figure 2- 7: The intelligence hierarchy (Liebowitz, 2006:7)

In 1967, Aguilar defined environmental scanning as the process of gathering information surrounding an organisation such as relationships, events, and knowledge that will help in the planning of future courses of action (Auster & Choo, 1994). Auster and Choo (1994) explain environmental scanning as the early understanding and prediction of events and trends that challenge organisations from the external environment so that management can make the right decisions and plan accordingly. Parker and Nitse (2006) identify the tools required to perform environmental scanning. They are: (a) competitive intelligence, (b) business intelligence, (c) knowledge acquisition, (d) knowledge discovery, (e) knowledge harvesting, (f) enumerative description, (g) knowledge engineering, (h) information retrieval, (i) document management, and (j) enterprise information portals. It is thus clear that KM, BI, and CI have common goals,

namely collecting information from the internal and external environment so that management can make decisions immediately and efficiently.

2.4.2 Strategic intelligence

It is essential at this stage to differentiate between organisational intelligence (OI) and strategic intelligence (SI). Liebowitz (2006) states that OI is a collection of benefits gained from intangible assets within organisations such as staff, shareholders, and clients. Moreover, he argues that SI is information and knowledge that adds value to the organisation to make strategic decisions and to be prepared for unexpected situations from competitors. In this context, according to Xu and Kaye (2010), strategic intelligence presents meaningful information to top management enabling them to make the right decisions.

Liebowitz (2006) argues that 'intelligentsia' combines different forms of intelligence within organisations which are (a) artificial intelligence, (v) business intelligence, (c) competitive intelligence, (d) strategic intelligence, and (e) knowledge management. He states that strategic intelligence embraces artificial intelligence, knowledge management, business intelligence and competitive intelligence to achieve the organisation's goals. Pellissier and Kruger (2011) concur that such combinations add value to information and knowledge so that strategic decision can be made within organisations.

2.4.3 Competitive intelligence

Competitive intelligence is one of the tools for environmental scanning. Toit and Sewdass (2014:2) define CI as "a system of environmental scanning which integrates the knowledge of everyone in the company".

Competitive intelligence may also be viewed as a legal process designed to gather and analyse information about a company's competitors to help the company take appropriate decisions to reach its goals (SCIP.org, 2015).

In this regard, many studies have been conducted on the role of CI and its relation to KM and BI. Among these studies is one by Pellissier and Kruger in 2011 which examine how strategic intelligence is used as a management tool in the South African insurance industry. The research investigated the extent to which strategic intelligence was used in the industry to remain globally competitive. They identify factors that need to be considered:

- Strategic intelligence encompasses an organisation's understanding of its internal and external environment. Its current positions among competitors can then be used to develop strategic plans.

- Strategic management and business intelligence are used mainly by larger organisations.

- Competitive intelligence functions in a formal way in larger organisations, whereas in smaller organisations it is used when needed or required.

- Even though knowledge sharing by employees within organisations is not up to the aspirations of the organisations, most of them consider knowledge management as a strategic tool that adds value to their business. This point is supported by Zack (1999), who argues that knowledge is the primary focus of competition and is an important strategic resource for organisations.

- Strategic intelligence plays a significant role in decision-making throughout the organisation. It can thus assist management with accurate information to gain competitive advantage.

Toit and Sewdass (2014) conducted a study that compared competitive intelligence activities in Brazil, Malaysia, Morocco and South Africa. The aim was to determine how these countries can implement competitive intelligence to increase their competitiveness in the global economy. They concluded that organisations should apply formal, structured processes to collect, analyse and distribute intelligence so that they can compete in the global economy. Furthermore, the scholars state that implementing competitive intelligence in organisations in developing countries will give them an opportunity to win the competition against their global competitors. The results of the study showed the following:

- The awareness of the importance of competitive intelligence is limited and is not the most significant activity within the organisations.

- Direct customer feedback is a primary source of information, whereas organisations' websites are a secondary source.

Parker and Nitse (2006) distinguish between knowledge management (KM) and competitive intelligence (CI). KM aims to manage an organisation's internal knowledge so that it can be available and efficient for the decision-maker within the organisation to improve its performance while CI is a process to collect useful knowledge relating to the external business environment for strategic decisions and to enable an organisation to gain a competitive advantage. Both CI and KM are strongly linked to each other. The relationship relies on CI's

value and depends on KM processes that convert information into something usable to enhance resources for organisations so that they can predict trends in their environments.

Toit (2003) examined the role of competitive intelligence in South African manufacturing enterprises, revealing how organisations collect information about their competitors and how they practice competitive intelligence. She points out that according to previous research 44% of manufacturing companies in the country collected information on competitors. Toit defines CI as knowledge creation through the collection, analysis, and dissemination of information about the external environment so that it can enhance competitive positions for countries and organisations. Toit (2003) states that competitive intelligence and knowledge management are related to each other; competitive intelligence creates knowledge from tacit knowledge. The results of such creation enhance business decisions after tacit knowledge is stored, and becomes explicit in order to be reused and shared by organisations. Toit adds that CI assists knowledge management and vice versa. Through the assistance of knowledge management, competitive intelligence can access information, and through competitive intelligence, knowledge management capturing information can be useful and categorised. She concludes that competitive intelligence was found in a formal manner in very few organisations. However, organisations find newspapers, customers, reports, relationships with others, staff, advertising, distributors, and suppliers are sources of information that can be used with competitive intelligence systems. Even though formal environmental scanning systems existed within organisations, these organisations typically scanned their environments only.

Albescu, Pugna, and Paraschiv (2008) argue that competitive intelligence is the result of combining BI and KM. Ghannay and Mamlouk (2012) state that it is vital to integrate KM and CI in organisations to enable them to obtain competitive advantage in the knowledge economy. Moreover, they indicate that KM and CI share similar objectives, namely evaluating business decisions, finding and delivering the right knowledge from internal and external environments of the organisations, and supporting management in making the right decisions. In addition, they believe that the process of CI is unique in every organisation, and that there is rarely similarity between successful CI processes. They also state that the process of CI should reflect the culture, resources, and objectives of the organisation. They identify some success factors in implementing CI in organisations, namely the support of top management, determining what the organisation needs for CI, CI culture and awareness, and CI tools and resources.

Moreover, El Fadili and Gmiri (2017) analysed the role of competitive intelligence (CI) in an age of globalisation. The authors recorded the paramount role of competitive intelligence processes in achieving organisational performance, given the fact that competitive intelligence embrace powerful agents of knowledge generation and as the foundation for organisational performance. Given the manifestations of globalisations in the business of information technology and telecommunications, competitive intelligence has been observed to play a significant role in "enhancing knowledge creation", nurturing a knowledge sharing culture in a firm and "encourage[ing] the creation of intangible assets that are considered as the main factors of its competitiveness in the business market" (El Fadili and Gmiri , 2017, p.619).

2.4.4   Business intelligence

Olszak (2013) states that BI aims to improve decision-making through collecting, storing and organising data, and then managing it by using different analytical tools such as OLAP (On-Line Analytical Processing), data mining, and data warehousing. A BI system is made up of (a) tools, technologies, and software products; (b) knowledge management; (c) decision support systems; (d) dashboards; (d) new working culture with information; (e) process; (f) analytics and advanced analyses; and (g) competitive business intelligence. Olzak points out with regard to knowledge management, that BI increases organisational knowledge through planning, forecasting and solving problems as well as transferring raw data into information and then knowledge. The author also considers CI a part of BI and states that CI is a process that organisations use for collecting different information about their external environment, especially competitors and customers, into one repository so that they can benefit from the strategic knowledge.

BI impacts positively on knowledge transfer, but this depends on an understanding and appreciation of the value that BI creates through analysis undertaken not only by individuals but also by groups within the organisation. In this context, organisations that wish to survive and to be competitive should apply BI tools judiciously by implementing the right technology for serious analytic purposes. This requires (a) a data strategy, i.e. an organisation needs to present its information in a way that is easy to access, and that is well presented (reports); (b) business intelligence software, i.e. it should allow users to collect, analyse, store, retrieve and distribute information using BI tools; and (c) suitable computer hardware (Davenport, 2006).

2.4.5　Knowledge management

Knowledge management has been defined differently according to cultural diversity and different definitions of managerial schools. Knowledge management incorporates the activities that organisation use, through knowledge, to meet surrounding challenges as well as to stay competitive (Greiner et al., 2007).

2.4.6　Knowledge management and business intelligence

McCarthy (1999) points out that KM and BI share common objectives, but that there are differences in the manner in which these are achieved. The differences are the following:

a. BI employs opportunity analysis which is a useful decision-making tool
b. The value of KM lies in its ability to prompt an organisation to identify, capture and reuse knowledge which leads to best practice which in turn reflects positively on the performance of the organisation, especially cost savings.

Shehzad and Khan (2013) argue that KM and BI are influenced by the internal environments of particular organisations, i.e. the business climates have to be such that they encourage management and employees to play a vital role in sharing their knowledge – and this is important for organisations of any size. Knowledge management (KM) and business intelligence (BI) stress the value of knowledge for decision-makers (Cody et al., 2002).

Cook and Cook (2000:3) state that "many people forget that the concepts of knowledge management and business intelligence are rooted in pre-software business management theories and practices." In other words, many organisations have invested in technologies so that they can manage the information they own. The authors state that technology plays a role in the facilitation of using information within an organisation, either by storing or transferring it. In this context, they indicate that knowledge management software enables an organisation to capture, store, transfer, and use documents, spreadsheets, graphics, sound, and videos. BI solutions have given organisations the opportunity to implement powerful tools that store, retrieve and analyse vast quantities of information about their businesses which in the end will increase the value of the information. Davenport, Cohen, and Jacobson (2005) emphasise three essential elements that could make an organisation become a strong analytical competitor. These items are (a) high quality data, i.e. when data is available it will in turn lead to meaningful and useful knowledge, (b) a capable technological environment, i.e. a good infrastructure of hardware and software so that organisations can get benefits from the data, and (c) quantitative analytical expertise. A relevant study in the present context was undertaken by Herschel and

Jones (2005) who argue that explicit knowledge is the concern of BI, whereas KM combines tacit and explicit knowledge. Furthermore, they state that both KM and BI enhance learning, improve decision-making and understanding, and that BI is a subset of KM.

Wang and Wang (2008) conducted a case study using a blog-based model of knowledge sharing to determine the importance of business insiders and their roles in making data mining (DM) relevant to business through knowledge development. They found that data mining is a powerful tool for discovering knowledge as part of a knowledge management process. Furthermore, the study showed that the model was useful for DM in terms of transferring tacit and explicit knowledge for BI, and the power of DM will depend on the involvement of business insiders as well as on the thorough implementation of knowledge-sharing within an organisation. The study emphasised that DM must be integrated with KM so that knowledge can be improved.

A computer-based solution that supports knowledge management can be referred to as a knowledge management system (KMS) (Curko, Vuksic and Loncar, 2009). Moreover, Curko et al. (Ibid), indicate that a KMS supports knowledge management through core activities which are (a) knowledge creation: 'this includes existing knowledge, revealing knowledge, searching for knowledge', (b) knowledge organisation: 'archiving knowledge and managing archived knowledge', and (c) knowledge dissemination: 'cooperation, exchange, and transfer of knowledge'. They assert that the primary function that a KMS should offer to achieve the above is support for business processes management (BPM). Thus, they argue that the main elements of KMS are a BPM system and BI. Moreover, Curko, Vuksic and Loncar (2009) state that knowledge management is connected with other disciplines such as organisational information processing which relates to IT, business intelligence which relates to information services, organisational cognition which is oriented to the study of corporate innovation, learning and sense-making, and organisational development that relates to business strategies and human resource management. Curko, Vuksic, and Loncar (2009) argue that there is a role for business process management systems (BPMS) and business intelligence systems in knowledge management. BPMS in KM can be observed through the modelling and analysis of business processes.

Herschel and Yermish (2009) state that KM combines both tacit and explicit knowledge whereas BI focuses only on explicit knowledge. They emphasise that both concepts enhance organisations' learning, decision-making, and understanding. Herschel and Yermish (2009) indicate that BI solutions are considered a complicated process because intellectual capital is

not a BI product despite the fact that it is supposed to be derived from an organisation's explicit knowledge which is used in decision-making processes. Business needs BI solutions due to the resiliency that it provides an organisation plus knowledge of their current business situation regarding what is happening in their markets. Moreover, they indicate that well-implemented BI might affect data management directly, and this will depend on the effectiveness of KM principles and practices which impact directly upon BI capabilities. They differentiate between KM and BI by arguing that BI concentrates on the interaction between data, technology, and analytical tools whereas KM focuses on sharing explicit and tacit knowledge.

Rao and Kumar (2011) conducted a study on the integration of KM and BI in the ICICI Bank in India. The findings of their study show that the proper inclusion of both technologies can help the bank to benefit substantially from this integration. It would also help the bank to manage explicit information which can then be converted into knowledge to assist it to make the right decisions and place it in a better position to compete. Moreover, they assert that such integration will facilitate knowledge processes such as capturing, coding and enhancing knowledge-sharing and retrieval throughout the bank to obtain strategic advantage and to survive in a competitive environment. Rao and Kumar (2011:7) claim that the benefits of interaction between KM and BI include (a) dissemination of successful business practices in the organisation to provide services not only to local clients but also to international customers, (b) integrations of which end-users prefer, through experience, to implement BI, and (c) facilitation of understanding business through knowing the results and training the end-user.

Some scholars indicate that KM and BI are not related to each other while others point only to some of the differences between these two technologies (Zarghamifard and Behboudi, 2012). They summarise the relationship between KM and BI as follows:

1. BI and KM share similar characteristics in decision-making.
2. BI is considered part of KM.
3. KM combines tacit and explicit knowledge, while BI concentrates on explicit knowledge.
4. The common objective of KM and BI is the continuity and growth of an organisation.

Shehzad and Khan (2013) discovered that when combining the critical success factors (CSFs) of both KM and BI, the outcome of the combination was more successful in terms of efficiency of decision-making than when BI was separated from KM. These authors also indicate other positive results of combining the CSFs of KM and BI, namely: (a) efficiency enhancement, (b)

an increase in productivity, (c) important monitoring capabilities, (d) innovation, and (e) competitive advantage. In general, combining these two technologies will increase the efficiency and productivity of an organisation. This study however does not focus on the differences between the two technologies, but rather sheds light on the technologies through reference to the literature review.

It could be said that BI plays a vital role in knowledge sharing. In this context, a study was undertaken by Al-Hikma Pharmaceutical Manufacturing Company in Jordan, which shows that some BI tools play a major role in knowledge dissemination. The BI tools were online analytical processing (OLAP), data mining and data warehousing. The results of OLAP showed that employees in the company perceive OLAP as necessary for the sharing of knowledge. The tool encouraged employees to share knowledge with each other. It was also found that the impact of data warehousing on knowledge-sharing is significant (Barakat, Al-Zu'bi, and Al-Zegaier, 2013).

It could be deduced from the preceding that BI solutions have an impact on knowledge-sharing among employees of any organisation. These results show that technology plays a role as an enabler of knowledge-sharing as well as being a factor that affects knowledge-sharing. Besides the technological aspects, other factors which could have an impact on the sharing of knowledge are organisational culture, trust, and incentives.

In this vein, Daryaei, Oskou and Soltani (2013) used SEM to investigate the links between KM and BI in knowledge-based companies. Their study was based on certain hypotheses related to both technologies. The first hypothesis was related to organisational KM, which tested (a) process, (b) leadership, (c) culture, (d) technology, and (e) measurement. Concerning the BI hypothesis, they tested (a) organisational strategy, (b) systems and procedures, (c) human resources, (d) information and communication technology, (e) competitors, (f) customers, (g) stakeholders, and (h) suppliers. Their findings indicate that management support is required for ICT infrastructure and that top management and leadership have both a direct and an indirect influence on technology and ICT. They emphasise that the support of senior management should be regarded as a critical factor in the success or otherwise of KM and BI. As can be seen from the above study, the success of interactions between KM and BI depends on many factors, both internally and externally.

In the Saudi public sector, Alrumaih and Zemirly (2014) conducted an empirical investigation of knowledge management support for business intelligence to provide a better empirical

understanding of the business context and practices in Saudi Arabian public sector organisations. They suggested that both BI and KM are needed to improve the organisational performance of companies by sharing information across organisations, getting detailed information from internal and external sources about firms and forecasting future trends in e-commerce in a globalising world in order for these companies to make better-informed decisions. The authors further observed that the public sector direly needs to apply the practices of knowledge management and knowledge transfer as much as it needs to apply the principles and practices of business intelligence since if an employee, especially experienced expatriates, resign without passing their experiences to their successors, it would become a big loss for the organisation. They also noted that in the Saudi public sector companies, telecommunications firms included, access to information and management of knowledge could be achieved by the application of information technologies and the acceptance of globalisation trends inasmuch as globalisation, communication technology and knowledge management influence business performance. They observed that ....

> the application of information technologies and communication affects the way of business performance and the way to satisfy and achieve customer requirements. This is prompting a majority of government organizations to interact with this fact and enter into the world of KM through the gate of technology, specifically in terms of e-government. (p.42)

The authors analysed the salient challenges in applying BI, and KM in Saudi companies, public or private, based on a review of literature (Alqhatani, 2009; Alharthi, 2009; Dyer and McDonough, 2001). These challenges include culture resistance, absence of strategic planning, centralisation of governance, ignorance of the importance of knowledge transfer, insufficiency of professionalism, employees' competencies and technical skills of public employees as far as KM is applied in the government organizations.

In a broader context, Ping, Chinn, Yin and Muthuveloo (2018) examined the influence of organisational capabilities in term of IT capability, BI use and collaboration capability on organisational performance in Public Listed Companies in Malaysia stock market against the backdrop of business dynamism, environmental volatility and strategic agility of companies in the emerging markets of Malaysia. In a globalising world, the authors found out that information technology capability is not a good predictor of organisational performance, but

strategic agility mediates the relationship between information technology capabilities, and business intelligence use on organizational performance.

The study by Ping et al. (2018) concluded that the volatile nature of the globalised markets and their dynamic business environments entail opportunities and threats that can potentially influence the performance of companies. According to the study findings, in a world of globalisation of business, firms need unique resources and potentials to help them respond to the unpredictable conditions of the global e-markets. Therefore, firms require well-developed IT infrastructures to make use of knowledge and business intelligence and to be able to take informed decisions to empower strategic agility of firms and to improve organisational performance.

It is apparent that the distinction between the various related concepts (KM, BI, CI, SI, OI, DM) is not clear at all from the literature. Interpretations of the numerous concepts vary with researchers emphasising either one or the other concept or relationship. In this study, the researcher considers CI as embracing both KM and BI.

Therefore, it can be deduced from the above mentioned that competitive intelligence and its tools are technologies that lead an organisation to gather information, interpret and store it, and then use it wisely to compete and survive. Survival means that an organisation finds the best opportunities not only locally or regionally but also internationally. Furthermore, environmental scanning as a method of gathering internal and external information is significant. This method is one way to assist an organisation to globalise its business, and also helps the organisation to be aware of and predict what it might face in the future.

Competitive intelligence not only assists an organisation to go global but this also applies to the selection of countries. Competitive intelligence tools, namely KM and BI, play a vital role in expanding and growing businesses not only locally but also globally. In general, globalising companies are based on tools such as CI, KM, and BI as well as understanding their surrounding internal and external environments.

2.5 Saudi Arabia at a glance

King Abdul Aziz Al-Saud founded the modern Kingdom of Saudi Arabia on 23 September 1932. This foundation claimed a land area of about 2,150,000 km^2. A few years after the foundation, oil was discovered, and in 1938 the production of oil began. Currently, Saudi Arabia ranks 25th in the world in terms of oil exports and imports, with foreign trade of US $78 billion which accounts for 25% of the total Arab Gross Domestic Product (GDP). The importance of

Saudi Arabia rests on the existence of Islam's two holiest places, Makkah and Madinah. The other significance of Saudi Arabia is its location which is in the southwest corner of Asia, at the crossroads of Europe, Asia, and Africa. Other central cities are Riyadh, Jeddah, Jubail, Yanbu, and Dammam. Riyadh, as the capital of Saudi Arabia in the central province, is the biggest and most active city. Jeddah, one of the largest and busiest cities, is located on the western coast of the Red Sea. It is important because it is the commercial capital of Saudi Arabia, and the gate for Muslim pilgrims who come to Saudi Arabia either by plane or sea to perform their Umrah or Hajj. Jubail and Yanbu are two distinctive industrial cities. Yanbu is situated on the east coast of the Red Sea, and Jubail and Dammam in the eastern province of the country (Ministry of Foreign Affairs, 2016). This overview sheds light on some aspects related to the Kingdom of Saudi Arabia which are discussed below.

2.5.1   Political

A hereditary monarchy governs Saudi Arabia. The official religion is Islam which is the dominant religion. The government and its institutions practice their activities based on Islamic laws and regulations which they derive from the Holy Quran and the Prophet's Sunnah. Saudi Arabia is a politically stable country because of practicing 'Sharia' (law) in all aspects of life (Ministry of Foreign Affairs, 2016).

2.5.2   Economic

Although Saudi Arabia counts among the 20 largest economies in the world, and the major economy in Middle East and North Africa region (MENA) representing 38% of total Arab GDP (SAGIA 2016), the fact is that Saudi Arabia's economy depends on oil as a source of its income because the country owns about 18% of the world's oil reserves. The oil industry represents 61% of Saudi Arabia's GDP, and the non-oil sector 39% of GDP. The contribution of the private sector is about 25% of the GDP, and the input of the government sector 14% of GDP (CSC, 2015). In this context, the GDP in Saudi Arabia grew by 3.35% in 2015 (CDSI, 2016). The ICT sector contributed about 6% to the GDP in Saudi Arabia in 2015, and was about 10% if petrochemical (oil and mining) sector was omitted (CITC, 2015). The currency in Saudi Arabia is the Riyal. One Saudi Riyal (SAR) is equal to approximately 0.27 US dollars, and one Saudi Riyal is equal to 3.46 ZAR, (SAMA, 2017).

In this context, the government of Saudi Arabia has a vision called Vision 2030. Its primary goal is for Saudi Arabia to no longer depend so heavily on oil as the main income for the country by 2030.

2.5.3 Socio-cultural

The Arabic language is the sole official language although English and French (amongst others), are used in the business sector. The population, according to estimates for the years 2004 to 2014, is 30,770,375. The Saudi population is 20,064,970, with men representing 51%. The non-Saudi population is 10,067,839, with males representing 53% (CDSI, 2016).

2.5.4 Technological

Saudi Arabia is one of the largest and fastest growing countries in terms of implementing, spending and using ICT, not only in the Middle East but also among GCC countries, since Saudi Arabia represents more than 70% of the ICT market. This development is a result of the increase in ICT products and services, especially after introducing public Internet services in the late nineties. Moreover, spending on ICT services in Saudi Arabia has increased from SAR 70 billion in 2008 to SAR 120 billion in 2015. It is predicted to grow annually by 7% and exceed SAR 138 billion in 2017 (CITC, 2016:11).

2.5.4.1 ICT adoption in Saudi Arabia

The rapid growth in the information and communication technology (ICT) sector is embraced by Saudi Arabia and led to the introduction and development of many processes for IT systems in the country. Al-Shehry (2008) states that the aim of these processes is to focus on three targets:

1. To implement necessary IT infrastructures.
2. To implement and use computers in both the government and private sectors.
3. To apply and provide IT training.

To implement ICT in Saudi Arabia, the government applied a new plan in 2007 as an initiative to develop ICT. The plan is called the National Communications and Information Technology Plan (NCITP). Its essential purpose is to develop ICT in Saudi Arabia within the next few years so that Saudi Arabia can become one of the more developed countries by the year 2020.The vision of the plan is to transform the country, nation, and economy into a knowledge-based economy to enhance productivity and to build a solid infrastructure that provides ICT services for the whole country as an alternative source of income (MCIT, 2007).

The Communications and Information Technology Commission (CITC) is the official controller of ICT in Saudi Arabia. The commission is responsible for many duties among which are the following (CITC, 2015):

(a) granting licenses to provide telecommunications and information technology services

(b) granting licenses to ICT services providers for handling frequency range

(c) setting quality services and standards

(d) controlling and filtering content

(e) setting policies and regulations and preparing studies for the ICT sector.

Many companies are registered and listed with the CITC. Currently, it creates a portal for ICT companies that operate in Saudi Arabia. The number of these companies so far reaches 81, and it is this group which constitutes the target population of the current study. The CITC has also formulated a plan for achieving five strategic objectives to be implemented in the year 2020. These are given in Table 2-2 below.

Table 2- 2: The CITC Strategic Plan

NO	Strategic Objectives	Current Status (2015)	Target (2020)
1	Percentage of access to FTTH/B networks with a speed of 100-1000 Megabytes/second to homes in urban regions	25%	83%
2	Increasing the availability of frequencies for wireless communications networks services in line with the recommendations of ITU	265 MHZ	1340 MHZ
3	Percentage of remote regions covered with wireless network with a minimum speed of 10 Megabytes/second	7%	17%
4	To increase the domestic use of telecommunication and information technology	77 Billion SAR	100 Billion SAR
5	Enhancing equal and effective competition and encouraging it in the fields of telecommunication and information technology (HHI)	5000	3800

(Source: CITC, 2016: 28)

2.5.5 Environmental

Climate has an influence on business in Saudi Arabia. During the summer season the temperature reaches up to 49°C. Sandstorms are also a factor; the climate has an effect on workers' tempers and attitudes and consequently productivity in both the government and private sectors. The Saudi Arabian government has also introduced legislation which follows international trends with regard to global warming and waste disposal (SAGIA 2016).

2.5.6 Legal

Saudi Arabia's overall legislation and regulations are based on Sharia or Islamic law. These laws and regulations protect organisations' rights regardless of their nationalities. Moreover, the legislations and regulations play an observable and vital role in facilitating investment in Saudi Arabia not only for Saudi businessmen but also for foreigners. These practices have created a good investment environment in Saudi Arabia which in turn attracts foreigners to invest in the country. The Saudi Arabian General Investment Authority is mostly responsible for these efforts.

Moreover, their efforts have placed the country in a competitive and attractive position among world economies; in fact, Saudi Arabia was ranked 25th. In terms of doing business easily overseas, Saudi Arabia was ranked 49th. The country is ranked third in terms of largest FDI in Arab countries because it has few financial complications and taxes are easily paid (SAGIA 2016).

2.6 Conclusion

This chapter focused on knowledge as a strategic source for organisational success and how necessary it is for obtaining competitive advantage. The history and drivers of globalisation was briefly discussed. Globalising technology was explained as well as why companies go global with the emphasis on factors and tools such as PESTEL which assist companies to transfer their business abroad.

Competitive intelligence and its tools, knowledge management and business intelligence, were discussed as well as their roles in assisting organisations in the globalising process. Saudi Arabia was briefly discussed from different points of view. In the next chapter, the design model is presented.

CHAPTER THREE: RESEARCH MODEL

3.1 Introduction

The aim of this study is to investigate the role of technological, organisational, environmental and attitudinal factors that facilitate or hinder the globalisation process of Saudi Arabian ICT firms with special reference to knowledge management and business intelligence as significant factors in the globalisation of technology organisations in Saudi Arabia. This chapter focuses on the theoretical frameworks, which were used in the research model for this study, namely TOE and KAP. Moreover, this chapter presents the research model that was used.

In the literature review, the researcher outlined globalisation, its history and some of the factors that encourage companies to globalise their businesses. This chapter focuses on the TOE framework and the KAP model in more detail.

3.2 Theoretical frameworks

Many technology adoption theories have been used for the adoption of innovation at the individual level, and at the firm level in IS. The individual level theories are the technology acceptance model (TAM), the theory of planned behaviour (TPB), and the unified theory of acceptance and use of technology (UTAUT). The two prominent theories at firm level are diffusion of innovation (DOI), and the technology, organisation and environment (TOE) framework (Oliveira & Martins, 2011). Zhu, Kraemer and Xu (2003) argue that TOE can be used to study the adoption of IS innovations which, as mentioned earlier, this study is using at the organisation level.

The study has used a mixed method approach for gathering the required data. The theoretical frameworks that support the study are the technology, organisation and environment (TOE) approach (Tornatzky & Fleischer, 1990) and the knowledge, attitude and practice (KAP) framework. Many studies have applied the TOE framework to analyse IS aspects. Among these are studies of e-banking, e-business, e-commerce, electronic data interchange (EDI), enterprise resource planning (ERP), knowledge management systems, and business intelligence (Arpaci et al., 2012). On the other hand, knowledge, attitude, and practice will be shown in the research model (Figure 3-1). The KAP lens is used to understand the organisation's globalisation intentions and actions. Knowledge, attitude and practice (KAP) surfaced to examine issues relating to population and family planning in the 1950s (Launiala, 2009), and researchers started to use KAP questionnaires from the 1960s onwards for understanding family planning in Africa (Dong, 2015). Table 3.1 provides conceptual definitions of the variables tested in this study

while Table 3.2 illustrates the matching of the research questions and research objectives to the theoretical frameworks. Figure 3.1 illustrates the research model. Both TOE and KAP models will be discussed in more detail in section 3.3 and 3.4.

Table 3- 1: Conceptual definitions of the variables tested in the study

Concept/Variable	Conceptual Definition
TOE Framework	The TOE Framework is a set of procedures taken by organisations or companies to assist them to adapt to, adopt or create and use technological innovations. Researchers suggested three factors that influence a TOE model. These are the technological context, the environmental context and the organisational context (DePietro, Wiarda, & Fleischer, 1990). The technology context includes internal and external technologies relevant to the business. Technologies can include both equipment and processes. However, the organisational context describes the structure of the organisation, its features and traits as well as the available and required resources of a business, such as business size, degree of centralization, degree of formalization, management structure, human resources, unusable resources and employee relationships. Broader is the outer circle of the environment; the environmental context refers to the structure and volume of the national and international kind of business an organisation is involved in, including, the company's competitors, the macroeconomic context and the regulatory environment (DePietro, Wiarda and Fleischer, 1990). The TOE framework includes these three elements of technology, organisational context and environmental context, which influence the direction of and need for adopting new technology or relevant innovations, since these variables control the constraints and opportunities that facilitate technological innovation in a firm (DePietro, Wiarda, & Fleischer, 1990, p. 154).

	The TOE three elements impact the direction of and need for adopting new technology or relevant innovations, since these variables control the constraints and opportunities that facilitate technological innovation in a firm (DePietro, Wiarda, & Fleischer, 1990, p. 154).
KAP Model	The Knowledge, Attitudes and Practices (KAP) survey is a quantitative method (predefined questions presented in normalized, verified structured questionnaires, that could collect objectively verifiable qualitative and quantitative data with the purpose of collecting real data on the ground. Such KAP questionnaires can be used for revealing or introspecting into the misconceptions or misunderstandings that may be barriers to the activities need to be implemented. It should be noted that a KAP survey essentially records a "notice" and is based on the declarative statements or items in a KAP survey. A KAP survey assesses the extent of a known situation by confirming (or misrepresenting) a hypothesis, providing new tangents to the reality of a situation, by deepening the knowledge of the status of a company in question, determining what can be done to improve business attitudes and practices. KAP survey findings provide insights for leaders of a company to suggest an intervention strategy that takes into account the situational circumstances and organisational culture of a given company as well as planning improvement activities.
Globalisation	In the classical concept, the term globalisation is limited to the liberalisation of trade and the spread of new information technology that transforms the world into a global village (Shehu, 2007). Globalisation is a process of being open to global variables including challenges and opportunities for development in order to facilitate and diffuse access to new technologies, new skills, new markets and new sources of

	funding and, more than ever, offers better opportunities for future growth (Wignaraja, 2004).

Table 3- 2: Matching research questions and research objectives to the theoretical frameworks

Research Question	Research objective	Research Method	Research Instrument	Framework / Models
What are the characteristics of SAICT organisations?	To determine the organisational factors which influence the globalisation intentions of SAICT.			
What technological factors facilitate or inhibit SAICT organisations in globalisation?	To identify readiness of SAICT companies in terms of IT competence	Quantitative ⟶ Survey		Technology, organisation and environment - TOE framework (Tornatzky & Fleischer, 1990)
What environmental factors facilitate or inhibit SAICT organisations in globalisation?	To determine the environmental factors which influence the globalisation intentions of SAICT organisations	Qualitative ⟶	Three companies' public documents (annual financial statements, annual reports, press releases, etc.)	
What knowledge do SAICT organisations have about globalisation?	To find out how knowledgeable the management of SAICT companies are about globalisation			
Do SAICT organisations' knowledge about globalisation influence attitudes to globalisation?	To describe the attitude of the management of SAICT companies towards globalisation	Quantitative ⟶ Survey		Knowledge, attitude and practice (KAP) model
What practices do SAICT organisations implement in relation to globalisation?	To determine the practices that SAICT companies are implementing in relation to globalisation			
What are the factors, which influence SAICT organisations in regard to globalisation?	To identify the factors which influence SAICT organisation in regard to globalisation (PESTEL)	Quantitative ⟶ Survey		

TOE Framework

Technological Factors

Knowledge management and Business Intelligence

Organisational Factors

External

Environmental Factors

Globalisation of Saudi Arabia ICT Firms

KAP Framework

Technological Factors

Knowledge management and Business Intelligence

Organisational Factors
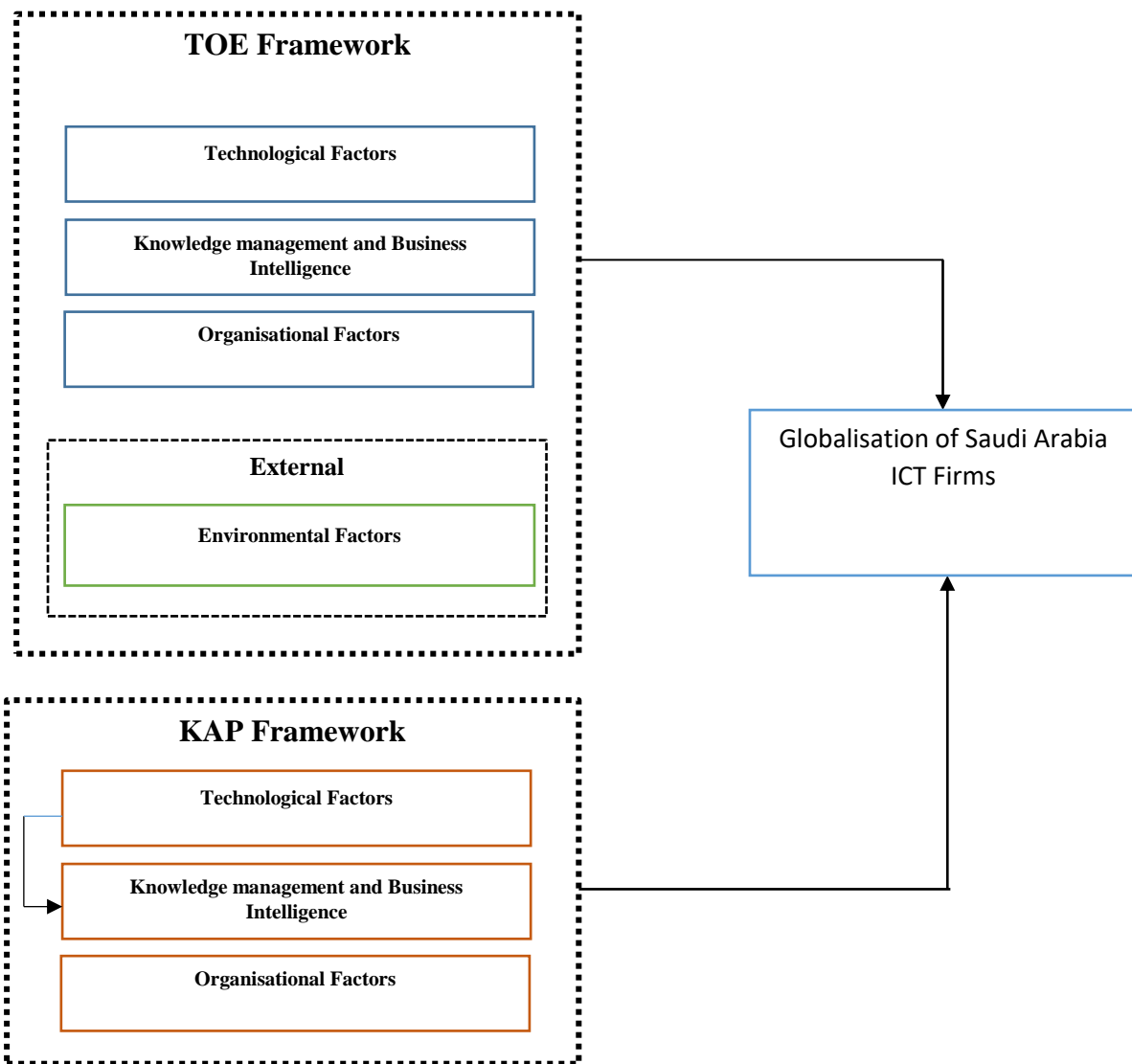
Figure 3- 1: Research model

3.3 Technology, Organisation and Environment (TOE) Framework

Tornatzky and Fleisher introduced the technology, organisation and environment (TOE) framework to study the adoption of innovation (Tornatzky & Fleischer, 1990). As has been mentioned, in section 3.2 TOE was applied in many studies, including some that investigate business intelligence and knowledge management.

The TOE framework puts forward three factors that influence organisations to adopt and implement technology, namely technological, organisational and environmental factors. Figure 3-2 illustrates the TOE framework by Tornatzky and Fleischer.
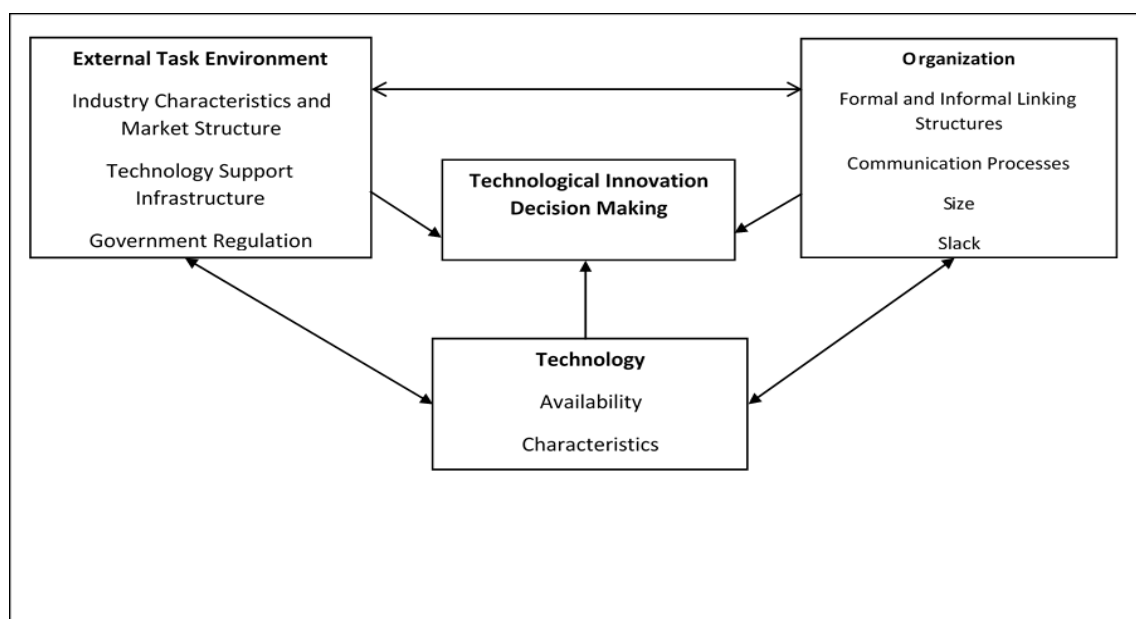
Figure 3- 2: Technology, organisation and environment framework (Tornatzky and Fleischer, 1990:154)

Hung et al. (2016) also state that when a company decides or plans to either adopt or implement the latest IT, the decision would be based on three contexts, which are the technological, organisational and environmental contexts.

The technological factor defines the appropriate internal 'practices and equipment' or external technologies that will be used by companies to improve productivity. The organisational factor refers to characteristics of the company such as size, structure, managerial flexibility, and the availability of financial resources. The environmental factor deals with the environment, which

surrounds the company from its industry to competitors as well as rules and legislation imposed by the government (Oliveira & Martins, 2011; Hoti, 2015).

Therefore, this study uses technology, organisation, and environment (TOE) factors to understand their influence on competitive intelligence tools (knowledge management and business intelligence) towards globalising ICT companies at the firm level. The TOE framework is used to understand the influence of technological capabilities such as websites, cloud computing, hardware, and software. It is also used to identify organisational factors in ICT companies such as characteristics and the size.

Oliveira and Martins (2011) conducted a study on information technology adoption in 2626 Portuguese companies to explore the factors which determined their adoption of websites and e-commerce, using the TOE framework. The study aimed to examine the effect of TOE-related factors on website and electronic commerce adoption, and what the drivers were. The study concentrated on the readiness for and integration of technology. On the one hand, readiness is determined by IT infrastructures and human resources such as the skills and knowledge which are needed to develop website applications. On the other hand, integrating technologies has a role to play in improving the performance of companies and improving the services provided to customers. In terms of organisation, they state that corporate size is the most important determinant in adopting websites and e-commerce. The environmental context relates to the influence competitors have on the company within the same industry. Oliviera and Martins (Ibid.) argue that once companies achieve innovation, they are able to control competition in the market and gain power over their competitors, which may be a powerful driver for adopting IT.

Soto-Acosta, Perez-Gonzalez and Popa (2014) developed a model based on the TOE framework to investigate and analyse the factors that enable the exchange of knowledge through Web 2.0 technologies in Spanish SMEs, with a staff of 14 and more. The companies under study represented activities from the sectors of trade, services, construction, and manufacturing. The questionnaires were sent to CEOs and companies. In terms of technological context, they point out that some studies using the TOE framework have found that IT resources are the main enabler in using Internet technologies. Under organisational factors, they contended that an organisation's employees should have the desire to share knowledge and collaborate. They argue that some studies found that employees might enable or prevent the adoption and use of Web 2.0 technologies because organisational and social cultures do not encourage employees

to share knowledge. With regard to environmental factors, they argue that the power of competition is considered a force for adopting Web technologies. The main findings of the study showed that technological and organisational contexts have an impact on knowledge sharing through Web 2.0 technologies, which are classified under internal organisational and technological resources, while impacts from environmental contexts are non-existent.

In 2001, Ryan, and Prybutok conducted a study using the TOE framework to investigate the relationships that enable the adoption of KM technologies. They used a survey method to collect data from IT executives as the targeted respondents because they were responsible for managing the company's IT tasks. The study used the IT executives as 'key informants' to describe the organisation's characteristics rather than their personal beliefs and behaviours. The results revealed that most organisations that implemented KM technologies viewed IT as a strategic addition to their organisations, enhancing and increasing employee productivity and giving them competitive advantage.

Aboelmaged (2014) conducted a study to examine the effect of TOE determinants on e-maintenance technology readiness in manufacturing companies. The study used a survey method to collect data and used structural equation modelling to analyse the data. The study found that companies are influenced by both technological and organisational factors such as infrastructure, technological competency, and the size of the organisation. The study indicated that in the environment context, there were no competitive pressures which impacted on e-maintenance readiness.

Parveen (2012) conducted a study using the TOE framework to investigate the impact of social media usage on companies in Malaysia. The findings indicated that social media was not yet mature enough to determine the benefit of using it to expand and market a business.

Park, Kim and Paik (2015) conducted a study using the TOE model to identify the factors that influence the adoption and usage of big data in South Korean organisations by using the analytic hierarchy process (AHP) method. The study found that the technological context is the most important determinant in the adoption of big data; this comprises compatibility with the current system, quality of the data, as well as security and privacy. Management support and financial investment are important organisational attributes in this context, whereas government support and policy are environmental factors.

In 2014, Puklavec, Oliveira and Popovič used the TOE model in a study to identify the determinants of adopting business intelligence systems in SME. The study used semi-structured interviews for collecting data as well as literature related to information technology and information systems adoption. The study found that management support is a dominant factor in an organisation; the engagement of top management is required since BI is implemented to assist senior management to make the right decisions. Regarding environmental context, the study found that this aspect was not significant. The technological context was found to be significant, especially when considering BIS as innovation.

Hung et al. (2016) also studied the factors influencing the success of BIS implementation by using a TOE framework. They found that some constructs of the TOE model have an effect on the implementation of BIS. In the technological context, constructs such as relative advantage had an impact; in the organisational context the size of the organisation and management support had an impact; and in the environmental context, competitive pressure and training had a major impact on user satisfaction.

Boonsiritomachai, McGrath and Burgess (2014) assessed the existing status of using BI and its implications in small and medium-size enterprises (SMEs) in Thailand. The study used three models, namely the diffusion of innovation (DOI) theory, the technology-organisation-environment (TOE) model, and the information systems and integration model. The study used a quantitative methodology and a survey technique via a questionnaire to collect the data. The study found that adopting BI is significant in the technological context because of relative advantage, complexity, and observability. In terms of environmental context, competitive pressure and vendor selection play a role, and in the organisational context constructs such as resource availability play a significant role in influencing SMEs to adopt business intelligence.

Furthermore, Bijker and Hart (2013) purposively researched five large South African organisations in different industries by examining the factors that impact the widespread adoption of BI based on the TOE model. This type of study is exploratory, and semi-structured interviews were used to collect data. The authors used thematic analysis to define the major factors that lead to the spreading of BI. The study found that all five organisations relied on BI in their activities to make the right decisions, and they aligned their BI strategy with their strategic goals which were supported by top management. Moreover, the study indicated that training and education, effective communication as well as the quality of information were significant factors towards enabling the use of BI in the organisations. In general, organisational

context had most influence on the use and spread of BI, whereas the technology and the environment had little effect.

3.4 Knowledge, Attitudes and Practice (KAP) Model

The second model that is applied in this study is the knowledge, attitudes and practice (KAP) model. Launiala (2009) points out that a KAP survey was first used to examine issues relating to population and family planning in the 1950s. Furthermore, Dong (2015) states that researchers started to use KAP questionnaires from the 1960s onwards for understanding family planning in Africa.

Kaliyaperumal (2004) states that KAP is a method of study that measures people's knowledge about, attitudes towards, and practices concerning certain topics. Launiala (2009) argues that the KAP model is used extensively to collect information, mainly on health programmes. The model appeared in the 1950s in response to a need to study family and population. Even though the discussion about conducting KAP surveys is limited in other environments or fields, it became recognised and used widely for gaining information especially on health. The KAP model is attractive because it is easy to design, the data can be quantifiable, the results are easy to interpret and present, the result of a small sample can be generalised to a significant population, and it is easy and quick to implement.

Furthermore, according to Goutille (2009:7), the KAP is "a representative survey conducted on a particular population to identify the knowledge (K), attitudes (A) and practices (P) of a population on a specific topic." In this context, the population is Saudi Arabian ICT companies, and the topic is globalisation.

Launiala argues that

> the attractiveness of KAP surveys is attributable to characteristics such as an easy design, quantifiable data, ease of interpretation and concise presentation of results, generalisability of small sample results to a wider population, cross-cultural comparability, speed of implementation, and the ease with which one can train numerators (2009:2).

According to Vandamme (2009, p. 1) KAP is "used to investigate human behavior concerning a topic: (a) what the respondents know about it (K); (b) how the respondents feel about it (A); (c) what the respondents do about it (P)".

Vandamme (2009) states that KAP is used to examine human behaviour about a particular topic, and concentrates on three goals, namely (a) knowing, (b) feeling, and (c) doing or taking action. The purpose of conducting KAP research is the following:

- To examine people's knowledge, attitudes and practices.
- To study a topic deeply so that appropriate solutions can be applied.
- To assess a current planning or programme.

Furthermore, according to Kaliyaperumal (2004:7), KAP means

> Knowledge refers to people's understanding of any given topic. Attitude refers to their feelings towards the subject, as well as any preconceived ideas that they may have towards it. Practice refers to the ways in which they demonstrate their knowledge and attitude through their actions.

As mentioned above, the KAP model focuses on medicine and health, but there are also studies conducted outside this field. Ahmad, Noor, and Ismail (2015) conducted a study using a KAP survey among students in higher education in Malaysia to identify the students' knowledge, attitudes and practices towards the environment. The study shows that the students in general have knowledge of the environment due to the government and educational organisations' efforts. The study identifies the weaknesses associated with knowledge and practice, which indicated that good knowledge, does not necessarily lead to good practice. The study also found that students could gain information about environmental issues from different kinds of media such as the Internet, TV, and newspapers.

Harishankar, Balaji, and Ganapuram (2013) applied a KAP model to assess the readiness of adopting open education resources (OER) in India. The study indicates the vital role of ICT and open source technologies in term of spreading OER. The study sample was 100 respondents from different faculties in various universities all over India. The nature of the study was mixed method. A survey was applied through a questionnaire for collecting data. To analyse the data, a quantitative approach was used while a qualitative approach was used to analyse the data collected through the KAP model. In other words, this study used a KAP framework to analyse their sample qualitatively because they believed that it would strengthen the study; a quantitative analysis would not have been enough. The study indicated that there is knowledge about OER among Indian teachers at a moderate level, and that there were no negative psychological or social attitudes towards OER. In terms of practice, even though OER is

spreading in India, the study found that Indian teachers are willing to practice it as individuals rather than according to institutional rules.

Rahman and Rahman (2015) conducted a study to establish teachers' and students' knowledge, attitudes and practices towards using ICT tools and services in Dhaka city. The study found that the practice or use of these tools and services in education was not satisfying even though knowledge of the tools was high. Furthermore, the findings point to a correlation between KAP elements, although it was not highly significant. Additionally, factors such as type of university, jobs, and having a personal computer were considered important in the levels of ICT knowledge and practice in education.

Daneshkohan et al. (2015) conducted a study using a KAP survey about how students use the Internet in the Shahid Beheshti School of Health. The study used a questionnaire method for collecting data from 250 students. Briefly, the findings state that more than 77% of the students had poor knowledge of searching the Internet, while more than 90% had positive attitudes towards using the Internet for learning.

Mehtab, Zaheer and Ali (2015) employed a KAP survey on Islamic banking in Peshawar, Pakistan. The aim of the study was to investigate the knowledge, attitudes, and practices of bank account holders in both Islamic and conventional banks. The study also tried to find out if there is any relationship between the three variables of KAP in Islamic banking, and whether attitude affected relationships positively, negatively or neutrally. The study collected data from 200 participants. The findings showed a relationship between knowledge and practice in Islamic banking. The data analysis revealed that a significant association existed between awareness and practice in Islamic banking. With regard to attitudes and their influence on the relationships between knowledge and practice in Islamic banking, it was found to be neutral.

3.5   Operational definitions of key variables in the present study:

The table 3.3 below summarises the main variables tested in the present study. These terms complement the conceptual terms introduced in Table 3.1.

Table 3- 3: Operational definitions of key variables in the present study:

Concept/Variable	Operation Definition
TOE	A TOE Framework-based survey that describes the main constructs of technology adoption in an ICT firm in Saudi Arabia. Section 1 addresses the organisational context for collecting information

	about the respondent's role in the company, the size of the business (number of employees), number of years in business, types of services provided, and places of company operation. Section 2 addresses the technological context by collecting information about the company's technological competence, which includes the role of the company's website, the role of knowledge management and business intelligence, the role of social networking, cloud service, and hardware and software. Section 3 of the TOE survey captures information about the effect of the company's location, culture, legislation, competitor pressures, and the role of knowledge management and business intelligence.
KAP	Knowledge, attitudes, and practice (KAP) is a survey developed for purposes of this study to gather information about the ICT organisations' knowledge, attitudes, and practice with respect to globalisation. It continues the TOE survey, thus including Section 4 that taps the respondent knowledge about globalisation and its effect on business, and the company's awareness of political, economic, technological, and cultural factors, which might affect its globalisation strategies. Then comes Section 5 to tap the respondent' attitudes towards globalisation of SAICT companies. Finally comes Section 6, which taps practices in ICT firms in Saudi Arabia. The purpose is to investigate the practices of SAICT companies towards globalisation.
Globalisation	It refers to the international effect of organisations concerning the role of staffs, marketing and sales department, as well as manufacturing in order to increase and improve business and results. In Part 3 of the questionnaire used in the present study, globalisation is what Section 7 measures in order to identify and evaluate the factors that influence ICT organisations' decisions to globalise. The factors tested by this section are political, economic, socio-cultural, technological, environmental, and legal.

3.6   Conclusion

This chapter identified the key theoretical frameworks for the study and their roles in IS or IT; which ones can be used at the individual level and which ones that can be used at organisational level. One of the organisational levels is the TOE model which is discussed extensively.

The following chapter focuses on the research methodology and demonstrates how it was applied.

CHAPTER FOUR: RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

Chapter four presents the research methodology that this study has used. The research approaches/paradigms, philosophy of research, study site, target population, and data collection instruments are discussed. In addition, this chapter presents a theoretical overview of the methodological considerations taken with regard to the research method for this study, and then develops into the framework of the method, instrumentation and design of the present study. This chapter is divided into two parts: first, a consideration of the different aspects of research methods such as research design, qualitative and quantitative approaches, and a discussion of various social science methodological issues. Second, the practical implementation of the research method used in this study will be discussed. In other words, the chapter sheds light on the strategies and instruments used for gathering information. A quantitative survey is a method used to collect information through questionnaires while collecting public documents is a qualitative method for collecting data. How the questionnaires have been used is discussed. In terms of public documents, the chapter discusses qualitative case studies of three ICT companies to examine the effect of implementing competitive intelligence tools (KM and BI) towards globalising SAICT companies.

The method of collecting and analysing the data is based on a TOE framework and KAP framework. Only TOE framework is used for quantitative and qualitative research, but the KAP framework is used for quantitative research. Finally, the reliability and validity of the collected data and the statistical analysis tools are discussed.

4.2 Research Approach

Research is known as a method in which the researcher seeks to discover the right information or an accurate investigation aimed at discovering useful facts and knowledge or increasing the available information (Bernard 1994). In this context, the researcher, in establishing the research design of this study, took into account the context of the research discussed in Chapter One based on the guidance of the literature review mentioned in Chapter Two and was shaped by the appropriate methodology and selected in both the Chapter Three and Chapter four.

On the other hand, Sekaran (1999) states that research is a way in which research studies are designed, and actions are taken to analyse data.

There are three main research approaches namely (a) quantitative, (b) qualitative, and (c) mixed-method. The integration of quantitative and qualitative methods within a single evaluation has synergistic effects in the three major phases of design, data collection, and analysis' (Madey, 1982, p. 223). Leedy and Ormrod (2010) argue that the purpose of quantitative research is to explain and predict, to confirm and validate, and to test a theory, whereas the purpose of qualitative research is to describe and explain, to explore and interpret, and to build theory.

Furthermore, Neuman (2007) states that the data gathered can be quantitative (which is expressed as numbers) or qualitative (which is expressed as words, visual images, and sounds or objects). The mixed-method research approach combines elements of quantitative and qualitative enquiry (Leedy and Ormrod, 2010). Moreover, Leech and Onwuegbuzie (2009:265) define mixed-methods research as "research that involves collecting, analysing, and interpreting quantitative and qualitative data in a single study or in a series that investigates the same underlying phenomenon." Thus, this study has used a mixed-methods research approach.

Creswell and Plano Clark (2011:12-13) identify the benefits of using mixed methods:

   a. It strengthens the research by minimising the weaknesses of both qualitative and quantitative research.
   b. It gives more evidence for studying research problems than quantitative or qualitative research alone.
   c. It helps to answer questions, which cannot be answered by quantitative or qualitative research alone.
   d. It helps to stop adversarial divisions between quantitative and qualitative researchers.
   e. It gives researchers the freedom to use all methods possible to address a research problem.

Furthermore, Kroll and Neri (2009) divides mixed method into six research strategies. They are the followings:

   1. Sequential Explanatory: this method is the collection and analysis of quantitative data and then the analysis of qualitative data. The objective of this type is to utilise and use qualitative study results to help the researcher explain the results of his/her quantitative study.

2. Sequential Exploratory: this method is characterised by the collection and analysis of qualitative data as an initial stage, followed by quantitative data collection and analysis. This strategy aims to explore or explain the phenomenon. This strategy may be useful when a researcher develops or tests a new instrument. With regard to the results of quantitative and qualitative data collection methods, they are analysed and then integrated during the interpretation phase.

3. Sequential Transformative: in this strategy, quantitative or qualitative data are first collected and analysed, and later, in the interpretation stage, the results are merged. This strategy has the goal of employing the best methods to assist the theoretical perspective.

4. Concurrent Triangulation: in this strategy, one study is used to collect quantitative and qualitative data that are conducted simultaneously. This strategy aims to confirm the results of the study and verify its validity. This type aims to investigate the validity of the finding produced either by quantitative and qualitative through the evidence provided by the other.

5. Concurrent Nested: this means either qualitative or quantitative is leading and guiding the project, while the other one is nested in it. The objective is to answer a different question than the dominant one or to find information from different levels.

6. Concurrent Transformative: in this design, the collection of quantitative and qualitative data are at the same time. Conducting a study of this type is through a theoretical perspective whereas data are integrated during the explanation stage.

4.3 Philosophy of Research

Firestone (1987) points out that quantitative studies usually follow a positivist model, while qualitative studies are based on a phenomenological study. Thus, each technique uses different views to convince the reader of its conclusions. In this context, the author argues that four differences need to be clarified the overall picture of the two approaches, as follows:

1. Assumptions. Quantitative research focuses on positivist philosophy, which presupposes the existence of social realities that are objectively determined separately from individuals' beliefs. While qualitative research is rooted in a socially constructed virtual model through individual or collective perception of the situation.

2. Purpose: Quantitative research aims to clarify the causes and effect of differences in social reality, through objectively verifiable standards and numerical or quantitative statistical analysis. On the other hand, qualitative research is concerned with trying to

understand the social phenomenon by knowing the participants' point of view through their participation.

3. Approach: The researcher, in the quantitative approach, often uses experimental or associative designs to reduce the error and prejudice or other intrusions that may affect the methodology or impede the researcher's awareness of social realities. On the other hand, the typical qualitative study is the ethnography and helps the reader figure out the characterizations of those being studied.

4. Role of the researcher: To avoid bias, the quantitative researcher is 'detached', while the qualitative researcher is engrossed in the phenomenon of interest.

Qualitative and quantitative methods may seem to be conflicting and derive from different philosophical views as explained above, yet both are effectual ideological springboards for social research, providing imminent insight into human behaviour. Thus, Sekaran (1999) confirms that one approach is neither better nor worse than another; they are simply complementary to each other.

Actually, when selecting the method of research, either qualitative, quantitative or mixed method depends are based on the aim of the research as well as the results that the research is expected. Downey and Ireland (1979, p.638) state that methodologies are "neither appropriate nor inappropriate until they are applied to a specific research problem". This perspective considers methodologies as ways to discover and select appropriate research methods and tools. The appropriate methodology for data collection, processing and analysis should also be considered. It is important to achieve accuracy at all stages, or as Madey (1982) added that quantitative and qualitative integration might produce synergistic effects that emerge and appear at all stages of data processing and analysis.

For a thoughtful comprehension of the nature of qualitative research and how it works, researchers are required to recognize and understand the goals of qualitative research and the different disciplines of knowledge as well as the goals and research areas of quantitative research that this methodology can ideally be used in (Ambert, Adler, Adler and Detzner, 1995). First, qualitative research seeks depth rather than researching a broader spectrum of topics and/or populations. Rather than using a broad representative sample for an entire population, qualitative researchers seek intimate and in-depth information about a smaller sector of the population who would actually participate in qualitative research as in case studies or

ethnographies. Second, the goal of qualitative research is to know how and why people act, think and give meaning to what they do, rather than what they do or believe in general. Third, the objectives of qualitative research can be defined at several levels. Qualitative research covers total partial spectrum as well as structural and procedural issues (Creswell, 2014). Qualitative research spans the micro-macro spectrum and both structural and procedural issues (Creswell, 2014). In this regard, Creswell (2014) further citing Neuman (2009) explains that in the theory of mixed-methods research and triangulation, there are three levels, which are the followings:

1. Micro-level theories focus on small parts such as time, space, or group of people. An example of these theories is 'Goffman's theory of face work,' which focus on the interaction between people who are engaged in rituals during meeting face-to-face.
2. Meso-level theories are a connection between micro level to macro levels. Here, these theories take place in significant places and groups such as 'organisations, social movement, or communities.' An example of this type of theories is 'Collins's theory of control in organisations.'
3. Macro-level theories concentrate on a larger group. This include 'social institutions, cultural systems, and whole societies'. (Creswell, 2014, p. 86)

Nevertheless, Sarantakos (1993) has an opinion regarding the choice of approach where he believes that a deep understanding of the validity of the subject should be adopted. Because each approach is different from other approaches in term of data collection and information that other methods may not be able to provide. Therefore, there is a need to integrate the methods because it is relevant and effective and can be viewed as complementary to each other.

Therefore, the researcher was very careful as to the selection of the research methods used in this study, thus utilising a mixture of qualitative and quantitative methodologies in order to gain accurate and precise data. In fact, various research projects either in the field of IT management or other fields have used quantitative methods. The researcher utilised a triangulation of methodologies, and manipulated a combination of qualitative and quantitative methods, which may achieve the required evidence for this study. Specifically, the researcher used descriptive questionnaires as instruments in the study to collect quantitative data, together with employing an open-ended introspective complement to the survey and case studies to collect qualitative data for the present study.

4.4   Qualitative Method

The qualitative research has a separate and distinct history in various sciences, from education, medical science, psychology, sociology, social work to history and organisational studies (Symon & Cassell, 1994).

Qualitative techniques are not concerned with accurate assessments and measurements per se; they are responsive to the needs of the respondents and to the nature of the subject matter, enabling the researcher to understand the situation first hand (Walker, 1985; Bryman, 2001). According to Walker, qualitative methods induce large amounts of rich data obtainable from a limited number of individuals, whereas quantitative data could be obtained from small or large-sized samples to extract or secure accurate, precise information. Qualitative methods such as interviews enable the researcher to touch on the real situation by asking relevant questions and receiving answers to provide an appropriate framework of the different dimensions of the problem under consideration. Wong (1992), states that this approach enables the researcher to discover the world as perceived by the interviewee. Bryman (1992) agrees that the emphasis tends to be on the understanding of what is going on in organisations in the participants' own terms rather than those of the researcher. In essence, qualitative methods attempt to capture and understand individual definitions, descriptions and meanings of events.

Qualitative methods such as interviews, observations, and document reviews are predominant in this paradigm, being mostly anecdotal in nature, yet varying in the degree of structuredness. These are applied in line with an assumption about the social construction of reality, in that research can be conducted only through the interaction between and amongst investigators and respondents (Denzin & Lincoln, 1994, p. 2).

Qualitative data can be obtained through a selection of research methods and comes in a variety of formats. While some of the qualitative methods are in principle the same as those of the quantitative methodology, others are discrepantly different and are employed only in the area of qualitative method.

4.5   Quantitative method

The quantitative research is characterized as a directed towards the product as well as an objective and controlled (Cook & Reichardt, 1979). Furthermore, the quantitative research approach "employs quantitative measurement and the use of statistical analysis" (Sarantakos, 1993, p. 6). Bryman (1992) contends that quantitative's practitioners usually view it as having

a logical structure in which theories define problems that are treated by researchers by employing hypotheses that are resulting from general theories. On the other hand, Van Maanen (1983) adds that this quantitative method concentrates on structural issues rather than complex issues related to the process

4.6 Triangulation Methodology

Triangulation is typically perceived to be a strategy for improving the validity of research or evaluation findings: "[. . .] triangulation is supposed to support a finding by showing that independent measures of it agree with it or, at least, don't contradict it" (Miles & Huberman, 1994, p. 235). It is essentially a strategy that will aid in the elimination of bias and allow the dismissal of plausible rival explanations such that a truthful proposition about some social phenomenon can be made (Campbell & Fiske, 1959; Denzin, 1978; Webb, Campbell, Schwartz, & Sechrest, 1966). Denzin defines triangulation as "[. . .] the combination of methodologies in the study of the same phenomenon". Good research practice obligates the researcher to triangulate, that is, to use multiple methods, data sources, and researches to enhance the validity of research findings. Regardless of which perspectives the evaluator use, either philosophical, epistemological, or methodological, it is necessary to use multiple methods and sources of data in the execution of a study. Using different methods of investigating a problem could enrich the result more than using one method alone; in addition, a combination of methods makes the research result more valid and reliable.

In this context, Cohen, Manion and Morrison (2007) defined triangulation:

> as the use of two or more methods of data collection in the study of some aspect of human behaviour. The use of multiple methods, or the multi-method approach as it is sometimes called, contrasts with the ubiquitous but generally more vulnerable single-method approach that characterizes so much of research in the social sciences. In its original and literal sense, triangulation is a technique of physical measurement: maritime navigators, military strategists and surveyors, for example, use (or used to use) several locational markers in their endeavours to pinpoint a single spot or objective. By analogy, triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and, in so doing, by making use of both quantitative and qualitative data. (p.141)

They further suggested that triangulation can be a powerful technique for establishing concurrent validity in qualitative research, where a researcher is engaged in a case study.

Triangulation techniques attempt to prepare the data or to explain the situation in details through studying from more than one standpoint and by making use of both quantitative and qualitative data. (Cohen et al., p.142).

In addition, Mason (1996) states that triangulation allows a holistic picture to develop. It is useful in capturing a more complete, holistic and contextual portrayal of the topic under study.

In order to address a research question or set of research questions, researchers must devise a strategy or, as Bryman suggests, "a general orientation to the conduct of social research" (Bryman, 2001, p. 20). Sekaran (1999), in this sense, emphasises the need for a multi-method of data collection as almost all data collection methods have biases associated with them, and therefore, when collecting data responses collected through interviews and questionnaires, which are strongly correlated with one another, we will have more confidence about the quality of the collected data. A sound research methodology should involve a combination of both qualitative and quantitative methods, or a blend of quantitative methods involving a variety of data collection methods and data analysis techniques or an amalgam of qualitative methods, involving a combination of data collection methods such as interviews, surveys, case studies and ethnographies, historical research methods, etc. Implementing a triangulated research strategy should be done in an integrated fashion by an expert researcher who can amalgamate both qualitative data in alignment with quantitative data complementarily as in a case study design where a variety of diverse methods are professionally employed. A mixed-methods research approach fundamentally gets a researcher to work on diverse types of data that span quantitative numerical data and qualitative interpretive and anecdotal data. This approach may require hiring different researchers to work together, or sometimes, different research teams to collaborate in different research paradigms. The case being thus, a mixed methods research approach is typically referred to as 'multi-strategy research' (Bryman, 2001, p. 20) suggesting the use of a number of various research strategies in a broad spectrum of research questions and a multifarious, sophisticated research designs.

Burgess (1984), on the other hand, chooses the term 'multiple research strategies' to describe the use of diverse methods in tackling a research problem. According to this view, research methods that do not apply sampling, observation and interviewing are considered narrow and

inadequate. His argument is that researchers ought to be flexible in selecting a range of appropriate methods.

Finally, qualitative and quantitative methods may appear to be opposites derived from different philosophical views. Both help to contribute to a precise comprehension of the phenomena at issue and both are justifiable tools of social research, providing an insight into human behaviour. It should be appreciated that one approach is neither better nor worse than the other; they should be better simply integrated into each other (Sekaran, 1999).

Quite often, a researcher, as the case in this research, needs to combine, merge and integrate different methods of data collection and procedures.

4.7   Research design

Research design is an important part of a research project because it articulates the general strategy for solving the research problem and answering the research questions. In this regard, Kothari (2004:31) states that research design is a process of collecting and analysed data with concentrating on data that is relevant to the research taking into consideration procedural economy.

According to Foranzo and Gravetter (2011) research design is based on exploratory or explanatory research. Kothari (2004) also categorises research design based according to study type, which could be exploratory, descriptive or hypothesis testing.

Furthermore, conducting research depends primarily on the nature of the subject to be researched or studied. There are many strategies available for scientific research, for example the case study, the survey, the action research study, and various forms of experimentation. In addition, there are different philosophical paradigms available based on the underlying epistemology, such as positivist research, interpretive research, and critical research (Myers, 2009).

This study explores and describes the impact of the interaction between the strategic tools of KM, BI, and CI and their usage in 81 ICT companies in Saudi Arabia. The purpose of descriptive research is to describe and explain the current state of the subject or issue under consideration at the time of study (Salkind, 2012). The study therefore uses a mixed method approach that includes both quantitative and qualitative research. Creswell (2009) states that a

mixed method approach means combining quantitative and qualitative approaches in order to get the best out of them, use the strength of both, and arrive at an expanded understanding of the research problem. The researcher uses both a quantitative, descriptive survey design in the form of a questionnaire based on the TOE framework and KAP model, and conducted a qualitative content analysis through analysing public documents.

Leedy and Ormrod (2010) explain that the purpose of survey design is to obtain information from one or several people about a particular topic to know their views, attitudes and experiences by asking questions about the topic that under study and then tabulating answers according to scientific methods. In other words, researchers use a survey design to study the characteristics of the target population directly.

The researcher utilised a triangulation methodology by manipulating a combination of qualitative and quantitative methods, which could achieve the required evidence for this study. Specifically, the researcher used case studies and the open-ended sections of the descriptive questionnaires as instruments in the study. Quantitative data was gathered using the closed sections of the questionnaires that had been statistically treated on the SPSS.

This study selected a survey method for several reasons. Firstly, it enabled the researcher to cater for a large number of participants. Secondly, the nature of the study required a strategy which would lead to accurate and credible results that are generalisable. Thirdly, the use of a survey enabled the researcher to obtain the exact type of data required from a large group or population using a systematic method (Oates, 2006).

The other part of the mixed method approach is a qualitative case study to examine the technological, organisational, and environmental factors that facilitate or prevent three Saudi Arabia ICT companies to globalise their businesses. For this part, the data was collected from the public documents of the three large companies. The companies are: (a) the Saudi Telecom Company (STC), (b) the Mobile Telecommunication Company Saudi Arabia (Zain KSA), and (c) the Etihad Etisalat Company, Mobily, which provides mobile services.

The companies were selected for the following reasons:

- There is huge competition between the three companies to acquire the largest market share in Saudi Arabia.

- To assist the researcher in obtaining a clear understanding and in-depth knowledge about the implementation of the three strategic tools in the three large ICT companies.

- To know to what extent the three large companies are implementing CI in their companies.

- To increase the validity of the collected data via more in-depth information about CI implementation from the respondents' point of view.

Furthermore, using both quantitative (a questionnaire) and qualitative (document analysis) methods to collect data is called triangulation. Creswell (2012: 259) defines triangulation as "the process of corroborating evidence from different individuals (e.g. a principal and a student), types of data (e.g. observational field notes and interviews), or methods of data collection (e.g. documents and interviews) in descriptions and themes in qualitative research." In other words, the data collected comes from different sources. The researcher adopted this strategy to increase the validity of the study and to augment the accuracy of the findings.

4.8   Data collection instruments

As already mentioned, this study followed a mixed-method approach, meaning that the data was collected quantitatively via a survey and qualitatively by instrumental case study design which involved collecting secondary data from the three large companies, namely STC, Zain KSA and Mobily. These methods assisted the researcher to create a clear picture about the topic as well as to obtain accurate results which can be generalised because the target population is a census sample.

4.8.1   Data collection: Surveys

4.8.1.1   Questionnaires

The aim of using a questionnaire as a data-gathering instrument is that copies can be sent or handed out to a large number of participants with relative ease. Oates (2006:219) defines a questionnaire as a "pre-defined set of questions (sometimes called items), assembled in a pre-determined order. Respondents are asked to answer the questions, thus providing the researcher with data that can be analysed and interpreted." Lodico, Spaulding and Voegtle (2006) argue that survey or questionnaire is the most important instrument used in data collection through descriptive surveys in research studies. This refers to primary data. Questionnaires are used commonly in quantitative research. A researcher can administer the questionnaires personally to the respondents or can be sent to them via email, telephone, fax, and mail. Furthermore,

respondents submit their data - answers - with limited interference from the researcher. Bailey, (1996) argues that there are some processes and rules of the questionnaire to adhere so that the research can be successful. There are (a) question can be read easily and quickly; (b) methods of answering should be clear; (c) avoiding confusing words; (e) states the brief and specific questions; (f) meaning of questions should be clear; and (g) avoiding questions that might have bias and unethical accepted.

For the purpose of this study, the questionnaire was written in English. The researcher constructed the questionnaire following suggestions by Leedy and Ormrod (2010), namely that the questions should be short as possible, with simple, clear instructions using simple clear language.

4.8.1.2   Advantages of the questionnaire method

Sekaran (1999) indicates that quantitative method has many advantages such as: (a) researchers are able to reach to a large number of respondents; and (b) the results will be valid and reliable when applying statistical methods for analysing and interpreting the data.

It is because of this, that researchers describe quantitative method as "generalisable hard and thin". Furthermore, Cohen et al., (2007) state that the main advantages of quantitative approach are as follows: (a) of effective and economic methods of data collection; and (b) it allows the researcher to possibly generalise the results.

4.8.1.3   Disadvantages of the questionnaire method

There are some limitations when using the questionnaire. In this context, Wong (1992) pointed out to some disadvantages such as (a) focus on social structure without addressing the social process itself; (b) over-simplify and abstract the subject matter; and (c) may be insulated from the real context of the problem under investigation. Furthermore, Sekaran (1999) adds that the response rate is almost always low. The major limitations of questionnaires according to Kidder, (1981) are: (a) low response rate; (b) not allowing probing, prompting and clarification of questions; and (c) researchers are not sure whether the questions are answered by the right person.

4.8.1.4 The questionnaire design

The survey was designed to collect primary data and had three objectives:

- The first part was designed to gather information about the organisations' technological, organisational and environmental (TOE) aspects. Part one consists of three sections:
  - Section 1 – Organisational Context: This section contains questions (1.1) to (1.5). The organisational context is investigated by capturing information about the respondent's role in the company, the size of the business (number of employees), number of years in business, types of services provided, and places of company operation.
  - Section 2 – Technological Context: This section contains questions (2.1) to (2.9). The technological context is investigated by capturing information about the company's technological competence, which includes the role of the company's website, the role of knowledge management and business intelligence, the role of social networking, cloud service, and hardware and software.
  - Section 3 – Environmental Context: This section contains questions (3.1) to (3.6). The environmental context is investigated to capture information about the effect of the company's location, culture, legislation, competitor pressures, and the role of knowledge management and business intelligence.
- The second part was designed to gather information about the organisations' knowledge, attitudes, and practice (KAP) with respect to globalisation. It consists of three sections:
  - Section 4 – Knowledge: This section contains questions (4.1) to (4.5). It aims to capture information regarding the company's knowledge about globalisation and its effect on business, and the company's awareness of political, economic, technological, and cultural factors which might affect its globalisation strategies.
  - Section 5 – Attitude: This section consists of questions (5.1) to (5.5). It is designed to investigate the attitude of SAICT companies towards globalisation. It enquires if the companies are ready to globalise their businesses, what value can be added by globalising, and if they think they will attract new customers by globalisation.

- o Section 6 – Practice: This section consists of questions (6.1) to (6.5). It is designed to investigate the practices of SAICT companies towards globalisation. In other words, what actions have been taken. The questions cover strategies to globalise, consulting with and visiting international experts to gain experience about globalisation, and allocating budgets to transfer their businesses to globalised markets.

- The third part, which is only one section, deals with factors that influence organisation's globalisation decision. This section starts with question number (7.1) to question number (7.10). The questions from (7.1) to (7.6) are designed to evaluate the factors that influence the organisations' decisions to globalise. The factors are political, economic, socio-cultural, technological, environmental, and legal. Questions (7.7) to (7.10) are designed to identify the processes which are implemented before globalisation. The factors which influence this are ICT readiness, the implementation of KM and BI processes and tools, and business expansion in Saudi Arabia and regionally over the next five years.

- Section (8) deals with issues related to the implementation of technology, organisational, environmental, and attitudinal interests and their role in the globalisation of SAICT.

For the purpose of this study, the researcher designed the questionnaire after the relevant literature was reviewed. An MS Word (2016) version was used to create the survey. The respondents were asked to place checks (√) in boxes to indicate their answers. The study used a five-point Likert scale based on the degree of agreement or disagreement. Using a Likert scale allows the researcher to obtain accurate information from the respondents (Oates, 2006). The questionnaire was structured as follows:

- In section 1 the respondents were asked to place a check (√) in the box.
- From section 2 to section 5 they were invited to put a check (√) in the box which shows their degree of agreement or disagreement. These used a Likert scale which is categorised into five measurements: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.
- In sections 6 and 7 the respondents were asked to place a check (√) in the box which shows the degree of importance. In these sections, the questionnaire was categorised as follows:1 = not at all important, to 5 = extremely important.

4.8.2　Data Collection: Desktop Study

4.8.2.1　Secondary data

The second method that this study used to collect data was a qualitative case study method. The case study comprised the three largest ICT companies in Saudi Arabia. In this approach, data was gathered from secondary sources. The aim of using secondary sources was to support and strengthen the results of the findings. Kothari (2004) states that secondary data is data already collected by someone else and available to the researcher. Moreover, secondary data can be used to support primary data or text material, which has been collected in methods such as questionnaires, interviews, or observations to triangulate the findings (Saunders, Lewis & Thornhill, 2016).

Meanwhile, Saunders, Lewis, and Thornhill (2016) noted that many researchers have created secondary data classifications, but these classifications do not include the full set of data. Thus, subsequent researchers classified the secondary data into three main sub-sections: 'document based, survey based and those compiled from multiple sources' (p.318). Furthermore, the researchers define document secondary data as 'data that, unlike the spoken word, endure physically (including digitally) as evidence, allowing data to be transposed across both time and space and reanalysed for a purpose different to that for which they were originally collected' (p.319). Moreover, the researchers state that survey-based secondary data is data collected for other purposes in the survey method, whereas the multiple-source secondary data is a combination of the former two types. Figure (4-1) illustrate the types of secondary data, the subgroups of each types as well as examples for each of them.
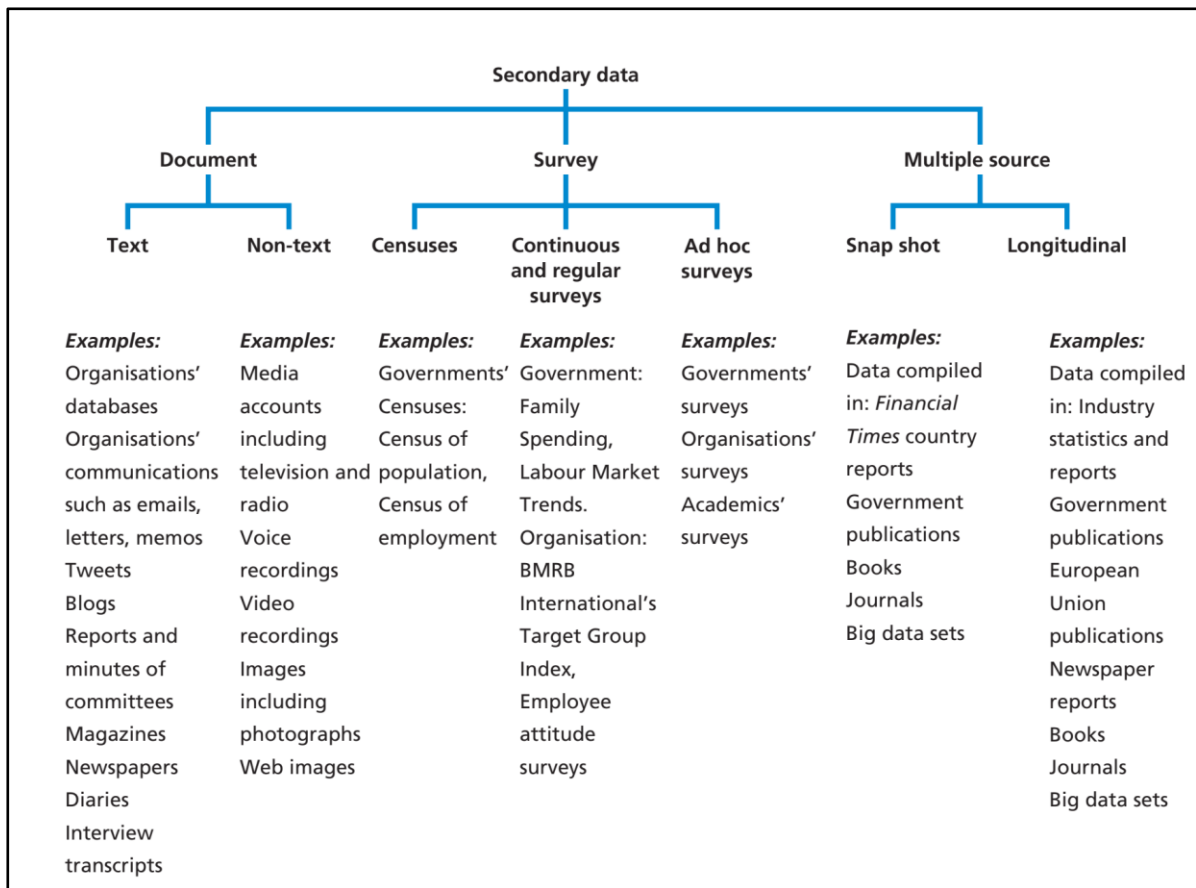
Figure 4- 1: Types of secondary data (Source: Saunders, Lewis and Thornhill, 2016, p.319)

There are three characteristics that secondary data should possess, namely (a) reliability, (b) suitability, (c) and adequacy. The secondary data consisted of organisational documents. In this context, Yin (2013) states that organisational documents are a significant source that can be depended upon because they are generally steady and accurate. Organisational documents in this study refer to public documents such as annual financial statements, annual reports, and press releases. The latest annual reports for the year 2016 of the targeted Saudi Arabia ICT companies were used. These were collected from the official websites of the companies and from the Saudi Stock Exchange (Tadawul) website because, as has already been mentioned, all ICT companies are listed on Tadawul.

4.8.2.2 Process of collecting data

For both the collection of primary and secondary data certain criteria had to be taken into consideration. The most important two are time and cost. Primary data is data collected for the first time and is gathered through observation, interviews or focus groups based on the research methodology, objectives and questions. Secondary data is data that already exists, collected and

analysed by someone else which can either be an individual or an organisation. Secondary data can also be obtained from books, magazines, reports or annual reports.

On 11 April 2017, the researcher received an approval letter (ethical clearance) from the Humanities & Social Sciences Research Ethics Committee at the University of KwaZulu-Natal. On 18 April 2017, the researcher began distributing the questionnaire to 81 Saudi Arabian ICT companies that are registered with CITC operate in Riyadh where the researcher conducted the study, while the companies outside Riyadh were contacted via email. The percentage of ICT companies located in Riyadh city, the capital of Saudi Arabia, represent 80%, whereas Jeddah city represents 14% of total ICT companies. The other 6% ICT companies are located in Dammam, Khobar and Qatif. The researcher submitted a hard copy of the questionnaire to the ICT companies located in Riyadh because the researcher resides in Riyadh city. The ICT companies outside Riyadh city were contacted via email, and were sent a soft copy of the questionnaire in MS Word format. On 20 May 2017, the researcher collected all the required data from the ICT companies listed with CITC, which means data collection took 32 days.

4.9 Data analysis

Techniques of quantitative data analysis are well developed, precise, and numerically oriented, and very diverse compared to qualitative data analysis (Sekaran, 1999). The production of data by most methods of collection requires some accurate manipulation to organise it into an acceptable form for analysis. The data reduction technique is used for this purpose. It involves data-coding, data-grouping and data-scaling procedures. Having accomplished this process, the researcher had the option to decide whether to analyse the data manually or with the aid of software.

The research design, research questions, objectives, and data collection methods are based on a TOE framework and a KAP model. Analysing the data led to the findings; a clear picture of the effect of the interactions between KM and BI through implementing CI towards globalising Saudi Arabian ICT companies. In other words, the data analysis, both quantitative and qualitative, were applied as means to find patterns in the data and to form conclusions (Oates, 2006). Yin (2014) proposes that data analysis is a process consisting of several stages, including data inspection, classification, and scheduling to reaching results based on the collected data of the topic that has been investigated. Creswell and Plano Clark (2011) state that mixed method

data analysis encompasses quantitative and qualitative analytic techniques, which can be applied at one or multiple points.

4.9.1 Data Analysis Strategy Employed in the Study:

Data analysis in qualitative research is an iterative process that allows data to be refined as the researcher gathers more information. In this study, the open-ended questions, and documents from the three case studies were vital because they support and increase the validity of the study. Some data analysis techniques were used, which include the following:

1. Thematic analysis: was used to find mainly patterns and themes from random data. Patton (2002, p.453) stated that content analysis is "used to refer to any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings."

2. The subsequent analysis that is being used is inductive and deductive analysis. Both analyses assisted the researcher to improve and refine the data. On the other hand, the researcher followed when using inductive and deductive analysis according to what Patton (2002, p. 454) referred to that "once patterns, themes, and/or categories have been established through inductive analysis, the final, confirmatory stage of qualitative analysis may be deductive in testing and affirming the authenticity and appropriateness of the inductive content analysis".

3. Logical analysis: at this stage, the researcher combined the content analysis and inductive analysis by focusing intensively on data and working on its interpretation from different angles. The aim is to discover what barriers that the researcher might expect and other unexpected factors.

4. Comparative analysis: such analysis was used for comparison to detect and understand patterns that appear among participants to make generalisations. Furthermore, it helps validate studies where the results can be enhanced by comparing data.

Using the techniques as mentioned above, the researcher has been able to study various inputs to eliminate or reduce incorrect generalisations and helped validate by including participants' views.

Furthermore, the study used several strategies to establish the credibility of this part of the questionnaire. In particular, the researcher analysed respondents' answers to specific open-ended questions to uncover emerging ideas and get an idea of the cumulative data in their

narrative responses, using MAXQDA. The researcher also exploited the direct quotes of the participants to deduce the codes and thus mitigate the unintentional biases and manipulation of the data that could occur if the researcher only used his opinions and experiences. Meanwhile, information obtained directly from different sources, prevented manipulating data during organising data, and limited the researcher's bias, that might affect the results. In addition, the researcher kept in the context of the study to minimize the problem of very much data to analyse. Thus, the focus was on some issues such as the problem, objectives as well as research questions which helped to reduce bias and create new ideas. The method contained within the analysis, it is the identification of essential words, the themes, relevant to the research, and then explain and interpret the data to support the study. This sequence helped the researcher to develop prominent and vital codes that are a reference for analysis and interpretation. The researcher then monitored closely the information to avert biases and ethical concerns which may emerge from the researcher's position in the society relative to the participants. The open responses supported the research with essential information about the respondents which they were organised and triangulated to make sure of their validity. Using MAXQDA assisted to organise the data in order to support the research and to find evidence to support the results. MAXQDA is a software that is used by students, researchers, scholars, and academics for conducting qualitative research and mixed method research. This software has been highly reliable as a product for managing non-numeric data, and well aligned with qualitative data. Through using this software, data was organised based on collected data during the study, allowing the researcher to review and organise respondents' opinions using codes. MAXQDA was a useful software because it allows researchers to find the themes and use information to find the connection between them and the study. These data management techniques were used to facilitate the analysis of data for the study. The researcher provided all the codes for this study in order to establish the reliability and ensured that it took into account all the data points collected in this part of the questionnaire. To confirm the data, the researcher used citations from the open survey responses and took a neutral stance by documenting all the comments registered by the respondents. The researcher was then able to examine the responses during the data analysis and the cross-reference information obtained from the responses. This allowed the researcher to confirm and audit the data throughout the data collection and analysis processes.

MAXQDA helped to organise the data and supported the research with evidence found and presented in the tool to support the results. MAXQDA is a popular tool used by students and professionals conducting qualitative and mixed research. This tool has been highly reliable as a product for managing non-numeric data. The tool is well aligned with qualitative data. It organises data based on information found during the study, allowing the researcher to review and organise participants' thoughts using codes. This was particularly useful because of its ability to allow researchers to develop themes and manipulate information to determine the connection between them and the study. These data management techniques were used to facilitate the analysis of data for the study. The researcher provided all the codes for this study in order to establish the reliability and ensured that it took into account all the data points collected in this part of the questionnaire. To confirm the data, the researcher used citations from the open survey responses and took a neutral stance by documenting all the comments registered by the respondents. The researcher was then able to examine the responses during the data analysis and the cross-reference information obtained from the responses. This, in turn, allowed the researcher to review the data that has been collected and analysed.

4.9.2 Analysis of the Quantitative Data

- The data was analysed using quantitative analytic tools so that research questions can be answered and accordingly the findings that arise from this study can be used as recommendations. Moreover, quantitative data analysis consists of descriptive and inferential statistics (Kruger, Mitchell, & Welman, 2005).

- Descriptive statistics demonstrate the description and summary of data. The reasons for choosing this approach are: (a) quantitative data, exemplified by evidence or data that is dependent on numbers, is one of the most reliable ways to examine data through experiments and surveys (Oates, 2006); (b) researchers can describe the data and examine the correlation between variables and causal relationships; and (c) for researchers, writing up their conclusions about the target population based on the sample of the study is facilitated (Marczyk, DeMatteo and Festinger, 2005).

- The quantitative data collected through questionnaires was analysed with suitable software, namely Statistical Package for the Social Sciences that is known as SPSS version 22. After analysing the raw data, it was illustrated in a series of graphs, charts, and tables to explain the relationships between the research questions and the collected data (Oates, 2006). This study used Microsoft Excel 2016 for the graphs, charts, and tables.

- Descriptive statistics were used to show percentages and frequencies, and inferential statistics were used to assist the researcher to relate the information obtained from the population to make correct conclusions based on the results.

4.9.3 Analysis of the Qualitative Data

The other method which this study applied is qualitative content analysis which was used to analyse the secondary data such as annual reports, articles, news articles, etc.

Stone et al. (1966) state that content analysis is a research method used to make inferences in a systematic way to identify certain characteristics in the text, which is being studied. Krippendorff (1980:21) defines content analysis as a "research technique for making replicable and valid inferences from data to their context". According to Leedy and Ormrod (2010:144) content analysis is "a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes, or biases." Weber (1990) states that content analysis is a collection of procedures applied to arrive at correct inferences from the targeted material. Moreover, in content analysis, the qualitative data needs to be categorised and coded so that it can be analysed (Saunders, Lewis & Thornhill, 2016).

The latest annual reports for the year 2016, speeches by CEO and financial statements for the three Saudi Arabia ICT companies were used for secondary data. These sources were collected from official websites of the three SAICT companies as well as from the Saudi Stock Exchange (Tadawul) website because, as has already been mentioned, the three ICT companies are listed on Tadawul.

Thus, for the purpose of conducting content analysis, many sources of data were used. These were annual reports, financial institution reports, newspapers and scholarly journals, company documents, and publicly available documents. Table 4-1 show the list of the secondary data that are used in the content analysis.

Table 4- 1: The list of the secondary data

Sources of data	Name of Sources
Annual reports	1. Mobily annual report, 2016 2. STC annual report, 2016 3. Zain annual report, 2016

Financial institution reports	1. Riyad Capital, 2015
	2. Aljazira Capital, 2015
Newspaper	1. Asharq Al-Awsat, 2017
Scholarly journals	1. Saudi Telecommunications Company: A Strategy for Sustainable Competitive Advantage. Journal of Advanced Social Research,2011
Company documents	1. Saudi Telecom company, 2017
	2. Mobile Telecommunication Company Saudi Arabia - Zain KSA,2017
	3. The Etihad Etisalat Company - Mobily, 2017
	4. Zain board of directors' report, 2016
Publicly available documents	1. Global Telecoms Business, 2017
	2. Communications and Information Technology Commission, CITC, 2016
	3. The middle East's Leading Technology website, (ITP.net, 2017).
	4. Saudi Stock Exchange, Tadawul,2017
	5. STC growing in scale and scope, (huawei.com, 2011)

To conduct content analysis, the constructs derived from the TOE framework and relative literature were used. The research questions were:

1. What are the characteristics of SAICT organisations?
2. What technological factors facilitate or inhibit SAICT organisations in globalisation?
3. What environmental factors facilitate or inhibit SAICT organisations in globalisation?

In this context, the data from each company as case study was tabulated according to the constructs found in the literature and research questions.

The researcher followed and used the conceptual components for content analysis that are specified by Krippendorff (2004) which are (a) the body of text that needed to be analysed; (b) the research questions to be answered; (c) the context that can be understood; (d) the analytical structure of the context; and (e) the inferences gained from the research questions.

The main constructs were arranged according to the research questions and categorised and coded so that they could be tabulated. According to Kothari (2004:18) tabulation is "a part of

the technical procedure wherein the classified data are put in the form of tables." Tabulation in this study was used to analyse the collected qualitative data in line with Kothari's (2004:127) recommendations which are (a) to conserve space and reduce explanatory and descriptive statements to a minimum; (b) to facilitate the process of comparison; and (c) to provide a basis for various statistical computations.

4.10 Study site

The business environment of Saudi Arabia includes many industries such as banks and financial services, petrochemical industries, energy and utilities, telecommunication and information technology, and insurance. For the purposes of this research, ICT companies in the telecommunication and information technology sector were selected. There are 81 ICT companies registered with CITC, of which four organisations are listed on the Saudi Stock Exchange in the telecommunication and information technology sector. These companies are: (a) the Saudi Telecom Company, (b) the Etihad Atheeb Telecommunication Co, (c) the Mobile Telecommunication Company Saudi Arabia (Zain KSA), and (d) the Etihad Etisalat Co (Mobily). Thus, the study sites were ICT companies and organisations in Saudi Arabia that are listed with the Communications and Information Technology Commission (CITC) in Saudi Arabia. These companies operate and provide services all over the country. Most of the ICT organisations operate their business in three main cities, namely Riyadh, Jeddah and Dammam. Riyadh, which is the capital of Saudi Arabia, holds the majority of these companies. This has led the Saudi government to establish an intelligent and distinct project in one place in Riyadh, which is called the Information Technology and Communication Complex (ITCC). Similar complexes will be established in the other two cities in the next few years.

4.11 Target population

According to Kitchenham and Pfleeger (2002, p.17) a target population is 'the group or the individuals to whom the survey applies, who are in a position to answer the questions and to whom the results of the survey apply.' The target population for this study were all of the 81 ICT organisations listed with the Communications and Information Technology Commission (CITC) in Saudi Arabia.

4.12 Sampling method

Since all 81 ICT organisations listed in the Communications and Information Technology Commission in Saudi Arabia were the target population, a census sampling study was

implemented. The study did not require a sample from the population due to the fact that a census sampling strategy means sampling the whole population. In this regard, Creswell (2012) states that a census study is a method of sampling a whole population. This study selected all the decision makers, in other words, the top management in all the 81 ICT companies. Therefore, the respondents were all the C-level executives, because at this level of management, chief executives have access to a variety of analysis reports on the internal and external environment of their organisations as they can use emerging technology to improve the core competencies in their firms. This level of management does also have access to comprehensive information about the performance of their firms and therefore can well assess the impact of technology, organisation, environment, business intelligence, knowledge and attitudes of their staff on the performance of their firms.

The researcher was well aware of the benefits of using census sampling in this study such as accuracy and being able to generalise the results. Watt and Berg (2002) point out that the results gained from conducting a census study can be generalised to the whole population with perfect confidence.

The researcher handed out the questionnaires to the management of the companies and allowed them to choose qualified persons, especially decision-makers, to complete them.

4.12.1 Sampling and sample size

According to Kothari (2004:56), sample size "refers to the number of items to be selected from the universe to constitute a sample." Sample size is a complicated issue from the point of view of some scholars. This is due to the fact that most researchers, especially beginners, do not know what size constitutes a suitable sample (Neuman, 2007). In very general terms it is advisable that the sample size should not be too large or too small. Achieving an optimal size, however, remains problematic (Kothari, 2004). Leedy and Ormrod (2010) offer some guidelines to select sample size which are: (a) take the entire population as a sample if the whole population equals 100 or less, (b) take about 50% as a sample if the population is around 500, (c) 20% should be the sample if the population is around 1500, and (d) if the population equals 5000 or more, a sample size of 400 should be adequate.

In spite of the above, this study implemented a census sampling since all 81 ICT organisations were selected. The entire available sample was used for the study.

4.13 Reliability

According to Leavy (2017), there are two fundamental criteria for judging the soundness and worthiness of quantitative research, namely reliability and validity. Citing Babbie (2013, p. 153), Leavy (2017) restated that reliability refers to the consistency of research findings and that for these findings to be acceptable, dependable and measurable, they have to be reliable and valid; in their words, a good questionnaire "should be both valid (measure what it's supposed to measure) and reliable (the results are dependable and repeatable)".

Leedy and Ormrod (2010:29) define reliability as "the consistency with which a measuring instrument yields a certain result when the entirety being measured hasn't changed." On the other hand, Ayodele (2012) states that to make research reliable it should validate whether similar results would be obtained if it was carried out with a similar set of participants in a similar manner. Similarly, Vanderstoep and Johnston (2009:62) define reliability as "the extent to which a measure yields the same scores across different times, groups of people, or versions of the instrument."

According to Merriam (1998), reliability of an assessment instrument refers to "the extent to which there is consistency in the findings", while validity is referred to as "the extent to which research findings are congruent with reality" (p. 219). Internal and external validity measures are typically employed along with the data analysis to validate the instruments and the research data. The reliability of any measurement will fundamentally depend upon the consistency of its utilise in connection to the people being assessed (Foxcroft and Roodt, 2009). In support of this suggestion, Anastasi (1990, p.103) maintains that the reliability of an instrument is determined by a consistency of scores gained from the same individuals who are duly to be re-examined using the same tests on a variety of occasions.

In this study, internal validity triangulation of data was utilized. According to Berg (2009), [triangulation] is a means of verifying data by using multiple data-gathering techniques to investigate the research questions. In addition, Tashakkori and Teddlie (1998) state that "Methodological triangulation involves the use of both qualitative and quantitative methods and data to study the same phenomena within the same study" (p.18).

To apply these definitions, the researcher tested the reliability of the instrument by applying a pre-test on ten ICT companies via 10 questionnaires. The aim was to make sure that the

questionnaire items would be understood and could be easy to respond to. In this study, the multiple data gathering techniques are those described in the instrumentation section: the two sets of the survey questionnaires, both the closed and open-ended items as well as in the case studies.

4.14 Validity

Basically, validity, in its root meaning, is a characteristic of a test, survey, questionnaire or scale, used in social sciences and humanities to indicate that a particular measure like these is actually measuring a trait, perception, cognition, attitude, or any other human relativity as it was designed to test it. Or in Leavy's words, "refers to the extent to which a measure is actually tapping what we think it is tapping" (Leavy, 2017, p.113). Given that human perceptions, cognitions, attitudes and any other psychological traits are relative, it may not be possible to conclude that a measure is ultimately and unequivocally valid. However, researchers try to control their psychological measures as much as possible to imbue their research findings with the colour of credibility.

When it comes to validity, Eisenhart and Howe (1992: p.644) define this as "the trustworthiness of inferences drawn from data," while Salkind (2012) states that validity rests upon whether or not "the test or instrument you are using actually measures what you need to have measured." Validity simply means to ensure that it measures what it was prepared for, or in other words, it refers to "the degree to which evidence and theory support the interpretations of test scores as entailed by proposed uses of tests (American Educational Research Association, 1999). It also means the truthfulness of the measures used in the assessment of a trait for all the elements that must be included in the assessment that involves "the systematic examination of the test content to determine whether it covers a representative sample of the behavior domain to be measured" (Anastasi & Urbina, 1997, p.114). To test for validity, the researcher conducted a pilot study among some senior managers of companies listed on the CITC. According to Leavy (2017), it may be apposite for researchers to "conduct small-scale pilot studies to gauge the appropriateness of our language, assumptions, and research instruments" as in questionnaire studies that could be complemented by pilot studies to validate research findings. (p. 49)

In this vein, Leavy (2017) indicated that there are several types of validity to make measures and their findings as much credible as they can. She noticed that there are five types of validity

(Face validity, content validity, construct validity, statistical validity and ecological validity) and these fall into two forms, i.e., internal validity and external validity.

To Leavy (2017, pp. 113-114), face validity is a judgement taken at face value and is based on common sense that a measure taps or assesses what it is claimed to be assessing. Content validity, however, judges the soundness of a measure by the views and opinions of experts and professionals in the field. Construct validity refers to the measure having the characteristic and capability to tap the concept and relevant concepts that the questionnaire should be measuring. Statistical validity refers to the appropriateness of statistical analysis methods and tests in a way that we could be able to draw consistent conclusions from a particular measure. Finally, ecological validity refers to the generalisability of findings to the real-world in absence of controlled conditions of an experiment. For the two major forms of validity, Leavy (2017, p. 114) states that internal validity is focused on "factors that affect the internal links between the independent and dependent variables that support alternative explanations for variations in the dependent variable", while external validity refers to the possibility of research findings being suitable to be generalised to other populations beyond the samples tested under empirical conditions. The researcher verified the questionnaire's validity through the following:

4.14.1 Face validity of the ICC (Intraclass Correlation Coefficient):

After the complete setting of the study questionnaires, they were sent out to an odd number of reviewers to judge the face validity of the survey. Face validity is an assessment conducted by an assorted group scholars or experts or professionals in the field with the purpose of ascertaining or checking whether a test or a survey looks like it measures a certain phenomenon. However, face validity may not assure that the test actually measures the phenomenon in question. However, the measurements can have a great validity, but when the test or survey does not seem to measure what it is designed to measure of a particular construct, its face validity could be low. That is what reviewers tried to do with the survey (Anastasi & Urbina, 1997).

The survey reviewers were requested to voice their dictum about the clarity of the statements which comprise the main part of the survey, the appropriateness of these items to what they were designed to assess, the appropriateness of the statements to the dimensions of the questionnaire. The reviewers suggested some amendments and suggestions necessary for the development of the survey. Based on the amendments and suggestions suggested by the

arbitrators, the researcher made the necessary amendments, which were agreed upon by the majority of the arbitrators. These included rephrasing some statements and deleting others in order to come up with final, refined form of the questionnaire.

4.14.2 Internal Validity

To affirm the internal consistency of the survey, the researcher computed the Pearson correlation coefficient for individual items in the survey and the total score of the dimensions, as in Table 5.1.

4.14.3 External validity:

Lincoln and Guba (1985) defined "internal validity" in a qualitative study as the credibility or truth-value established by structural corroboration. This corroboration is achieved by spending enough time with the subjects to search for deviant cases, looking in detail at the participants' experience and checking several data sources such as other investigators, written records, diaries, field notes and others. Lincoln and Guba defined (1985) "external validity" as the generalizability of the results of the study. Qualitative studies provide a detailed description of a relatively small number of participants in the context of a given context. These descriptions allow transferability to other parameters. Lincoln and Guba (1985) also thought that the samples could change over the course of the study, but that generalization to other participants and situations would still be moderate and depend on the new specific context.

Rudestam and Newton (2001) defined "adequacy" in a qualitative study as the amount of data collected that equates to getting enough power by involving a sufficient number of participants in a quantitative study. Rudestam and Newton felt that adequacy was achieved when the researcher collected enough data for the previously collected data to be confirmed (a.k.a. "saturation") and understood. Lincoln and Guba (1985) defined the saturation range of qualitative studies to 20-30 participants.

Rudestam and Newton (2001) also explained that the term "relevance" in a qualitative study meant that investigators chose subjects intentionally rather than randomly to meet the theoretical requirements of the study. They said that researchers in qualitative studies should keep a careful record of the study process so may be that other scholars or researchers may draw nearly the same findings. Rudestam and Newton defined this concept as an "audit trail". An audit trail includes not only the raw data, but also evidence about how the data was analyzed,

reduced, and summarized, as well as notes from the researcher containing information about his thoughts, intuition, and reactions when analyzing raw data. Finally, Rudestam and Newton stated that it was common in qualitative studies that researchers return to respondents and present all their interpretations from information already obtained, with the ultimate goal of confirming the accuracy and credibility of their conclusions.

4.14.4 Fourth, the Reliability of ICC (Intraclass Correlation Coefficient) Survey:

To check the reliability of the survey, the researcher further employed the Cronbach's Alpha coefficients, which are detailed in Tables 5.2 up to Table 5.8.

4.15 Statistical analysis tools that are used in the study

To achieve the study objectives and to analyse the data collected, the Statistical Package for the Social Sciences (SPSS) version 22 for Windows was used to analyse the quantitative data from the survey. After raw data has been collected, organised and categorised, it is time to analyse the data. The following significant statistical measurement can be used which are (a) measures of central tendency or statistical averages; (b) measures of dispersion; (c) measures of asymmetry (skewness); and (d) measures of relationship (Kothari, 2004).

Furthermore, this study used descriptive and inferential statistics. Descriptive statistics are used to show trends or tendencies in the data, to show different scores, and to compare one score with others (Creswell, 2012). Descriptive statistics, which show general tendencies in the data, can be used to measure the mean, mode, and median. The standard deviation in the spread of scores was also measured.

For inferential statistics Pearson's correlation coefficient was used to find relationships in the data, and the Cronbach's Alpha coefficient was used to measure the reliability of the study's instrument (questionnaire). Least significant difference (LSD) was used to find the differences between variables. In addition, the Chi-Square test of independence or association was used to find the relation between variables (cross tabulation). Finally, a multiple regression analysis was applied to find relationships between variables and to locate the trend between the independent and dependent variables. The statistical methods used to analyse the data are explained in Chapter Five.

4.16 Pilot Study

Bordens and Abbott (2011) state that a pilot study is undertaken to conduct a small-scale version of a study to reassure a researcher that his/her procedures and materials are working properly according to the research plan. Gay, Mills and Airasan (2008) state that a pilot study is useful because it helps to discover weaknesses in either the design or the instruments. The researcher thus conducted a pilot study to test the design of the instrument, namely the questionnaire. The aim of the researcher in sending out a pilot questionnaire was to make sure that the questionnaire could be easily understood by the respondents. Secondly, the pilot study assisted the researcher to have a better impression of how well the survey was structured and if there was any need to change it after receiving feedback from the respondents (Creswell, 2012). Thirdly, the pilot study showed how long the respondents likely to take to answer the questions.

The researcher also conducted a pilot study to enhance the reliability and validity of the survey instrument. The researcher piloted the questionnaire following Oates's (2006) recommendation which states that it is good to experiment with a survey on a group of people who complete it as if they were the target respondents.

The researcher therefore distributed the questionnaire to IT experts in the IT department where the researcher works, for evaluation and validation. The researcher conducted the pilot study in 10 ICT companies which are not listed with the CITC and who were not involved in the last draft to pre-test the questionnaire. The aim of using a pre-testing method is to edit the results of the pilot study (Kothari, 2004). The pilot study was helpful in terms of adding questions or deleting any that might be unnecessary. The overall results showed that the respondents understood the questionnaire and that it was easy to answer. Thus, there were no changes or corrections to be made to the first draft of the questionnaire.

This step helped the researcher to find out if the questionnaire (instrument) covered the problem according to the study plan. In order to check if the questionnaire could be analysed, the researcher then sent the questionnaire to three statisticians for evaluation.

4.17 Ethical considerations

As a requirement before conducting the research, the researcher applied for ethical approval from the University of KwaZulu-Natal Ethics Committee (see Appendix B). One of the fundamental ethical principles is respect for persons (Marczyk, DeMatteo and Festinger, 2005).

Accordingly, the researcher obtained informed consent from the participants prior to the study. The title and information about the objectives of the research were provided to potential respondents in a cover letter. The participants were also informed that their participation was voluntary and that they had the right not to participate. They were assured that their answers would be kept anonymous and confidential. The informed consent form was written in simple English so that it could be easily be understood by the participants (See Appendix C).

4.18 Conclusion

This study used a mixed method approach. This method combines quantitative and qualitative research. The data was collected quantitatively through a survey using a descriptive questionnaire appended by a set of open-ended questions (also eliciting qualitative data), and case studies of three SAICT companies in Saudi Arabia for collecting secondary source qualitative data for the present study.

The questionnaire data was collected and analysed based on a TOE framework and KAP model, while the qualitative data from case studies were based on the TOE framework only.

This study used a census study, which means that the data was collected from all 81 ICT companies, which comprised the target population.

Reliability and validity were considered throughout the study as well as in the pilot study. The statistical analysis tools were discussed as was the fact that the researcher followed the ethical requirements set out by the University of KwaZulu-Natal Ethics Committee.

CHAPTER FIVE: DATA ANALYSIS AND RESULTS

5.1 Introduction

This chapter presents the analysis of the collected data and the results of the study. The study used a mixed-methods approach, which employs quantitative and qualitative data analysis. The data was collected and analysed according to the research questions, hypotheses and objectives, and modelled on TOE and KAP frameworks.

The measurements of the descriptive and inferential statistics that were used are discussed in detail in this chapter. The Pearson correlation and Cronbach Alpha coefficients are explained in the context of the study.

The first part of the chapter sheds light on the quantitative data analysis. The second part presents the qualitative data analysis using content analysis for all three ICT companies as case studies.

5.2 Quantitative Data Analysis

The data collected in this part was generated by a questionnaire, which formed the primary data. The analysis and results of this study are discussed as follows:

5.2.1 Pearson's correlation coefficient

Many methods can be used to measure the validity of the questionnaire. Among them is Pearson's correlation coefficient, which is applied to find relationships in the data. Pearson's correlation coefficient is a method for measuring the relationship between two variables (Creswell, 2012). In this study, it was used to measure the validity of the questionnaire, and to determine the connection between each item in the section and the overall mean of the same section. If the coefficient is close to (-1) or (+1), then it is a sign of a strong negative or positive relationship between the two variables (Oates, 2006). In this case, the correlation coefficient was calculated based on the pilot study, which consisted of 21 respondents. The overall results show that the correlation coefficient is positively significant at 0.01 level, which indicates that there is an internal consistency and correlation between the components of the instrument used in this study and its overall mean scores. See Table 5-1.

Table 5- 1：Pearson's Correlation coefficient between each item in the section and its overall section mean; instrument

No	Section	Pearson Correlation coefficient	P-Value	No	Section	Pearson Correlation coefficient	P-Value
2.1	**Section 2:** The technological factors that facilitate or inhibit SAICT organisations in globalisation	.342**	0.002	5.1	**Section 5:** SAICT organisations' knowledge about globalisation influences attitudes to globalisation	.557**	0.000
2.2		.641**	0.000	5.2		0.179	0.114
2.3		.720**	0.000	5.3		.364**	0.001
2.4		.752**	0.000	5.4		.247*	0.028
2.5		.758**	0.000	5.5		.769**	0.000
2.6		.770**	0.000	6.1	**Section: 6** The practices that SAICT organisations implement in relation to globalisation	.686**	0.000
2.7		.757**	0.000	6.2		.802**	0.000
2.8		.628**	0.000	6.3		.786**	0.000
2.9		.635**	0.000	6.4		.775**	0.000
3.1	**Section3:** The environmental factors that facilitate or inhibit SAICT organisations in globalisation	.653**	0.000	6.5		.434**	0.000
3.2		.632**	0.000	7.1	**Section:7** The factors and drivers of SAICT organisations in globalisation	.561**	0.000
3.3		.707**	0.000	7.2		.566**	0.000
3.4		.734**	0.000	7.3		.662**	0.000
3.5		.780**	0.000	7.4		.722**	0.000
3.6		.748**	0.000	7.5		.527**	0.000
4.1	**Section: 4** The knowledge of SAICT organisations about globalisation	.612**	0.000	7.6		.627**	0.000
4.2		.891**	0.000	7.7		.667**	0.000
4.3		.889**	0.000	7.8		.518**	0.000
4.4		.674**	0.000	7.9		.730**	0.000
4.5		.767**	0.000	7.10		.334**	0.003

.**Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

As Table 5-1 shows, the correlation coefficients between each items (phrases) in the section of the questionnaire and the mean of the same section. The results of the correlation coefficients at 0.05 significant level show positive significant correlation except one item in section five. The overall results of correlation indicate a very high validity of the questionnaire instruments, which means that there is acceptable internal consistency.

5.2.2   Cronbach's alpha (Reliability analysis)

As mentioned in section 4.11 reliability is to measure the possibility of obtaining the same results if the same instrument is applied to similar individuals or groups. In this regard, Cronbach's alpha coefficient used to measure internal consistency, so it used to measure the reliability of the instrument for each axis (section) separately, apart from section one. Leech, Barrett, and Morgan (2005) emphasise that Cronbach's alpha coefficient must be more than

level 0.7. Thus, the higher the Cronbach's alpha coefficient is, the more consistent the instrument; in this case the questionnaire. The following tables show the reliability statistics of the instrument for all sections of the questionnaire.

Table 5- 2: Section 2 - Technological Context

Section 2: Technological Context	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
2.1	23.79	35.85	0.16	0.87
2.2	25.01	31.58	0.57	0.83
2.3	24.15	31.69	0.63	0.82
2.4	24.11	29.72	0.65	0.82
2.5	24.44	30.17	0.66	0.82
2.6	24.75	30.57	0.69	0.81
2.7	24.45	30.79	0.67	0.82
2.8	24.57	31.33	0.54	0.83
2.9	23.72	32.37	0.54	0.83

Table 5- 3: Section 3 - Environmental Context

Section 3: ENVIRONMENTAL CONTEXT	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
3.1	16.96	13.96	0.46	0.79
3.2	16.57	14.27	0.44	0.79
3.3	16.68	14.19	0.57	0.76
3.4	16.90	13.78	0.60	0.75
3.5	16.68	13.86	0.68	0.74
3.6	16.84	13.27	0.60	0.75

Table 5- 4: Section 4 - Knowledge

Section 4: KNOWLEDGE	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
4.1	14.06	9.57	0.45	0.84
4.2	14.69	7.51	0.81	0.74
4.3	14.54	7.37	0.81	0.74
4.4	14.06	9.13	0.52	0.82
4.5	15.05	7.40	0.58	0.82

Table 5- 5: Section 5 - Attitudes

Section 5: ATTITUDES	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
5.1	13.88	3.32	0.00	0.07
5.2	12.81	4.73	-0.11	0.14
5.3	15.33	4.20	-0.05	0.12
5.4	13.03	4.60	-0.12	0.17
5.5	14.08	2.28	0.37	-.632

Table 5- 6: Section 6 - Practice

Section 6: PRACTICE	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
6.1	14.70	8.37	0.46	0.72
6.2	15.22	7.86	0.66	0.64
6.3	15.15	7.41	0.60	0.66
6.4	15.08	7.94	0.61	0.66
6.5	14.34	10.59	0.22	0.78

Table 5- 7: Section 7 - Globalisation

Section 7: Globalisation	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
7.1	33.90	25.11	0.42	0.77
7.2	33.71	25.33	0.44	0.77
7.3	34.78	23.50	0.51	0.76
7.4	33.74	23.99	0.64	0.75
7.5	34.91	25.02	0.34	0.78
7.6	34.54	23.58	0.48	0.76
7.7	34.12	24.08	0.55	0.76
7.8	34.23	26.05	0.41	0.77
7.9	34.18	23.19	0.62	0.75
7.10	34.01	27.78	0.17	0.80

Table 5- 8: Cronbach's Alpha Reliability

Section	Name	Number of Items	Cronbach's alpha (a)
2	Technological context	9	0.844
3	Environmental context	6	0.795
4	Knowledge	5	0.827
5	Attitudes	5	0.048
6	Practice	5	0.746
7	Globalisation	10	0.785
Total		40	0.875

As it can be seen from the above table, except to the attitudes section the reliability coefficient for all remaining sections were greater than the acceptable alpha value of 0.7, the attitudes section finding was lower than 0.7 exactly 0.048, the researcher kept the phrases (items) of the questionnaire's theme for two reasons, namely:

1. The study's instrument (the questionnaire) had very high validity from the arbitrators who arbitrated the questionnaire.
2. The instrument had very high values of validity (content validity) when the Pearson correlation coefficient was applied to test the whole theme as shown in Table 5.1.

Overall, the reliability of the questionnaire (instruments) in this study is reasonable and acceptable since its overall value is 0.875 as can be seen in Table 5-8; in other words, it is satisfactory.

5.2.3 Descriptive analysis of organisational factors

The following section answers research question 1: What are the characteristics of SAICT organisations?

Section 1 in the questionnaire concentrated on the features of SAICT companies which include the following:

- Role in the organisation
- Size of the organisation
- Number of years in business
- Services provided by the organisation
- Primary places of the business

5.2.3.1 Role in the organisation

Table 5-9 and Figure 5-1 show that the majority of the respondents who represented the SAICT companies were chief technology officers (CTOs), and they represent 35.8% or 29 CTOs out of 81 companies. Following this are the chief executive officer (CEOs) ranked second at 30.86%. The chief financial officers (CFO) represents 17.4%, while chief information officers (CIOs) ranked at the fourth place at 12.34%, and finally, chief knowledge officer (CKOs) 3.7%.

Table 5- 9: Role in the organisation

	What is your role in your organisation?	Frequency	Percent
1	Chief Executive Officer (CEO)	25	30.9
2	Chief Information Officer (CIO)	10	12.3
3	Chief Financial Officer (CFO)	14	17.3
4	Chief Technology Officer (CTO)	29	35.8
5	Chief Knowledge Officer (CKO)	3	3.7
	Total	**81**	**100%**
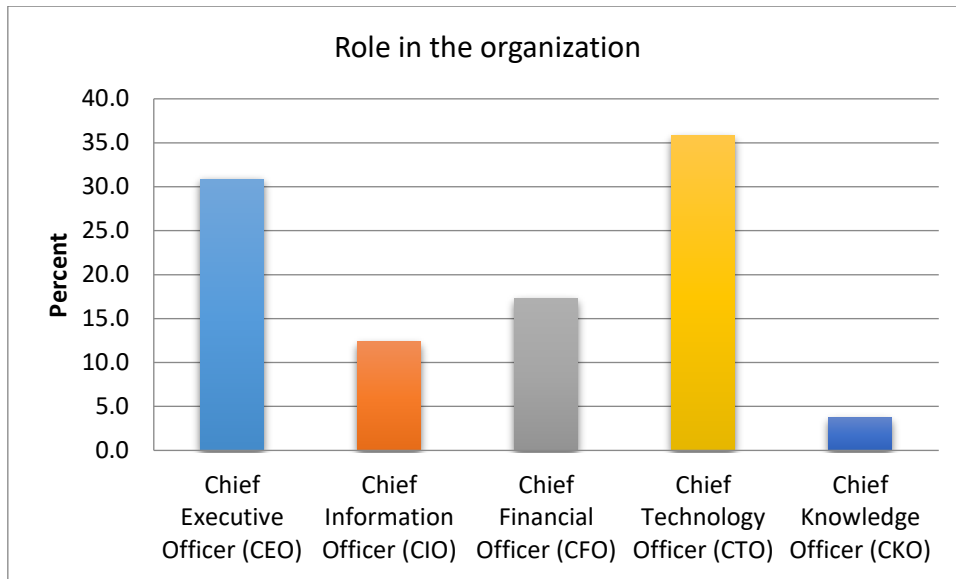
Figure 5- 1: Role in the organisation

5.2.3.2 Size of the organisation

Table 5-10 and Figure 5-2 show the size of the SAICT organisation. It can be observed that the dominant size of the companies ranges from 101 to 500 employees, which represents 27.2% or 22 out of 81 SAICT companies. This size of the organisations is considered medium according to the definition of SMEs in Saudi Arabia (See Section 2.3.6.1 Company Size, Table 2-1). The following sizes are from 51 to 100 and less than 50, which represent 24.7% and 21% respectively. SAICT companies that have more than 1 000 employees, or large companies, represent 19.8%, while organisations with 501 to 1 000 employees, 7.4%.

Table 5- 10: Size of the organisation

	How many employees are there in your organisation?	Frequency	Percent
1	Less than 50	17	21.0
2	From 51 to 100	20	24.7
3	From 101 to 500	22	27.2
4	From 501 to 1000	6	7.4
5	More than 1000	16	19.8
	Total	**81**	**100%**
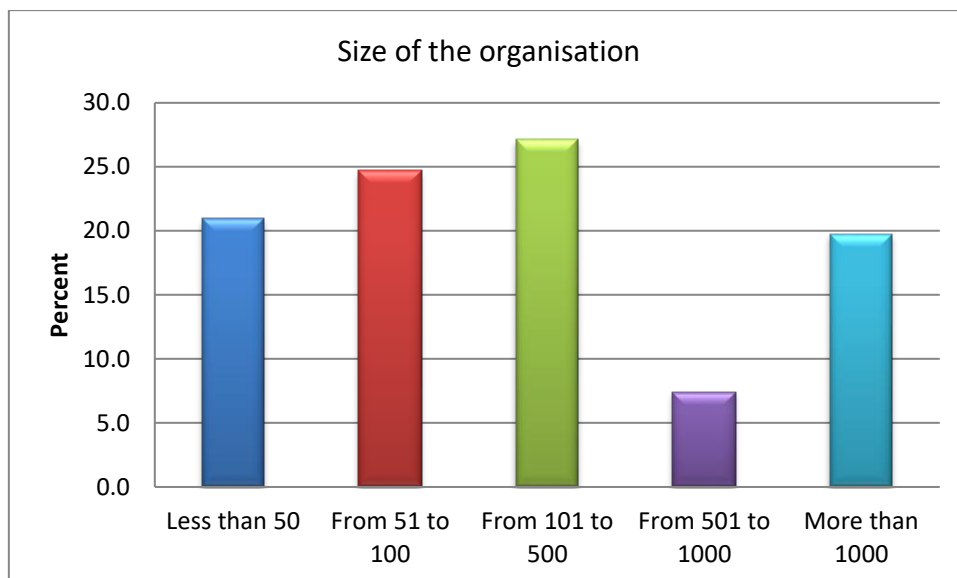
Figure 5- 2: Size of the SAICT Organisation

5.2.3.3 Number of years in business

Table 5-11 and Figure 5-3 indicate that the majority of the SAICT organisations have been in business between 5 to 10 years at 38.3%, while organisations with more than 15 years and 10 to 15 years are in the second and third position, which represent 24.7% and 23.5% respectively. The SAICT companies that have more than one year but less than five years are ranked second to last with 12.3%, while the last one with less than one year is just 1.2%, or only one ICT company.

Table 5- 11: Number of years in business

	How many years has your organisation been in business	Frequency	Percent
1	Less than 1 year	1	1.2
2	More than 1 year but less than 5 years	10	12.3
3	5 - 10 years	31	38.3
4	10 - 15 years	19	23.5
5	More than 15 years	20	24.7
	Total	**81**	**100%**
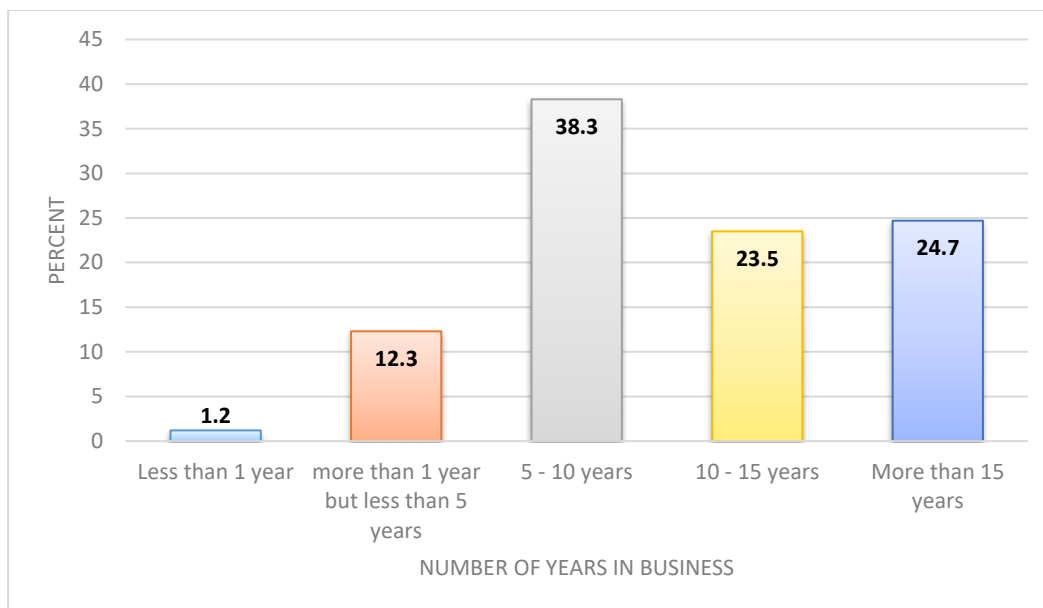
Figure 5- 3: Number of years in business

5.2.3.4 Services provided by the SAICT organisation

In Table 5.12 and Figure 5.4 the results show that software production is the dominant service among others at 87.7%, followed by hardware production at 9.8%. Internet and multimedia production, and Internet service providers represent only 1.2%.

Table 5- 12: Types of services provided by organisation

	What services do your company provide? Check all that apply	Frequency	Percent
1	Software Production	71	87.7
2	Hardware Production	8	9.9
3	Internet and Multimedia Production	1	1.2
4	Internet Service Providers	1	1.2
	Total	**81**	**100%**
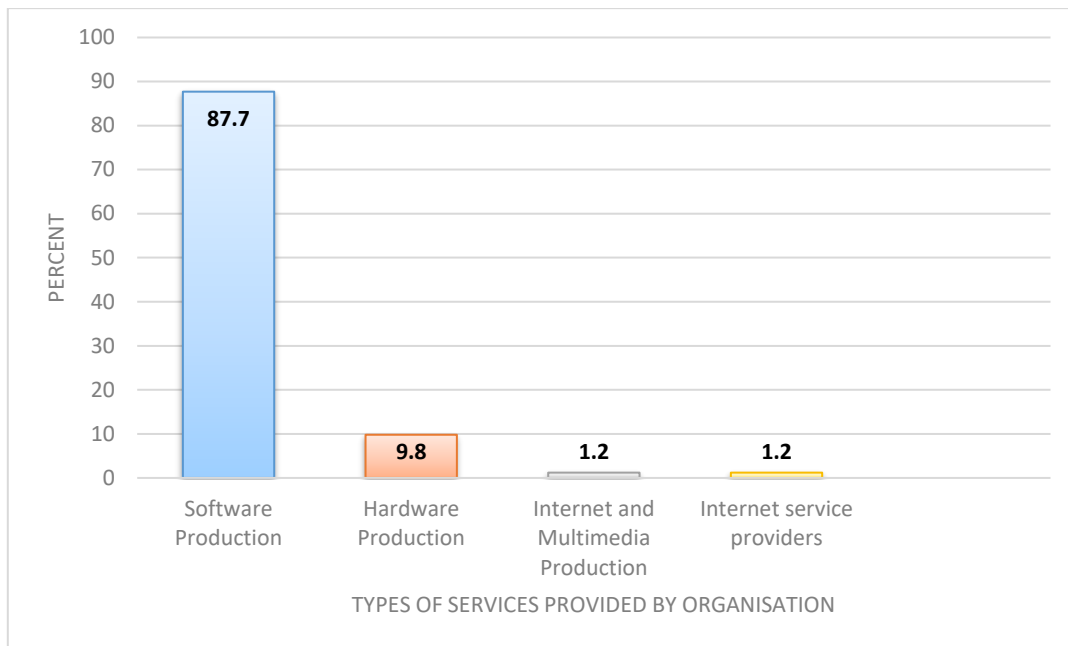
Figure 5- 4: Types of services provided by organisation

5.2.3.5 Primary locations of the business

Table 5-13 shows that 79 SAICT companies operated their business in Saudi Arabia at 97.5%, while only two companies operate their businesses in Saudi Arabia as well as in the Middle East and Europe.

Table 5- 13: Places of doing business

Where is your organisation's primary place of business? Check all that apply		Frequency	Percent
1	Saudi Arabia	79	97.5
2	Middle East	1	1.2
3	Europe	1	1.2
Total		81	100%
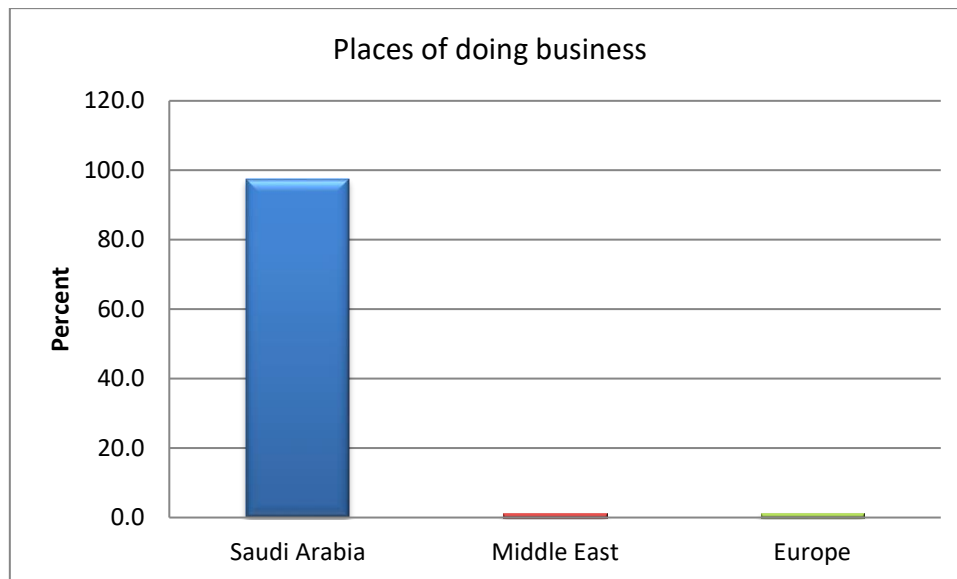
Figure 5- 5: Places of doing business

5.2.4 Descriptive analysis of technological factors

Table 5-14 shows the response of the SAICT companies with regard to research question number two: 'What technological factors facilitate or prohibit SAICT organisations in globalisation?' The results indicate the following:

- The highest rated item: 'Our organisation has adequate software that will enable us to globalise our business at any time' reached a mean of 3.66 in the 'Agree' category. The second highest rated item, the statement was: 'Our organisation's website helps us to market our services and products locally more than globally' had a mean of 3.60 in the 'Agree' category. The higher mean appears in the second order.

- Interestingly, the implementation of competitive intelligence tools, namely business intelligence and knowledge management, were important for the SAICT respondents in marketing their business. The table shows that the mean for business intelligence reached 3.28 in the 'Agree' category, while the mean for knowledge management was 3.24.

- The most prominent features of the SAICT companies, as shown in Table 5.14, are that they own the appropriate software to help globalise their activities, as well as having proper websites. The data shows that there is no doubt that these two factors are significant in the technological context, but companies also need knowledge and optimal implementation to promote competitive intelligence tools, namely business intelligence and knowledge management. This means that competitive intelligence tools may become essential for most of the SAICT companies in the next few years.

Table 5- 14: Technological Context

No	Statement		Degree of approval					Mean	Std. Deviation	Order
			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree			
1	Our organisation's website helps us to market our services and products locally rather than globally.	Frequency	3	10	22	27	19	3.60	1.09	2
		Percent	3.7	12.3	27.2	33.3	23.5			
2	Our organisation's website helps us to market our services and products more globally than locally.	Frequency	12	42	15	8	4	2.38	1.02	9
		Percent	14.8	51.9	18.5	9.9	4.9			
3	Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management.	Frequency	2	13	36	20	8	3.24	0.94	4
		Percent	2.5	16.0	44.4	24.7	9.9			
4	Our organisation can reach international markets and sell its products and services as a result of the implementation of business intelligence.	Frequency	2	24	17	22	14	3.28	1.15	3
		Percent	2.5	29.6	21.0	27.2	17.3			
5	Our organisation contacts and shares experience with our customers through social networking.	Frequency	6	24	19	25	5	2.99	1.09	5
		Percent	7.4	29.6	23.5	30.9	6.2			
6	Our organisation has adopted an effective e-commerce strategy to target customers globally.	Frequency	3	42	16	10	5	2.63	0.99	8
		Percent	3.7	51.9	19.8	12.3	6.2			
7	Our organisation has adopted effective cloud computing services so that it can market its products and services.	Frequency	3	27	26	18	5	2.94	0.99	6
		Percent	3.7	33.3	32.1	22.2	6.2			
8	Our organisation has adequate hardware that will enable us to globalise our business at any time.	Frequency	4	38	14	17	6	2.78	1.08	7
		Percent	4.9	46.9	17.3	21.0	7.4			
9	Our organisation has adequate software that will enable us to globalise our business at any time.	Frequency	-	12	17	36	14	3.66	0.95	1
		Percent	-	14.8	21.0	44.4	17.3			

5.2.5 Descriptive analysis of environmental factors

Table 5-15 shows the response of the SAICT companies with regard to research question number three: 'What environmental factors facilitate or prohibit SAICT organisations in globalisation?' The results indicate the following:

- Descriptive statistics applied to the responses to this question show a mean score of 3.35 in the 'Neutral' category. The statement 'Current government legislation helps our organisations to globalise its business and services' appears in the first order with a mean score of 3.56 in the 'Agree' category. It is followed by 'Our organisation has

become more aware of our competitors' business activities after the implementation of knowledge management strategies', which has a mean score of 3.44 in the 'Agree' category. In the third order came the statement: 'Our organisation considers globalising its business because of the rivalry in the business environment in the ICT sector' shows a mean score of 3.44 in the 'Agree' category.

- It is noticeable that there are three statements in the 'Neutral' category which are the following:
  1. Our organisation has become more aware of our competitors' business value after the implementation of business intelligence strategies. The mean was 3.29.
  2. Our organisational culture is conducive to globalising our business. The mean was 3.23.
  3. The location of our organisation is a vital factor for us to globalise our business. The mean was 3.16.

- Concentrating on competitive intelligence tools, namely knowledge management and business intelligence, it is noted that 32 SAICT companies which represent 39.5% of the sample, 'Agree' that the implementation of knowledge management makes them aware of their competitors, and 24 SAICT companies or 29.6% 'Agree' that they are aware of their competitors after the implementation of business intelligence. suggest that environmental factors do not influence SAICT organisations' globalisation decisions, which disconfirms the third null hypothesis and verifies the positive hypothesis that indicate that environmental factors influence SAICT organisations' globalisation decisions as perceived by the participants of the study.

Table 5- 15: Environmental Context

S	Statement		Approval Degree					Mean	Std. Deviation	Order
			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree			
1	The location of our organisation is a vital factor for us to globalise our business.	Frequency	7	15	25	22	10	3.16	1.15	6
		Percent	8.6	18.5	30.9	27.2	12.3			
2	The current government legislation helps our organisation to globalise its business and services.	Frequency	6	6	20	32	15	3.56	1.12	1
		Percent	7.4	7.4	24.7	39.5	18.5			
3		Frequency	-	12	34	19	14	3.44	0.96	3

S	Statement		Approval Degree					Mean	Std. Deviation	Order
			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree			
	Our organisation considers globalising its business because of the rivalry in the business environment in the ICT sector.	Percent	-	14.8	42.0	23.5	17.3			
4	Our organisational culture is conducive to globalising our business.	Frequency	-	24	21	26	8	3.23	1.00	5
		Percent	-	29.6	25.9	32.1	9.9			
5	Our organisation has become more aware of our competitors' business activities after the implementation of **knowledge management strategies.**	Frequency	1	11	27	32	8	3.44	0.90	2
		Percent	1.2	13.6	33.3	39.5	9.9			
6	Our organisation has become more aware of our competitors' business value after the implementation of **business intelligence strategies.**	Frequency	1	23	19	24	12	3.29	1.09	4
		Percent	1.2	28.4	23.5	29.6	14.8			

5.2.6 Descriptive analysis of SAICT knowledge about globalisation

Table 5-16 shows the responses of the SAICT companies regarding research question number four which is: 'What knowledge do SAICT organisations have about globalisation?' The results indicate the following:

- The general mean for this topic is 3.62 in the 'Agree' category, which means respondents agree with all the statements of this topic. The first statement, 'I am knowledgeable about globalisation and its effect on business,' has a mean score of 4.05 in the 'Agree' category.

- The second statement, 'I am aware of the technological factors that might affect our organisation's globalisation strategy,' has a mean score of 4.05 in the 'Agree' category.

- The third statement, 'I am aware of the economic factors that might affect our organisation's globalisation strategy' has a mean score of 3.56 in the 'Agree' category.

- The fourth statement, 'I am aware of the political factors that might affect our organisation's globalisation strategy', has a mean score of 3.41 in the 'Agree' category.

- The fifth statement, 'I am aware of the cultural factors that might affect our organisation's globalisation strategy', has a mean score of 3.04 in the 'Neutral' category.

It can be extrapolated from the results of question four that SAICT companies in general are knowledgeable about globalisation and other factors such as political, economic, technological and cultural factors and their effects on their businesses.

Table 5- 16: SAICT knowledge about globalisation

S	Statement		Approval Degree					Mean	Std. Deviation	Order
			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree			
1	I am knowledgeable about globalisation and its effects on business.	Frequency	1		15	41	22	4.05	0.77	1
		Percent	1.2		18.5	50.6	27.2			
2	I am aware of the political factors that might affect our organisation's globalisation strategies.	Frequency	1	10	31	28	8	3.41	0.89	4
		Percent	1.2	12.3	38.3	34.6	9.9			
3	I am aware of the economic factors that might affect our organisation's globalisation strategies.	Frequency	-	12	22	34	11	3.56	0.92	3
		Percent	-	14.8	27.2	42.0	13.6			
4	I am aware of the technological factors that might affect our organisation's globalisation strategies.	Frequency	-	3	14	38	24	4.05	0.80	2
		Percent	-	3.7	17.3	46.9	29.6			
5	I am aware of the cultural factors that might affect our organisation's globalisation strategies.	Frequency	5	26	17	23	8	3.04	1.14	5
		Percent	6.2	32.1	21.0	28.4	9.9			

5.2.7 Descriptive analysis of the attitudes of SAICT companies to globalisation

Table 5-17 shows the response of the SAICT companies to question number five: 'Does SAICT organisations' knowledge about globalisation influence attitudes to globalisation?' The results indicate the following:

- In the first order the statement, 'I think that globalising our business will add value to the organisation' has a mean score of 4.47 in the 'Strongly Agree' category.

- In the second order, the statement 'I think that globalising our business is an efficient way of getting new customers', has a mean score of 4.25 in the 'Strongly Agree' category.

- In the third order, the statement 'I do not think that our organisation is ready for globalisation because we need to change our strategy and plan so that we can compete locally and globally', has a mean score of 3.39 in the 'Neutral' category.

- In the fourth order, the statement 'I think that our business is not ready for globalisation because of very high local demand', has a mean score of 3.20 in the 'Neutral' category.

- In the fifth order, the statement: 'I think that globalising our business will not increase product and services requests', has a mean score of 1.96 in the 'Disagree' category.

The results, shown in Table 5-17, thus indicate that positive attitudes to globalisation are actually found in SAICT companies. The respondents believe that globalisation is an important process to bring in new customers as well as to add value to their business. The researcher believes that the globalisation of SAICT companies through competitive intelligence will help them to enter and count among the major economies of power.

Table 5- 17: The attitude of SAICT companies to globalisation

S	Statement		Approval Degree					Mean	Std. Deviation	Order
			Strongly disagree	Disagree	Neutral	Agree	Strongly Agree			
1	I do not think that our organisation is ready for globalisation because we need to change our strategies and plans so that we can compete locally and globally.	Frequency	5	16	18	23	17	3.39	1.21	3
		Percent	6.2	19.8	22.2	28.4	21.0			
2	I think that globalising our business will add value to the organisation.	Frequency	-	-	6	30	43	4.47	0.64	1
		Percent	-	-	7.4	37.0	53.1			
3	I think that globalising our business will not increase products and services requests.	Frequency	25	40	6	6	1	1.95	0.91	5
		Percent	30.9	49.4	7.4	7.4	1.2			
4	I think that globalising our business is an efficient way of getting new customers.	Frequency	1	-	11	33	34	4.25	0.79	2
		Percent	1.2	-	13.6	40.7	42.0			
5	I think that our business is not ready for globalisation because of very high local demands.	Frequency	4	16	34	10	15	3.20	1.13	4
		Percent	4.9	19.8	42.0	12.3	18.5			

5.2.8 Descriptive analysis of the practices which SAICT companies implement in relation to globalisation

Table 5.18 shows the response of the SAICT companies regarding the practices they implement in relation to globalisation. Question number six is: 'What practices do SAICT organisations implement in relation to globalisation?' The results show that the following practices have been implemented.

The statement, 'Allocate a budget to assist in the transition from a local to global business', is at the top of the list of practices, with a mean score of 4.28 in the 'Very Important' category.

The statement which takes the second place is: 'Set a long-term strategy to move from regional to global within the next five to ten years', with a mean score of 3.92 in the 'Important' category. This is followed by: 'Follow-up on our competitors and business partners, especially those with branches both in Saudi Arabia and abroad to understand their experiences after the globalisation of their business', with a mean score of 3.45 in the 'Important' category. The fourth practice is the statement: 'Visit many multi-national companies from different sectors, to understand their opinions, their experience, and lessons learned' with a mean score of 3.47 in the 'Important' category. The last practice is: 'Consult with many international experts to get their advice about the expansion of the business from local to international markets' with a mean score of 3.47 in the 'Important' category.

Table 5- 18: The practice of SAICT companies in globalisation

S	Statement		Approval Degree					Mean	Std. Deviation	Order
			Not very important	Not important	Middle important	Important	Very Important			
1	Set a long-term strategy to move from regional to global within the next five to ten years.	Frequency	2	6	18	23	30	**3.92**	**1.07**	**2**
		Percent	2.5	7.4	22.2	28.4	37.0			
2	Consult with many international experts to get their advice about the expansion of the business from local to international markets.	Frequency	3	8	32	26	10	**3.41**	**0.97**	**5**
		Percent	3.7	9.9	39.5	32.1	12.3			
3	Visit many multi-national companies from different sectors, to understand their opinions, their experience, and lessons learned.	Frequency	2	16	22	21	18	**3.47**	**1.13**	**4**
		Percent	2.5	19.8	27.2	25.9	22.2			
4	Follow-up on our competitors and business partners, especially those with branches both in Saudi Arabia and abroad to understand their experiences after the globalisation of their business.	Frequency	-	14	23	27	15	**3.54**	**1.00**	**3**
		Percent	-	17.3	28.4	33.3	18.5			
5	Allocate a budget to assist in the transition from a local to global business.	Frequency	-	2	11	29	37	**4.28**	**0.80**	**1**
		Percent	-	2.5	13.6	35.8	45.7			

5.2.9 Descriptive analysis of the factors and drivers of SAICT companies in globalisation

Table 5-19 shows the response of the SAICT companies regarding factors and drivers of SAICT organisations in globalisation. Question number seven is: 'What are the factors and drivers of SAICT organisations in globalisation?'

The overall mean score is 3.83 in the 'Important' category, i.e. all statements on this topic are considered important in globalisation. The key influential factor in globalisation from the point of view of the respondents is: 'Economic factors such as the level of inflation, the GDP, as well as the exchange rates between markets'. This factor appears in the first order and the mean score is 4.32 in the 'Important' category. This is followed by: 'Technological factors such as the ICT infrastructure, the penetration of the Internet and mobile services'. The mean score is 4.25 in the 'Important' category. The other factors are arranged in terms of their importance:

- Political factors such the stability of the government and involvement in a trade agreement with well-known and respected world organisations. This appears in the third order with a mean score of 4.13 in the 'Important' category.

- Business expansion firstly into Saudi Arabia and then regionally in the next five years. This appears in the fourth order in the 'Important' category.

- ICT readiness and maturity models. This appears in the fifth order with a mean score of 3.91 in the 'Important' category.

- The implementation of business intelligence processes and tools. This appears in the sixth order with a mean score of 3.85 in the 'Important' category.

- The implementation of knowledge management processes and tools. This appears in the seventh order with a mean score of 3.78 in the 'Important' category.

- Legal factors such as protection and the rights of individuals and groups, laws and legislation that facilitate investing and expanding businesses in the country. This appears in the eighth order with a mean score of 3.74 in the 'Important' category.

- Socio-cultural factors such the distribution of education, income, lifestyle trends, and attitudes towards accepting foreign companies. This appears in the ninth order with a mean score of 3.25 in the 'Less Important' category.

- Environmental factors such as climate, global warming law and regulations regarding waste disposal. This appears in the tenth order with a mean score of 3.31 in the 'Average Important' category.

Table 5- 19: The factors and drivers of SAICT companies in globalisation

S	Statement		Approval Degree					Mean	Std. Deviation	Order
			Not very important	Not important	Middle important	Important	Very Important			
1	**Political factors** such the stability of the government and the involvement in trade agreements with well-known and respected world organisations.	Frequency	1	3	14	28	33	**4.13**	**0.92**	**3**
		Percent	1.2	3.7	17.3	34.6	40.7			
2	**Economic factors** such as the level of inflation, the GDP as well as the exchange rates between markets.	Frequency	1	1	11	25	41	**4.32**	**0.86**	**1**
		Percent	1.2	1.2	13.6	30.9	50.6			
3	**Socio-cultural factors** such as the distribution of education, income, lifestyle trends and attitudes towards accepting foreign companies.	Frequency	7	6	36	20	10	**3.25**	**1.07**	**9**
		Percent	8.6	7.4	44.4	24.7	12.3			
4	**Technological factors** such as ICT infrastructure, the penetration of the Internet and mobile services.	Frequency	1	1	10	30	37	**4.28**	**0.83**	**2**
		Percent	1.2	1.2	12.3	37.0	45.7			
5	**Environmental factors** such as climate, global warming law and regulations regarding waste disposal.	Frequency	5	17	31	15	11	**3.13**	**1.10**	**10**
		Percent	6.2	21.0	38.3	18.5	13.6			
6	**Legal factors** such as protection and rights of individuals and groups, laws and legislation that facilitate investing and expanding businesses in the country.	Frequency	3	11	26	22	16	**3.47**	**1.09**	**8**
		Percent	3.7	13.6	32.1	27.2	19.8			
7	ICT readiness and maturity models.	Frequency	1	4	19	32	23	**3.91**	**0.92**	**5**
		Percent	1.2	4.9	23.5	39.5	28.4			
8	The implementation of **knowledge management** processes and tools.	Frequency	-	3	24	39	13	**3.78**	**0.76**	**7**
		Percent	-	3.7	29.6	48.1	16.0			
9	The implementation of **business intelligence** processes and tools.	Frequency	-	9	16	32	22	**3.85**	**0.96**	**6**
		Percent	-	11.1	19.8	39.5	27.2			
10	A business expansion firstly into Saudi Arabia and then regionally in the next five years.	Frequency	-	1	21	33	24	**4.01**	**0.79**	**4**
		Percent	-	1.2	25.9	40.7	29.6			

5.2.10 The results of hypothesis testing of the different factors;

Table 5-20 shows the multiple regression results which were used to investigate the influence of different factors on globalization. The results are as follows:

- The null hypothesis (H1o) that the technological factors do not influence SAICT organisations' globalisation decisions can be rejected under 0.05 significant level, where the t- test sig value is 0.011 which is less than 0.05 level. Furthermore, the magnitude effect of the technological factors on the globalising decision around 23% (The mean of the technological context items from the questionnaire in Section 2: technological Context: (2.1 to 2.9) were calculated).

- Regarding the hypothesis of the environmental factors (influence on the decision making of SAICT companies to globalise, the result found that these factors has a statistical significant effect at 0.05 level, where the t-test sig. value is 0.018, so under this result the second null hypothesis of the study has been rejected and the alternative is accepted. The magnitute effect of these factors around 20% (The mean of the technological context items from the questionnaire in Section 3: Environmental Context: (3.1 to 3.6) were calculated).

- Table 5-20, use to test the individual and partial effect of the factors on the companies decision to globlise, while table 5-21 use to test the overall statistical siginficant of the influnce of tecnological and envirnmental factors on campanies decision to globlies, to do so F-test is used, where the results show that these factors jointly has a statistical segnificant influnce under 0.01 significant level, where the F-test sig. is 0.001.

Table 5- 20: The most significant independent variables that have an influence on decision-making of SAICT companies in globalising their business

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	R Square	Adjusted R Square
	B	Std. Error	Beta				
(Constant)	3.112	.277		11.253	.000		
Technological factors	.230	.088	.284	2.603	.011	0.110	0.048
Environmental factors	.203	.084	.266	2.421	.018		

Table 5- 21: F-test; the joint test of all factors influences on the companies' decision to globalise;

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.57	4	1.893	5.811	0.015
Residual	23.45	72	0.326		
Total	31.02	77			

Regarding the hypothesis of the organisational factors influence on the decision making of SAICT companies to globalise, by using Chi- square test, the result found that there was no relationship between organisational factors and SAICT organisations' globalisation decisions. So according to the Chi- square test, the null hypothesis can be rejected, where the average value of chi-square test for all items for organisational factors is (13.78) with p-value (0.514) which is greater than the 0.05 significant value.

5.2.11 The relationship between globalisation and the TOE framework and KAP model

Table 5-22 shows the relationship between globalisation and the TOE framework and KAP model. The results are the following:

- There is a positive correlation (0.284, $p < 0.05$) between globalisation and the technological context of SAICT companies.

- There is a positive correlation between globalisation and the environmental contexts of SAICT companies, meaning that there is a significant correlation of (0.266, $p < 0.05$) between them.

- There is a positive correlation between globalisation and the knowledge of SAICT companies about globalisation, meaning there is a significant correlation of (0.363, $p < 0.05$) between them.

- There is a negative insignificant correlation between globalisation and the attitudes of SAICT companies to globalisation. The correlation coefficient is (-0.072, $p < 0.05$).

- There is a positive correlation between globalisation and the practices in SAICT companies to globalisation. There is a significant correlation coefficient is (0.30, p<0.05) between them.

Table 5- 22: The relationship between globalisation and the TOE framework and KAP model

		Globalisation	Technological factors	Environmental factors	Knowledge about globalisation	The attitude to globalisation	Practices of globalisation
Globalisation	Pearson Correlation	1					
	Sig. (2-tailed)						
Technological factors	Pearson Correlation	.284*	1				
	Sig. (2-tailed)	.011					
Environmental factors	Pearson Correlation	.266*	.775**	1			
	Sig. (2-tailed)	.018	.000				
Knowledge about globalisation	Pearson Correlation	.363**	.477**	.298**	1		
	Sig. (2-tailed)	.001	.000	.008			
Attitudes to globalisation	Pearson Correlation	-.072	-.144	-.057	-.238-*	1	
	Sig. (2-tailed)	.531	.205	.618	.035		
Practices in globalisation	Pearson Correlation	.302**	.361**	.204	.335**	-.115	1
	Sig. (2-tailed)	.007	.001	.074	.003	.313	

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

5.2.12 Chi-Square Test of Independence or Association

The chi-square test hypotheses are: (a) Null hypothesis; H_0: there is no relationship between the two variables under study and (b) alternative hypothesis; H_a: there is relationship between the two variables.

5.2.12.1 The relationship between Knowledge management (KM) and TOE variables

In this section, a chi-square test was used to describe the relationship between (3) Knowledge management (KM) variables and (5) TOE variables. The Knowledge management (KM) variables are:

- 'Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management'.
- 'Our organisation has become more aware of our competitors' business activities after the implementation of knowledge management strategies'.
- 'The implementation of knowledge management processes and tools'.

While TOE variables are:

- 'What is your role in your organisation?'
- 'How many employees are there in your organisation?'
- 'How many years has your organisation been in business?'
- 'What services does your company provide?'
- 'Where is your organisation's primary place of business?'

To measure the relation between (3) variables of Knowledge management (KM) and (5) variables of the TOE, the study uses cross-tabulation which produce Pearson's chi-square statistic. In order to accept the null hypothesis and decide that there is relationship between variables, the study considered that the null hypothesis is rejected if the P- value is less 0.05 as we using 0.05 level of significant.

The Chi-Square test showed that among (15) relationships, four were found statistically significant.

- The variable 'Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management' has a dependency with (3) TOE variables

- Dependency with the numbers of employees, in which Pearson's chi-square statistic equal to 25.409 with p-value of 0.021 which is statistically significant at the significant level of 0.05.
- There is a dependency with the numbers of years in business, in which Pearson's chi-square statistic equal to 25.647 with p-value of 0.059 statistically significant at the significant level of 0.10.
- There is a dependency with provided services in the company, in which Pearson's chi-square statistic equal to 20.681 with p-value of 0.055 statistically significant at the significant level of 0.10.

- The variable 'Implementation of knowledge management processes and tools' has dependency with the variable 'provided services in the company', in which Pearson's chi-square statistic equal to 16.776 with p-value of 0.052 statistically significant at the significant level of 0.10.

However, the third variable of knowledge management which is 'Our organisation has become more aware of our competitors' business activities after the implementation of knowledge management strategies' does not have an association with any of the TOE variables. This result is shown in Table 5-23 below.

Table 5- 23: The relationship between Knowledge management (KM) and TOE variables

The relationship between Knowledge management (KM) and TOE variables	Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management		Our organisation has become more aware of our competitors' business activities after the implementation of knowledge management strategies.		The implementation of knowledge management processes and tools.	
	Chi-Square	**Sig.**	**Chi-Square**	**Sig.**	**Chi-Square**	**Sig.**
What is your role in your organisation?	14.231	0.582	17.826	0.334	15.261	0.506
How many employees are there in your organisation?	25.409	0.021**	22.532	0.127	15.015	0.241
How many years has your organisation been in business?	25.647	0.059*	10.799	0.822	9.969	0.619

What services does your company provide?	20.681	0.055*	6.954	0.861	16.776	0.052*
Where is your organisation's primary places of business?	10.174	0.253	3.413	0.906	10.418	0.108

* Statistically Significant at the 0.10 level of the probability. ** Statistically Significant at the 0.05 level of the probability.

5.2.12.2 The relationship between Business Intelligence (BI) and TOE variables

In this section, a chi-square test was used to find out the relationship between (3) Business Intelligence (BI) variables and (5) TOE variables (role, employees, years, services, location). The Business Intelligence (BI) variables are:

- 'Our organisation can reach international markets and sell its products and services as a result of the implementation of business intelligence.'

- 'Our organisation has become more aware of our competitors' business value after the implementation of business intelligence strategies.'

- 'The implementation of business intelligence processes and tools.'

Among (15) relationships, the Chi-Square test we found that there is only one statistically significant dependency inwhich between Business Intelligence (BI) variable 'implementation of business intelligence processes and tool' and 'the number of employees there are in the organisation', the dependence between the two variables is statistically significant at significant level of 0.10, since Pearson's chi-square statistic equal to 19.176 with p-value of 0.084 which is less than 0.10. The results are shown in Table 5-24 below.

Table 5- 24: The relationship between Business Intelligence (BI) and TOE variables

The relationship between Business Intelligence (BI)and TOE variables	Our organisation can reach international markets and sell its products and services as a result of the implementation of business intelligence.		Our organisation has become more aware of our competitors' business value after the implementation of business intelligence strategies.		The implementation of business intelligence processes and tools.	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
What is your role in your organisation?	17.826	0.334	21.065	0.176	9.554	0.655
How many employees are there in your organisation?	16.716	0.404	16.379	0.427	19.176	0.084*
How many years has your organisation been in business?	14.881	0.533	16.549	0.415	16.909	0.153
What services do your company provide?	13.014	0.368	11.292	0.504	5.159	0.820
Where is your organisation's primary places of business?	8.372	0.398	7.951	0.438	5.316	0.504

* Statistically Significant at the 0.10 level of the probability.

5.2.12.3 The relationship between Knowledge management (KM) and Globalisation variables

In this section, Chi-Square test was used to find the relation between (3) Knowledge management (KM) variables and (9) Globalisation variables. The knowledge management (KM) variables are:

- 'Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management'.
- 'Our organisation has become more aware of our competitors' business activities after the implementation of knowledge management strategies'.
- 'The implementation of knowledge management processes and tools'.

While, the Globalisation variables are:

- 'Political factors such as the stability of the government and the involvement in trade agreements with well-known and respected world organisations.'
- 'Economic factors such as the level of inflation, the GDP as well as the exchange rates between the market.'
- 'Socio-cultural factors such as the distribution of education, income, lifestyle trends and attitudes towards accepting foreign companies.'
- 'Technological factors such as the ICT infrastructure, the penetration of the Internet and mobile services.'
- 'Environmental factors such as climate, global warming law and regulations regarding waste disposal.'
- 'Legal factors such as the protection and rights of individuals and groups, laws and legislation that facilitate investing and expanding businesses in the country.'
- 'ICT readiness and maturity models.'
- 'The implementation of business intelligence processes and tools.'
- 'A business expansion firstly into Saudi Arabia and then regionally in the next five years.'

Among (27) relationships, the Chi-Square test found that there are (9) statistically significant dependency between knowledge management (KM) and Globalisation, which are the following:

- 'Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management' has a statistically significant dependency with 'Political factors', since Pearson's chi-square statistic equal to 25.629 with p-value of 0.059 which is less than significant level of 0.10.
- 'Our organisation has become more aware of our competitors' business activities after the implementation of knowledge management strategies' has a statistically significant dependency with 5 factors of the Globalisation variable, which are:
  o Socio-cultural factors with chi-squareequal to 38.710 and p-value 0.001.
  o Technological factors with chi-square equal to 24.239 and p-value =0.001.
  o Legal factors with chi-square equal to 32.387 and p-value = 0.009.
  o ICT readiness and maturity models with chi-square equal to 35.866 and p-value =0.003.
  o The implementation of business intelligence processes and tools with chi-square equal to 22.059 and p-value =0.037.

- 'The implementation of knowledge management processes and tools' has a statistically significant dependency with 3 factors of the Globalisation variable, which are:
  - Environmental factors with chi-square equal to19.493 and p-value =0.077.
  - ICT readiness and maturity models with chi-square equal to 27.721 and p-value =0.006.
  - The implementation of business intelligence processes and tools with chi-square equal to 34.945 and p-value =0.000. The results are shown in Table 5-25 below

Table 5- 25: The relationship between (KM) and Globalisation

The relationship between (KM) and Globalisation	Our organisation can reach international markets and sell its products and services as a result of the implementation of knowledge management		Our organisation has become more aware of our competitors' business activities after the implementation of knowledge management strategies.		The implementation of knowledge management processes and tools.	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
Political factors such as the stability of the government and the involvement in trade agreements with well-known and respected world organisations.	25.629	0.059*	20.466	0.200	10.685	0.556
Economic factors such as the level of inflation, the GDP as well as the exchange rates between markets.	15.768	0.469	23.009	0.113	17.700	0.125
Socio-cultural factors such as the distribution of education, income, lifestyle trends and attitudes towards accepting foreign companies .	12.467	0.711	38.710	0.001***	11.993	0.446
Technological factors such as the ICT infrastructure, the penetration of the Internet and mobile services .	22.127	0.139	24.239	0.084*	17.300	0.139
Environmental factors such as climate, global warming law and regulations regarding waste disposal .	15.050	0.521	13.015	0.672	19.493	0.077*
Legal factors such as the protection and rights of individuals and groups, laws and legislation that facilitate investing and expanding businesses in the country.	16.025	0.451	32.387	0.009**	13.295	0.348
ICT readiness and maturity models.	20.350	0.205	35.866	0.003**	27.721	0.006**

The implementation of business intelligence processes and tools.	6.900	0.864	22.059	0.037**	34.945	0.000***
A business expansion firstly into Saudi Arabia and then regionally in the next five years.	18.169	0.111	15.940	0.194	14.697	0.100

* Statistically Significant at the 0.10 level of the probability.
** Statistically Significant at the 0.05 level of the probability.
*** Statistically Significant at the 0.001 level of the probability.

5.2.12.4 The relationship between Business Intelligence (BI) and Globalisation variables.

In this section, Chi-Square test was used to find out the relationship between (3) Business Intelligence variables and (9) Globalisation variables. The BI variables are the following:

- 'Our organisation can reach international markets and sell its products and services as a result of the implementation of business intelligence.'
- 'Our organisation has become more aware of our competitors' business value after the implementation of business intelligence strategies.'
- 'The implementation of business intelligence processes and tools.'

The Globalisation variables are the following:

- 'Political factors such as the stability of the government and the involvement in trade agreements with well-known and respected world organisations.'
- 'Economic factors such as the level of inflation, the GDP as well as the exchange rates between the markets.'
- 'Socio-cultural factors such as the distribution of education, income, lifestyle trends and attitudes towards accepting foreign companies.'
- 'Technological factors such as the ICT infrastructure, the penetration of the Internet and mobile services.'
- 'Environmental factors such as climate, global warming law and regulations regarding waste disposal.'
- 'Legal factors such as the protection and rights of individuals and groups, laws and legislation that facilitate investing and expanding businesses in the country.'
- 'ICT readiness and maturity models.'
- 'The implementation of business intelligence processes and tools.'

- 'A business expansion firstly into Saudi Arabia and then regionally in the next five years.'

Among (27) relationships the Chi-Square test found that there are (14) statistically significant dependency between business intelligence (BI) and Globalisation as follows:

- 'Our organisation can reach international markets and sell its products and services as a result of the implementation of business intelligence (BI)' has a statistically significant dependency with 2 variables:
    - ICT readiness and maturity models with chi-square equal 22.230 and p-value = 0.035).
    - The implementation of business intelligence processes and tools with chi-square equal to 19.953 and p-value = 0.068.
- 'Our organisation has become more aware of our competitors' business activities after the implementation of business intelligence (BI) strategies' has a statistically significant association with 5 of the Globalisation variables, which are the following:
    - Socio-cultural factors by (chi-square=24.069 and p-value =0.088).
    - ICT readiness and maturity models by (chi-square= 36.670 and p-value =0.002).
    - The implementation of business intelligence processes and tools by (chi-square= 43.130 and p-value =0.000).

While 'the implementation of business intelligence processes and tools' has a statistically significant dependency with all Globalisation variables, as follows:

- Political factors with chi-square equal to19.071 and p-value = 0.087.
- Economic factors with chi-square equal to 22.047 and p-value = 0.037.
- Socio-cultural factors with chi-square equal to 29.854 and p-value = 0.003.
- Technological factors with chi-square equal to 34.244 and p-value = 0.001.
- Environmental factors with chi-square equal to 21.091 and p-value = 0.049.
- Legal factors with chi-square equal to 25.858 and p-value = 0.011.
- ICT readiness and maturity models with chi-square equal to 25.966 and p-value = 0.011.
- The implementation of knowledge management processes and tools with chi-square equal to 34.945 and p-value = 0.000.
- A business expansion firstly into Saudi Arabia and then regionally in the next five years with chi-square equal to 15.924 and p-value = 0.068. The results are shown in Table 5-26 below.

Table 5- 26: The relationship between Business Intelligence (BI) and Globalisation variables

The relationship between business intelligence (BI) and Globalisation	Our organisation can reach international markets and sell its products and services as a result of the implementation of business intelligence.		Our organisation has become more aware of our competitors' business value after the implementation of business intelligence strategies.		The implementation of business intelligence processes and tools.	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
Political factors	18.349	0.304	17.475	0.356	19.071	0.087*
Economic factors	14.685	0.548	20.841	0.185	22.047	0.037**
Socio-cultural factors	14.480	0.563	24.069	0.088*	29.854	0.003**
Technological factors	14.706	0.546	15.277	0.504	34.244	0.001***
Environmental factors	13.283	0.652	13.078	0.667	21.091	0.049**
Legal factors	12.455	0.712	22.003	0.143	25.858	0.011**
ICT readiness and maturity models.	21.464	0.161	36.670	0.002**	25.966	0.011**
The implementation of knowledge management processes and tools.	22.230	0.035**	43.130	0.000***	34.945	0.000***
A business expansion firstly into Saudi Arabia and then regionally in the next five years.	19.953	0.068*	16.223	0.181	15.924	0.068*

* Statistically Significant at the 0.10 level of the probability.
** Statistically Significant at the 0.05 level of the probability.
*** Statistically Significant at the 0.001 level of the probability.

5.2.12.5 The relationship between Globalisation and (Knowledge, Attitude, Practice)

In this section, Chi-Square test used to find out the relationship between (10) of the Globalisation variables and (15) variables of (Knowledge , Attitude, Practice). The Knowledge variables are:

- 'I am knowledgeable about globalisation and its effect of business.'
- 'I am aware of the political factors that might affect our organisation's globalisation strategies.'

- 'I am aware of the economic factors that might affect our organisation's globalisation strategies.'

- 'I am aware of the technological factors that might affect our organisation's globalisation strategies.'

- 'I am aware of the cultural factors that might affect our organisation's globalisation strategies.'

Attitude variable are:

- 'I do not think that our organisation is ready for globalisation because we need to change our strategy and plan so that we can compete locally and globally.'

- 'I think that globalising our business will add value to the organisation.'

- 'I think that globalising our business will not increase product and services requests.'

- 'I think that globalising our business is an efficient way of getting new customers.'

- 'I think that our business is not ready for globalisation because of very high local demand.'

Practice variables are:

- 'Set a long-term strategy to move from regional to global within the next five to ten years.'

- 'Consult with many international experts to get their advice about the expansion of the business from local to international markets.'

- 'Visit many multi-national companies from different sectors, to understand their opinions, their experience, and lessons learned.'

- 'Follow-up on our competitors and business partners, especially those with branches both in Saudi Arabia and abroad to understand their experiences after the globalisation of their businesses.'

- 'Allocate a budget to assist in the transition from a local to global business.'

Among (50) relations, the Chi-Square test found that there are (11) statistically significant dependency between Globalisation and Knowledge. The highest statement of Knowledge section, which has a statistically significant dependency between globalisation variables, was 'I am aware of the cultural factors that might affect our organisation's globalisation strategies' which has statistically significant dependecy with six factors:

- Socio-cultural factors with chi-square equal to 31.776 and p-value = 0.011.
- Legal factors with chi-square equal to 58.614 and p-value = 0.000.
- ICT readiness and maturity models with chi-square equal to 23.703 and p-value = 0.096.

- Implementation of business intelligence processes and tools with chi-square equal to 22.989 and p-value = 0.028.

- A business expansion firstly into Saudi Arabia and then regionally in the next five years with chi-square equal to 23.201 and p-value = 0.026.

Among (50) relations, the Chi-Square test found that there are (6) statistically significant dependency between Globalisation and Attitude. The highest statement of Attitude section, which has a statistically significant dependency between globalisation variables, was 'I think that globalising our business will add value to the organisation' which has dependecy with three factors:

- Political factors with chi-square equal to 17.657 and p-value = 0.024.

- Socio-cultural factors withchi-square equal to 16.364 and p-value = 0.037.

- Technological factors with chi-square equal to 13.700 and p-value = 0.090.

Among (50) relations, the Chi-Square test found that there are (17) statistically significant dependency between Globalisation and Practice. The highest statement of Practice section, which has a statistically significant dependency between globalisation variables, was 'Visit many multi-national companies from different sectors, to understand their opinions, their experience, and lessons learned.' which has a dependency with five variables:

- Environmental factors with chi-square equal to 27.829 and p-value = 0.033.

- Legal factors with chi-square equal to 26.816 and p-value = 0.044.

- ICT readiness and maturity models with chi-square equal to 31.453 and p-value = 0.012.

- Implementation of knowledge management processes and tools with chi-square equal to 23.084 and p-value = 0.027.

- Implementation of business intelligence processes and tools with chi-square equal to 21.193 and p-value = 0.048. The results are shown in Table 5-27 below.

Table 5- 27: The relationship between Globalisation and (Knowledge, Attitude, Practice)

The relationship between Globalisation and (Knowledge, Attitude, Practice).	Political factors		Economic factors		Socio-cultural factors		Technological factors		Environmental factors		Legal factors		ICT readiness and maturity models		Implementation of knowledge management processes and tools		Implementation of business intelligence processes and tools		A business expansion firstly into Saudi Arabia and then regionally in the next five years	
	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.	Chi-Square	Sig.
I am knowledgeable about globalisation and its effect of business.	11.392	0.496	7.757	0.804	13.519	0.332	8.265	0.764	14.459	0.272	9.951	0.620	4.861	0.962	11.798	0.225	7.504	0.585	5.602	0.779
I am aware of the political factors that might affect our organisation's globalisation strategies.	18.508	0.295	16.064	0.449	16.932	0.390	15.086	0.518	16.598	0.412	20.823	0.185	19.171	0.260	18.133	0.112	19.418	0.079*	32.794	0.001***
I am aware of the economic factors that might affect our organisation's globalisation strategies.	10.565	0.567	13.005	0.369	12.021	0.444	12.751	0.387	11.095	0.521	14.692	0.259	14.500	0.270	23.429	0.005***	22.265	0.008***	7.829	0.551
I am aware of the technological factors that might affect our organisation's globalisation strategies.	15.110	0.235	20.308	0.061*	12.233	0.427	17.536	0.131	9.361	0.672	7.223	0.843	7.897	0.793	6.862	0.651	15.079	0.089*	10.101	0.342
I am aware of the cultural factors that might affect our organisation's globalisation strategies.	23.005	0.114	18.087	0.319	31.776	0.011***	21.409	0.163	18.518	0.294	58.614	0.000***	23.703	0.096*	14.588	0.265	22.989	0.028**	23.201	0.026**
I do not think that our organisation is ready for globalisation because we need to change our strategy and plan so that we can compete locally and globally.	15.625	0.479	19.272	0.255	20.771	0.187	14.676	0.548	12.592	0.702	14.754	0.543	13.047	0.669	11.807	0.461	10.710	0.554	18.447	0.103
I think that globalising our business will add value to the organisation .	17.657	0.024**	10.963	0.204	16.364	0.037**	13.700	0.090*	3.814	0.873	6.484	0.593	8.556	0.381	7.475	0.279	5.508	0.481	13.606	0.628
I think that globalising our business will not increase product and services requests .	15.947	0.457	26.125	0.052**	20.148	0.214	14.638	0.551	13.597	0.629	12.513	0.708	9.071	0.697	9.890	0.626	7.450	0.826	16.531	0.168
I think that globalising our business is an efficient way of getting new customers.	12.475	0.408	13.270	0.350	18.252	0.108	8.328	0.759	15.660	0.207	15.396	0.220	6.076	0.732	20.417	0.016**	11.962	0.215	14.277	0.578
I think that our business is not ready for globalisation because of very high local demand.	13.805	0.613	19.988	0.221	15.404	0.495	18.289	0.307	29.295	0.022**	22.523	0.127	17.063	0.147	16.627	0.164	13.880	0.308	13.506	0.635
Set a long-term strategy to move from regional to global within the next five to ten years.	13.506	0.635	14.149	0.588	15.002	0.524	17.464	0.356	12.301	0.723	15.047	0.521	22.643	0.124	25.061	0.015**	19.778	0.071*	23.003	0.028**
Consult with many international experts to get their advice about the expansion of the business from local to international markets.	22.345	0.132	13.937	0.603	37.502	0.002***	16.933	0.390	30.294	0.017***	16.966	0.388	30.846	0.014***	15.190	0.231	15.641	0.208	11.805	0.461
Visit many multi-national companies from different sectors, to understand their opinions, their experience, and lessons learned .	21.010	0.178	15.992	0.454	20.802	0.186	17.598	0.348	27.829	0.033**	26.816	0.044**	31.453	0.012***	23.084	0.027**	21.193	0.048**	10.600	0.563
Follow-up on our competitors and business partners, especially those with branches both in Saudi Arabia and abroad to understand their experiences after the globalisation of their businesses.	13.573	0.329	12.767	0.386	25.246	0.014***	16.894	0.154	17.869	0.120	24.213	0.019***	14.248	0.285	10.485	0.313	20.851	0.013***	11.938	0.217
Allocate a budget to assist in the transition from a local to global business	23.566	0.023**	16.380	0.174	7.745	0.805	9.194	0.686	24.666	0.016***	14.554	0.267	6.832	0.869	21.385	0.011**	12.913	0.167	7.250	0.611

* Statistically Significant at the 0.10 level of the probability. ** Statistically Significant at the 0.05 level of the probability. *** Statistically Significant at the 0.001 level of the probability.

5.3   Qualitative Data Analysis

This section of data analysis presents findings from the questionnaire study, the appended open-ended questions, which the participants in this study presented in writing their responses to the questionnaires emailed to them. It also presents a content analysis of the case studies.

5.3.1   Open-ended Questionnaire Items: A Qualitative Analysis

This part of the questionnaire format was intended to include open-ended questions that probe into the role of technological, organisational, environmental and attitudinal factors in facilitating globalisation of Saudi Arabia ICT companies. These open-ended questions were semi-structured in format and were designed to focus on specific technological issues related to the implementation of information technology, as well as to expand on other areas of organisational, environmental, and attitudinal interests that contribute to globalisation of ICT companies in Saudi Arabia as perceived by the respondents in this study. This part of the questionnaire was primarily designed with the purpose of answering questions related to the impact of technological, organisational, and environmental on firms' performance, changes in the workflow and competitive advantage, including the role of business intelligence and knowledge management. However, due to the distinct type of business developed by the SAICT, the researcher assigned open questions specifically to respond to the following set of questionnaires:

1. How far do you think Saudi Arabia Information and Communication Technology (SAICT) companies are ready for globalising in terms of IT competence?

2. What are organisational factors you believe will impact the globalisation of SAICT organisations?

3. What are environmental factors you believe will impact the globalisation of SAICT organisations?

4. What knowledge do you believe that SAICT organisations should have before globalise their business?

5. How do you appreciate the attitudes and behaviours of your department in your company would contribute to globalising your services?

6. How do you appreciate the efforts of your department in your company as in developing and implementing the competitive intelligence's tools (KM & BI), including its underlying architectures?

This instrumentation is used in this dissertation because it enables the investigation of how companies seek to use information technology for competitive advantage and how well they succeed.

5.3.1.1 MAXQDA Analysis

The open-ended survey responses in this study were analyzed using MAXQDA software (MAXQDA Analytics Pro 2018, Release 18.0.7). The responses from the respondents to the open-ended semi-structured questions at the end of the questionnaires were entered into MAXQDA software and were managed through the code system.

5.3.1.2 Coding

The process of coding can be done in many different ways, but it depends on the type of data collected and the volume of documents available for analysis by dragging and dropping selected texts in the analysed interview texts or segments of texts onto the code system created. MAXQDA determines that similar code is not assigned to the same segment many times. Segments given the same code will never overlap; they will become one large coded segment.

The essential variables in content analysis or codes were analysed using Krippendorff's six methods approach by selecting interview texts for analysis in the MAXQDA analytical software, formulating the research questions or hypotheses that need to be addressed, creating a context of analysis within the interpretations elicited, working out constructs that operationalise the main concepts deduced from the analysis and supporting the qualitative findings, and drawing inferences that could be used to support findings from the quantitative study findings (Angeles, 2013, pp. 2880-2881).

Once entered, the data lent themselves to be viewed and categorized in the MAXQDA programme through the created coding. Then the categories were managed through the code system used. In this way, six codes were created for the open-ended question used in the present study bearing out six themes as illustrated in Table 5-28 below:

Table 5- 28: Coding the open-ended question response

Codes	No. of quotes that fit into the codes
Technical readiness for globalisation	77
Organisational factors	81
Environmental factors	64
Knowledge about globalisation	73
Attitudes towards globalisation	59
Competitive intelligence	52

5.3.1.3 Technical readiness for globalisation

It is clear from analysing the responses to the first open-ended question, that the respondents understand that their ICT firms require immediate access to updated information systems and hardware. They also understand that these firms also need to have their own internal processing systems carefully integrated using internationally recognized standards. SAICT companies that fail to build global information networks with the outside world will be at a competitive disadvantage. The array of responses elicited indicate that IT has been used to increase the speed of IT networks, availability of services and products, and the readiness of these ICT firms to globalise. According to one respondent:

> "Some of ICT firms in Saudi Arabia need to have access to the latest technologies both software and hardware. We also need to update the experiences and qualifications of our personnel to be able to keep pace with the latest developments in ICT technology. If we fail to do this, we would cease to exist in the local market, let alone the international markets."

For example, IT imports to these firms have presented better results through the use of updatable IT capabilities. In this way, the exchange of information between local SAICT firms and international counterparts becomes easier and faster. Unfortunately, technology evolves faster than the capacity of legislation of certain countries to accept such procedure. In this rapid pace, technology changes the workflow, thus allowing the remittance of electronic documents with signature to branches of SAICT companies located worldwide. Another respondent said that:

> "Local legislations that regulate the importation of ICT technologies need to be approved by national security authorities, especially when these technologies may

intervene with their communication security systems. In addition, some of the new software used in ICT can pose threats to national ICT firms in terms of profitability and competitiveness. A notorious case is that of the permissions given to Facebook messenger video and audio calls, Viber, INC calls or the WhatsApp audio calls which were later forgone because of the losses local ICT firms underwent, especially in international calls conducted by residents."

Undoubtedly, IT has changed the logistics and documents flow. Most respondents from the major SAICT companies surveyed in this study indicated, without doubt, that IT plays an important role at their firms. They also believed that always updatable IT plays a strategic role in developing and expediting the companies' readiness to accept and adopt new technologies as well as to go trendy with the latest developments in the global market. Therefore, IT plays an important role in conquering and maintaining customers locally and internationally. It can be inferred from the narrative responses to this question, also that SAICT companies work very close to the concepts presented by Bhattacherjee and Hirschheim (1997), who posit that IT was primarily used as a tool to enable decision making, while in the new paradigm, information technology is linked to core business processes to facilitate organisational change and provide new sources of competitive advantage.

Some respondents also indicated that IT has changed dramatically the way SAICT firms do business, for example, technology has eliminated non-sophisticated work internally, such as paper memos, and some secretarial functions they had in the past, which helps these companies to live up to the expectations of the global market. The implementation of an electronic mail system and abandonment of paperwork changed the communication pattern at these firms, thus resulting in flatter communication structures. However, SAICT companies are in a transition process on the way they do business. It takes some time to change concepts, but it happens. Some people misinterpret IT. In this regard, Tyre and Hippel (1997) argued that electronic media can be excellent vehicles for sharing ideas, documents, designs, however, they are limited because they are decontextualized. The authors posit that the physical setting plays an important constitutive role in investigative activities. A rich set of potential clues embedded in a given location remains inaccessible for those who use the computer in a distant location. What really matters is the way the firm adapts itself to global needs, global changes and global challenges. However, they all concur that Information technology really changes the work-flow, impacts the way trading companies do business and amplifies the possibilities of

enhancing the exchanges of goods and services worldwide. In fact, IT is necessary and essential to modern business.

5.3.1.4 Organisational factors

The theme of organisational factors was uncovered to be very influential to the way people work in SAICT companies. One leader stated that

"Organisational factors should be considered with the utmost attention. Organisational factors in mobile technology firms are core to the success in productivity, global access, and the new agile culture at the site, although some indicated that the company should implement a targeted strategy, standards, and guidelines for organising work within an ICT firm. The flow of work and efficiency of the work cycle in a given ICT firm relies extensively upon the position and size of the company."

Another respondent said that

"large ICT firms like the three major companies, such as STC and Mobily have robust opportunities to globalise their businesses. However, this depends relatively on available assets, investments, and experience in the fields of ICT. Well-established companies have better chances to globalise as they have already gained sufficient competitive advantages. That is, the older the company, the more competitive it becomes in the field of communication technology".

5.3.1.5 Environmental factors

Senior executives surveyed in this part of the survey have recognized the effect of globalisation on business and related it with different goals and strategies. The main element of this strategy was to find the core values to promote a global mindset; these values are generally discussed at management meetings to promote greater cohesion and awareness of other areas of the business in local and global environments. Another factor observed in the responses was to link the objectives of the company to these core values and to implement standard training and tools throughout the company for all leaders of ICT companies in both local and global environments and to match the environmental cultures as well.

Some of the key leaders introspected here said that associated ICT companies around the world are forced to think outside of their own local cultures, customs and businesses. One respondent said that:

"We are a global company, but people still use the term offshore. How can it be offshore if we are global? So, I think the way this has influenced the way we work is fundamentally about trying to change the mindset of individuals ... So, in some ways, it really changes the mindset of individuals who are sitting here in Saudi Arabia because people out of the kingdom are getting it. Therefore, I think the way we work is impacting (associates) to really understand that power and information do not stop there".

Globalisation is forcing employees around the world to change their minds to think globally about their daily work and future strategy. Other leaders have also observed the change of mentality. One said:

"This is a very profound change of perspective regarding the need to take into account other countries and other areas".

According to another respondent,

"the state of mind of society vis-à-vis other projects and other perspectives, at the global level, in terms of prioritization and planning, has changed significantly. "

One of respondent stating that:

"in my opinion, [globalisation] would enable more communication between individuals, more technology-driven, telepresence and videoconferencing [and other things of the same kind]. I hope we will expand that further, so that people will get used to different cultures and people from different cultures and will see these interactions and ways, but I'm not sure yet. I think we are still not new to the world community to see the results of that."

In particular, participants noticed a change that was beginning to take place in the way other societies think, interact and work every day. The level of experience and leadership exposure varied from one individual to another, indicating a certain disparity in the communication and views of local and international companies in the sector. While many leaders realise that they need to adopt new technologies and develop a communication approach to be able to cope and adapt to a changing workforce. Most respondents applaud the new work environment, so they do not want to be treated differently but prefer to adapt to the new environment as quickly as possible to succeed in their tasks.

5.3.1.6 Knowledge about globalisation

The respondents were able to see and express the impact of globalisation and technology at their companies. Most of them felt that their companies' knowledge about globalising their business had a significant positive impact on their job. Many of the respondents believe their knowledge has facilitated communication and, as a result, simplified their work, especially when communicating with global ICT companies. They also believe that this knowledge provides excellent flexibility in the way information is communicated and received at work, as well as helping to improve performance. One respondent said:

> "Our organisation is knowledgeable of how to expand our business and activities in Gulf states. It is easy to start, firstly, in Gulf states, because culture, economy and technology are almost similar to Saudi Arabia."

Another respondent pointed out that "leaders of ICT companies must pay more attention to some factors before they market their business globally. They first take security issues, political stability and then culture into consideration. Once the country is secure and stable, then we can market our products and services over there".

5.3.1.7 Attitudes towards globalisation

The respondents suggested that ICT companies with regard to attitudes toward globalisation, firstly, should address issues such as knowing what does globalisation mean in terms of economic concept and the concept of doing business. They also need to know the role and impact of globalisation not only on countries but also on organisations as well as individuals. They believe these issues are the starting point toward taking business to global markets. Moreover, the respondents also think attitudes can be negative when the members of an organisation stick to very localized objectives, strategies and cultural values. According to a respondent:

> "successful companies must continue to think in an inclusive and comprehensive way. So, it is an important first for companies that want to be internationally competitive to have positive attitudes towards change to globalisation. "He believes that "ICT companies in all sectors value the benefits of a diverse workforce. These firms also consider the challenges related to working across borders, cultures and languages by a change in attitude."

Another respondent has shown that positive attitudes towards globalisation should take into account the diversity of ideas on the development of ICT companies.

"It has been shown that diversity of ideas encourages creativity and stimulates innovation, thus helping ICT firms to solve problems and meet customer needs in new and interesting ways. For example, the successful globalisation of ICT companies in Saudi Arabia is due to their multicultural product and service development teams".

A third respondent wrote:

"A positive attitude towards the globalisation of the ICT sector in Saudi Arabia needs to accept and improv a multicultural workforce. In order for ICT's products and services to succeed and to be in a competitive position in other country, ICT companies need to understand the local market, supply and demand, and whether their products and services will be accepted and add value or not".

5.3.1.8   Competitive intelligence's tools (knowledge management and business intelligence – KM & BI)

The answers to this question on competitive intelligence's tools (knowledge management and business intelligence – KM & BI) indicate that integrating cultural diversity into the workplace is an important first step for ICT companies that want to compete internationally. Respondents indicated that competitive intelligence's tools (KM & BI) can be used to discover and explore new export markets for their services and products. These firms can then explore the further rise of global regional integration, the reduction of trade barriers around the world, the sharp rise in international trade and the challenges facing managers in achieving better performance in their organisations. In addition, respondents suggested that the success of the globalisation of their ICT companies depends on the match between a specific market opportunity and the company's resources, which form the basis of a sustainable competitive advantage. According to one of the executive's respondent:

"One of the key ways to succeed in international business is to have a strong competitive advantage, such as assets and resources, partners and economies of scale."

The answers also suggest that in assessing market opportunities, managers should pay particular attention to the resources, decision making tools such as CI's tools and skills needed to gain a competitive advantage. They say that it is not appropriate to evaluate market opportunities

based solely on their attractiveness. According to their point of view, managers should focus on matching market opportunities with the resources and capabilities of the business.

5.3.2 Content Analysis

The data in this part was generated from secondary data documents of the three ICT companies. The collected documents comprised an annual report for each company for the year 2016 as well as information from their websites. In this section, the data analysis is based on one of the two research models, namely the TOE framework. The study analysed the contents of the three telecoms companies separately according to their consolidated financial statements, CEO statements, and annual reports for the year of 2016 (CITC, 2016). The analysis and results of the study are discussed below.

A content analysis of the main three telecommunications companies operating their services in Saudi Arabia, namely Zain, Mobily, and STC, shows that STC holds 72% of the market share, while Mobily holds 19%, and Zain 9%. Figure 5-6 shows these percentages of the companies' market share of telecommunications services in Saudi Arabia.

Percentage of companies' market share of the telecommunications services
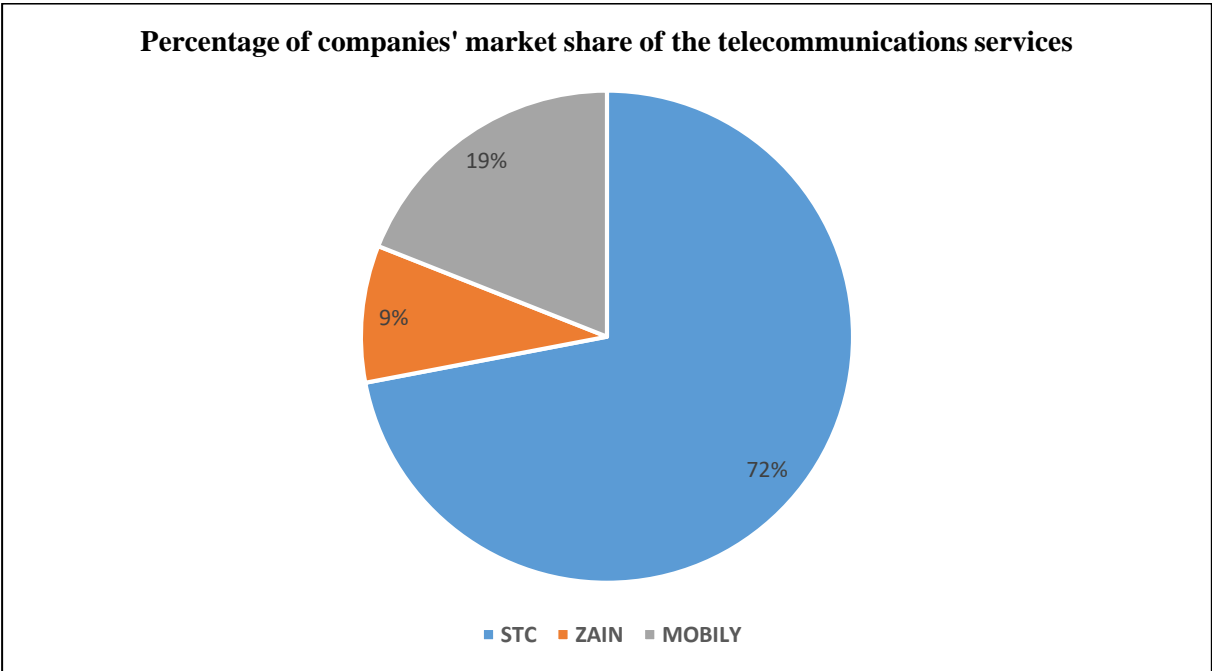
Figure 5- 6: Percentage of companies' market share of the telecommunications services in Saudi Arabia

5.3.2.1 Saudi Telecom Company (STC)

STC's company strategy is to 'enhance the economic, environmental, and social value of a community'. In term of STC's company vision, it is to 'become an incentive for economic and

social development' while the mission is 'to enable and connect the community and its various sectors with technical solutions and services, which help benefit from the development opportunities therein.' (STC, 2017).

In this context, STC has set up a new strategy called LEAD. The aim of the strategy is to focus on STC collective energies and efforts to take advantage of emerging opportunities and address all future challenges (STC, 2017). The LEAD strategy focuses on six key dimensions that are important to the company, which is illustrated below in Table 5-28.

Table 5- 29: The STC's strategy

STRATEGIC THEMES	STRATEGIC IMPERATIVES	IMPERATIVE HIGHLIGHTS
Drive Profitable Growth	1. Lead the Consumer data market	• Establish network leadership across mobile and fixed • Establish leading position in the Consumer data market with strong focus on profitability
	2. Lead the Enterprise and Government ICT markets in the region	• Expand IT services efforts to drive the Government's digital economy ambitions • Leverage our scale to capture wholesale opportunities in the region
Transform our Culture and our Business	3. Focus on capable people, empowered to perform	• Continuously develop our people with strong emphasis on performance and productivity through clear incentives and active management
	4. Drive efficiency	• Renewed emphasis on efficiency culture across the board
Invest in and Enable the Knowledge-Based Economy	5. Pursue strategic investments to support growth objectives	• Invest and deliver targeted acquisitions and partnerships to capture growth, efficiencies and innovation
	6. Shape win-win Government outcomes	• Establish STC as a key partner and enabler to the Government's transformation plans

(Source: STC - LEAD Strategy, 2017)

It is noted that the company's strategy LEAD is developed by the company to seek to expand its business in the regional and global markets. The company's strategy focuses on three strategic themes, which are growth, culture, and knowledge, which is essential for any

organisation to start and expand its business. Growth in profits helps organisations to expand, not only at the level of Saudi Arabia but also the level of the region. This expansion depends on transforming the company's culture and business into developing its resources through improved performance and production as well as enhancing efficiency. The important theme from the researcher's view is the company's tendency to invest in the knowledge-based economy because knowledge, as mentioned in the literature, is the compelling factor for the success of any organisation regardless of its size. Through knowledge, the company can compete. Through knowledge, organisations can add value. Through knowledge, companies can achieve a competitive advantage. Through knowledge, companies will exploit opportunities with good returns wherever they are locally or internationally, or through alliances with other companies or investing in ICT related fields.

On the other hand, STC offers landline, mobile and internet services, such services are Internet, broadband internet, VOIP, IP VPN. There are four units that STC operates its business in which are (a) Al Hatif, which means telephone, that provide services such prepaid cards, landline and public telephones; (b) Al Jawal, which means cell phone that provides many services relating to mobile services; (c) Saudi Net which offers services relating to internet services; and (d) Saudi Data that is responsible for data solutions. Since the STC is the biggest telecommunications organisation in Saudi Arabia, it employs many Saudi citizens as well as foreigners. STC has expanded its operations to the global level, with a network of investments in the GCC, Asia, and Africa. As mentioned, STC implemented a knowledge management system. Thus, the information derived from knowledge management enables STC to play a vital role in the implementation of effective strategies that led to cost reduction, which in turn led to an increase in the company's income. STC have an advanced supply chain management system with support of business intelligence system that helps STC to obtain accurate financial data, expenses data and financial performance of each office and site of the company in which it operates its business. As previously mentioned, STC has the largest market share in Saudi Arabia, mainly due to the company's reorganization of its innovative operations through the development of new operating models that the company seeks to improve customer experience and retaining them. The company has also invested heavily in new IT systems to improve service quality. On the other hand, the strategic planning of the company led the company to obtain sustainable competitive advantages and increase profitability and global expansion. This strategic planning was based on three factors:

1. Factor-driven: massive growth because of the increase of the company's subscribers and their diversity, which is the result of population growth, economic growth, competition between companies and technological development.

2. Efficiency-driven: this is a result of the company's need to improve the quality of the services provided to its customers since the quality of service and the prices of services and features of products and services are motivating customers to remain with the same company. Therefore, the efficiency factor is essential for the company to achieve profitability because incompetence means the failure of the company's business and thus the loss of its clients.

3. Innovation-driven: by developing the latest technologies and products, then providing them to the customers of the company at competitive prices such as fast connection, voice calls via mobile internet and call rates at a competitive price (Al-Aklabi and Al-Allak, 2011).

One of the company's strategies is to build a strategy that explains its social responsibility and the company's relationship with the community. In this context, CEO of (STC) Dr. Khalid Al Biyari said that

> "our concept of social responsibility surpassed the idea of just providing aid to certain social groups that need support in the form of charity, or merely gestures for publicity's sake. Therefore, our company has built its strategy which expresses its social responsibility, through a clear and definite vision that cares for building a good relationship with our communities. By providing sustainable development projects with an increased focus on health and education, we have achieved a very positive impact. Also, we have dedicated support to keep up with trends in the world in telecommunications and information technology, which is at the core of our business" (STC, 2017).

This statement shows the company's social role towards the community, especially with regard to focusing on health and education as they are essential for any society and interdependent at the same time. The company is also interested in following developments in the field of ICT because they are the basis for the success and expansion of companies not only in the field of ICT, but all fields.

The CEO of STC International Operations for the period of 2010 to 2012, Ghassan Hasbani explains that the globalisation of companies goes through three stages. The first stage is the

development of an investment strategy initiative that enables the company to expand its business by testing new markets. The second stage is to develop the internal capabilities of the company and also to emphasize synergies and enhance the company's presence in the markets. The third stage is to develop the 'international career management processes' of the company to create a culture of one institution focused on the respect and preservation of local culture and also make the brand unified across the markets. In this regard, Hasbani points out that STC has laid the foundation for the second phase, where a program and boards of synergies have been established across the group. The synergy program consists of members of companies operating in the company, including CEOs, operating company's CEOs, CTOs, and CMOs where they meet to review the company's business and propose actions to improve the company's performance. He adds that the stages of the globalisation of the company are interdependent and dependent on each other, through these stages the company seeks to become an international operator (Fan, 2011). In this context, according to "STC's globalisation strategy, if a market does not create synergy and complementary opportunities for STC's current operational base, the company is not interested, even if it is an attractive market with huge growth potential" (Fan, 2011:5).

STC had an agreement with the Saudi Arabian government for offering Fiber broadband service through the country. The estimated cost of the project which is expected to be finished in 2020 is about US$ 1.95 billion. The project will allow around 1.3 million households to be connected with fibre lines. So far, STC is offering up to 200 Mbps in some areas in the country (Global Telecoms Business, 2017).

STC is using business intelligence tools as well as web applications to manage files and projects (STC, 2017).

STC increased its international business and operations since 2007, which means the company integrated international business in its overall strategy. As previously mentioned, it has a footprint in nine countries. Thus, the company's revenue from international operations was 10% which grew about 17% in 2014 (Riyad Capital, 2015). This expansion of STC gave it preference in competition as it helped diversify the company's revenue resources, especially after the local market reached a saturation stage in the face of fierce competition between the major three operators in the Kingdom. STC has therefore pursued a new strategy of expanding internationally by increasing its investments to nearly US $ 6 billion since 2007. STC's rivals

Mobily and Zain have not yet entered into the expansion process, making them vulnerable to local market volatility. Although the company's operations in Malaysia, Turkey and South Africa have started to generate revenue, the company's operations in India and Indonesia still require massive investments. On the other hand, the company is aware of the intensification of competition in the international markets and the low average return and the need for more capital expenditure to upgrade the technical infrastructure, in other words, these countries are similar to the domestic market (Aljazira Capital, 2015).

The STC CEO Dr. Khalid al-Bayari, said during STC's participation in GITEX in Dubai in October 2017, that 'the STC approach is based on a new strategy that focuses on growth through new areas, not traditional communication areas, that includes digital content, digital financial services and information technology, as well as limited geographic expansion'. With regard to the strategy, Bayari said: "We deal with the challenges facing the traditional telecommunications sector but STC focused on a growth strategy, which is part of an acquisition of companies operating in specific fields" (Asharq Al-Awsat, 2017).

STC is a pioneering national company that provides consolidated services in Saudi Arabia. The company keeps up a continuous response to customers' requirements and expectations, coping with advanced technological developments and emphasising company identity and status in a changeable world in which telecommunications plays a potential role and application. This has been clear in the company restructuring policy that the management has implemented, i.e. it has set up four main employment units focusing on the main customer categories as follows (a) individual services sector; (b) residential services sector; (c) business services sector; and (d) operators and transmitters sector. The company has also acquired shares in various entities, both local and regional, namely Arabsat, Marine Cable which links the banks of the Red Sea, Saudi Arabia, and Sudan. Recently, it has acquired 100% of Awal, a net service provider as well as a Saudi trading company (STC annual report, 2016).

5.3.2.1.1 Technological Context

The company's website provides all information and services provided by the company. STC is the first service provider in the Middle East and North Africa, to announce the successful trial of innovative 5G technologies. For business, STC provides cloud computing services not only over Saudi Arabia but also over some Arab countries. Both knowledge management and business intelligence are implemented and used to understand the market trends, customer needs and to share knowledge among employees. The company has data centres which offer a

variety of special services to host IT infrastructure. The company has a VDC (Virtual Data Center) which is a form of cloud computing that provides virtualised computing resources over the Internet. STC is helping Saudi Arabia to transform into a knowledge-based economy, as well as supporting the Saudi government entities by creating smart services over Saudi Arabia (STC, 2016).

5.3.2.1.2 Organisation Context

Saudi Telecom Company is the first and the largest telecommunications service provider in Saudi Arabia as well as in the Gulf. The company was established on September 9, 2002, based on the Royal Decree No 35 dated April 21, 1998. On 2003, the company offered 30% of its stocks on the Saudi Stock Exchange. In April 2007 the company ended its monopoly of the fixed line or land phone service after an alliance led by Bahrain's Batelco obtained the second licence which was franchised by the government. The company has a prepaid card, called Sawa, which is widespread in Saudi Arabia. STC has adopted an ambitious program that aims to transfer its government works to comply with approved and applied basics. The company has set up a clear strategy for its internal structure, training and qualifying its employees, reviewing and improvement of its internal procedures, studying and complying with clients' demands and proceeding with its national and social responsibilities. Currently, the STC company has more than 17,000 employees (STC, 2016).

5.3.2.1.3 Environment context

- **Competition (Expansion activities)**

STC believes in the importance of its clients, and it works hard to meet their expectations. It has adopted a pioneering strategy which supports and promotes the company's competitiveness, where it tries to implement its strategy of focusing on clients. STC has expanded hugely outside Saudi Arabia, i.e. it has taken over 25% of Malaysian Access Telecom with an amount of US$ 3,04billion. The Access company operates and runs some mobile phone companies in Malaysia, India, and Indonesia. The agreement also includes the acquisition of 51% of natUrando B.T. in Indonesia. STC has taken over 26% of land phone licences in Kuwait with an amount of US$ 924.6 Million. STC has acquired 30% of the shares of Oger Telecom, headquartered in the UAE, at the beginning of 2008 with an amount of US $208 million. STC has a network of activities in some GCC countries, Asia and Africa, where the company is available in Kuwait, India, Indonesia, Malaysia, Turkey, South Africa and in Bahrain (STC annual report, 2016). Table 5-29 show the TOE of the STC after being tabulated.

Table 5- 30: The TOE of STC

Saudi Telecom Company	
Factors	
Technological	
Website	www.stc.com.sa
Knowledge Management	LEAD strategy and through sharing knowledge among employees and with their clients.
Business Intelligence	Through analysis the market trend and customers' interest.
Social networking	Facebook, google+, Instgram. Twitter, YouTube, and Linkedin
E-commerce	Through Mystc website. Customers can buy STC's services and products.
Cloud computing services	IT infrastructure, IP hosting, managed solutions, international network connectivity, continuity of the business and disaster recovery.
Hardware	There are 34,000 telecom towers in Saudi Arabia, 50% of these towers belong to STC. Mainframes and servers as well as different hardware from different vendors such as Cisco and Huawei.
Software	The company uses different products from different vendors such as Microsoft, SAP, Cisco, and Oracle.
Organisational	
Number of employees	More than 17,000 employees.
Number of years in Business	1998; 19 years ago.
Services provided	Software production, Internet and Multimedia production, Internet services providers, mobile and landline services, Internet Protocol television and cloud services.
Places of operating business	Saudi Arabia, Middle East, and Africa
Revenue	$13.6 billion (2016)
Net Income	$2.27 billion (2016)
Environmental	

Location	The location of STC in Saudi Arabia is a vital factor for the company to globalize its business.
Government legislation	The current government legislation in Saudi Arabia has helped the STC to expand its business and services in the Middle East, in Malaysia and Indonesia and some Africans countries.
Competition	STC expands its business because of the rivalry in the business environment in the ICT sector especially from the other competitors operating in Saudi Arabia.
Knowledge management and business intelligence strategies	The implantation of Knowledge management and business intelligence strategies has helped the STC to become more aware of its competitors' business activities.

5.3.2.2 Etihad Etisalat Co., Mobily

Mobily's vision is "enriching your life by continuously leading and innovating in communications services". While its mission is to "exceed the expectations of our employees and customers by fully leveraging our capabilities and potential" (Mobily Annual Report, 2016:5). Mobily is considered to be the leading company in terms of the Internet sector, especially in data exchange in Saudi Arabia. This led to an increase in the company's sales of Internet services to more than 53.1% due to high usage rates. This increase is the result of Mobily's strategic focus on the Internet sector. When comparing Mobily with Saudi Telecom Company – STC, Mobily's international expansion is not among its priorities at present because of the lack of volume of operations available to the company compared to STC. On the other hand, since Mobily is an international subsidiary of Etisalat of UAE, the decision to expand to the international market is based mainly on the mother company in UAE to determine whether there is a need for international expansion or not. Mobily's strategy, firstly focuses on establishing and improving its position in the local market, taking advantage of the growing Internet sector. The second strategy is to focus on the management of its customers since the company knows the importance of customers and they are the basis of success and excellence. Therefore, the company has outsourced its operations as well as distribution and technical support (Aljazira Capital, 2015).

Mobily has signed an agreement in September 2017 with three ICT leading companies for upgrading its network in Saudi Arabia in the next three years. The three companies are Ericsson, Huawei, and Nokia. The company is planning to invest about US$ 650 million in term of upgrading their network. In this regard, Mobily CEO Ahmed Aboudoma said: "This agreement comes in line with the 2030 Kingdom Vision and its objectives that focus on developing the telecom & IT sector. Moreover, it will allow Mobily to provide the best services to its customers that comply with its new strategy 'RISE' in which its objectives revolve around boosting up the level of provided services by using the latest telecom technologies." Furthermore, the CEO of Mobily has added that "Mobily's current network has a competitive performance among the sector. The new agreement will contribute in raising network performance significantly to allow Mobily customers enjoy unprecedented services. The agreement discussions lasted more than 6 months to ensure adding plans comply with telecom technology rapid developments, in addition to adapting future technologies within an efficient contractual framework." (Bicheno, 2017).

In October 2017, Mobily and Dell Technologies had an agreement for supporting Mobily's cloud computing market. The agreement allows Mobily to connect its data centre in Riyadh with two cities Dammam and Jeddah that makes Mobily the largest company in term of cloud computing network in Saudi Arabia (ITP.net, 2017).

5.3.2.2.1 Technological Context

The main activity of Mobily is to set up and operate Wi-Fi and optic fibre networks, and their installations, provide installation and operate sell-out phone devices and telecom systems in Saudi Arabia. Developing software technology to be used by the company and providing support services to information technology. Executing and concluding of contracts for the installation and maintenance of wireless and telecom networks, installing computer systems and providing data service. Providing satellite transmission services via IPTV protocol. Mobily has a launched set of technology solutions to develop and promote its services. The company has succeeded in collaborating with Huawei Company, in launching the first network to take advantage of advances in maximum multiple inputs and outputs, LTE M-MIMO in Saudi Arabia. The company launched an LTE TDD network with 2.6 GH frequency and with a speed of 600 megabytes per second in Saudi Arabia. This project allows clients to have access to fast mobile internet and to access multiple services like video on demand and games via e-cloud.

The company raised the capacity of the network to 4G and sending via 4GFDD, i.e., by increasing the coverage of FDD in the main cities, namely Makkah. The management of optic fibers (FTTH) to provide speed linking lines. Following its investment in optic fibers, the company now covers 22 cities in Saudi Arabia. The company strategy is to extract cash profits from FTTH and to attract more subscribers from land phones. The strategy has been a great success, and it achieved annual growth of 100% on FTTH assets. The 2G network covers more than 99% of the Saudi population compared to 3G which covers about 97%. The metropolitan optic fibers (FTTH) will be applied to 24,000 km to meet the demands of clients in Saudi Arabia. It has adopted several procedures to gather and analyse various communications with its customers such as knowledge management and business intelligence (Mobily annual report, 2016).

5.3.2.2.2 Organisation Context

Mobily is the second telecommunications services provider in Saudi Arabia. It was established in 2004, as an alliance led by Etisalat UAE which is the biggest stockholder in the company. Set up, management and operation of services and industrial projects and investment in these projects. Trade in computers, smart devices in retail and wholesale, maintenance and services. The company focuses on employment and training employees with the skills to advance the company's technical capabilities and implement new technologies such as 5G and the Internet of Things (IoT), mainly for businesses and individuals. Currently, the Mobily company has more than 2,750 employees. (Mobily annual report, 2016).

5.3.2.2.3 Environment context

Although Mobily is not the biggest mobile telecom operator in Saudi Arabia, nonetheless, it exerts all possible efforts to promote the best service to its customers. The company believes that the main technological mover is customer satisfaction. It believes in network expansion to achieve revenues, and the quality of its services ensures clients' approval. Mobily operates an international Internet portal with an enormous combination of international partners via marine and land cables. The final destinations of the international Internet portal include Egypt, Jordan, Iraq, Kuwait, Bahrain, Qatar, Yemen, India, and Singapore (Mobily, 2017). Table 5-30 show the TOE of the Mobily after being tabulated.

Table 5- 31: The TOE of Mobily

Mobily	
Factors	
Technological	
Website	www.mobily.com.sa
Knowledge Management	Through sharing knowledge among the employees.
Business Intelligence	Through analysis the market trend and customers' interest.
Social networking	Facebook, google+, Instgram. Twitter, YouTube, and Linkedin
E-commerce	Through My Mobily website. Customers can buy Mobily's services and products.
Cloud computing services	Mobily provides Microsoft cloud services and productivity tools over the Internet such as Office 365, Dynamics, and Enterprise Security Suite. Also, Mobily provides many Cloud Services for Enterprise that supports Enterprise IT environments through using MicroVM (μVM) technology which helps Enterprise to "deliver application-level performance SLAs for both traditional and web-scale applications."
Hardware	There are 34,000 telecom towers in Saudi Arabia, 50% of these towers belong to STC, while 12,000 telecom towers belong to Mobily. Mainframes and servers, as well as different hardware from different vendors such as Cisco and Huawei, are used by the company.
Software	The company uses different products from different vendors such as Microsoft, SAP, Cisco, and Oracle.
Organisational	
Number of employees	More than 2750 employees.
Number of years in Business	Since 26 August 2008 in Saudi Arabia. The mother company founded in 1994 in Kuwait.
Services provided	Internet and Multimedia production, Internet services providers, mobile and landline services. "Datacenter, Business Cloud, Information

	Security, Business Continuity, Infrastructure and Unified Collaboration solutions."
Places of operating business	Saudi Arabia and the Middle East.
Revenue	SAR 12,569,397 Million (2016)
Profit	SAR 7,425,285 Million (2016)
Environmental	
Location	The location of Mobily in Saudi Arabia is a vital factor for the company to globalize its business. Currently, the company is working on expanding its business in another country especially in South Asia countries such as Malaysia and Indonesia.
Government legislation	The current government legislation in Saudi Arabia has helped the Mobily to expand its business and services in the Middle East and North African countries.
Competition	Mobily has an intense competition with STC in Saudi Arabia.
Knowledge management and business intelligence strategies	Implantation of Knowledge management and business intelligence strategies in Mobily has helped the company to know the market trend and customers interest as well as becoming aware of its competitors' business activities.

5.3.2.3 Mobile Telecommunication Company Saudi Arabia, Zain KSA

The company started in Kuwait in 1983 as Mobile Telecommunications Company (MTC), and in 2003 set an expansion strategy. Thus the company grew in the Middle East and Africa. In 2007, the company's name was changed to Zain in order to reflect the company's evolving and leading position in multinational mobile services with a focus on expansion globally. The company ranked fourth in the world in 2008 regarding the geographic presence, having been present in 15 African countries as well as seven countries in the Middle East. On the other hand, in 2010, the company made a strategic decision to focus its operations on the Middle East and North African regions as a result of growth in these markets. The strategic decision that has made by the company to sells its entire African company to Bharti Airtel Ltd. for US$ 10.7 billion. The 15 countries acquired by Bharti Airtel Ltd. from Zain in Africa were 'Burkina Faso, Chad, the Democratic Republic of the Congo, Republic of the Congo, Gabon, Ghana, Kenya,

Madagascar, Malawi, Niger, Nigeria, Sierra Leone, Tanzania, Uganda, and Zambia.' Zain's strategy and vision are to build a sustainable and innovative digital communications company that serves the communities and the business sector. Thus, the company's strategy focused on six transformational initiatives to achieve this strategy and vision. These are 'Customer Experience, Operational Efficiency, Value Management, B2B business, digital platform and innovation, and talent development (Zain, 2017)'.

5.3.2.3.1 Technological Context

In 2016 Zain embarked on a project to consolidate VAS through replacing all conventional services with new consolidated VAS cloud services to provide modern and credible services to all users and foreign partners. This project is expanding its current capabilities to cope with client expectations and requirements as well as to support them with up-to-date digital technology, and provide them with more potential and a new integration system that complies with the digital age. The company was the first operator of Microsoft Office 365 in Saudi Arabia and the Middle East (Zain annual report, 2016).

5.3.2.3.2 Organisation Context

The Saudi Zain Mobile Telecom provides telecommunications services inside Saudi Arabia where the company also operates, purchases, provides, installs, manages and maintains mobile systems. It is listed on the Saudi Stock Exchange. It is based on the Royal Decree No. 48 of July 12, 2007, and was established as the third mobile phone operator. Currently the Zain company has more than 6,300 employees (Zain board of directors report, 2016).

5.3.2.3.3 Environment context

In order to compete with the other companies, Zain launched a programme which aims to change commercial transactions and conventional technology platforms that impede flexibility of the business in competitive areas. It provides customer services, sets up solutions and provides technical requirements. The programme focuses on three main objectives (a) providing new revenue resources; (b) promoting customer experience; and (c) increasing operational competency. There are some other changes made in term of the organisational environment that has helped the Zain company in terms of competition, such as:

- An update of the interconnection rules and guidelines has already been drafted by the CITC to ensure that all service providers receive fair treatment, to ensure good practices in interconnection services between providers, and to promote the provision of high quality interconnection services through technical and economic efficiency. These new rules, have

helped Zain to benefit because the company believes there is no fair competition with other telecommunication providers especially STC.

- The CITC has approved the rules that govern access to services that organise coordination and sharing physical facilities, and which provide access to networks through a neutral method, promoting investment in NGN (next-generation network) and establishing processes for disputes.

- The tariff system has been modified to facilitate the process of providing services and products to the market; the CITC no longer requires prior consent to launch new products and services as long as the products comply with the required procedures.

- The horizon and expectation of competence:

  o In the midst of a complex macroeconomic environment and an increase in competitiveness in Saudi Arabia, Zain has responded by swiftly providing central data for quality services for all market segments. New partnerships are emerging to provide optimal solutions, so that new services can be delivered sooner than before without having to first build huge new network infrastructure. The company's main priority is still to increase its customer base and market share of revenue, and it is working hard to promote its operational potential to improve productivity and reduce operational expenses.

  o The current organisational regulations, customs tariffs, changes to governmental fees levied on corporations, and the scope of work in general, will affect the financial performance of these companies in future. Continuous coordination with CITC and the Ministry of Communications and Information Technology is thus essential to solve disputes and legal problems.

- Zain operates in Bahrain, Iraq, Jordan, Sudan, Saudi Arabia, and Kuwait, as well as in 11 African countries. This network enables subscribers to interact and communicate with each other without incurring huge fees enforced by communication companies in these areas, in particular with regards to mobile phone services for roaming. Table 5-31 show the TOE of the Zain KSA after being tabulated.

Table 5- 32: The TOE of Zain

Zain KSA	
Factors	
Technological	
Website	https://www.sa.zain.com
Knowledge Management	Zain KSA implements knowledge management so that the company can satisfy its customers with services they need based on the data the company collected. Also, to enhance work among its staff and encourage them to share knowledge in order to achieve high performance. It also encourages the Zain's employees to coordinate their work process to achieve the Zain's goals.
Business Intelligence	Zain uses BI to understand their customers' needs and to analysis market's trend.
Social networking	Facebook, Instgram. Twitter, and YouTube
E-commerce	Through My Account website. Customers can buy Zain services and products such as Internet load and charges.
Cloud computing services	Zain provides cloud services through Cloud Connect which allows the customers to have a dedicated bandwidth that is fully managed by Zain. Cloud Connect services connect customers to other cloud service providers simply and effectively.
Hardware	There are 34,000 telecom towers in Saudi Arabia, 50% of these towers belong to STC, while 7100 telecom towers belong to Zain KSA. The network servers are from different vendors such as Cisco and Huawei.
Software	Zain uses different products from different vendors such as Microsoft, SAP, Cisco, and Oracle.
Organisational	
Number of employees	More than 6,300 employees.
Number of years in Business	Since December 14, 2004. 12 years ago.

Services provided	Landlines services, Mobile services, and Internet services.
Places of operating business	Saudi Arabia, the Middle East, and North Africa.
Revenue	SAR 6,926,652 Million (2016)
Profit	SAR 4,400,668 Million (2016)
Environmental	
Location	Even Zain in Saudi Arabia is the third operators, but its location in Saudi Arabia has helped the company to expand its business as a result of good income.
Government legislation	The current government legislation in Saudi Arabia has helped the Zain to expand its business and services in the Middle East and different parts of the world.
Competition	Zain has an intense competition with STC and Mobily in Saudi Arabia. Zain operates its business in some countries which are Kuwait, Bahrain, Jordan, Sudan, Saudi Arabia, Lebanon, Morocco, Iraq and South Sudan.
Knowledge management and business intelligence strategies	Implantation of Knowledge management and business intelligence strategies in Zain has helped the company to know the market trend and customers' needs not only in Saudi Arabia but also in different Arabs country.

It is clear from the content analysis referred to above that STC was a government company which was privatised twenty years ago. This gave them a head start but there is nevertheless intense competition from Mobily and Zain. It can be said that the three operators' services are similar, but they try to surpass each other to attract the largest segment of users since the telecommunication market is the biggest market not only in Saudi Arabia but in the Middle East. This is due to the proliferation of smart devices among most members of society and the presence of more than 10 million foreigners in the country, 95% of whom have smart devices and are subscribers to at least one of these companies or two at the same time.

All the operators have IT qualifications and IT infrastructure be it hardware or software, to provide effective and efficient service. All the operators have access to a website that displays and clarifies the services rendered including cloud computing services, but there are differences

in the provision of these services. For example, STC is unique in its extensive coverage throughout Saudi Arabia as a result of the quality and availability of its equipment, while Mobily has been rapidly expanding in the Kingdom through sharing STC's telecommunications network. Zain is the first operator to have provided Microsoft Office 365 in Saudi Arabia and the Middle East.

STC has more than 17,000 employees. This is firstly a legacy of the company's conversion from a government to private enterprise, and state funds are still invested in the company because of the significant financial return earned from the firm's large number of subscribers. Secondly, it is the result of the company's vast network coverage in Saudi Arabia and its multiple activities in Gulf, Arab and some African countries, including South Africa where it worked with Cell C. STC has not suffered from financial crises like the other two companies Zain and Mobily.

Top management fully supports STC's staff, and they strive to develop the company into an international competitor in the field of ICT.

Mobily has more than 2,750 employees, which is the result of being newly established in Saudi Arabia. The company is committed to caring for its employees and customers, a legacy acquired by the parent company in the UAE with its development and training courses for staff. The company suffers from financial problems attributable to the decline of the company's shares in the Saudi Stock Exchange, but the stock has begun to recover during the past few months.

Zain also has more than 6,300 employees, including those who work in Saudi Arabia. The company offers more competitive services compared to STC and Mobily. It has more than 46 million subscribers, including 10 million subscribers in Saudi Arabia, which means that competition from them is on the rise.

STC has adopted a customer-focused strategy since its inception, and this emphasis has increased, especially after the introduction of Mobily and Zain. There is intense competition between the three operators to regain market share in Saudi Arabia. The approach followed through offers and promotions is calculated to reduce revenues; market share is the main driver of income rather than price.

It is clear that the three operators have expanded beyond the borders of Saudi Arabia into regional markets and STC is considered to be global. All these companies have implemented

global expansion to compete and achieve competitive advantage, which is reflected in their financial returns.

5.4 Conclusion

This chapter discussed the analysis of the data and the results of the study of the globalisation of technology organisations in Saudi Arabia through competitive intelligence. The data was gathered according to a mixed method approach. The study was based on the TOE framework and KAP model.

The analysis was based on quantitative and qualitative data. In the quantitative analysis, Pearson's coefficient was used to measure validity between the study's axes, while Cronbach's alpha was used to calculate the reliability of the instrument for each axis (section). Some of the data was analysed using descriptive statistics, with explanations of the frequencies and percentages, and graphs to illustrate the results.

Qualitative analysis was undertaken through the analysis of case studies of three ICT companies through content analysis, based on the TOE model only, to answer the first three questions related to the TOE framework.

Chapter Six discusses the conclusions, recommendations and limitations of the study.

CHAPTER SIX: DISCUSSION

6.1 Introduction

This study focuses on the globalisation of SAICT companies through competitive intelligence. The study aimed to identify the factors that affect SAICT companies in taking decisions to globalise.

In the first chapter, the problem, research questions, and objectives of study were identified. The second and third chapters focused on the theoretical framework of the study. The fourth chapter identified the methodological and statistical measures applied, the type of study and methodology, the community sample, the medium of data collection and the statistical methods used for analysis.

Chapter six gives an evaluation of the study and a summary explanation of the findings.

6.2 Findings

Chapter Five of this study gives the results, which emerged from the survey data which contributed to the achievement of the study objectives and answering the research questions. In this chapter the key results of the study are categorised into seven sections which address the research questions, the three hypothesis that are based on TOE framework, and the six open-ended questions.

6.2.1 The technological factors

Many technological factors play an active role in the globalisation of organisations. These factors vary according to their importance and the extent of their application within the organisations. The website is considered one of the leading factors in the present era in which local companies were able to move their work from local to global at a glance. These websites have made corporate products available to everyone in different countries of the world. The results indicate that the website is essential in the globalisation of company activity. Thus, websites play an effective role in SAICT companies in terms of marketing services and products, but more locally than globally. Many multinational organisations market their products and services globally to enhance their relationship with their clients. Websites help companies to communicate and interact with customers all over the world (Shin and Huh, 2009).

On the other hand, business intelligence does not have any significant positive relationship to globalise the companies' business in terms of quantitative findings. It could be due to the fact

that companies have not previously used business intelligence effectively and efficiently in terms of awareness of competitors even though there are many other benefits in implementing business intelligence, for example reaching international markets to sell products and services, which can increase sales, reduce cost, and assist in making good decisions all of which leads to competitive advantage (Mudzana & Maharaj, 2015).

In terms of technological resources, large companies like STC, Mobily, and Zain have the technological, financial capability and resources to implement and use IT resources. With regard to qualitative findings, competitive intelligence's tools that are knowledge management and business intelligence have a significant influence on the three companies to expand their business not only locally but also globally.

Hypothesis H_1 was used to determine whether technological factors influence SAICT organisations' globalisation decisions. The result reveals that technological factors influence SAICT organisations' globalisation decisions.

The data analysis also indicates that SAICT companies should implement a robust IT infrastructure and train their employees to effectively utilise it. Because implementing robust IT infrastructure and improving employee's qualification will help companies to keep pace with rapid developments and changes in the field of ICT to make them competitive and reach regional and global markets. It will also enable their employees to deal with their customers, especially international ones, and keep them loyal.

6.2.2 The organisational factors

In terms of organisational factors, the results in general, show that the job role in the company, size of the company and experience in business influence the companies to expand the business beyond the country's borders. With regard to the job role, the result show that the chief technology officers (CTOs) was the major job role in most of the SAICT companies. In fact, at executive level a qualified person is required who is capable of following the rapid developments in the field of information technology, especially in light of the increase in electronic commerce and social media services. Thus, position in C-level in the SAICT company has a significantly influence to globalise company's business.

On the other hand, the size of the company and experience in the ICT business are the factors that can lead to globalising the company. The results show that large companies have the ability

to globalise their business with easily and conveniently. In fact, it is true that larger companies can compete better than small ones in international markets (Moen, 1999). Larger organisations also have a better chance to globalise their businesses than small or medium ones (Chung, 2003). Moreover, experience in business and market gives the companies a privilege to expanding business internationally without any barriers. Mokhtari et al. (2013) claim that organisations that have been in business for more than a year may have experience as well as knowledge of various markets, and will know how to identify strategic markets to enter in order to gain competitive advantage.

Hypothesis H_2 was used to determine whether organisational factors influence SAICT organisations' globalisation decisions. The data did not support the alternate hypothesis; thus, the null hypothesis cannot be rejected.

On the other hand, the results show a positive relationship between employee numbers and competitive intelligence's tools (knowledge management and business intelligence). The results could be an indication of the awareness of the employees how important these technologies to companies for analysing data, predicting and making a strategic decision. Such strategic decision is to expand business globally.

6.2.3 The environmental factors

Among the environmental factors, the government's legislation, knowledge management strategies, and intense rivalry in the ICT sector have a significant positive relationship to globalise business. It is known that Saudi Arabia's legislation and regulations are derived from Sharia or Islamic law. Such legislation and regulations protect companies' rights regardless of nationalities or religion. In term of qualitative results, it showed that this legislation has helped STC, Mobily, and Zain, to expand their business and activities to other countries.

In terms of awareness of the competitive environment, the results indicate there is a relationship between implementation of knowledge management strategies and companies become more aware of competitors' business activities. This is consistent with what was stated in Chapter two that the implementation of competitive intelligence in companies helps them to collect information about their competitors as well as enabling them to compete globally. It is clear that the three ICT companies STC, Mobily and Zain are aware of each other's business and activities and this is can be seen in the fierce competition especially the promotion that each company promotes to acquire the big slice of customers.

Furthermore, the study shows there is a significant positive relationship between the firm's ability to globalise its business and environmental factors as a result of intense rivalry in the ICT sector. It is agreed and known that IT is one of the drivers of globalisation. Many multinational companies have taken the opportunity to invest in knowledge and technology so that they can attain and maintain competitive advantage in the global markets (Stephens, 1999).

The results show that there is an awareness of the impact of globalisation on business. Training all employees to work in local and international environments, especially those responsible for ICT, is also important. The intensive training and qualification help employees change their way of dealing with local and international customers and think outside of their own local context.

Hypothesis H$_3$ which was used to determine whether environmental factors do not influence or influence SAICT organisations' globalisation decisions. The result reveals that environmental factors influence SAICT organisations' globalisation decisions.

6.2.4 Knowledge about globalisation

In terms of knowledge about globalisation, the results indicate that the relationship between knowledge and globalisation has a significant positive on the organisation from different aspects. Knowing about globalisation leads to benefits in business such as reducing costs, improving the quality of products and services, enhancing customer preferences, and increasing competitive leverage.

Moreover, the results show that awareness of technological factors is positively related to the organisations' globalisation strategies. Technological factors could be new ideas and innovation (Johansson, 2009). Technological factors also play a vital role in globalisation in terms of speeding up globalisation as well as reducing costs (Dwyer, 2015). These factors force companies to rearrange their policies and strategies towards taking their business global, especially with the innovation in technology that appears every single day.

On the other hand, the results show that the organisation should be aware of the economic factors that might affect their organisations' globalisation strategies. These factors include interest rates, levels of inflation rate, the GDP, and exchange rates.

Also, the results reveal that ICT companies are aware and taking into their consideration internal factors within the countries they are marketing their business and services. Such factors are security, political stability as well as culture. These companies know that no organisations want to invest in a country that does not enjoy security and political stability because it will affect the performance and productivity of the company.

6.2.5 Attitudes towards globalisation

The results show that attitudes to globalisation have a positive relationship with adding value to organisations and an efficient way of getting new customers. In other words, globalisation is characterised by fundamental features of increased economic openness, the growth of economic interdependence and deepening integration into the global economy. Economic openness is not limited to trade, investment and financial flows, but extends beyond the transfer of services, technology and information across national borders. Such growth and openness of economy, will definitely add value to companies.

6.2.6 Practices implemented in relation to globalisation

In term of practices implemented in relation to globalisation, the results show that there is a positive association between practices implemented and globalising business. A very important practice was to allocate a budget to enable the transition from local to global businesses. Such practice can be achieved by setting up and implementing long-term global strategies that focus on the whole world as one market, not many markets – and also arranging strategies for local companies (Hout, Porter & Rudden, 1982).

The other important practice that has positive association between practices is to move from regional to global markets within five to ten years. Such practice gives an indication that there is an intention for companies to take their activities into global markets in the future (O'Brien, 2002).

Moreover, practice such as following ICT competitors and business partners locally and globally to understand their experiences of globalisation has a significantly positive relationship with globalisation. This is consistent with Gabrielsson and Gabrielsson (2004) who state that in the globalising world, the ICT companies try to be qualified in terms of global competence, and at the same time try to learn from different companies in various countries to add value to their companies in terms of expanding and attaining competitive advantage.

6.2.7 The factors and drivers of SAICT in globalisation

The results of the study showed that there is a positive relationship between knowledge management and some variables of globalisation that help companies to decide to globalise their activity. The most important of which is the political factor. This factor is significant, as companies that wish to globalise their activities take it into account. Political stability and government stability in the host country is the first catalyst for global firms to find a foothold. The political stability leads to economic growth not only in the host country but also in the multinational companies. Political stability leads to the flow of foreign direct investment. Foreign direct investment (FDI) is considered as a technology transfer tool that contributes to the growth of the host country when there are human capital and advanced technology. Overall economic growth and political stability are deeply intertwined (Borensztein, Gregorio, and Lee, 1998).

Moreover, economic and technological drivers are considered as important influences in their organisations' globalisation decisions. Economic drivers such as the level of inflation, GDP, and exchange rates between markets ranked as most important factors that encourage organisation in globalisation. The second driver is technological such as ICT infrastructure and penetration of the Internet and mobile services. This is consistent with other scholars who state that the most important drivers of globalisation are economic and technological factors. The importance of economic factors lies in knowing customers' needs both locally and globally, as well as understanding global competition and foreign markets. The importance of technological factors is because companies can advertise their products and services through many IT channels such as social networking and websites.

This chapter has provided a summary and discussion of the key results and findings. Figure 6.1 illustrates the key results and findings.
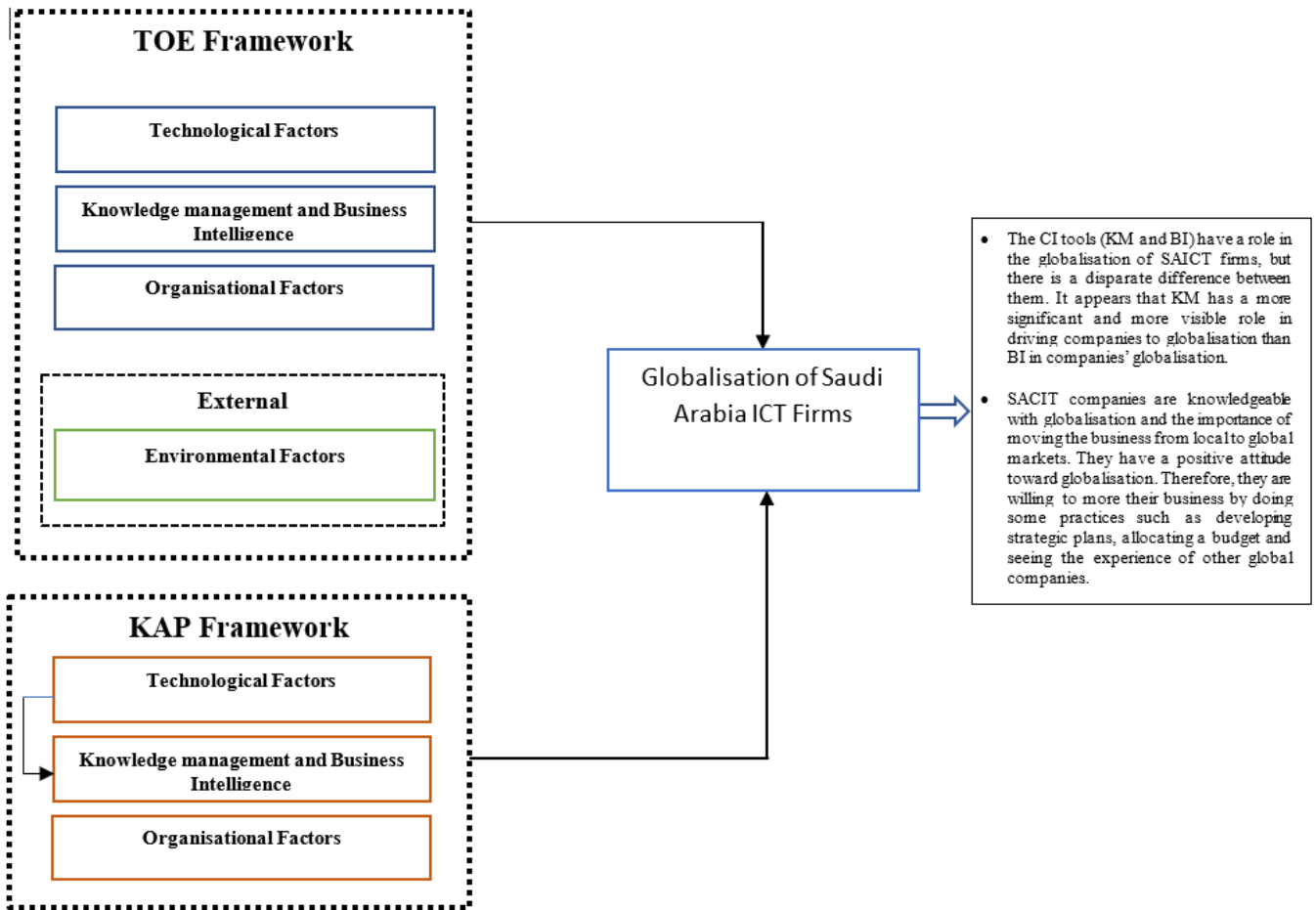
Figure 6- 1: The research model and the key results and findings

CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This study was carried out to primarily investigate the interaction between knowledge management and business intelligence in the Saudi IT industry towards globalising selected businesses.

In this chapter, the findings, contribution of the study to the body of existing knowledge, obstacles and limitations encountered by the researcher, and the lessons learned for technology and other companies in general, are offered.

The main problem encountered in the study is that Saudi Arabia enjoys a great fundamental economy, good infrastructure especially in the field of ICT, and occupies an advanced position in terms of global rankings related to competitiveness or the level of communication and information services, but is still highly dependent on crude oil. It seems there is no intention for small, medium and large companies to transfer their business to global markets except for some organisations which operate in the field of petroleum and its derivatives. Many sectors do not seek to be in the ranks of multinational global companies, and some of these are in the ICT sector. Although the three operators, STC, Mobily, and Zain, may have moved to global markets, it can be deduced that on the whole this sector still operates locally, and many companies do not have even a regional scope.

7.2 Conclusions

The purpose of this study was to analyse the role of knowledge management and business intelligence in globalising Saudi Arabia ICT companies. Towards achieving this goal, the researcher explored the role of technological, organisational, environmental and attitudinal factors in facilitating globalisation of Saudi Arabia ICT companies according to two research models: the Technology, Organisation, Environment model and the Knowledge, Attitudes and Practice model. Utilising a mixed-methods approach, the researcher used descriptive and introspective data collection tools such as questionnaires and case studies applied to 81 ICT companies registered with the Communication and Information Technology Commission (CITC) in Saudi Arabia, including the three largest ICT operators in Saudi Arabia, namely STC, Mobily, and Zain.

Quantitative and qualitative data revealed that the size of the company, its experience in the ICT field business, and position of the company in the market are significant organisational factors in globalising the ICT firms. Findings also showed that knowledge management strategies influence the attitudes of people in the organisation and hence the performance of the company in the local and global markets alike. Results revealed that technological factors play an active role in the globalisation of organisations. Accepting and adopting new technologies, including Internet technologies, websites for the companies, etc., play an effective role in SAICT companies in terms of marketing services and products, but more locally than globally. Quantitative analysis of the questionnaire's structured part indicated that business intelligence does not have any significant positive relationship to globalise the companies' business. This can be explained by the fact that companies have not previously used business intelligence effectively and efficiently in terms of awareness of competitors even though there are many other benefits in implementing business intelligence, for example reaching international markets to sell products and services, which can increase sales, reduce cost, and assist in making good decisions all of which leads to competitive advantage. However, qualitative findings of the open-ended part of the questionnaire study and the case studies showed that the success of the globalisation of their ICT companies depends on the match between a specific market opportunity and the company's resources, which form the basis of a sustainable competitive advantage, that attributes much of the success of an ICT firm in globalisation to effective use of competitive business intelligence. Competitive business intelligence was revealed to be an important perceived factor in accepting and adopting innovations to keep ICT firms competitive in the global market. Furthermore, quantitative and qualitative findings showed that there is a significantly positive relationship between environmental factors and globalisation. For instance, results suggested that there is a relationship between implementation of knowledge management strategies and companies become more aware of competitors' business activities. Environmental factors include local cultures, customs and businesses, and core values and mindsets. Findings also showed that in the Saudi context, there is a significant positive relationship between the firm's ability to globalise its business and environmental factors as a result of intense rivalry in the ICT sector. The acceptance and adoption of updated IT is a significant driver of globalisation, especially in an ICT firms. Regarding, knowledge management and its relation to globalisation, findings indicated that there is a positive relationship between using knowledge management strategies and globalising the business. Knowledge can facilitate communication with global mobile technology companies.

Furthermore, quantitative findings showed that attitudes towards globalisation in ICT firms are positively related to efficient workflow and attraction of new customers. Qualitative data showed a relationship between knowing and acting as a function of positive attitudes towards change. A positive attitude, it was revealed, refers to 'openness' to worldviews and values embedded in globalisation of ICT firms and 'trust' in adopted technologies and knowledge sharing at a global level, which were related to knowledge management, reward system in the firms, and a collaborative organisational culture and environment as influencing knowledge sharing attitude and behaviour.

ICT companies should focus their best IT resources on the information capabilities that make them able to globalize in a competitive world. ICT companies must first integrate their business processes before they can effectively use information technology to support the information they need to make decisions. Good information technology practices can play a critical role in discovering new business opportunities, such as the global expansion and merger strategy. Companies, who effectively manage and use information, know how to assess the relevance of information to the needs of the business; they consider that information has a life cycle with distinct evaluation points. Employees in all departments should be concerned about information needs, and information management should consider the context of managers and employees. Members of the organisation must be informed of the appropriate information they need to deal with environmental threats in order to run their businesses. Organisations with poor information management and information technology practices may perform less well. The integrity of information is important for the development of trust between people. Members of the organisation become proactive when they understand the company and have an open information environment.

The present study major findings can be summed up in the following points:

It is noted that the chief technology officers (CTOs) may have knowledge of the importance of moving the company from the local to global context by virtue of their close relationships to the technology and to their management. The chief executive officers (CEOs) ranked as second and are more important, since they have a major role in the decision-making process in the companies and their opinions are be heard when moving a company's activities from local to global. Other officers are not as important as the two previous ones in this decision-making process.

It is concluded that large ICT companies are aware of the importance of globalising their business, therefore most of them have already globalised their businesses or may be heading towards globalisation in the next few years.

Distinctive software production plays a positive role in helping the companies to go global and improve their business as well as competing with other companies. Websites also play a major role in introducing the companies' activities and reaching new customers in remote areas of the world.

One of the core objectives of the study is to understand the impact and the role of the interaction between knowledge management and business intelligence to assist SAICT companies to globalise their business. This interaction under the umbrella of competitive intelligence is what helps companies, whether they have participated in the study or not, to make the right decisions to transfer the work and activities of the organisations from local to global markets. The results of the study show that these two technologies, knowledge management and business intelligence, are necessary tools for an organisation to reach world markets to sell their products and services, which strengthens what was explained in Chapter Two of this study about their importance.

Regarding environmental factors, the study found that there is neutrality in the extent to which technology companies benefit from existing government legislation in helping them to globalise their business and services, while there is consensus about the importance of knowledge management and that companies should become more aware of their competitors. The study also found that there is agreement about the importance of globalisation, especially in the ICT sector since it is clear that there is competition between the three main operators in the Saudi telecom industry, namely STC, Mobily, and Zain, and the spread of their business and activities to some countries of the world.

On the other hand, the study found that the SAICT companies were mostly neutral in using business intelligence to become aware of the activities of their competitors. The cultures of the organisations and their websites are factors that help them to globalise their businesses.

The present study found that through the use of knowledge there is agreement among SAICT companies that it is firstly, technological factors, secondly economic factors, thirdly political factors, and lastly cultural factors which have strategic impacts on the globalisation of a

company's business and activities. It can be concluded that the ICT companies in general, including STC, Mobily and Zain, are aware of globalisation and other factors such as political, economic, technological and cultural factors and their impact on their businesses. It therefore requires corporate management to adopt a new system and policy based on openness to new markets.

The study found there is agreement that knowledge about globalisation influences attitudes to globalisation. Furthermore, the study emphasises that globalisation of companies' activities will add value to the organisations and would be an effective way to attract new customers and increase the demand for corporate products and services. So, it is suggested that attitudes towards globalisation are an important aspect to bring in new customers as well as add value to the businesses.

The study found that allocating a budget is one of the priorities for technology companies to help them move their businesses to the global market. Setting up strategies and long-term plans from 5 years to 10 years is a priority to move the companies' businesses into the world.

The study found that there is interest from companies in learning from competing companies, especially those with branches in Saudi Arabia or abroad, to benefit from their expertise, especially after these organisations have globalised their companies. There is also interest in visits to several multinational organisations and different sectors to increase the knowledge about globalisation of organisations, which also applies to consultation with international experts to obtain their views and advice regarding the transfer of business to the world.

The study found that the political, economic, social, technical, environmental and legislative factors are important in moving the activities of companies to the global market, but that economic factors come first, followed by technological and then the other factors. In addition to the above, it is clear that there are necessary steps before SAICT companies can go global. They first need to expand their businesses in Saudi Arabia and then move regionally before globalising. The use and implementation of ICT readiness and maturity models are also an important factor since preparedness and models can contribute and accelerate the globalisation of technology companies as they set standards for companies. On the other hand, the implementation of business intelligence and knowledge management are important factors that should be considered by technology companies as a first step before any transition to globalisation.

7.3 Contribution of the study theoretically and practically

This study has contributed effectively not only to the general body of knowledge but also to the methodological and theoretical. In terms of its contribution to knowledge, the study helped to find out the current status of the role of competitive intelligence tools (knowledge management and business intelligence) in the globalisation of SAICT companies. Also, we have an understanding of how and why companies are seeking to adopt technology and what are the results of their implementation. This study enriches the information technology, management and business literature concerning the globalisation of companies in the context of developing countries with a focus on Saudi Arabia. Moreover, this study provides a better understanding of the process of globalising companies through the implementation of competitive intelligence tools which has not addressed in earlier studies at least from a Saudi Arabia perspective.

Moreover, this study is significant to examine the role of political, economic, Socio-cultural factors, technical, environmental and Legal factors for the globalisation of SAICT companies. The factors identified in this study are unique and well suited in the Saudi Arabia context at the moment.

The information obtained from this study could also be considered as a baseline that could be applied to other sectors, including the information and communication technology (ICT) sector.

There are no previous studies that have empirically conducted to understand the benefits of using competitive intelligence tools for companies in Saudi Arabia. Therefore, this study identified the benefits of using competitive intelligence tools for companies in different sizes in among one of the developing countries.

Another contribution to this study is how the integration of knowledge management and business intelligence brings the so-called strategic intelligence to the organisation or company so that it achieves the best strategic decisions.

This study, from a practical perspective, may help companies in Saudi Arabia in particular and in developing countries, in general, by knowing the areas in which competitive intelligence and its tools are implemented and used. Executives, managers and officers such as CKO, CFO, CTO, CKO, CIO, and will see the positive effects of this research as they become more aware of the factors that influence the transformation of their companies from local to global markets.

7.4 Limitations

Overall, competitive intelligence through the interaction between knowledge management and business intelligence, which is the product of ICT, is the main driver in organisations as a technological tool that is considered an aid to globalisation. Without competitive intelligence, which is based on ICT, no organisation or sector can globalise its business. An ICT infrastructure helps the organisation to do so at the organisation level and country level. However, this study faced some limitations which include the following:

1. Very few research studies have been conducted specifically on the interaction or integration between knowledge management and business intelligence, and there is a lack of prior research studies on this topic in Saudi Arabia.

2. Some companies were reluctant to participate because they believe that there is no benefit or return from participation, but the researcher explained to them the importance of the study and the importance of their involvement since it would reflect positively on everyone.

3. Some participants hesitated to answer some of the questions that they thought were sensitive, especially those related to political and economic aspects, but the researcher explained to them the aim of these questions and they answered them.

4. Some limitations arise from the reliance on documents in the case study. These include insufficient details for answering the research question(s); some documents could not be found or retrieved; and, some organisations prevented the researcher accessing their documents.

7.5 Recommendations for SAICT companies

The globalisation requires that the top management of SAICT companies should adopt the new world system to open up to new markets. This requires knowledge and awareness of the cultures, tastes, and values of the global markets, as well as how to conduct business in such markets and evaluate competitors to set up international administrative, productive and marketing strategies. Organisations that comply with world changes like the liberation of markets, development of exports, and the application of proper policies through the development of marketing strategies, or integrating/merging with competitor organisations, can cope with advanced economies and maintain market shares in the international market.

The SAICT companies should not consider their status as merely profit tools, but also how to be effective contributors to the community, part of new international policies, and how to make use of their skills and potential to develop society at all levels and make use of community knowledge.

Competitive intelligence tools (knowledge management and business intelligence) focus on the elements of the competitive environment, taking advantage of past events and predicting the future to minimise the risks of uncertainty and external risks that can arise from the emergence of new products, innovations, competitive strategic alliances or changes in consumer tastes, etc. Therefore, top management in SAICT companies are required to focus and pay more attention to competitive intelligence tools, because the basis of risk assessment in the companies is to provide the necessary information by experts who are working and using the competitive intelligence tools.

SAICT companies should be aware of the importance of using strategic analysis and its tools, including but not limited Porter's five forces analysis, PESTEL, SWOT…etc. Implementing strategic analysis tools help companies to assess the physical and human capabilities available to them, to assess internal and external environment to determine the strength of competition, current and potential competitors, and the risks surrounding them. When the company identifies its weaknesses, it will seek to address them and correct the company's path. SAICT companies need to link strategic internal analysis with strategic external analysis so that they can be a strong competitor when they globalise their business.

To remain competitive, SAICT companies must also adopt innovations based on new technologies. Given that innovation is a key factor in keeping businesses competitive, lacking the right structures to implement external changes or reacting to them, and new technologies can be detrimental. The responses emphasized that when companies lack the staff and structures to implement external changes and new technologies, or to respond to these changes, this can affect the competitiveness of a company.

Undoubtedly, there are many administrative and organisational obstacles facing companies in general in Saudi Arabia, but these obstacles have been overcome and significantly reduced in light of the current policy of Saudi Arabia. Currently, the great openness witnessed by Saudi Arabia has invited many major International and multinational companies to invest in Saudi Arabia and vice versa. Companies in Saudi Arabia have taken into consideration that they may

face challenges and fierce competition in developing marketing and pricing strategies when globalising their business. They must, therefore, cope with social and cultural diversity in global markets, taking into account local and global domination of those companies either in or outside their countries.

SAICT companies should pay attention to the prevailing legislation and regulations in other countries where they intend to expand and move their business. So, becoming aware of current legislation and regulations will avoid companies that may hinder their work and activity in other countries and which may result in unnecessary financial burdens.

7.6 Recommendations for Further Study

- An important point, which may require further study, is that this study was carried out from the point of view of the ICT sector, which cannot be generalised to other sectors, so the researcher believes that other studies should be conducted to represent the view of other sectors.

- This study focused on the perspective of companies as a unit of study but did not include the perspective of employees, so it is preferable to have additional studies, which focus on employee points of view to know and understand the roles they play.

- The researcher suggest that other studies can be conducted in other developing countries, such South Africa.

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Appendix A: Approval of Doctoral Research Proposal

UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

TO: **Hasan Mesfer Alarjani (Student Number: 213573210)**
FROM: **SCHOOL OF MANAGEMENT, IT & GOVERNANCE**
DATE: **5 September 2016**
SUBJECT: **Approval of Doctoral Research Proposal**

Student Name & Student Number	Title: The Globalisation of Technology Organisations in Saudi Arabia through the Strategic Implementation of Competitive Intelligence
Hasan Mesfer Alarjani, 213573210	
Qualification, Major & Campus	**Supervisor:** Prof. M Maharaj
PhD, IS&T, WVL	**Co- Supervisor:** NA
Proposal Presentation Date: 01 September 2016	**Time:** 10h05
Decision	**Proceed with Comments**

This memo is to confirm that the Research Proposal Review Committee has accepted your Doctoral Research proposal presented on the 01 September 2016.

Topic and Title Language Coherence Focus Referencing	Title, Research Objectives and Research Questions are disjoint from the model.
Theoretical Framework	How does this model tie up with the Research Questions? How does it fit? Model is not aligned, require further clarification. Are you looking at perceptions of success? Justify the use of the model. Either use a Conceptual Framework or adapt an IS Success Model and be convinced about it. The IS Success theory just does not seem to fit the study.
Research Objectives and Research Questions / Hypothesis	Research Objective 3: What are you trying to achieve? How does it fit? Research Question: Strategic tools, are you asking the right people? Clarify. In the Literature Review you mention that CI=KM+BM, however, in the Research Questions you name KM or BI and CI is not mentioned. Main Research Question: Should look at practice.
Population Sample	Pre-screen companies to see if they use Knowledge Management Systems. Pilot: How are you going to find the Sample?
Limitations / Background to study	Limitations: How do you manage these challenges? Clarify.
Gatekeepers / EC	Send the questionnaire to the CEO to avoid the need for a gatekeeper letter from each organisation
Additional Comments	How do you measure Globalisation? Clarify the concept of responsiveness.

School of Management, IT and Governance
College of Law and Management Studies

Postal Address: M Block, Room 237, Westville, 3630, South Africa
Telephone: +27 (0)31 260 8162
E-mail: Pearcea2@ukzn.ac.za

	Clarify what you mean by 'top companies'. Justify this / Explain. November 2017 is ambitious.

Please note that the above comments/suggestions are intended to develop and strengthen your study, thus you need to consider them seriously. Your supervisor(s) will provide further guidance on how to factor the suggestions into your study.

Good luck with your studies and we look forward to your successful completion.

Yours sincerely,

Ms AB Pearce

Research & Higher Degrees: School of Management, IT & Governance
University of KwaZulu-Natal – Westville Campus

Cc. Prof. M Maharaj & Dr. I Govender

School of Management, IT and Governance
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Appendix B: Ethical Clearance Letter

UNIVERSITY OF KWAZULU-NATAL ™

INYUVESI YAKWAZULU-NATALI

26 August 2019

Mr Hasan Alarjani 213573210
School of Management, Information Technology & Governance
Westville Campus

Dear Mr Alarjani,

Protocol reference number: HSS/0247/017D
New project title: An analysis of the role of competitive intelligence (knowledge management and business intelligence) in globalisation of Saudi Arabia ICT firms

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 19 August 2019 has now been approved as follows:

- Change in Title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for period of 3 years from the date of original issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully

....

Professor Urmilla Bob
University Dean of Research

/dd

cc Supervisor: Prof Manoj Maharaj
cc Academic Leader Research: Prof MA Phiri
cc School Administrator: Ms Angela Pearce
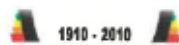
Appendix C: Letter to Respondents

The globalisation of technology organisations in Saudi Arabia through the implementation of competitive intelligence

Dear Respondent,

PhD Research Project
Researcher: Hasan Mesfer Alarjani (00966504974150)

Abufaisal24@hotmail.com
213573210@stu.ukzn.ac.za

Supervisor: Prof. M.S. Maharaj (+27837866034)

Maharajms@ukzn.ac.za

My name is Hasan Mesfer Alarjani, a PhD student in the School of Management at the University of KwaZulu-Natal. I am conducting a study on the globalisation of technology organisations in Saudi Arabia through the implementation of competitive intelligence.
The aim of this study is:

1. To discover how successful Saudi Arabian Information and Communications technology (SAICT) businesses are in terms of the technological context.
2. To identify the organisational factors that facilitate or prohibit SAICT organisations' globalisation.
3. To find the environmental factors that facilitate or prohibit SAICT organisations' globalisation.
4. To understand how knowledgeable the top-management of SAICT organisations are about globalisation.
5. To assess the attitudes of top-management in SAICT organisations towards globalisation.
6. To find out what practices SAICT organisations implement in relation to globalisation.
7. To develop a conceptual framework, that matches SAICT organisations' approach to globalisation.

Through your participation, I hope to find out how the competitive intelligence tools (KM, BI) could facilitate the globalisation of Saudi Arabia's ICT organisations. The results of this survey will allow me to have statistical evidence of your organisation's position towards globalisation, to know how ready Saudi Arabian ICT organisations are, and hence to make appropriate recommendations.

Your participation in this project is voluntary. There will be no monetary gain from participating in this research. Confidentiality and anonymity of records will be maintained by the School of Management, IT and Governance, UKZN.
If you have any questions or concerns about participating in this study, please contact me or my supervisor at the numbers listed above or via email.

Sincerely
Researcher's signature: _____ Date :

University Of KwaZulu-Natal
School of Management, IT and Governance

PhD Research Project

Researcher: Hasan Mesfer Alarjani (00966504974150) 213573210@stu.ukzn.ac.za
Abufaisal24@hotmail.com
Supervisor: Prof. M.S. Maharaj (+27 (0) 31 260 8003) Maharajms@ukzn.ac.za
Research Office: Humanities & Social Sciences Research Ethics Administration, Govan
Mbeki Building, Westville Campus, Tel: + 27 (0)31 260 8350, Email: hsreclms@ukzn.ac.za

CONSENT

I_____hereby confirm that I

understand the contents of this document and the nature of the research project, and I consent

to participating in the research project. I understand that I am at liberty to withdraw from the

project at any time, should I so desire.

I hereby provide consent to:

Audio-record my interview / focus group discussion   YES / NO

Video-record my interview / focus group discussion   YES / NO

Use of my photographs for research purposes   YES / NO

_____   _____

Signature of Participant   Date

Appendix D: Questionnaire

Section 1: <u>Organisational Context:</u>

1.1 What is your role in your organisation? (Please check (√) in the box that applies to you – only one
☐ Chief *Executive* Officer (CEO)
☐ Chief *Information* Officer (CIO)
☐ Chief Financial Officer (CFO)
☐ Chief Technology Officer (CTO)
☐ Chief Knowledge Officer (CKO)
☐ **Not listed, please specify…………………**

1.2 How many employees are there in your organisation?
☐ Less than 50
☐ From 51 to 100
☐ From 101 to 500
☐ From 501 to 1000
☐ More than 1000

1.3 How many years has your organisation been in business?
☐ Less than 1 year
☐ More than 1 year but less than 5 years
☐ 5 - 10 years
☐ 10 - 15 years
☐ More than 15 years

1.4 What services does your company provide? Check all that apply.
☐ Software production
☐ Hardware production
☐ Peripherals production
☐ Internet and multimedia production
☐ Internet service providers
☐ Mobile and landline services
☐ Cloud services
☐**Not listed, please specify…………………**

1.5 Where is your organisation's primary place(s) of business? Check all that apply.
☐ Saudi Arabia
☐ Middle East

☐ Asia		
☐ Africa		
☐ Europe		
☐ North America		
☐ South America		
☐ Australia and New Zealand		
☐ **I am not sure**		

Section 2: <u>Technological Context:</u>

	This table below relates to your perceptions of your company's technology characteristics	**1** **Strongly disagree**	**2** **Disagree**	**3** **Neutral**	**4** **Agree**	**5** **Strongly Agree**
2.1	Our organisation's website helps us to market our services and products **locally rather than globally.**	☐	☐	☐	☐	☐
2.2	Our organisation's website helps us to market our services and products **globally rather than locally.**	☐	☐	☐	☐	☐
2.3	Our organisation can reach international markets and sell its products and services as a result of the implementation of **knowledge management.**	☐	☐	☐	☐	☐
2.4	Our organisation can reach international markets and sell its products and services as a result of the implementation of **business intelligence.**	☐	☐	☐	☐	☐
2.5	Our organisation contacts and shares experience with our customers through social networking.	☐	☐	☐	☐	☐
2.6	Our organisation has adopted an effective e-commerce strategy to target customers globally.	☐	☐	☐	☐	☐
2.7	Our organisation has adopted effective cloud computing services so that it can market its products and services.	☐	☐	☐	☐	☐
2.8	Our organisation has adequate hardware that will enable us to globalise our business at any time.	☐	☐	☐	☐	☐
2.9	Our organisation has adequate software that will enable us to globalise our business at any time.	☐	☐	☐	☐	☐

Section 3: <u>Environmental Context:</u>

		1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
3.1	The location of our organisation is a vital factor for us to globalise our business.	☐	☐	☐	☐	☐
3.2	The current government legislation helps our organisation to globalise its business and services.	☐	☐	☐	☐	☐
3.3	Our organisation considers globalising its business because of the rivalry in the business environment in the ICT sector.	☐	☐	☐	☐	☐
3.4	Our organisational culture is conducive for us to globalise our business.	☐	☐	☐	☐	☐
3.5	Our organisation has become more aware of our competitors' business activities after the implementation of **knowledge management strategies.**	☐	☐	☐	☐	☐
3.6	Our organisation has become more aware of our competitors' business value after the implementation of **business intelligence strategies.**	☐	☐	☐	☐	☐

Section 4: <u>Knowledge</u>

		1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
4.1	I am knowledgeable about globalisation and its effect of business.	☐	☐	☐	☐	☐
4.2	I am aware of the political factors that might affect our organisation's globalisation strategies.	☐	☐	☐	☐	☐
4.3	I am aware of the economic factors that might affect our organisation's globalisation strategies.	☐	☐	☐	☐	☐
4.4	I am aware of the technological factors that might affect our organisation's globalisation strategies.	☐	☐	☐	☐	☐
4.5	I am aware of the cultural factors that might affect our organisation's globalisation strategies.	☐	☐	☐	☐	☐

Section 5: <u>Attitudes</u>

		1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
5.1	I do not think that our organisation is ready for globalisation because we need to change our strategy and plan so that we can compete locally and globally.	☐	☐	☐	☐	☐
5.2	I think that globalising our business will add value to the organisation.	☐	☐	☐	☐	☐
5.3	I think that globalising our business will not increase product and services requests.	☐	☐	☐	☐	☐
5.4	I think that globalising our business is an efficient way of getting new customers.	☐	☐	☐	☐	☐
5.5	I think that our business is not ready for globalisation because of very high local demand.	☐	☐	☐	☐	☐

Section 6: <u>Practice</u>

On a scale from 1 to 5, where 1 corresponds to not at all important, and 5 corresponds to extremely important please rate how important it is to do the following prior to globalising.	1	2	3	4	5
6.1 Set a long-term strategy to move from regional to global within the next five to ten years.	☐	☐	☐	☐	☐
6.2 Consult with many international experts to get their advice about the expansion of the business from local to international markets.	☐	☐	☐	☐	☐
6.3 Visit many multi-national companies from different sectors, to understand their opinions, their experience, and lessons learned.	☐	☐	☐	☐	☐
6.4 Follow-up on our competitors and business partners, especially those with branches both in Saudi Arabia and abroad to understand their experiences after the globalisation of their businesses.	☐	☐	☐	☐	☐
6.5 Allocate a budget to assist in the transition from a local to global business.	☐	☐	☐	☐	☐

Section 7: <u>Globalisation</u>

On a scale from 1 to 5, where 1 corresponds to not at all important, and 5 corresponds to extremely important. Please rate how important you believe that the factors below will influence your organisation's globalisation decision.	1	2	3	4	5
7.1 **Political factors** such as the stability of the government and the involvement in trade agreements with well-known and respected world organisations.	☐	☐	☐	☐	☐

7.2	**Economic factors** such as the level of inflation, the GDP as well as the exchange rates between the markets	☐	☐	☐	☐	☐
7.3	**Socio-cultural factors** such as the distribution of education, income, lifestyle trends and attitudes towards accepting foreign companies.	☐	☐	☐	☐	☐
7.4	**Technological factors** such as the ICT infrastructure, the penetration of the Internet and mobile services.	☐	☐	☐	☐	☐
7.5	**Environmental factors** such as climate, global warming law and regulations regarding waste disposal.	☐	☐	☐	☐	☐
7.6	**Legal factors** such as the protection and rights of individuals and groups, laws and legislation that facilitate investing and expanding businesses in the country.	☐	☐	☐	☐	☐
In what follows, please indicate how important you think it is that the following processes or factors are implemented prior to globalisation.		**1**	**2**	**3**	**4**	**5**
7.7	ICT readiness and maturity models.	☐	☐	☐	☐	☐
7.8	The implementation of **knowledge management** processes and tools.	☐	☐	☐	☐	☐
7.9	The implementation of **business intelligence** processes and tools.	☐	☐	☐	☐	☐
7.10	A business expansion firstly into Saudi Arabia and then regionally in the next five years.	☐	☐	☐	☐	☐

Section 8: <u>Open-ended Questions</u>

8.1 How far do you think Saudi Arabia Information and Communication Technology (SAICT) companies are ready for globalising in terms of IT competence?
8.2 What are organisational factors you believe will impact the globalisation of SAICT organisations?
8.3 What are environmental factors you believe will impact the globalisation of SAICT organisations?
8.4 What knowledge do you believe that SAICT organisations should have before globalise their business?
8.5 How do you appreciate the attitudes and behaviours of your department in your company would contribute to globalising your services?
8.6 How do you appreciate the efforts of your department in your company as in developing and implementing the competitive intelligence's tools (KM & BI), including its underlying architectures?

*** Thank you so much for your time and your cooperation *