Model for Integrating ICT into SMEs for Business Sustainability in Developing Countries

Case Study: Northern Uganda - Lira District

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A Model for Integrating ICT into SMEs for Business Sustainability in Developing Countries

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DEDICATION

“To Mrs. Onya Josephine Wasike and Raphaela Atukei”

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LIST OF ABBREVIATIONS

ASARECA	-	Association for Strengthening Agricultural Research in Eastern and Central Africa
CRM	-	Customer relationship management
EU	-	European Union
FUE	-	Federation of Ugandan Employers
GDP	-	Gross Domestic Product
ICT	-	Information and Communication Technology
ICTs	-	Information and Communication Technologies
IT	-	Information Technology
MACE	-	Malawi Agricultural Commodity Exchange
MSME	-	Macro, Small and Medium Enterprises
NITA-U	-	National Information Technology Authority-Uganda.
OECD	-	Organization for Economic Cooperation and Development.
SMEs	-	Small and Medium Enterprises
STEI	-	Science, Technology, Engineering and Innovation

ABSTRACT

The demand of efficient Information and Communication Technology (ICT) in facilitating business operations between businesses and their client, employees and business partners is becoming more important for a business to stay competitive in an increasing evolving technology. Governments around the world put more emphasis on use of ICT to different sectors of various calibers even their Small and Medium Enterprises (SMEs). However, the situation is different within SMEs in developing countries like Uganda. Certainly, SMEs appeared to be very slow in adoption of ICTs and its integrations to business processes to remain sustainable in the volatile economies today despite advantages, opportunities and effectiveness that ICT offers.

The study aimed at building a model that will help SMEs integrate ICTs to their businesses to achieve sustainable development business goals. Specifically, the study looked into the level of ICT utilization in various SMEs in Uganda, the benefit of using ICT in marketing activities within SMEs and factors which in one way or another that are affecting the use of ICT within SMEs in developing countries like Uganda.

The case study approach was employed in this study, which specifically focused on ICT and SMEs, and concentrated on studying its connection on the business sustainability. Data were collected from thirty five respondents within twenty SMEs through a filled-in questionnaire and through direct interviews within selected SMEs, also, seven officials from private and public institutions concerned with ICT and SME were interviewed to make total number of respondents to be Fifty.

Research indicates that SMEs in Developing Countries are somehow aware of the benefits of ICT adoption with regard to business activities as it can offer a promising and exiting way for SMEs to meet various challenges in these present days, and can add competitive advantage in market expansion. Also the findings reveal that lack of internal capabilities, high cost of ICT and lack of information about suitable ICT solutions and implementation were some of the major barriers in adopting ICT within SMEs. This research also identified the supports required by manufacturing SMEs in developing countries using Zanzibar as a case study.

Therefore, ICT culture should be built within SMEs business, by continually exploring all technological options with their possible benefits to the SMEs. Also, policy makers and business societies should use this research as a foundation for understanding the current state of affairs of the usage and impact of ICT on SMEs and its benefits.

CHAPTER ONE: GENERAL INTRODUCTION

1.0 Introduction

The growth of the Small and Medium Enterprises (SMEs) sector stands out as one of the key characteristics of a flourishing economy as it plays an important role in the development of any country. It contributes through creating employment in rural and urban areas, and by providing sustainability and innovation in the economy as a whole (FUE SME Study Report, 2013).

The implementation of new technology has been recognized as an important process for transforming a business (Yu and Tao, 2009). These transformations are not only enabled by Information and Communications Technologies (ICT), but also dependent on the ability of organizations to adopt and implement emerging ICT to streamline their business processes, and sustain business competitiveness and growth continually. Today, ICT has become a major driver in economic growth sustainability around the world, and this explains why SMEs should integrate ICT in their business processes (Galloway and Machrie, 2005:33).

Through the rapid spread of information and communication technologies (ICT) and ever decreasing prices for communication, markets in different parts of the world are becoming more integrated. And as the world economy continues to move toward increased integration as a result of advances in information communication technology, and increased reductions in trade barriers, some of the greatest opportunities for SMEs will derive from their ability to participate in the regional and international markets. The existing literature has proved that the greater the benefits perceived by the SMEs the higher the possibility of ICT adoption and integration. In one empirical study, Giovanni and Mario (2013) found that ICT is able to offer enterprise a wide range of possibilities for improving their competitiveness such as provide mechanisms for getting access to new market opportunities and specialized information services.

1.1 Background of the Study

Across the world, it has been recognized that small and medium-sized enterprises (SMEs) are today's main engine of economic growth. According to the EU report (2012), it is estimated that SMEs contribute to about 81.5% of global economic growth (Jutla, D, 2010). For example, in Hong Kong alone, the Trade and Industry Department reported in 2010 that more than 260,000 Hong Kong SMEs, accounting for 98% of business establishments, provide about 1.2 million jobs, or half of the total non-government employment.

The EU Annual report, (2012) on SMEs indicates that, SMEs accounted for 99.8 per cent of non-financial enterprises in 2012, equating to about 20.7 million businesses globally. The overwhelming majority (92.4 per cent) are micro-enterprises, defined as those with fewer than ten employees. Some 6.4 per cent of SMEs in the EU are classified as small enterprises (employing between 10 and 49 people) and 1.0 per cent are medium-sized (50-249 employees). Large businesses, with more than 250 employees, account for just 0.2 of enterprises in the EU's non-financial sector, as indicated in the table below (EU Annual report on SMEs, 2014).

	Micro	Small	Medium	SMEs	Large	Total
Number of enterprises						
Number	19,969,338	1,378,374	223,648	21,571,360	43,517	21,614,908
%	92.4%	6.4%	1.0%	99.8%	0.2%	100%
Employment						
Number	38,629,012	27,353,660	22,860,792	88,843,464	44,053,576	132,897,040
%	29.1%	20.6%	17.2%	66.9%	33.1%	100%
Value added at factor costs						
Million Euros	1,362,336	1,147,885	1,156,558	3,666,779	2,643,795	6,310,557
%	21.6%	18.2%	18.3%	58.1%	41.9%	100%

Table 1: EU SMEs Annual Report 2014/2015

The creation of SMEs may bring about the reinforcing dynamics of economic growth. That is, an increase in the total number of SMEs in an economy would increase job creation and job per capita. However, the difficult economic environment continues to pose severe challenges

to SME in various ways, such as ways of boosting sustainability through productivity growth. It's therefore important to note that while the prospects for SME success are tied with macro-economic developments, they by no means identically mirror all of them. As the majority of SMEs operate in sectors that serve domestic demand, for example, they did not share in the benefits of increased foreign demand, which is the key macro- economic driver of growth (World Bank Annual Report, 2014).

High tech and knowledge intensive SMEs are important contributors to a country's innovation capabilities and its future growth potential (EU, Report on SMEs 2013/2014). They also contribute to the reinforcing loop of innovation that drives economic growth. As the number of SMEs in a particular sector increases, and they become more knowledgeable of their product and industry, they can become more innovative and thus more sustainable. From the government's perspective, SMEs are not only an important source of tax revenues, but are also critical to society's stability by providing job opportunities, thus contributing to the creation of wealth. Besides their importance in the domestic market, SMEs can also be considered an engine for international development and the growth of exports. This is particularly evident in the East and Southeast Asia economies, such as South Korea, Indonesia, Taiwan, Hong Kong and Singapore (Tambunan, T. 2008).

In light of the above, it is hence not surprising that governments around the developing world are keen to find ways to facilitate the development of SMEs – and among other initiatives, through the effective adoption and utilization of ICT. Even though there is a lack of consensus as to how ICT investment and firm performance is linked, there seems to be three general categories of the potential benefits of ICT adoption by SMEs (Farhoomand A, 2010). First, ICT can be of strategic importance to a SME. Today's globalized economy has created an increasing need for SMEs to access and use ICT, and their ability to do so will determine their success in regional and global business networks. Second, the use of ICT can improve the

SMEs' operational efficiencies. Third, ICT can help increase the organizational transparency of SMEs to internal and external stakeholders by facilitating communication within and between firms (Ali Farhoomand, 2009).

According the ICT strategic action plan (for 2013 – 2017) policy documents of Queensland, the government is creating the conditions to enable SMEs to access government business more effectively than ever before. A set of guidelines have been implemented into the early market engagement process to make sure that SMEs are given the opportunity to provide better value for money options for government through the tendering process.

SMEs have continued to benefit by adopting ICT in their own operations, enabling them to communicate quickly, increase productivity, develop new business opportunities, and connect to global networks (Idisemi Apulu, 2012). On the other hand, the reliance on ICT in the knowledge economy means that those SMEs who have not yet adopted ICT and have not adapted to the faster pace and increasing complexity of the way businesses are conducted will lose out to the increasing competition brought about by globalization and may have trouble surviving (Kozeta, et al, 2008).

The adverse impact of the economic slowdown in South East Asia region, Indonesia and the globalization of the world economy underscore the need for SMEs as the backbone of the national economy to become more resilient and sustainable (Kartiwi, 2006). Farhad Nejadirani et al, (2011) and Thorp, (1998) believe that successful implementation of ICT offers the prospects of substantial competitive advantage for large and SMEs alike. In terms of e-commerce implementation, it requires one to give thorough attention and proper understanding towards SMEs characteristics before delineating further issues of technology adoption and strategies. The renowned characteristic of SMEs that are common in most countries is the lack

of in-house ICT expertise and financial resources. Furthermore, in relation to ICT usage, SMEs have considerably fewer resources available to implement ICT solutions.

Tanzania Vision (2025) which is the national development strategy requires the nation to meet the following development goals in next 10 years; achieving quality and good life for all, good governance, and the rule of law and building a strong and resilient economy that can effectively withstand global competition. In this vision, technologies have been recognized as the major driving force for the realization of Vision. They should be harnessed persistently in all sectors of the economy and should be put to benefit of all social groups with a view to enabling the meeting of basic needs of the people, increasing productivity and promoting competitiveness. In order to meet the targeted plan, the vision 2025 recognizes the new opportunities which ICTs are opening up that can be harnessed to meet the goals of the Vision.

Kenya's Vision 2030 which is the country new development blueprint covering the period 2008 to 2030 (NESC, 2009) aims at making Kenya a newly industrializing, middle income country by providing high quality life for all its citizens by the year 2030 (Anthony M, 2011). The vision aims at, policies that should aim to encourage and promote the development of local technologies with emphasis on SMEs because of their size and resource limitations. However, for SMEs to fully develop and use this potential, they need specific policy measures to ensure that technology services and infrastructure are provided (Wanjohi, 2010).

The Uganda Vision 2040 is conceptualized around strengthening the fundamentals of the economy to harness the abundant opportunities around the country. The opportunities include; oil and gas, tourism, minerals, ICT business, and others. On the other hand, the fundamentals include: infrastructure for (energy, transport, water, oil and gas and ICT); Science, Technology, Engineering and Innovation (STEI); land; urban development; human resource; and peace, security and defense. The vision also puts emphasis on supporting the development of micro,

small and medium sized manufacturing industries that range from agricultural based MSMEs, handcrafts to automated hi-tech industries that are well distributed throughout the country.

In this regard, literature from Uganda Investment Authority (UIA) indicates that SME sector accounts for approximately 90% of the entire Private Sector, over 80% of manufactured output and contributes about 75% to the gross domestic product (GDP). Furthermore, the sector employs more than 2.5 million people, which makes it one of the largest employers in the country. The main SME sectors include trade, agro-processing and small scale manufacturing. Others include real estate & construction, clearing and forwarding, events management, healthcare services, metal works, tailoring, art, crafts and culture, energy & environment, farming & fishing, ICT & telecommunications, personal care services, tours and travel services, catering & food services, entertainment, food processing, leather products, photography and wood works.

The literature from Uganda National Chamber of Commerce shows that there is little empirical evidence of how the diffusion and application of information and communication technologies (ICTs) can be a catalyst for economic competitiveness and growth in Ugandan SMEs. Though SMEs tend to be creative and innovative at the inception phase, thereafter they typically focus on sales strategies & no other quality initiatives are introduced to drive performance & growth thus most fail to adopt and use the latest ICT technologies for doing business such as e-commerce.

In conclusion, small and medium-sized enterprises (SMEs) play an ever-increasing role in sustainability achievement, not only for their significant contribution to the economy's GDP and GNP but job creation. This justifies the need for sustainability of the SMEs given the challenging and dynamic environment in which they operate that continue to inhibit their survival. Ordinarily the fundamental prerequisite for SMEs is profitability until recently

interaction and application of sustainability impacts to build profitability and long-term viability for all forms of business has become of importance too — including SMEs (Horsley and Ahmed .D, 2011).

The government of Uganda has put several ICT Policies and Strategies, Statutes, Laws, Acts and Regulations, passed and enacted in the last 10 years; however, none of them seem to specifically address the issues surrounding ICTs-SMEs integration. SMEs are still grappling with inadequate IT penetration, lack of awareness of the potential of ICT to improved business performance, limited skills to use ICT to promote businesses, inadequate access to information and markets and costly telecommunications (Charles Opolot, et al, 2014). Although a big percentage (about 94%) of SMEs have access to mobile phones, the majority of them do not use them for business purposes. Given the critical role SMEs are playing in economic development, there is need to harness the potential in ICT to bring about efficiency in their operations, hence enabling them to become sustainable.

1.2 Problem Statement

Most businesses (SMEs in general) in developing countries like Uganda are now adopting ICT in their business strategies. The aim of the adoption was to enable these firms reach a wider market nationally, regionally and internationally. For these firms to have been able to harness the various resources associated with ICT technology, it needed to be introduced and developed along a well planned, systematic and guided path.

Despite the haphazard effort made by SMEs firms to adopt ICT, its integration process has met some setbacks. These setbacks were attributed to many factors including: lack of awareness by business owners and users, lack of equitable access and usage, lack ICT skills among the SME employees, cost of equipment deployment, and lack of effective financial management amongst other setbacks. These setbacks have to some extent down played the effective

integration of ICT to SMEs. Therefore, it is imperative to examine the present situation of ICT integrations into SMEs and come up with a proposed Model that will help integrate ICT into SMEs' for business sustainability.

1.3 Objectives of the Study

1.3.1 Major Objective

The main objective of this study was to design and develop a model for integrating ICT into SMEs for business sustainability. With this model in place, the SMEs will be able to harness the benefits such as business innovation, competitiveness, productivity and profitability brought by ICT.

1.3.2 Specific Objectives

The specific objectives of this study are;

1. To review literature about models related to SME & ICT integration to determine the requirements for designing the proposed model.
2. To design and develop a model for ICT integration in SMEs Businesses.
3. To test and validate the model.

1.4 Research Questions

i. What are the requirements needed for designing the proposed Model?
ii. What are the important components of the proposed Model?
iii. Will the existing ICT infrastructure in Uganda be able to support the proposed Model?
iv. How can the Model be validated?

1.5 Scope of the Study

The study was divided into three sub-section of: Content Scope, geographical scope and time scope.

1.5.1 Content Scope

This study covered areas of ICT adoption (including the barriers), levels of ICT usage, ICT technologies used in business, sustainability models and ICT policies in business.

1.5.2 Geographical Scope

Geographically, the study was conducted from Northern Uganda and covered the SME firms/organizations operating in – Lira District. Northern Uganda was chosen because it one of the developing regions in Uganda and because of its close proximity to the researcher.

1.5.3 Time Scope

The study lasted the period of nine months.

1.6 Significance of the Study

Authors (such as Harry Bouwman, et al 2005) state that, the way ICT (e-commerce) has eventually given shape, basically resulting in the implementation of Internet technology to support primary and secondary business processes (e-business), is more a gradual process than an abrupt change. And according to ITU's Connect Arab Summit paper (2012), Information Communication Technologies (ICTs) have been playing a critical role in improving the socioeconomic development by extending government services such as health, education, safety and security, finance, transport, and other services to citizens.

According to Uganda's vision 2040 (2010), ICT provides an opportunity to improve national productivity by making Government and business enterprises more efficient, effective and globally competitive. There is potential to improve availability of digital content and e-products, automation of Government processes and inter-agency connectivity, innovation, bridging the gap between industry and the academia, and commercialization of research and development.

The output of the study is expected to provide evidence and inputs for developing business processes aimed at improving the adoption and integration of ICTs by SMEs for business growth and sustainability. The developed model is expected to contribute to a conducive business environment for SMEs, hence supporting the growth of the enterprises at all levels. This will further contribute to the improvement of livelihood, resulting into poverty reduction, hence contributing to socio-economic development through multiplier effects.

1.7 Proposed Conceptual Model

Basing on the literature reviewed above (background) and also after analysis on how SMEs adopt ICT strategies in Uganda, this study proposed the following conceptual framework (adapted from Wong's Theoretical framework conceptualizing ICT implementation in schools) (Figure 1) that links external factors and internal factors that results in an outcome of the business environment.

The external factors include the government ICT policies, the business environment and business leadership traits. Internal factors include the ICT adoption and implementation strategies.

In the conceptual framework below, the business environment and ICT coupled with the ICT policies, lead to changes in the business processes of an SME, hence changes in business.

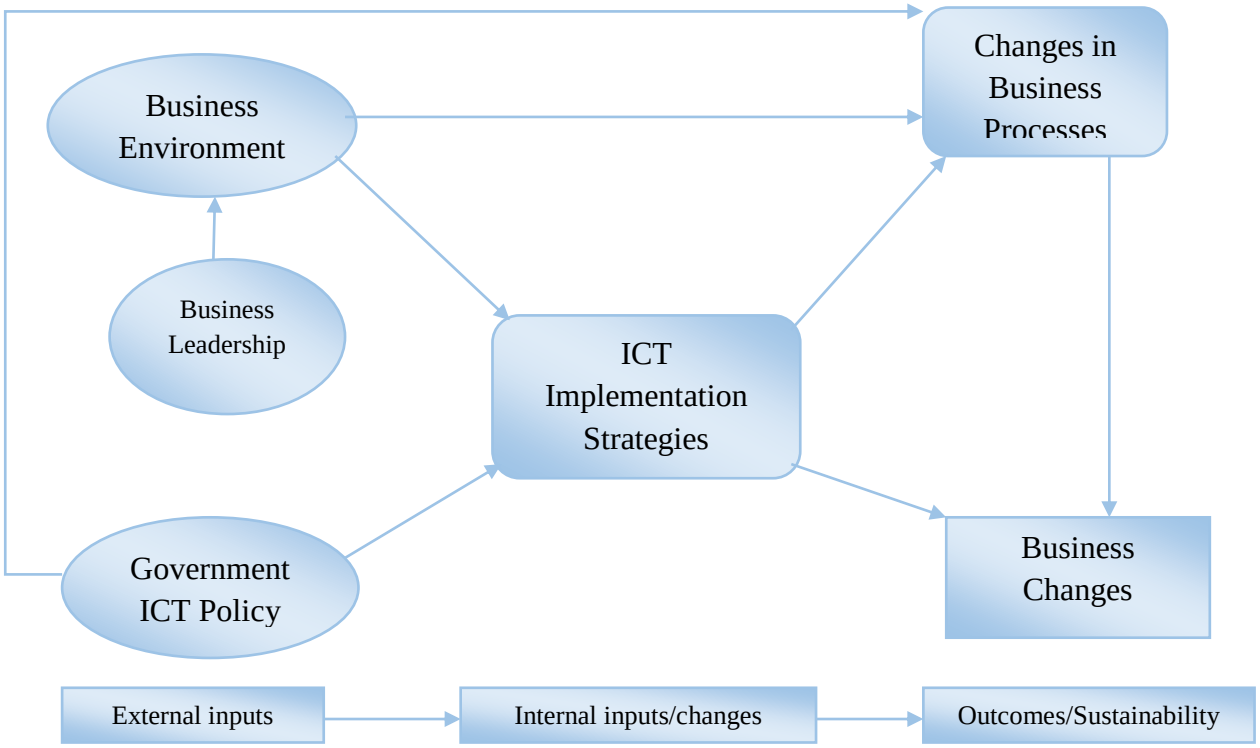

Figure 1: Proposed Conceptual Model

The proposed model will be designed following the above conceptual model.

1.8 Conclusion Summary

This chapter forms the foundation on which the rest of the report is constructed. The chapter has presented the background to the study, problem statement, research objectives and research questions. It also presented the scope, significance and a conceptual framework of the study. The boundaries of the study are clearly demarcated by the objectives and the scope of the study.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter gives a brief about SMEs, explores literature about business processes, their main activities and analyses of businesses in Uganda. It also explorers the roles played by ICT in business development.

2.1 Introduction

The evolution of information communication technologies (ICT) uptake has become popular to depict as a process involving transitions toward increasing use of ICT coupled to organizational change and sophistication which can impact organizational performance (Gatautis, 2015). Contribution of ICT to development is mainly determined by structural change aimed at boosting the production and adoption of new and knowledge-intensive technologies.

2.2 Concepts of SMEs & ICT

Small and Medium-sized Enterprises (SMEs) have grown in importance in the global economy during the last couple of decades. Both theoretical and practical economic and business development literature acknowledges the key contributions of SMEs to the development of both national and international growth of economy (Farhad Nejadirani, 2011). This fact is not only measured by the number of SMEs which represents nearly 90% of the total establishments across the world, but also their significant role in creating employment opportunities. Small and Medium-sized Enterprises (SMEs) form the backbone of a country's economy (EU Report, 2014). Rough estimates by Open group show that SMEs account for around 95% of global businesses and contribute approximately 40% of GDP.

Information Communication and Technology (ICT), on the other hand, is found to play an important role for any organization. The use of ICT that range from mainframe to personal

computers, from word processing to sophisticated application and systems have made considerable inroads into large, medium and even small organizations (Doukidis, 1996). Recent research shows the positive signs that, SMEs can take advantage of ICTs (such as E-Commerce), in helping their business to survive.

SMEs are increasingly aware of the positive impact that Information and Communication Technology (ICT) can have as these technologies spread through their organizations. Among the different tools for SME development and sustainability, ICT have become widespread in every activity sector over the last several decades (Gatautis, 2015).

In the past, large companies were the first to set up ICT (Antonelli, C., Teubal, M. 2008), both for organizational reasons (e.g., to maintain links with subsidiaries, to coordinate distant sites) and economic reasons (e.g., to better integrate processes, to automate data exchanges with key suppliers). In order to accomplish these goals, these pioneering companies had to restructure their operational processes, modify their organizational structures and redefine their core activities and their positions in the value chains. Thus, digitalizing a company's internal and external processes necessitates changes in organisation and management. These changes often generate costs and risks that are proportionately greater for SMEs, which may also lack expertise and knowledge, leading to longer ICT implementation and appropriation phases.

2.3 Definition of SMEs

The review of literature shows that, SMEs are defined in many ways and vary from country to country (OECD, 2015). For example, the World Bank Group defines SMEs in three sub-categories: Micro-enterprise: up to 10 employees; total assets/total annual sales of up to US$100,000; turnover must be in excess of US$400,000, and tangible assets in excess of US$200,000; Small enterprise: between 10 and 50 employees; total assets/total annual sales

between US$100,000 and US$3 million; Medium-sized enterprise: between 50 and 300 employees; total assets/total annual sales between US$3 million and US$15 million.

In Serbia, the Serbia Accounting and Auditing law firm defines SME as an enterprise which fulfills at least two of the three conditions: Employees up to 250, annual turnover up to EUR 10 million and total assets up to EUR 5 million.

The EU defines SMEs as businesses which employ less than 250 staff and have an annual turnover of less than €50 million and / or their balance sheet total is less than €43 million. They comprise three categories –micro, small and medium – which are defined as follows.

Company Category	**Employees**	**Turnover**	**Or**	**Balance sheet total**
Micro	<5	< € 2 million	< € 2 million	
Small	<50	< € 10 million	< € 10 million	
Medium	<250	< € 50 million	< € 43 million	

Table 2: Definition of SMEs as per EU Report

The Tanzanian SME Development Policy of 2003 defines SME as indicated in the table below;

Category	**Employees**	**Capital Investment (in million TShs)**
Micro enterprise	1 – 4	Up to 5
Small enterprise	5 – 49	5 – 200
Medium enterprise	50 – 99	200 – 800
Large enterprise	100+	Above 800

Table 3: Adapted from Tanzania's SME development Policy

In Uganda a 'Micro Enterprise' is an enterprise employing up to four people, with an annual turnover of Uganda shillings 12 million, while a 'Small Enterprise' is defined as an enterprise employing between 5-50 people, with an annual sales/ revenue turnover or total asset of up to

Uganda shillings 360 million. A medium enterprise employs more than 50 people with an annual sales turnover or assets of between 360 million to 30 billion (UIA website).

2.3.1 The State of SME Sector Globally

The SME sector is the backbone of the economy in high-income countries, but is less developed in low-income countries. The Organisation for Economic Co-operation and Development (OECD) reports that more than 95% of enterprises in the OECD area are SMEs. These enterprises account for almost 60% of private sector employment, make a large contribution to innovation, and support regional development and social cohesion (OECD 2011). Also in low-income countries, the SME sector makes a critical contribution to GDP and employment, as shown in Figures below (Ayyagari, 2011).

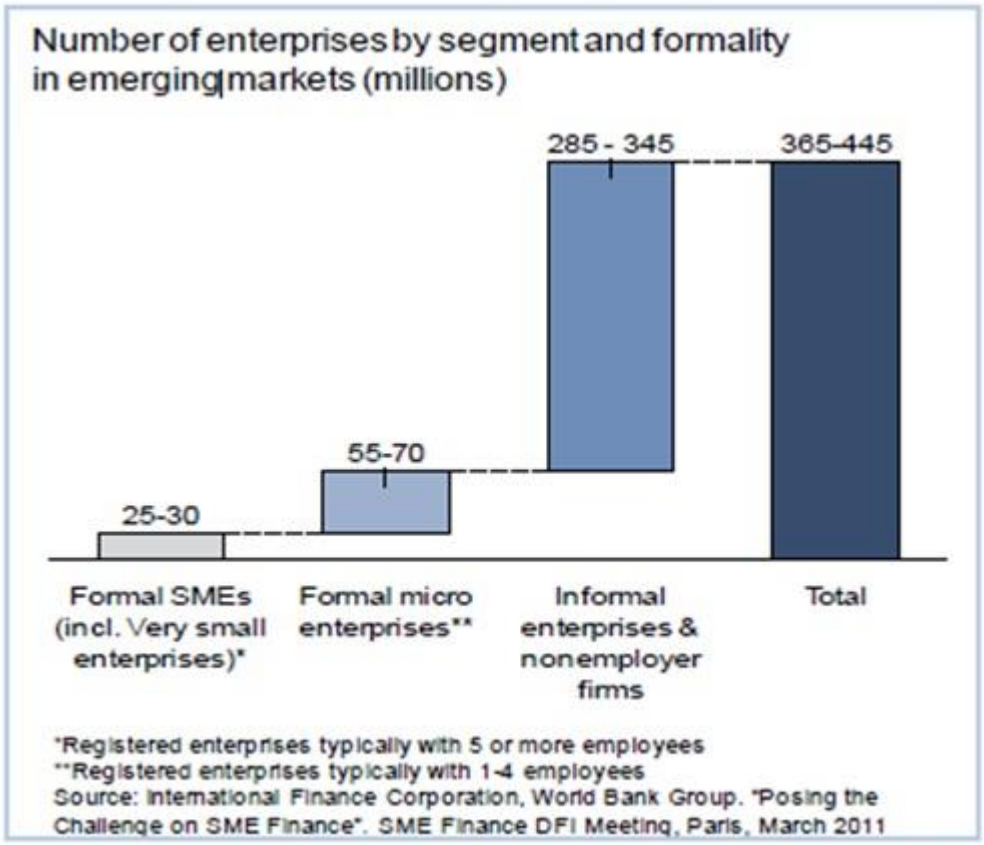

Figure 2: Number of enterprises according to Ayyagari, 2011

2.3.2 State of SMEs in Uganda

Like many countries across the globe, Uganda's formal and informal small businesses make an essential contribution to economic growth, employment and social well-being, playing a vital role in both the economic and social regeneration agendas for Uganda. They are usually categorized as general user, production-integration and market-oriented groups which play a role in particular position of economy development (SME Draft report, 2010). The report further states that, the SMEs contribute a lot in the economic growth and regeneration, and since the majority of businesses in Uganda fall within the categories of small firms that are acknowledged as key contributors to the economic and regeneration plans for the most communities and rural areas. Business start-ups create wealth and employment opportunities locally, promote reinvestments in other goods and services offered locally and stimulate wider prosperity with the country hence, Uganda's SMEs are recognized as vital drivers for growth and innovation.

2.3.3 Characteristics of the SMEs

The growth of the Small and Medium Enterprises (SMEs) sector stands out as one of the key characteristics of a flourishing economy as it plays an important role in the development of any country. It contributes through creating employment in rural and urban areas, and by providing sustainability and innovation in the economy as a whole. Ayyagari et al (2006) argue that SMEs tend to employ more labor-intensive production processes than large enterprises and as a result they create more employment opportunities

Hashim (2012) argues that SMEs are nowadays becoming increasingly significant in the process of exporting and industrialization in the emerging economies. SMEs have now grown to be the largest cluster of industrial elements in most developing countries, and have made a

significant contribution to manufacturing productivity and employment in these countries (FUE SME Study Report, 2013).

Most SMEs do not have dedicated ICT facilities for running business but it is common for SMEs to host their IT in a third-party service provider's environment in a co-located (or co-hosted) environment with a shared-services business model, SMEs tend to use Commercial Off-The-Shelf (COTS) software products as-is, with minimal customizations. The Table below describes some basic contrasts between an SME and large enterprises.

2.4 Definition of ICT

Information and Communication Technology (ICT) covers different technologies ranging from the simple to complex such as telephone, stand-alone PCs, networked environments, Internet, and e-commerce activities. ICT can also be thought of or referred to technologies that pertain to collecting, storing, processing and transmitting information whereby information, computing, and telecommunications are converging. Beckinsale and Ram (2006, 86) defined ICT as 'any technology used to support information gathering, processing, distribution and use'.

Ritchie and Brindley (2005) define ICT as ―the array of primarily digital technologies designed to collect, organize, store, process and communicate information within and external to an organisation and, in our case, SMEs (Ritchie & Brindley 2005:206).

2.4.1 Benefits of ICT

Adoption of ICT can have a transformative effect on SMEs and in the way they perform their business operations. Here is a closer look at some of the benefits ICT offers:

- **Efficiency in business processes**: Implementation of ICT applications can bring in efficiency in managing a company's resources. Seamless transfer of information through shared electronic files and networked computers boosts productivity of business processes

such as documentation, data processing and other internal functions. This allows SMEs to concentrate on their core areas of business and operate efficiently.

- **Reduction in costs**: A cohesive IT set-up has great potential to cut down operational costs and boost productivity within an organization. Additionally, lower the cost of ICT adoption higher will be the motivation of SMEs to adopt them.
- **Better access to real-time market information:** Use of ICT tools can help SMEs get better access to real-time information and gain insights into customer and market requirements. This helps to take timely and appropriate business decisions.

2.5 ICT & Business Performance of SMEs

ICTs can enhance enterprise performance through indirect cost saving such as labour costs and increased labour productivity, and direct cost reduction of firm's input such as information costs. On top of these short-run impacts of ICT adoption in the production process, the use of ICTs in the transaction process can foster input and output market expansion. SMEs use ICTs both as input in the production process, and in the transaction process selling their products or acquiring inputs. However, in the long run, ICT may have an even bigger impact as it can completely restructure the production process and transaction methods, increase flexibility and improve outputs.

Though ICTs can influence the performance of an enterprise in multifaceted ways, we limit ourselves only to ICT effects on enterprise return, labour productivity and market expansion. Despite the potential benefits of ICT and e-commerce, there is debate about whether and how their adoption improves firm performance. Use of and investment in ICT requires complementary investments in skills, organisation and innovation and investment and change entails risks and costs as well as bringing potential benefits. While many studies point to the possibility of market expansion as a major benefit for SMEs, larger businesses can also expand

into areas in which SMEs dominated. Moreover, it is not easy for SMEs to implement and operate an on-line business, as this involves complementary costs for training and organizational changes as well as direct costs of investing in hardware and software solutions.

2.5.1 Preparedness/readiness of SMEs to use ICTs

E-readiness can have different meanings in different contexts. However, E-readiness of an SME is defined (according to Peyman Akhavan, 2015) as the ability of an SME to successfully adopt, used and benefit from information technology such as e-commerce.

E-readiness of SMEs is related to the level of ICT acquisition or adoption especially e-commerce by them. SMEs need to address any barriers to adoption and also pay attention to the factors influencing ICT adoption for achieving a good level of e-readiness (Peyman Akhavan, 2015).

2.5.2 Adoption of ICTs in SMEs

SME usage of ICT ranges from basic technology to more advanced technology such as represented in the figure below.

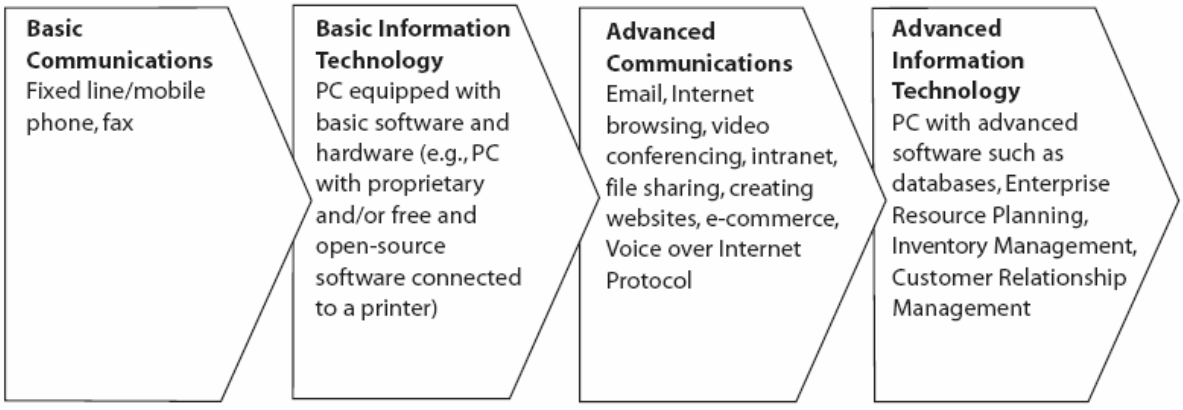

Figure 3 ICT Adoption progressions

Since SMEs play a role of increasing importance in the economy (especially when we consider their contribution to the generation of jobs as well as the social-economic development of the

community where they are located) (Hartigan, 2005), it is then desirable that SMEs are stimulated into adopting new technologies more rapidly, and creating innovative products more competitively. It requires that SMEs have the right environment to prosper, form a skilled workforce and drive economic growth.

The unprecedented acceleration of Information, Communication and Technologies (ICT) have contributed the recognition of a wide range of new technologies, business practices and features not to mention the emergence of e-business, e-commerce, e-marketing, e-banking, e-learning etc.

The integration of information and communications technology (ICT) in business has revolutionized relationships within organizations and those between and among organizations and individuals. Specifically, the use of ICT in business has enhanced productivity, encouraged greater customer participation, and enabled mass customization, besides reducing costs.

2.5.4 Impact of ICT adoption in SMEs business strategy

The SME sector has one important role to play in economic development, and it largely exceeds the average economic growth of national economies in many countries and contributes to employment creation (Higon 2011). The three main distinct stages of Information Technology (IT) usage in small businesses according to Matthews, (2007) include; Basic - minimal usage of IT, Substantial – several applications and machines in use, and Sophisticated – integrated various systems and constantly developed use of technology. This is usually observed as staged progression, with firms progressing from simple to enabling technologies. ICT also influences flexibility of the organizations and companies that adopt ICT – hence better performance in the market and easier differentiate products and services etc.

ICT adoption seems to have a positive effect on productivity, directly as well as indirectly, depending on the sectors and has a great potential to support a sustainable development.

However, it's important to emphasize adoption and to take in mind that, organizations adopting ICT have to adjust their structures to make internal changes as such personal training and reorganize them (Consoli, 2012)

The figure below represents the four groups of main effects of ICT in a firm. Each group consists of several dimensions, such as efficiency, productivity, product quality, etc.

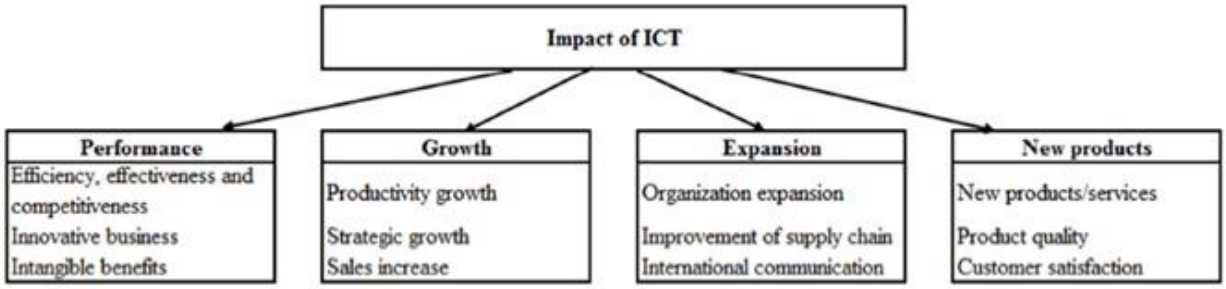

Figure 4: Impact of ICT in the private sector (Consoli, 2012)

While most of the SMEs are aware of the potential benefits of ICT, they are unsure of how to select the right solution. Taking a closer look at the relationship between SMEs and the usage of ICT and how this impacts on the adoption process, Southern and Tilley (2000) outlines three types of user groups, which are;

1. Higher users – this group exhibit signs of more sophisticated understanding of ICT and how the technology can be applied.

2. Medium user – this group includes the small businesses that have started using some ICT in their organization. They normally have stand-alone PCs and some form of simple network.

3. Low users – these are small businesses that have little or no ICT in their business. The usually don't understand the difference between IT and ICT and are not willing to invest money in ICT.

SMEs on the other hand need to make realistic assessments of e-commerce/e-business opportunities, benefits and costs. Policy measures that, for example, encourage business associations or other groups to provide awareness-raising and consultation services can be beneficial. Such initiatives can also encourage SMEs to develop niche products and personalized services not provided by larger firms. On the costs, open source software has been proposed as an economically viable solution for establishing and upgrading ICT systems, because it can enhance system interoperability and make it easier to introduce new applications.

To encourage SMEs to adopt and integration ICT to their business, efforts first need to concentrate on convincing the management that implementing ICT can improve their business, whether through cost savings or enabling expansion to new markets. This is because these managers determine the overall strategy of the firm, and they make the decision whether or not to adopt ICT. Middle management are usually the ones to implement the ICT project and thus need to have a deeper knowledge of how to implement it, so their training should include a mix of strategy and implementation skills. Frontline employees are the ones who will use ICT on a daily basis. It is therefore more important to concentrate their training on the actual skills required than on the strategic benefits of ICT.

2.16 Demands and opportunities in the adoption of ICT

Van den Hooff (1995; 1997) used the model presented in Figure 5 (below) to explain the suitability of a specific form if ICT model in an organization, it provides an insight into the interaction between the characteristics of the technology and (processes within) an organization.

This model combines two lines of reasoning. The first line of reasoning springs from the organizational domain and focuses on the demands that an organization processes put on information and communication media. These processes can be divided into primary and

supporting processes. These processes make up the key activities of an organization, and are typically guided by strategy processes. They put certain demands on communication processes.

The other line of reasoning springs from the ICT domain, and focuses on the opportunities certain technologies (or media) offer to change or improve communication processes. It seeks to address what contribution these technologies make to improve the communication and supply of information within an organization or between an organization and its environment.

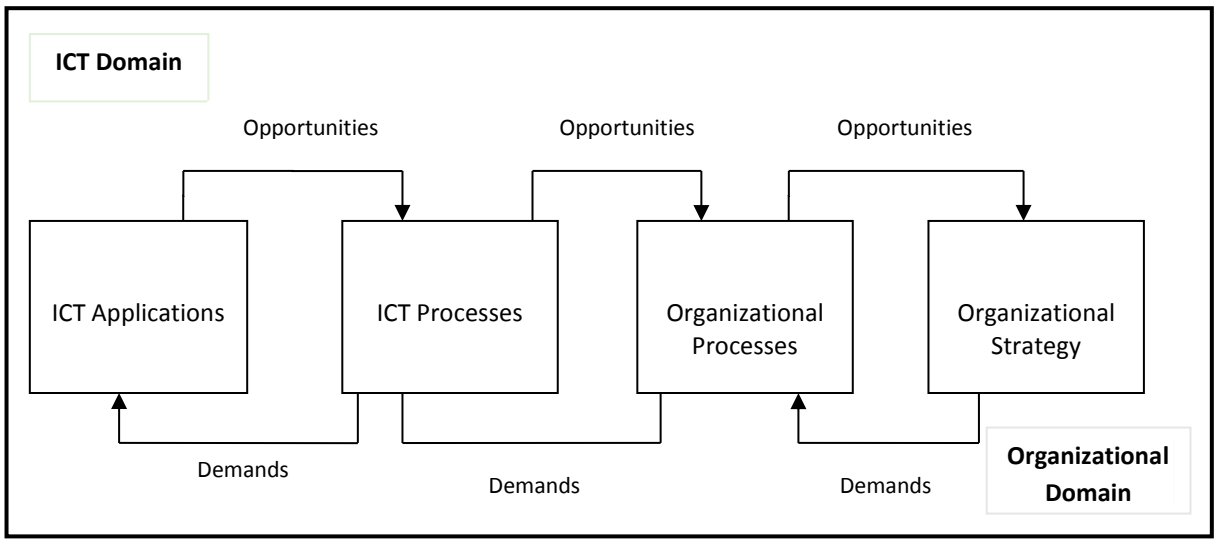

Figure 5: Demands and opportunities in the adoption of ICT (adopted from van den hooff 1995; 1997

2.5.5 Barriers to ICT adoption and usage

There is a wide range of reasons why SMEs do not make more active use of the ICT (OECD, 2002b). Reasons vary widely among sectors and countries and are most commonly related to lack of applicability to the business, preferences for established business models, and the kinds of electronic transactions SMEs are involved in or wish to introduce (B2B or B2C). Common barriers include: unsuitability for the type of business; enabling factors (availability of ICT skills, qualified personnel, network infrastructure); cost factors (costs of ICT equipment and networks, software and re-organisation, and ongoing costs); and security and trust factors (security and reliability of e-commerce systems, uncertainty of payment methods, legal frameworks) - (OECD, 2002b).

2.6 ICT usage in SMEs

Information and Communication Technologies (ICTs) are considered today as powerful tools for socio-economic development around the globe. Business environment, commercial considerations and potential returns drive the ICTs adoption by the SMEs. Primarily the mobile phone technology and especially the SMS are catching up quickly in Africa and the potential of the technology has been shown by many SMEs and other organizations (Simon Melchioly and Øystein Sæbø, 2010)

Reports on a small and medium enterprise (SME) survey carried out by the Research ICT Africa (RIA) in 14 African countries; show that mobile phones are mostly used today by the MSMEs. Primarily the mobile phone technology and especially the SMS are catching up quickly in Africa and the potential of the technology has been shown by many SMEs and other organizations such as the Kenya Livestock Marketing Council, Malawi Agricultural Commodity Exchange (MACE), Foodnet of Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), Tradenet.biz in West Africa and Pride Africa (King, 2004).

In Uganda, most SMEs that use computers for doing their businesses include the ICT companies/start-ups, hotels, tours and travel, and construction companies as compared to their counterparts in other sectors such as the informal sector (small manufacturers) which as low penetration in computer usage, though they used mobile technologies at its basic level.

Some businesses, mainly early adopters of e-commerce, are entering the next stage of ICT use, e-business. They have begun to engage in increasingly sophisticated uses of ICT, involving business process reengineering and more complex technology. In such firms, B2C and B2B e-commerce are components of an overall e-business strategy (Kozeta, 2008). External relations with customers as well as internal processes are being linked. Marketing and sales, logistics and delivery, after-sales service, supply chain management and other business functions are

integrated in an overall e-business strategy. Most SMEs appear still to be at a stage where establishing a Web site or adopting e-commerce is the main issue (Kozeta, 2008).

2.7 ICT Integration into SMEs

Competing in a dynamic, collaborative, global environment, SMEs need a strategic management tool to help develop the requisite capabilities, structure, and integrate and leverage the underlying ICT resources in line with the dynamic market and environmental conditions.

The significance of using information and communication technologies within SMEs has been underlined by various scholars. Utilizing information systems decreases process's costs, improves quality of products, services and reduces delivery time, cost and ultimately improve their performance (Seyran, 2014). Information technology also affects decision making processes (Seyran, 2014) by improving enterprise communication and transparency in both external and internal environments (C. T. Street, 2004). Although the advantage of IT adaptation within SMEs is clearly illustrated, one should be aware of various external and internal factors that have critical impacts on design and development of ICTs solutions. With the short-range manager's perspective and commitment, SMEs are more intending to focus on day to day operational IT improvements (Wilton, 2008).

Eeva Melama (2011) in his article on boosting ICT business alignment in SMEs outlines about five practical ways in which ICT business alignment can be boosted; (1) understanding business, (2) establishment of an ICT governance model, (3) creation of ICT newsletters that can be sent quarterly or twice a year describing the what ICT has been and what is coming next, (4) write short service descriptions of the most important services you offer, and (5) develop a key performance indicators for top management to show how ICT is doing.

Although it is easy to focus on daily execution, a lot of work can be done for nothing if business and ICT do not understand each other. It is ICT's responsibility to make a big deal about the

things that are going on and show business that they cannot make it without ICT (Eeva Melama, 2011). In relation to assisting SMEs to integrate e-business into their entire business process, there could also be more emphasis on integrating e-government into the business process. For example in Australia, government compliance activities tend to be undertaken separately to other 'back office' business processes (OECD, 2004).

2.7.1 What ICT tools could be used by SMEs?

ICT environment is ever changing, so constant learning and updating of technologies is needed. Alexander (2008) outlines some of the technologies that SMEs can benefit from and that will help them realize the benefits of ICT integration, such technologies include:

Video conferencing – this enables "real time, face to face communication with partners over a network" (Alexander, 2008:3). This can benefit SMEs in a number of ways such cost reduction brought by travel costs, hotel stays, reducing time spend on travelling and away from work, still providing the reach content that you receive from a normal phone call, and allowing meetings to be held more regularly than trips can be planned.

Extension mobility – "wireless and mobile technologies increase efficiency and productivity by extending the footprint of office, delivering information and applications to employees when and where they need it" (Alexander, 2008:3). This enables one to work remotely with a "virtual office". The benefit to the SME is saving on rental space, and, if a job requires being on site at the client's premises, the faster deployments of work to staff while they are on the road. This can be done through the use of IP networks, VoIP tools, the cellphone as a tool, and web-based solutions.

Customer relationship management (CRM) – these are technologies designed to help the business. The CRM is often described as having a 360 degree view of the customer, meaning knowledge of all the communication that the customer makes with the business and the ability

to analyze them to gain a better understanding of the customer's future needs. Alexander (2008) explains that, CRM solutions can be linked with the IP phone, so as to keep track when the client calls, it's easy to see the information about the client.

Internet - According to McKinsey consultants (Web article, 2014), the Internet has grown from emerging technology to a tool that is transforming how people, businesses, and governments communicate and engage. The Internet's economic impact has been massive, making significant contributions to nations' gross domestic product (GDP) and fueling new, innovative industries. It has also generated societal change by connecting individuals and communities, providing access to information and education, and promoting greater transparency.

However, not all countries have harnessed the Internet's benefits to the same degree. In a new report, we examine the evolution of Internet adoption around the world, the factors that enable the development of a vibrant Internet ecosystem, and the barriers that are impeding more than 60 percent of the global population from getting online. Several findings emerged.

The model suggested by Premkumar and Roberts (1999) and modified by Nissen Boris in his research paper "Internet adoption decisions by SMEs, outlines four adoption factors, Environment, internet, Organization and Offering. These are all illustrated in the figure below:

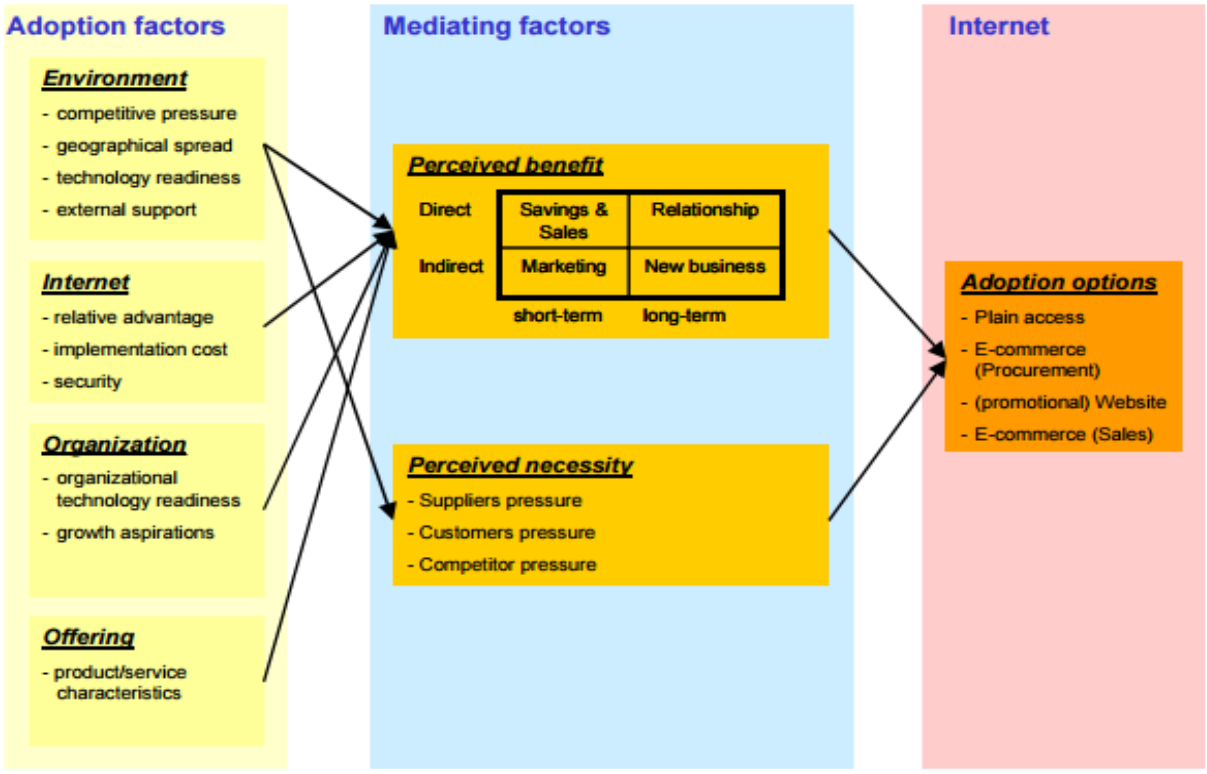

Figure 6: Internet Adoption decision in SMEs

2.8 Government policy and its role in promoting ICT usage in the SMEs sector

According to the World Economic Forum (2010), governments around the world are recognizing the importance of ICTs to their economic development. In this regard, Tanzania provided a tax relief on ICT hardware to SMEs; the Venezuelan Government provided grant scheme; the Governments of Ghana and India established donor schemes to promote ICT adoption.

However, many Governments in developing countries still have not explicitly focused on ICT adoption by SMEs in the non-ICT sector. They have either focused on growing the ICT sector or supporting the growth of SMEs, but they have not focused on integrating the two areas to implement broad-based policies (OECD, 2010). Since most SMEs who can benefit from the use of ICT are not in the ICT sector, they have not been able to receive the benefits. The

governments therefore need to create the cross-cutting policies that can help guide the ICT-Business integration process.

2.9 The roles ICT play in Business sustainability

The role of ICT is incredibly important for being used to increase the efficiency and effectiveness of both information systems and business practices. ICT today is viewed as an enabler of productivity and quality through process automation and quality control.

Idisemi Apulu (2012), in his research agrees with Kyobe (2004) that, the effective utilization of ICT refers to the use of ICT resources such as hardware and software to provide an organisation with a competitive advantage.

The survey conducted in OECD countries shows that the use of ICT by SMEs has increasingly become common (OECD, 2013). Across all sizes of organizations there is generally clear evidence of ICT, be it through, for example, the telephone, mobile/cellular phone, network switch/router, PC, laptop or tablet computer. Invariably, these and many other devices are considered integral to a firm, as they assist employees to, among other things: communicate with customers, partners and each other, prepare and transmit documents and files, and Browse online and conduct a wide range of electronic transactions. However, although such technology is considered integral to an organisation, frequently they are not harnessed to their fullest potential to improve its performance. Below four ways in which technology could be better applied are discussed.

1. To improve service delivery to customers - Depending on the organisation and the services being provided, it is likely that a detailed list of improvements can be identified, but some likely to be on the list include: providing certain services online and introducing e-commerce facilities, which would, at the very least, offer customers a more convenient and efficient experience.

2. To improve your organization's responsiveness to new developments - Although this point might seem most relevant to complex, goods-oriented businesses that operate in highly dynamic industries, this point is as applicable to small service-oriented organizations.

With regard to organizational responsiveness, ICT/technology can be a major aid in:

1. Processing data generated from a diverse range of channels (e.g. sales, web analytics, inventory control, customer feedback, industry data, etc.), which, if handled correctly, can flag developing issues and be the impetus for important strategic decisions; and

2. Facilitating the implementation of the decisions that have been made, through innovative and (hopefully) cost-effective options, some of which it might be possible to build in-house.

3. To change the basis of competition in your industry - organizations that aim to grow market share; improve visibility; or wish to become the preferred vendor or service provider, ICT/technology can help them achieve those goals.

Again, ICT/technology can be instrumental in:

1. Streamlining, optimizing and automating certain internal processes , which can reduce delays, human error, red tape, and the complexity of certain processes

2. Introducing operational efficiencies that can reduce costs and improve the bottom line

3. Implementing new measures that can ultimately add value to the customer and improve his or her experience with the organisation.

4. To improve your organization's overall performance

1. ICT can introduce a paradigm shift in organizations by helping them to re-evaluate, among other things, what might be possible, how they can raise the bar and perform better, and what new services and quality standards should be introduced. This point may be particularly

applicable to micro, small and medium sized businesses, many of which have limited resources, and might be looking for ways to take their operations to the next level.

2. One way of beginning the process of getting more out of the technology your organisation currently possesses, is not to focus on the devices themselves. Instead, the priority in the first instance should be to set the goals or desired outputs that you wish to realize, and to examine and understand current processes or project cycles in order to be in a position to determine how best they can be optimized with technology to achieve the desire outcomes.

3. In closing, ICT has long been touted as being able to introduce efficiencies into businesses, but too often the organizations themselves do not actively introducing such measures. Depending on the expertise resident in the firm, some external assistance may be necessary to get the most of the current equipment. However, as the corporate world becomes even more fixated on profits and savings, and competition increases across various sectors, a more considered investment to harness readily available ICT might be worth the inconvenience in the long term.

2.9.1 The relationship between ICT and SMEs sustainability/survival

Sustainable business development is a relatively new area and its implementation, especially in Small and Medium Enterprises (SMEs), is limited. Van Hemel and Cramer (2002), highlight that a lack of knowledge, awareness and investment are barriers for moving towards sustainable practices and more responsible business in SMEs. Moreover, Ciliberti, et al. (2008), include lack of infrastructure, poor communication channels between stakeholders, low savings rate and lack of mentorship as additional problems in developing economies, these are still recurrent even today.

Studies have showed that ICT investments contribute to the SME's returns at the firm level. For example, Ntwoku's (2011) study on "adoption of information and communication

technology (ict) in small and medium enterprises (SMEs): the case of Cameroon" shows that using Solow's Model, Dedrick, Gurbaxani, & Kraemer (2003) indicates that although there is a significant IT contribution to returns, the magnitude of contribution varies extensively across the firms. In other words, some firm with similar IT investment might have performed differently.

Lopez-Nicolas & Soto-Acosta (2010) looked at the benefits of ICT to SMEs from a different angle and found that ICT adoption could be appropriately molded into the organization to eventually improve SME performance.

Kharuddin, Ashhari, & Nassir (2010) made a study directed at finding out if informed decision enables the SMEs to increase business efficiency and stay competitive and they found that adopting information systems is crucial for SMEs as it helps improve business efficiency and competitiveness. More generally, it could be interpreted that information systems provide SMEs with the right capabilities and resources to overcome the competitive pressure from within the SME industry and also from the larger firms.

2.9.2 Review of Existing Models for/related to Business sustainability

According to the Financial Times Lexicon, Business sustainability is defined as managing the triple bottom line - a process by which firms manage their financial, social and environmental risks, obligations and opportunities. Business sustainability requires firms to adhere to the principles of sustainable development. According to the World Council for Economic Development (WCED), sustainable development is development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." So, for industrial development to be sustainable, it must address important issues at the macro level, such as: economic efficiency (innovation, prosperity, and productivity), social equity (poverty,

community, health and wellness, human rights) and environmental accountability (climate change, land use, biodiversity).

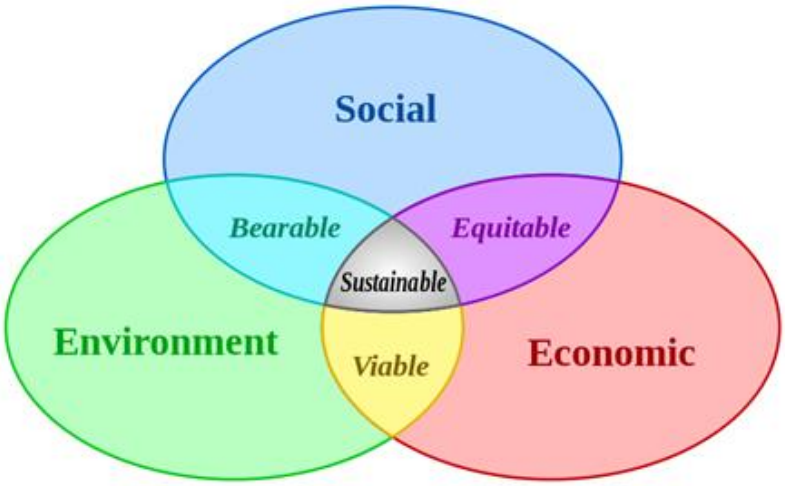

Figure 7: Model by Adams W. M (2006)

1. Steady State Sustainability Model Small Business

The Steady State sustainability model small business combines different modules (figure below) to the business enterprise to build the sustainable business future.

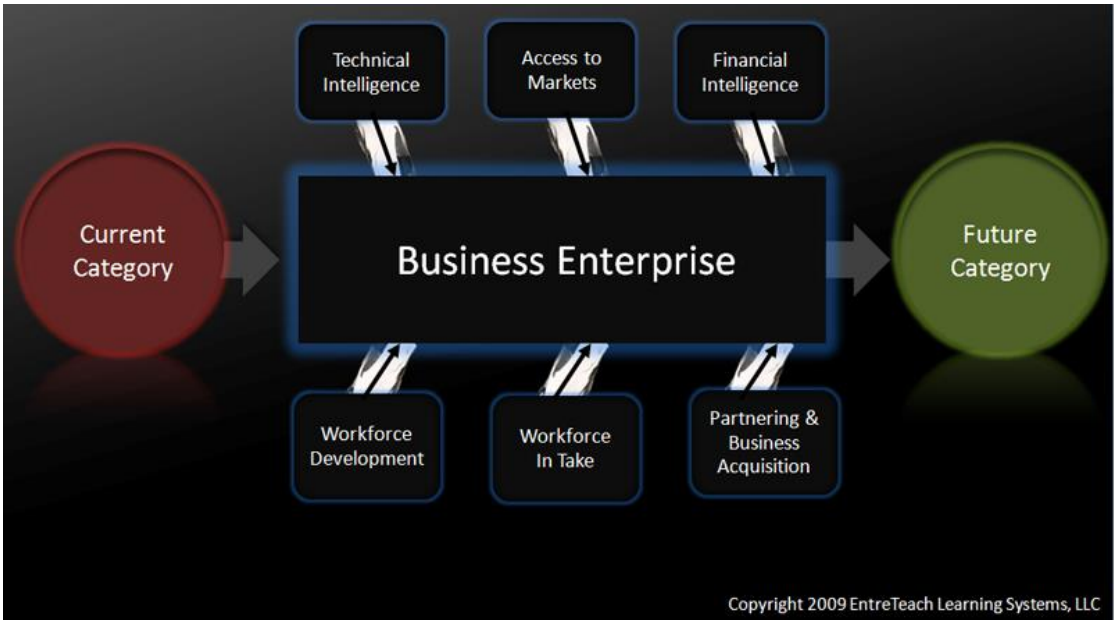

Figure 8: Steady state sustainability model for small business

The model combines the Technical Intelligence, Access to markets, Financial Intelligence, workforce development, workforce in take and partnering and Business Acquisition to the Business enterprise.

2. Model for CSR and Sustainability

The expanded model for CSR and Sustainability was developed at the Conscious Business Institute. The model helps shift CSR or Sustainability initiatives in organization from a process – something companies "do" – to something that is engrained into a company's fabric – something that is lived by every person inside an organization.

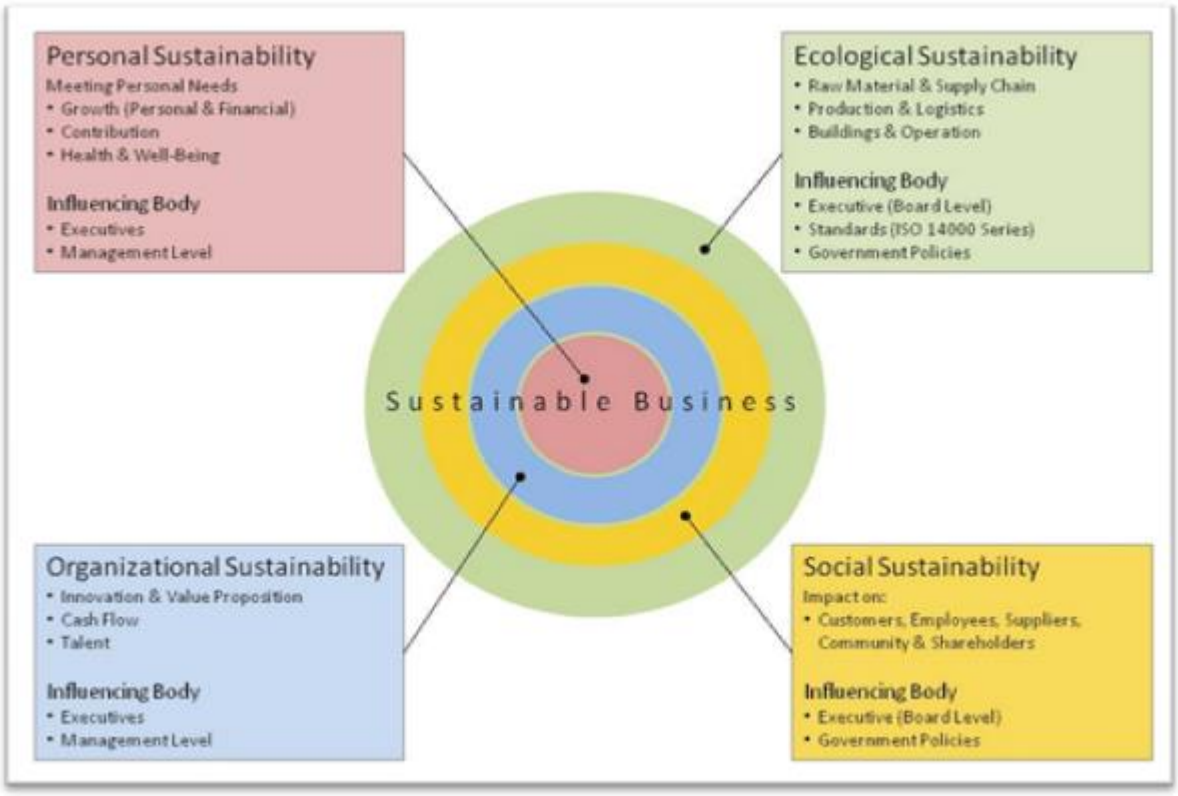

Figure 9: Conscious Business Institute business model

This combines the four elements of Personal Sustainability, Ecological Sustainability, Organizational Sustainability and Social Sustainability to create the sustainable Business

3. Model for ICT Maturity in Business

According to Quoc Trung Pham (2010), 'ICT maturity of SME' is the state of an SME, in which it reaches fully development state in applying Information Communication Technology in doing its business. To measure ICT maturity in business, some elements related to MIS (management information system) are considered, such as: hardware, software, data, process, human, network and the ICT policy. The Maturity model measures ICT maturity of SME, in which four main ICT factors inside an enterprise are: ICT Policy, ICT Infrastructure (hardware, network), ICT Application (software, data, process), and ICT Human Resource.

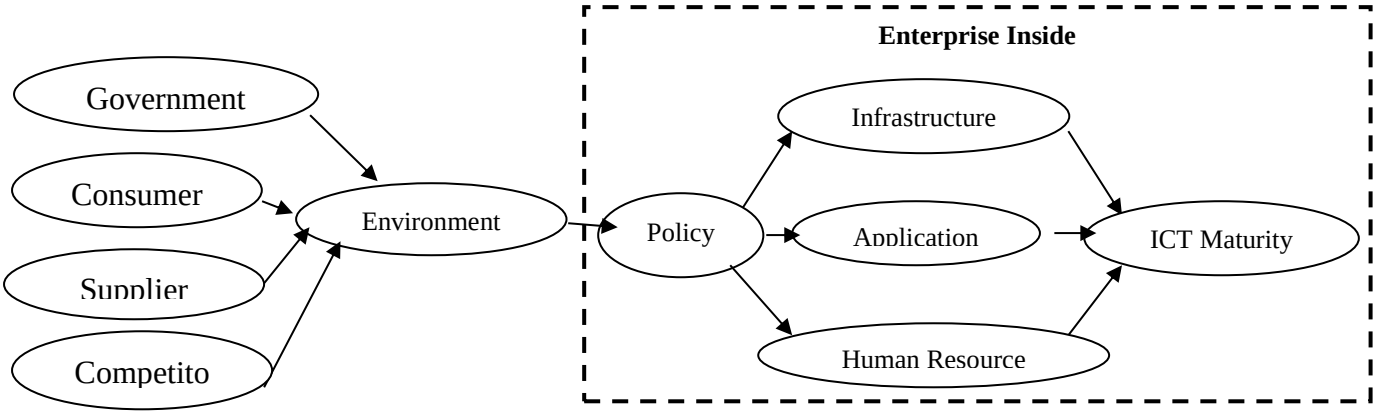

Figure 10: ICT Maturity in Business

Ø Policy: written/unwritten rules, regulars, procedures, ways of doing business in an enterprise, which show the recognition, intention, determination of company leaders and staff to apply ICT in maximizing their business efficiency. This factor effects on all other factors of ICT use in business.

- Infrastructure: ICT devices and services, such as: server, PC, laptop, mobile, telephone, fax, network, internet, LAN, WAN… which help the SME in storing, processing, communicating and searching information. This is the basic for all other ICT applications in an enterprise.
- Application: application software which change the processes and ways of doing business. Some popular applications are Management information system, Decision

support system, intranet, extranet, e-commerce, knowledge base system, and social network services. ICT Application has mutual-relation with both ICT Infrastructure and Human Resource.

- Human Resource: one of the most important factors of ICT use in enterprise, which includes: staff literacy, ICT skills, **innovation** skills, IT experts, IT leaders, ICT training, and research and development activities.

Although each of above factors has different effects on ICT maturity of an SME, they all show one or some aspects of the ICT development in business.

2. 10. Summary of the frameworks/models

Model/frameworks	Description	Strengths	Gaps
Steady State Sustainability Model Small Business	The Steady State sustainability model small business combines different modules to the business enterprise to build the sustainable business future.	The combination of elements of different modules.	The application of ICT in various modules will lead to a complicated strategy.
Model for CSR and Sustainability	The model puts together the personal, organizational, Ecological and Social	Looks at other various forms of sustainability.	The ICT factor is not visible in the model.

	sustainability to achieve business sustainability.		
Model For ICT Maturity In Business	This model combines all business stakeholders into environment that leads to policy formulation for the business.	Leads to ICT maturity within the enterprise	Does not include business processes

Table 4: Comparisons of Models

2.11. Conclusion

A review of the available literature related to the subject of this research will always reveal that there is a growing interest among researchers to investigate and improve ICT adoption and usage by SMEs. Once this is improved, compliance to different laws and regulations will increase and e-commerce in Uganda will thrive.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. The methodology may include publication research, interviews, surveys and other research techniques, and could include both present and historical information.

This research is aimed at developing and designing a model to which SMEs can use to integrate ICT into business for sustainability. The goal of this study is to:

- Extend the understanding and find empirical evidence of the barriers faced by the SMEs in adopting the technologies.
- Determine the requirements required to design the proposed model.
- Design and develop a model for integrating ICT into SMEs for business sustainability.

3.1 Research Design

Before primary data collection was done, the research did a pilot study that included collecting secondary data from various online sources that included trade organization such as UAE, Kacita, Enterprise Uganda and many others.

The following research design model (figure below) was developed by the researcher to help him collect the data that will be required for designing the model. In this research design, the following approaches were used to determine the requirements for designing the model; literature review, in-depth interviews, quantitative & qualitative data collection.

The model below guided the research in collecting data starting from the literature review, there after the methods to be used were selected, this included, use of qualitative data collection methods and qualitative methods that were used.

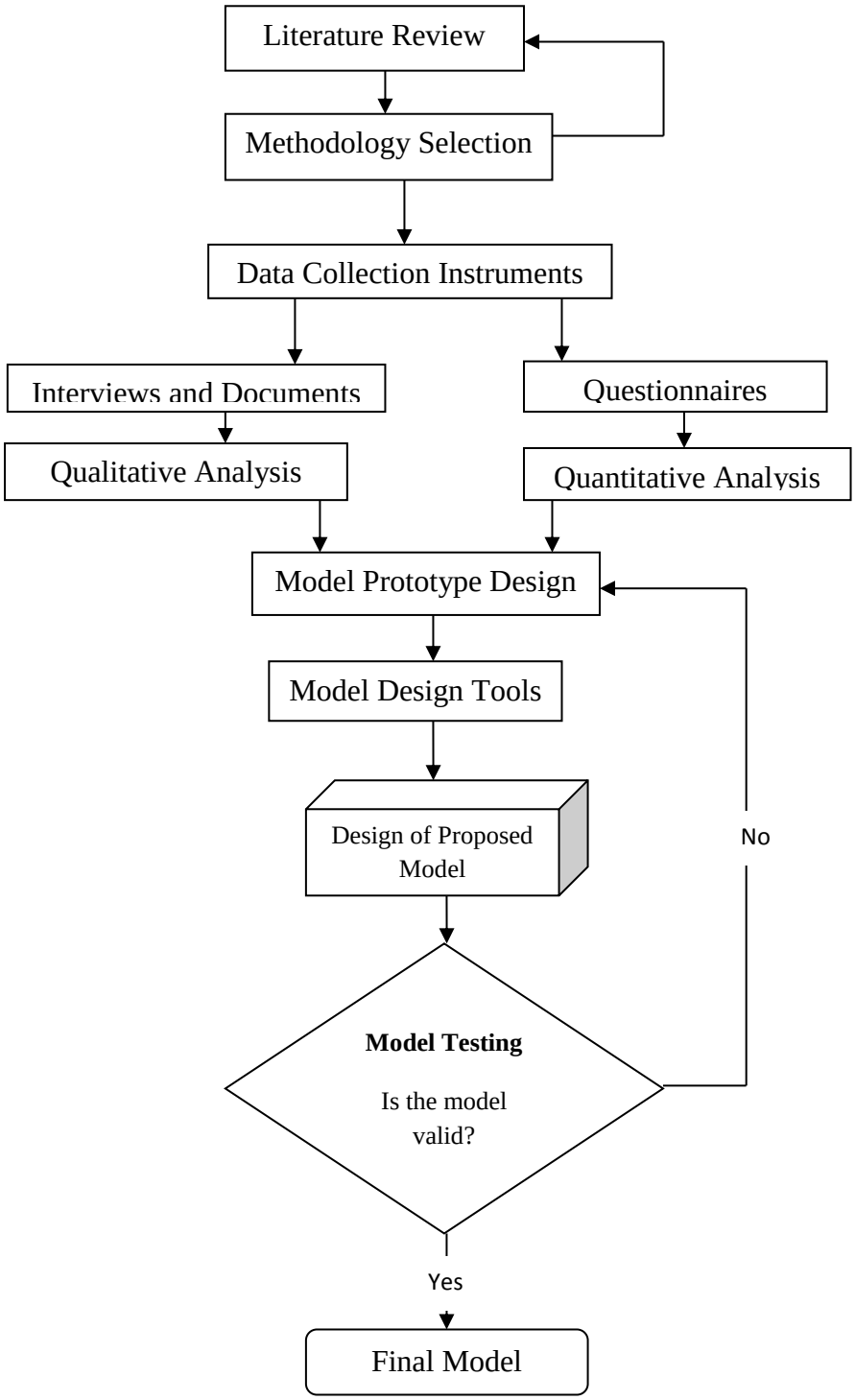

Table 5: Research Design

After Literature Review was done, the researcher decided the methodology to use to collect the required data will be collected. The data collection instruments were developed for collecting the required data for the proposed model. Data collected was subjected to data analysis. Thereafter, the model was designed using simple design tools in Microsoft word tools.

The theoretical data collected also included information from "ICT adoption" by Rogers (2003) and data obtained from various research papers in ICT adoption by businesses that was availed from various online resources. This was done by the researcher in to order understand the theoretical models in order to develop a comprehensive model to facilitate ICT adoption in business institutions. The models that were suggested were later used to come up with an enhanced model that was proposed in the study.

3.1.1 Research Strategy

To achieve the stated objectives, this study used mixed method research methodology. Data collection was done using qualitative and quantitative methods interviews and questionnaires. This research design was selected because it would best present statistical and non-statistical values in analysis and presentation of findings.

3.2 Study Area

The study was conducted from Northern Uganda, however, the pilot study was done in Kampala to help the research compare the results that were collected, given the fact that Kampala city was considered more developed compared to Lira district in terms of infrastructure.

The study covered areas mentioned in chapter one section 1.5.1.

3.3 Study Population

The study covered 20 SMEs that have been in business for a period not less than 5 years and are fully registered with the registrar of companies.

3.4 Sampling Procedures

The research used the following sampling procedure to collect the data from the field study.

3.4.1 Sample Size

The total study population comprised of 35 respondents including those who were involved in the pilot study.

3.4.2 Sampling Techniques

The research employed non-probability sampling techniques, that is, purposive sampling and simple random sampling. Purposive sampling was used in the study to obtain information only from those elements that were most readily available and could provide desired information. Simple Random sampling was used to help the researcher to select only the specific target group for the study population. This was because the research had knowledge of who the best respondents and it was suitable for a small population.

3.4.3 Data Sources

Most data was secondary data collected from literature reviews and from online sources (check references) such as SME websites and from local newspapers (print media). The primary data was collected using the questionnaires that were administered by the research himself with the help of friends and personal interviews especially with the owners of the SMEs who double as the directors of the selected SMEs.

3.5 Data Collection Methods and Instruments

Data collection methods used by the research included personal interviews, questionnaires, and document reviews.

3.3.1 Interviews

In this study, personal interviews were conducted in order to gather the required data. Amin, (2005) defines personal interview as "questionnaire administration conversation, initiated by the interviewer for the specific purpose of obtaining research-relevant information and focused by him on the content specified by the research objectives of description and explanation in which the interviewer and the respondent have a face-to-face contact". These were conducted with the help of interview guides. Structured interview guides were designed in such a way that required more specific and in-depth responses related secure ecommerce business practices. The interview schedules helped the researcher to cross check information already given and thus helped to give validity to the data collected.

3.3.2 Questionnaires

The researcher used a semi structured questionnaire which had both open and closed end questions simply because it is easier to administer in a short period of time and it ensures that all the participants in a study respond to the same set of questions. The questionnaire was dived into five sections namely; general information, background information, current ICT usage, ICT investment & impact and non-ICT usage.

3.3.3 Document Reviews

Document review is a secondary data collection method which is a very important aspect of the research process. Document reviews was done throughout the study and the documents reviewed included previous documented researches, guiding policies, journals, books and book

chapters, conference proceedings, newspaper articles, online content, masters and PhD theses among others. This gave a researcher a good understanding of the tools and methodologies that SMEs use to run their businesses with or without ICT. The information collected here, was very useful for the model design because it gave the researcher the clear business strategies and models that are in use.

3.6 Quality Control Methods

To ensure quality of the research, a pilot study was conducted involving 35 respondents to pre-test the data collection instruments. Data was collected from developed SMEs and business associations. This helped the research to ensure the quality of the research data collected and to avoid collecting wrong data.

Respondents helped the researcher to evaluate the structure, wording, difficulty or ease of answering questions as well as the time necessary to complete the questionnaire. Feedback regarding the format and structure of the questionnaire was considered and changes were made to the questionnaire. Suggestions were taken to clarify the survey instructions, using less technical words.

3.7 Data Management and Processing

Data management is the process of controlling the information generated during a research project. Any research will require some level of data management. Data processing refers to the process of performing specific operations on a set of data or a database.

The data collected was documented and stored in a computer for later processing and analyses using a computer software packages.

3.8 Data Analysis

The study adopted a descriptive statistical approach in collecting and analyzing data. It involved gathering data that described events and then organized, tabulated, and described the data. Description was used as a tool to organize data into patterns that emerge during analysis. Visual aids such as graphs and charts were used by the researcher.

Quantitative data was entered into excel and sheets which was then used to generate frequency counts and percentages. Qualitative data was which was got from the questionnaires and the interviews were analyzed by repeated reading of the responses of the participants. It was then generalized and put into use as views and reasons explaining answers to the quantitative research, these reasons were put in the report.

3.9 Ethical Considerations

Before carrying out the study, the researcher clearly explained to the respondents the aim of the research. The researcher assured the respondents about the ethical issues such as confidentiality of whatever information that will be obtained from them will not be disclosed. The research was conducted according to the following norms and regulations governing research studies:

- Obtaining permission and approval from the authorities
- Obtaining formal consent from the respondents.
- Ensuring confidentiality
- Briefing the respondents about the importance of the study and why it is being carried out to ensure genuineness in their answers

3.10 Limitation of the Study

The size of the population used in this research was small and could not be used for quantitative analysis to present statistical data exhaustively.

Due to the time factor at the researcher's side, and the processes involved in testing the model, the model was not validated by the researcher.

CHAPTER FOUR: PRESENTATION, ANALYSIS AND DISCUSSION OF THE FINDINGS

4.0 Introduction

This chapter covers the presentation of data obtained from the field. The data presentation was guided by three research objectives and four research questions from the study which purposely conducted to design and develop a model for integrating ICT into SMEs for business sustainability.

4.1 Background Information

Data was collected was collected from 20 different SMEs from Lira District in Northern Uganda. The SMEs from these areas were selected because it was easy for the researcher to access them and due to transport constraints faced by the researcher to reach to other places. The data was collected using interviews and questionnaires which were distributed to the SMEs owners and their respective staff. The owners of these SMEs were chosen as suitable candidates for the study because they have a good understanding of issues surrounding their businesses. Due to confidentiality obligations the identities of the companies studied in this research are not disclosed in this report. However, the SMEs fall in categories of tours and travel, food processing, ICT services, financial services, construction, communication, engineering, fabrication and Agro-based processing.

The findings were grouped according to the subsections outlined below. It is important to once again highlight that this research made use of a qualitative and quantitative approach in trying to answer the research question. The major parts of replies are based on the experiences of the SMEs' owners and employees as they run their businesses.

4.1.1 Background information of SMEs covered in the study

The SMEs covered in the study included those in areas/sectors as shown in the table below.

S/No	SME Sector	Number
1.	Engineering / Manufacturing/ Fabrication	03
2.	Grocery / Food processing	03
3.	Financial services	02
4.	Hotel and Accommodation	03
5.	Tours and Travel	01
6.	Construction	03
7.	Real Estate and renting services	02
8.	IT services and Communication	03

Table 6: Sectors of SMEs involved in the study

The different sectors were selected to represent the diversity of SMEs that operate in the area. However, the researcher was unable to cover all the SMEs available due to the time factor for during the time of research.

The study looked at the age of the participants who were part of the study and the result was as represented in Table below.

4.1.3 Age and Gender distribution

Gender	Frequency	Percent	Valid %	Cumulative %
Female	11	36.7	36.7	36.7
Male	19	63.3	63.3	100.0
Total	**30**	**100.0**	**100.0**	

Table 7: Gender representation

The number of males was higher than the females amongst participants with males having 63.3% and females having 36.7%. The male staff participants were almost twice more represented than female staff participants. This category had an imbalanced gender representation.

Age	Frequency	Percentage	Valid %	Cumulative %
18-25 years	5	16.7	16.7	16.7
26-30 years	5	16.7	16.7	33.3
31-35 years	5	16.7	16.7	50.0
36- 45 years	7	23.3	23.3	73.3
46-50 years	4	13.3	13.3	86.7
Over 50 years	4	13.3	13.3	100.0
Total	**30**	**100.0**	**100.0**	

Table 8: Age distributions

The participants' age distribution as showed in table above revealed the following findings: 18-25 years had 16.7%, 26-30 years had 16.7%, 31-35 years returned 23.3%, 36-45 had 13.3% and those over 50 years were 13.3%. The findings reflected patterns of recruitment in SMEs which is gradual over the years with some staff leaving for other jobs, others retiring, some passing on and others leaving on their own. These unavoidable drop offs which occurred as subsequent replacements were made is the reason why the trends in the age brackets are spread across the age brackets from 26 years to over 50 years.

4.2 ICT Utilization within various SMEs in Uganda

From the findings of this study (table below); it was observed that all interviewed SMEs are implementing at least a basic ICT in their businesses. Information about the ICT utilization within SMEs is based on the number of issues, such as ICT Investments and Impact, workforce knowledge, current state of ICT usage within the SMEs and levels of awareness of ICT within SMEs plus Non-ICT Usage.

S/N	Type of ICT Tools	Number(s)
1	Mobile Phones	20
2	Computers and Laptops	15
3	Internet Connection	10
4	Telephone	05
5	Enterprise Software. E.g. Accounting software	00

Table 9: Applications used by SMEs

On the question of the usage of ICT, the study found that SMEs mostly use mobile phones as compared to computers and are not aware enough about ICT tools that can be used for business. This is in agreement with the literature review, which highlights lack of knowledge as a problem barring SMEs from adopting ICT business tools. Regardless of the size of enterprise, every business relies on information in order to make informed decisions that will give them a competitive advantage. The evolution of technology influences significantly the business by changing the industry infrastructure and business operations by creating the premises for the emergence of competitive advantages for those organizations that are adopting ICT in their business processes. The adoption of ICT by SMEs provides the ability of rapid access to data,

assessment, processing and dissemination of large data volumes. Consequently, only those SMEs which use the state-of-the-art technologies have the opportunity to enter the international market and remain competitive despite the challenges of globalization, liberalization and scientific and technical progress (Ongori H, 2010).

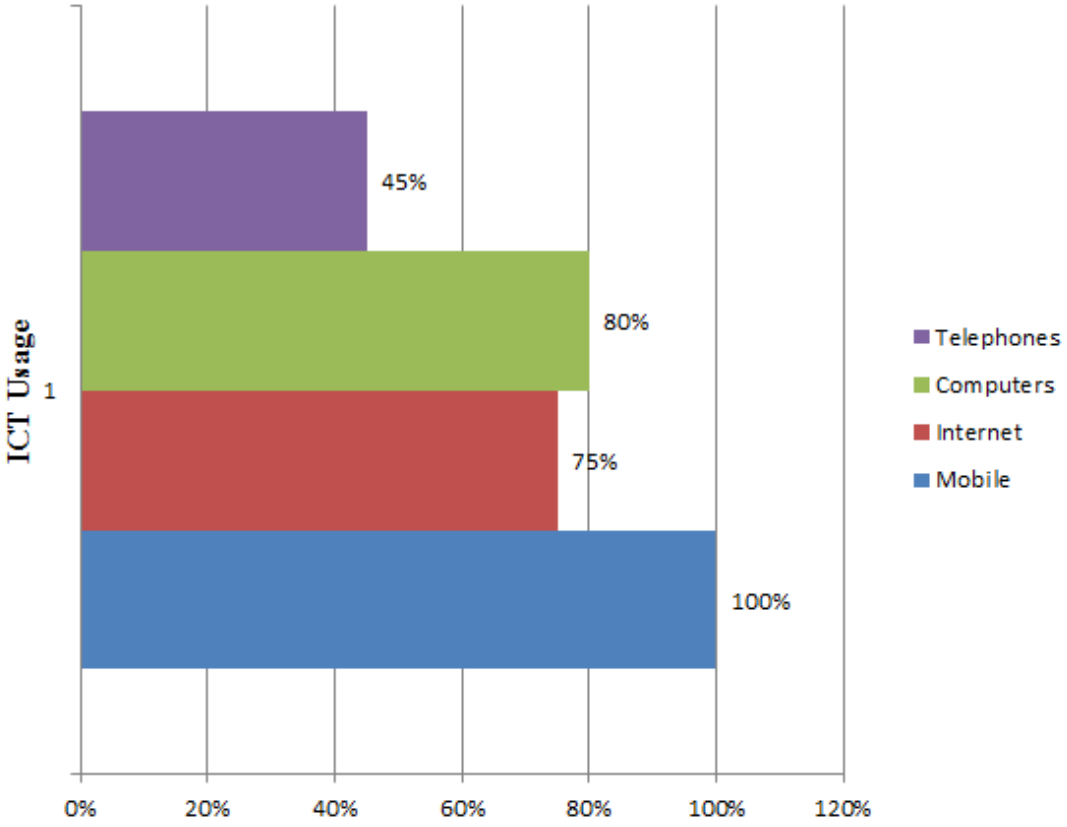

Figure 11: ICT usage graph

ICT-solutions help SMEs to increase their productivity and achieve higher business performance. However, the percentage of ICT adoption by SMEs in the developing countries is very low. Thus, nowadays a very moderate usage of ICT by SMEs in the emerging economies can be observed. This can be explained due to the fact that, in the developing countries, the SMEs are faced with additional challenges - high cost of telecommunications, the lack of legislative support from the state, the use of obsolete technologies, the overall technological illiteracy, lack of qualified staff and poor communication infrastructure (Ongori H, 2010).

4.2.1 ICT Investments and Impacts in SMEs

S/N	Type of ICT Invested	Number s)
1	Computers	15
2	Websites	06
3	Enterprise Software	00
4	Internet Connectivity (Using Modem and phones)	19
5	Office application Software	15

Table 10: ICT investments in SMEs

The findings show that all interviewed SMEs have invested in some form of ICT in their firms, although they do not have ICT policies and strategies in place. 80% of the interviewed firms use computers at a basic level to store information about the inventory in their operations. It was also noted that about 60% of SMEs studied use internet mostly for communication especially social media platform such as facebook, twitter and whatsapp etc.

Table below illustrates the overall perception of the benefit of ICT in Business activities to SMEs; the results shows that 31% of respondents perceive ICT as very important, 33% said that it is important, 25% see it as is on average, while only 11% said it is less important.

Rank	Percentage
Very important	30%
Important	35%
Average	25%
Less important	10%

Table 11: overall perception of the benefit of ICT

About 80% of the SMEs in the study acknowledged that, ICT is very important in running their businesses since it helps to conduct their businesses remotely. However, most SME's owners

admitted that the cost is still high for acquisition of ICT tools that can enable them to run their business with the current technologies.

4.2.2 Workforce knowledge

S/N	Size of SME (Range)	Number of SMEs
1	1 – 5 Employees	03
2	6 – 10 Employees	06
3	11 – 50 Employees	10
4	51 – 150 Employees	01
5	Over >250 Employees	00

Table 12: Work force representation

The findings in this study show that all questioned SMEs have a number of employees within the required range as discussed in the definition of SMEs (see Chapter one). The number of employees of the selected SMEs ranges from 6 up to 60. This reflects that the chosen respondents were the right ones.

The distribution according to number of employees in the figure above; might not correspond to the universal set of SMEs within the different sectors in Uganda, in which the small enterprises would comprise a larger proportion. The results of the analysis based, therefore, on data which is weighted according to the use of ICT within SMEs especially in marketing activities.

On the question of education level of employees within selected SMEs, the results show that 75% of employees of the interviewed SMEs have a minimum qualification of Secondary certificates (O and A levels) and Diploma; however there were few employees with Degrees.

This could imply that there is still a problem of low level education among SMEs' employees; hence SMEs require some level of computer literacy.

But also another problem is that 68% out of eighteen respondents indicated they are not computer literate. Only 32% of respondents which include owners/managers and employees are computer literate within SMEs as represented in figure below; however, most of owners/managers are computer literate.

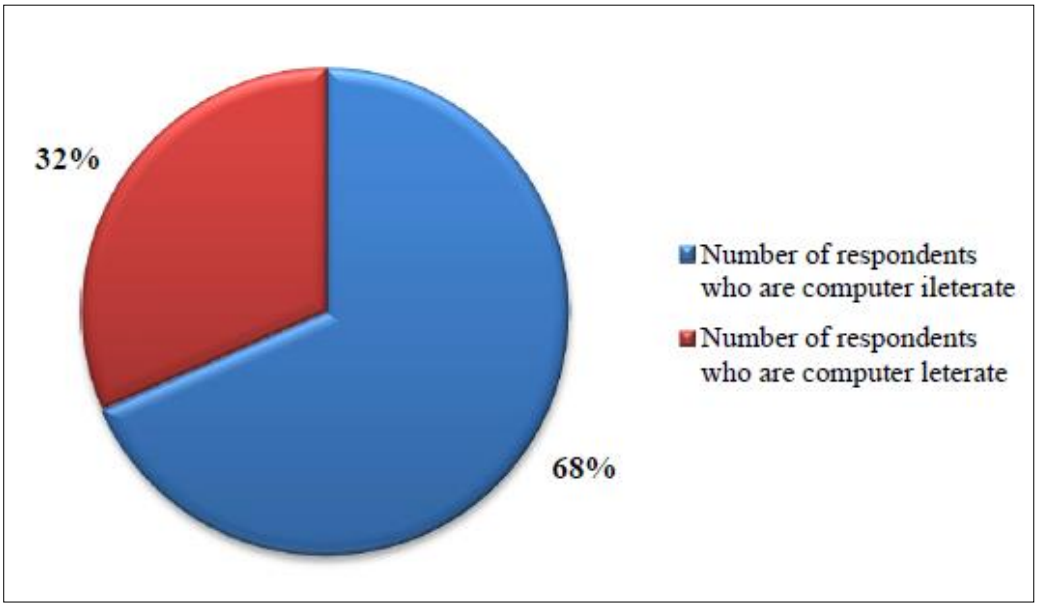

Figure 12: Pie Chart showing computer literacy by respondents

Only 10 SMEs found to have IT experts as their business is technology-based. The others do not have any ICT specialists working for them.

The findings reflects that the education levels of employees in the interviewed SMEs range from certificate level to degrees level, but only one of twelve interviewed SMEs employed a person with IT/ICT related skills.

Lack of ICT skills are widespread obstacles to effective uptake once adoption decisions are made and SMEs have major roles in providing basic ICT skills to their employees. As

mentioned before, there is a need to have someone to deal with ICT matters in the business and driving the functioning process.

ICT technical skills are essential in ICT use and application, but they are not a source of competitive advantage, due to their availability and mobility. In order to obtain benefits from using ICT, both ICT technical skills and managerial skills related to ICT are needed. Managerial skills involve management's ability to develop ICT applications to support and contribute to other business functions. Such skills could be real sources of increasing marketing performance and sustainable competitive advantage of SMEs. According to Celuch et al., (2007), effective ICT capabilities could be reached through aligning or fitting ICT resources with each other and with other important organizational resources.

The findings validate the significant role that ICT knowledge and skills play. All the interviewed SMEs agree that they do not know much about ICT, but they recognize the impact that ICT could make on their business and economy in general to grow. They highlight a lack of ICT skills as one of obstacle to their business in utilizing and use it ICT as a competitive tool.

4.2.3 Awareness of ICT within SMEs

The findings indicated that almost all respondents have some sense of understanding of ICT and what benefits it might bring to their business as well as marketing activities. But they find ICT as complicated technology to operate, simply because they do not have dedicated ICT specialist to carry out the ICT related responsibilities. The majority of the respondents generally depended on 'friends and family' members who at least know a bit about IT/ICT to help or give advice, because their awareness level is very low. In general, SMEs perceive that

ICT technology plays a significant role in increasing profits, extending the market size and making their businesses sustainable.

4.3.4 The Position of ICT within SMEs

The position that ICTs have a role to play in enhancing sustainability in SMEs has several threads and can be seen from three spheres – community, government and business. If ICT facility is seen as only providing a service to specific individual users, then the model of sustainability must necessarily be one of identifying individual revenue sources and immediately puts the facility into the context of market-driven mechanisms.

The aim of this research was mainly in identifying the manner in which the ICT facilities can become sufficiently and visibly embedded in the SMEs business processes so that it is recognized as a necessary component for business survival. To attain this, of course, requires the development of strategies and applications which link the facility directly into other and necessary business processes and involves determining how to use the technology as the basis for more effective and efficient organizational management.

4.3 Benefit of ICT Integration to Business activities.

S/No	ICT Benefit	Number
1	It's helping the firm access new sales opportunities	28
2	It makes the business become sustainable	02
3	It helps the firm become competitive	10
4	It's helping the firm improve product/service delivery to its customers	05
5	It's helping the firm improve customer relations	03

Table 13: ICT benefits in SMEs

Overall, respondents replied that they agree that reasons for integrating ICT to their businesses in a developing country like Uganda are the perceived benefits to increase business profits by expansion. The ability to be reachable worldwide and the creation and effectiveness of supply chain of industries were another two major benefits of SMEs-ICT integration in developing countries, and these factors are seen to be vital as they have turned out to be very important by participant SMEs in the study.

In general, the study found that SMEs in Uganda can improve their business operation including marketing performance by integrating ICT. The ability to be reachable worldwide and the creation and effectiveness of supply chain are among the benefits highlighted.

4.3.1 Possible benefits of ICT in relation to SMEs business activities.

Most of the benefits of ICT come from the data captured from the Customer, such as personal details and transactions details. The finding of this study illustrate that many SMEs do not keep electronic records of their customers or their transactions, which means that they do not have databases. Most of the interviewed SMEs keep only manual records of their clients' details and transactions. Manual records are difficult to analyze, especially when there are a lot of records. Those few records that are captured on the computer are isolated from the rest of the data in the manual record, so it is difficult to put them together to form a knowledge base.

Even in those SMEs which have a database, the information is not used in the way that they could highlight opportunities for marketing or business growth. The concepts of data warehousing, data mining, business intelligence, customer and product centre do not exist in the environment of SMEs involved in this study.

The findings indicate that producing high quality products and improving customer relationship management are best approaches in competitive strategies. Most of the SMEs aim to provide

highest quality products to their customers as well as establishing long term relationships with customers. By implication, the so doing could lead to increasing in sales volume and also reducing costs through investing in ICT. Business person in Uganda could begin to notice different perspectives offered by ICT especially through the internet.

Enterprises using ICT can be more competitive in local and international markets, and could offer extensive range of products through information accessible by means of internet may be useful. In this case the problem is that SMEs have been using these opportunities thoughtlessly, however, they face different barriers using the internet.

The findings reveal that ICT is perceived to be very significant in marketing activities of SMEs within manufacturing sectors, perceived significance represented in terms of significant in simplification of marketing activities, increasing of customer relationship, increasing of sales volume and in contribution to higher earning of enterprise.

This can be interpreted that, in generally, SMEs within the sector of manufacturing consider ICT as very significant in marketing activities although it seems that they are not sure of the rate of return on ICT investment, may be because of the perceived high cost of implementation. The results agreed that ICT offers great opportunities for all enterprises, especially SMEs, looking for a place in the market for their products nationally and internationally, this is consistent with other studies. In a survey of SMEs conducted in OECD countries, reveals that ICT may provide SMEs with inexpensive access to the international market and help overcome many internationalization barriers usually faced by small enterprises (OECD 2004).

The findings reveal that ICT utilization in marketing activities is moderate within various SMEs, and almost all interviewed SMEs do not have marketing strategy in place. It is necessary to understand that ICT is not a remedy for all problems; however, if it is used efficiently, it can

be a very effective instrument assisting SMEs to overcome main barriers of the business activities including marketing activities, and it could accelerate the process of internationalization. E.g., main advantages gained by SMEs when using the internet for the reduction of psychological barriers, are strengthening of international knowledge, trust and responsibility for accessible global sources of information, requests and feedback from potential consumers on the website, etc.

In summary it can be stated that ICT provides opportunities for enterprises to enter international markets, leave their usual business environment and move to new markets where cultural, legal and social systems are significantly different. What is applicable in one market may be illegal or inefficient in another. Therefore, enterprises should value and use critical success factors like finding of a proper foreign agent or distributor, creation and maintenance of efficient collaboration with an agency/distributor, large export share, international cognition, knowledge and orientation, etc. in their strategies.

4.3.2 Decision Making Process with Regards to ICT

Many of the decision makers in small and medium firms are not always aware of relevant ICT that could develop their business. This in itself is a barrier to ICT investment. The finding from the interviews was that the decision making process in the selected SMEs was one sided. These results confirm the statement in the literature that the owner is the centre of the SME business, making all or most of the decisions. This is a weakness, because the owner manager of the SME is the decision maker in all aspects of the business, including ICT without necessarily having proper knowledge of the ICT environment. One of the reasons for this problem is the fact that the owner-manager may not have prioritized ICT as a functional area. The owner-manager should rather think of ICT as an essential function, like accounting, and either outsource it or employ someone permanently for it. ICT technical skills are essential in ICT

use and application, but they are not a source of competitive advantage. In order to obtain benefits from using ICT both ICT technical skills and managerial skills related to ICT are needed.

The owner capability gaps or knowledge gaps and motivations will influence his or her decisions. Love et al, (2004) highlighted that the competitiveness of SMEs depends on the basic role of the owner/manager, intangible investment (intellectual capital), tangible investment in information and communication technology, and strategic capability, meaning the ability to be innovative and adaptive to change.

Planning the ICT implementation is essential if any business wants to employ it successfully. This means planning what to use, how to use it, when to use it, who is going to use it, what alternatives to use if it is not working, the infrastructure of it, how to develop it, when to retire it, etc. These are very important questions to answer before implementing ICT it is critical to have someone with the right knowledge and expertise answering them.

4.4 Attributes which could Persuade SMEs to the adoption of ICT.

S/No	Attributes leading to ICT adoption	Percentage
1.	Production gains.	30
2.	System efficiencies.	30
3.	Provision of unlimited service to customers.	19
4.	Improved service delivery	21

Table 14: Attributes for ICT adoption

Most (79% in total) of the respondents involved in the study reported production gains, system efficiencies and the provision of unlimited service to customers as the most significant factors

for using the technology. The following are some listed attributes which can influence the ICT adoption by SMEs.

Owner/manager attributes: The findings from the study suggested that owner/manager attributes such as background, knowledge, skills, attitude and experience played a significant role in ICT adoption. The participant argued that, only if owners/managers are interested, the ICT will be easily adopted within the organization.

Organization readiness: The findings suggested that the financially more stable enterprise could have adopted more and better ICT applications, and appeared to be more growth-oriented than the financially constrained ones.

Environmental attributes: Pressure from customers, guests, employees, competitors and suppliers: Consistent with the insights from the reviewed literature and distinctive behavioral characteristics of SMEs in this paper, the results from the study suggested that ICT adoption was on the basis of the perceived benefits and driven by pressure from customers, guests, competitors, employees and technology suppliers. In addition, competition from other small business operators also appeared to influence the decisions to adopt ICT.

Government role: The study findings suggested that government intervention in the business operations was largely indirect. This was reflected in the role government playing in setting up policies, providing ICT support infrastructure, power supply, and development of business infrastructure and dissemination of information to the small businesses. According to a participant from the study, he stated "*There is a massive business drive here at the moment. The government currently busy upgrading environment such as expanding the national internet backbone, association offices, and other infrastructure for in different sectors area*".

4.5.2 Barriers to ICT adoption within SMEs

The respondents listed different barriers that prevent them from adopting or implementing ICT, ranging from socio-economic issues to technology-related issues; lack of money, power cuts, insufficient ICT infrastructure, lack of knowledge (within SMEs or their clients), possibility of fraud, technology threats, perceived high cost of ICT and etc. The listed barriers are very much in line with the literature, with the addition of frequent power cuts, most of the barriers could possibly be overcome by learning more about ICT and by SMEs employing knowledgeable ICT staff.

About 79% of respondents feel that a lack of necessary internal skills is a major barrier. There has been a recent increase in technological challenges and the general investment by the Government of Uganda in the ICT industry to overcome challenges. 55% of interviewed SMEs feel that the monetary costs of ICT solutions and implementation are too high, while 42% feels that there is not enough information available about relevant and effective technologies.

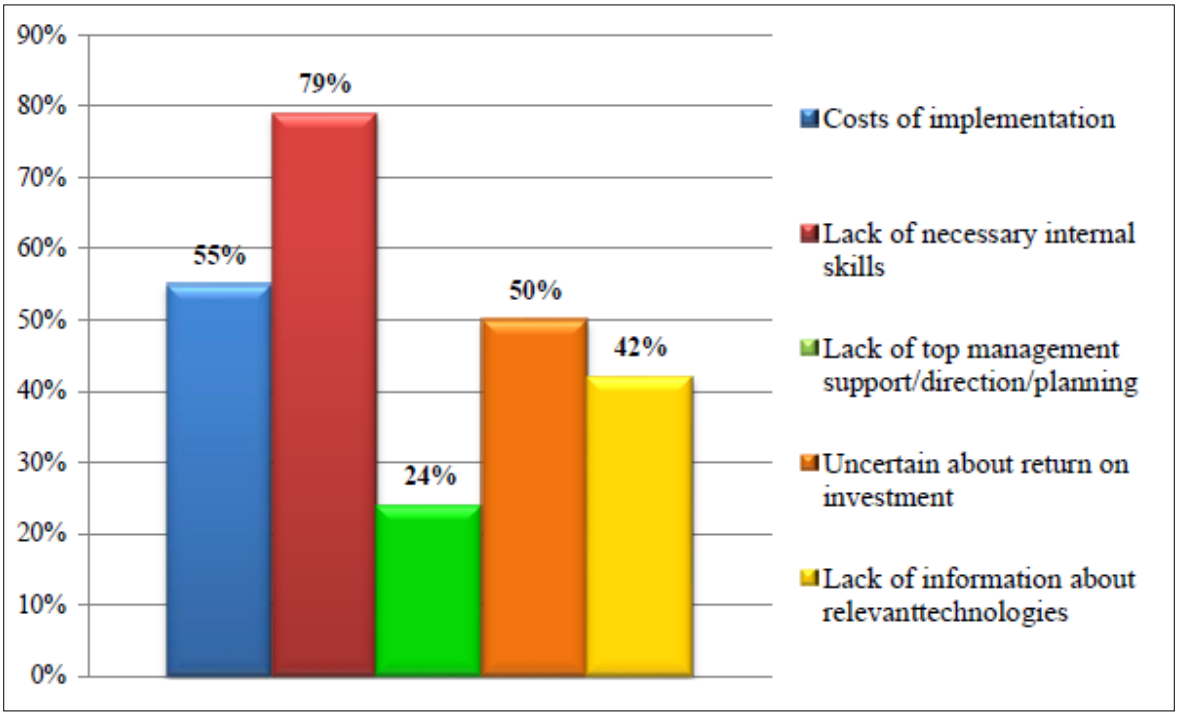

Figure 13: Graph showing ICT barriers representation

Moreover, the findings in figure above indicate that 50% of the firms are uncertain about return on their ICT investment and 24% of the respondents feel there is not enough support from the top management in the firms.

The answers in the interviews regarding the barriers to successfully implementing ICT are in line with what most authors in the literature review have identified as obstacles. The barriers that were highlighted as major problems are lack of knowledge about both the strategic use of ICT and ICT as a concept. All the respondents agreed that understanding ICT was a challenge for them, and emphasized the lack of IT skills as a problem.

They complained that IT skills were too expensive because ICT specialists have high price tags. Generally SMEs cannot afford expensive skills, whether ICT or otherwise, because of their small turnover and limited budgets. The problem of the ever changing ICT environment is one that the respondents understand and are aware of, but keeping up with the changes is a bit difficult for them. Another problem that they highlighted was a lack of trust in ICT, together with doubts about its security, because of not understanding it and because they cannot tell if they are being robbed. They would rather use methods that they understand.

Other barriers identified include lack of ICT access and awareness to customers, many customers especially local customers are not ICT oriented; and few of the interviewed SMEs complained about lack of infrastructure in certain areas in the country.

Another obstacle for ICT usage by developing countries is inapplicability of the standard software used in developed countries due to their high cost, lack of developed supporting infrastructure and a number of other reasons. Therefore for development of the solutions taking into account the peculiarities of developing countries, additional research is to be made in order to examine the existing problems, the peculiarities of micro and macro environment. Other

strategies which will help to overcome the above mentioned barriers are creation of the appropriate infrastructure, creation of financial and legal foundations.

Small firms may lack objective information regarding the benefits and costs of adoption of ICT. The private sector (e.g. business associations) and government have a role, and can provide information about service available and when necessary improve coordination of government information on the benefits of adoption and use of ICT, for example case studies and good practice demonstrations to undertake market failures in information supply.

As Martin et al (2014) emphasizes, the owner/manager of the SME has limitations, including gaps in knowledge or capability. If the owner/manager does not know much about ICT, will impact the business since he or she will only consider to sets the culture of the business in traditional way.

4.5 A Proposed Model for Integrating ICT into SMEs

4.5.1 Introduction

From the research study on ICT integration in SMEs operating in Lira, there have been attempts by these SMEs to integrate ICT in sales, distribution and marketing. However, only minimal benefits of ICT use has been realized in the SMEs and even the little that has been acknowledged cannot be easily quantified.

4.5.2 The ICT Integration Model

This model included features from; Steady State Sustainability Model Small Business, the strategic alignment model, Model for CSR and Sustainability and Model for ICT maturity in Business. This model's requirement includes ICT adoption strategy, ICT Usage computer, Enterprise Architecture, and ICT integration amongst others.

This model is constructed using the analytical data and interpretations made by the researcher regarding the adoption and usage of ICT in SMEs. However, the requirements for the model are described below.

4.5.3 Requirements for the proposed model

The proposed models was generated after putting together the results gathered from the various studies and explanation of other models, for example, the Conceptual Framework of Leadership Traits and Business, adapted by Samuel Sejjaaka et al (2015) in their research titled "*Leadership Traits and Business Sustainability in Ugandan SMEs: A Qualitative Analysis*".

The models also bring the knowledge of the TOGAF framework business architecture and the adoption processes employed by firms in adopting ICT. This is in order to help offset the missing links created by the lack of business enterprise architecture in most business firms.

The proposed model would require the following factors to be integrated together:

ICT adoption strategy: This is the approach that will inform the SME owner about the ICT requirements to implement. This will help an SME owner to determine when to adopt ICT and which ICTs to adopt to make the business sustainable.

ICT Usage: This in the implementation required. This will help to determine which ICT tools are needed to implement the ICT solutions required for the business to become sustainable.

Enterprise Architecture: This is includes the SME's building blocks, artifacts and deliverables of the firm's success in its business activities. To help shape the ICT adoption and usage, this is required to validate and verify respectively the ICT adoption and usage by the SME.

ICT Integration: This is the resultant action that combines ICT adoption and usage to the business activities of the SME. This will enable the formation of the ICT enabled business strategy required by the SME to become sustainable.

4.5.4 Adapted Elements of the model

For ensuring linkage between Enterprise Architecture, IT architecture and business architecture, the development of IT capabilities provides the high-level overview of how business processes are related to the IT capabilities (Ross, Weill and Robertson 2006). Organizations require an Enterprise Architecture, as it will provide the overall guidance required to ensure that the IT capabilities that are built meet the long-term objectives of the Organisation.

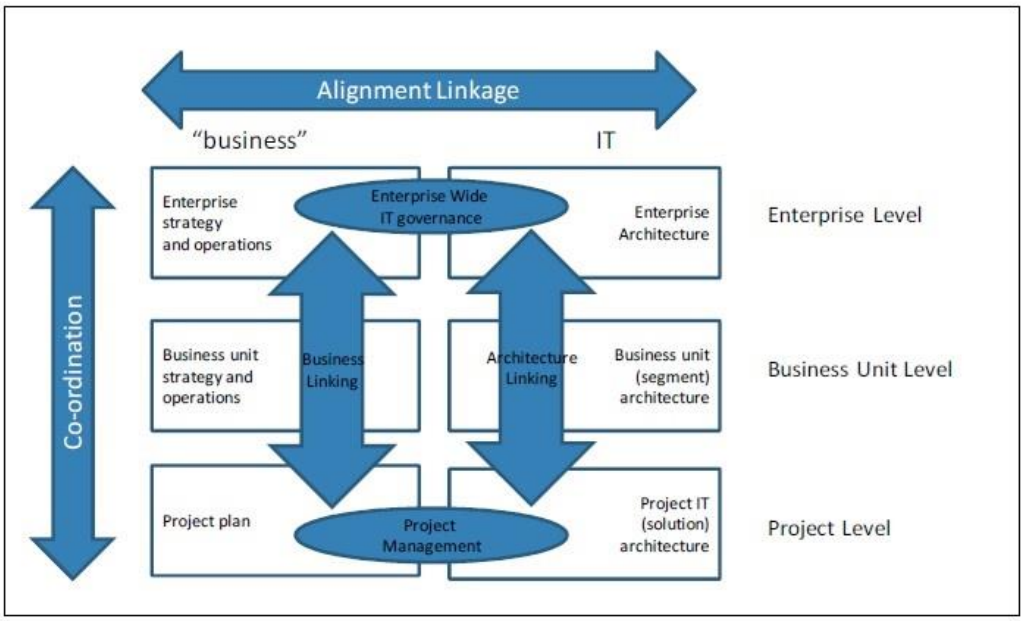

Figure 14: IT Engagement model (Ross, Weill and Robertson 2006)

4.5.5 Model Key Parameters

After thorough literature review and borrowing a leaf from the existing related alignment frameworks and models, the discussion of the results from this study, the model was adapted

for modification looking at the points of emphasis that are key in order to achieve efficient and effective integration of ICT. These are shown in the adapted model below.

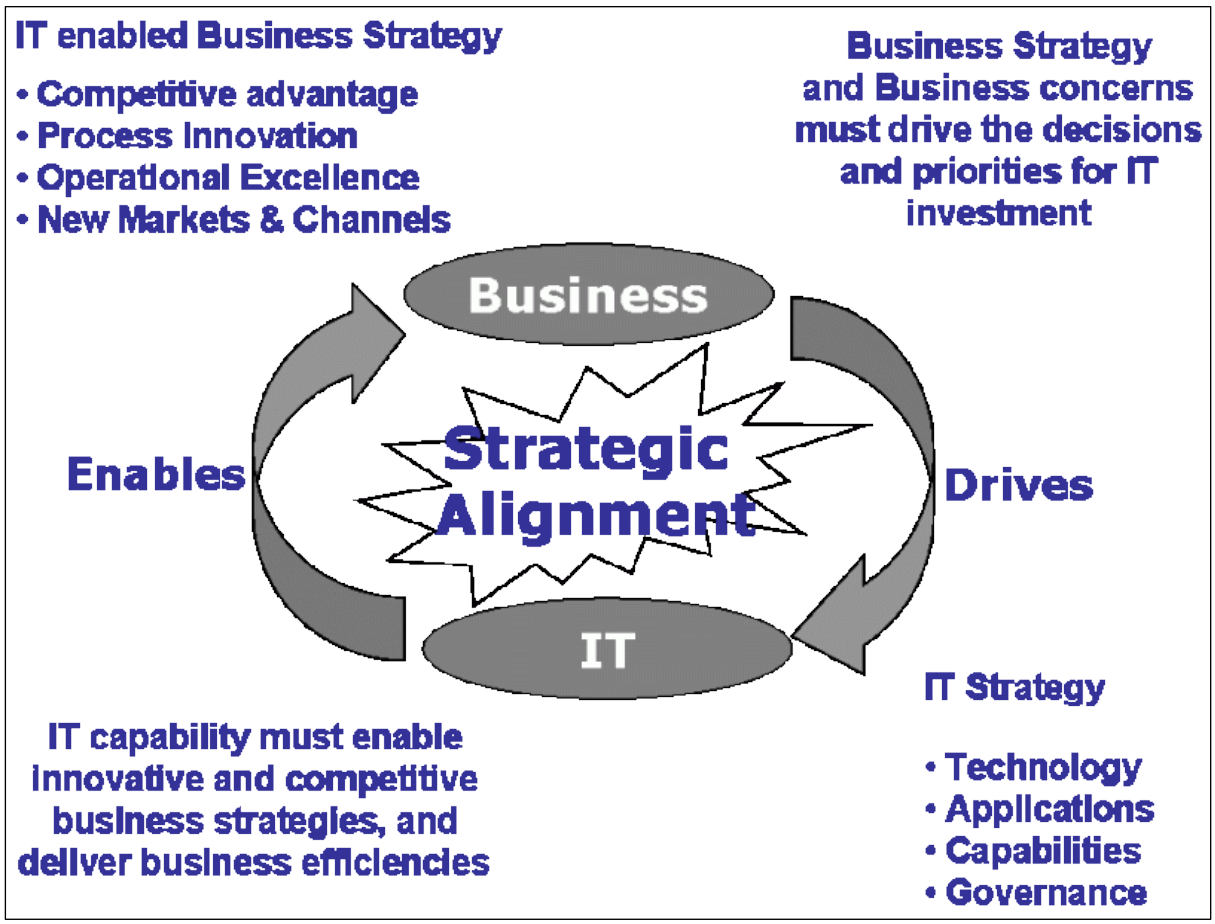

Figure 15: Strategic Alignment Model adapted from Weill & Broadbent, 1998

The table below shows the summary of features in selected models constituting the integration model.

MODEL	BASIC FEATURES AND PERFORMANCE	UNIQUE FEATURE
Steady State Sustainability Model for Small Business.	Combines the Technical Intelligence, Access to markets, Financial Intelligence, workforce development, workforce in take and partnering and	Looks at the business enterprise.

	Business Acquisition to the Business enterprise.	
The Strategic Alignment Model (SAM) of Henderson and Venkatraman [1999].	Model is composed of four quadrants that consist of three components each. All of the components working together determine the extent of alignment.	Has advantage of the Strategic Alignment of all the components.
Model for CSR and Sustainability	The model helps shift CSR or Sustainability initiatives in organization from a process.	Has good management of ICT adoption
Model for ICT maturity in Business	Maturity model measures ICT maturity of SME, in which four main ICT factors inside an enterprise are: ICT Policy, ICT Infrastructure (hardware, network), ICT Application (software, data, process), and ICT Human Resource.	Accelerates maturity levels in ICT skills development.

Table 15: summary of features in selected models constituting the integration model

4.5.6 Proposed Integration Model

After the integration of the various ideas from the four selected models, the researcher used the ideas collected from the four selected models to come up with a blended idea that formed a proposed model as shown in Figure 16.

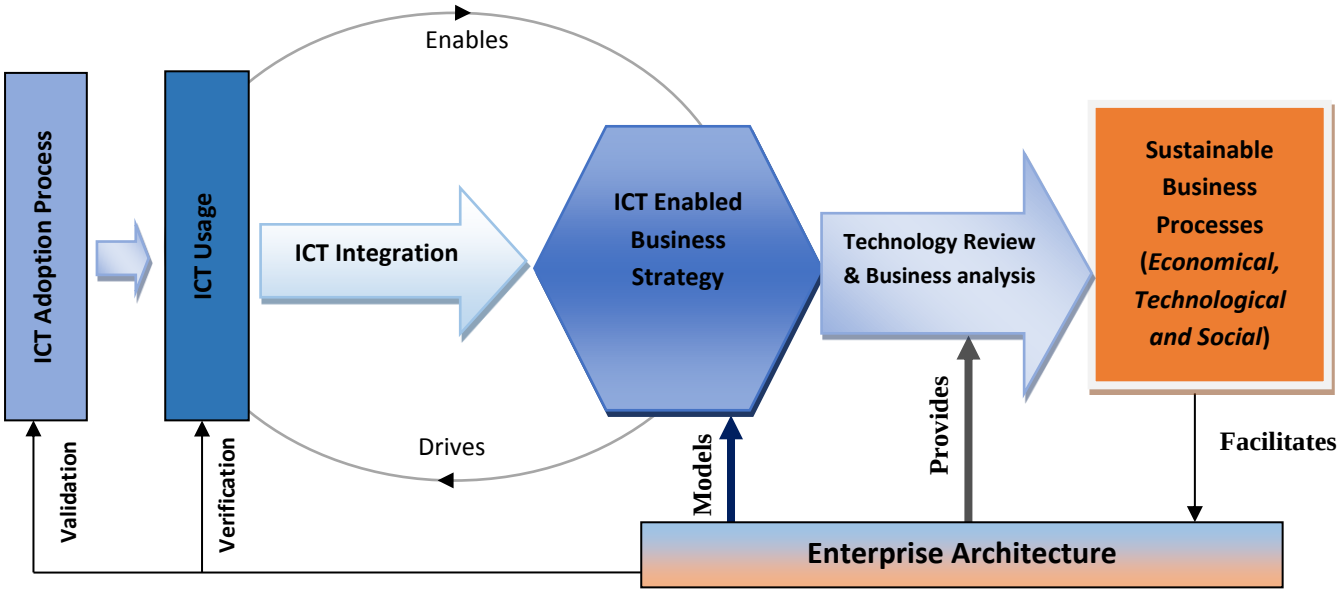

Figure 16: Proposed Model for ICT integration

4.5.7 Description of the proposed model.

The proposed model (figure below) begun with the assessment on the gaps (needs assessment) on ICT adoption and usage by SMEs. After understanding the needs of the SMEs and the owners, it was important to determine how ICTs can be used to enhance the business activities within the SME and subsequently enable business sustainability development processes. The gap analysis and user involvement acted as a spring board for the formulation of appropriate policies derived from the national ICT policy which in effect will guide the National Policy on ICT Business.

For the SMEs realize their objectives in ICT, some strategies (for example the National Fiber Optic) have been put in place in areas that have been found lacking: infrastructure, capacity building and content creation amongst others which will stimulate knowledge creation, skills development and ICT adoption. The main objective of the proposed model is to bring on board avenues where SME owners, directors and employees can be empowered to use technology to

improve on their workplace performance. The technology is an enabler to the various activities in the business process.

Innovation technological developments within the computer industry has given rise to a situation where ICT is now shaping business practice and the traditional premise is increasingly being questioned by management and technologists.

The SME's Enterprise Architecture Design helps to validate and verify the ICT adoption and usage within the SME. Enterprise Architecture also models ICT enabled business strategy and help to prove the reviews required for the technology reviews & business analysis. This is required in order to achieve the required sustainable business processes that will facilitate the continuous design of the firm's enterprise architecture.

4.5.8 Model Validation

In a bid to validate the performance of the proposed integration model, ten (10) respondents (that is, 4 SME owners, 3 SME directors and 3 selected employees from different SMEs) were given a demonstration of the model. They were asked to give their views about the model before given the questionnaire (Appendix "III") to fill. The model was tested for flow of the required elements for integration such as the adoption strategy, usage and integration processes of ICT into business. This was to find out if the suggested elements would be supported by the proposed model and if they would be in position to support the existing business processes in an SME.

The result of their position was favorable; they supported the proposed integration model for adaptation. The respondents were also given chance to ask any questions where they needed clarity on the model.

Their attitudes (question No. 10 in appendix "III") towards the proposed model acceptance showed that 80% of the respondents accepted the model, 10% did not accept the model while 10% reported not knowing what the model would offer.

4.6 Conclusion

This chapter highlighted findings of the study obtained from data collected with the use of questionnaires and interviews presented in line with research objectives. Data was presented using percentages, pie-charts, graphs and description. During the discussion of findings, reference was made to the reviewed literature.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

ICT is a wide subject which covers, amongst other things, telephones, mobile technologies, internet, computer usage and networks. ICT is a tool for global networking and can be used among others for marketing purposes and increasing the company presence on the web (market oriented ICT).

ICT believed to offer a promising and exiting way for organizations to meet various challenges of an ever changing environment in these present days. However, SMEs in developing countries always lag behind or are in doubt about adopting and integrating ICTs despite advantages, opportunities and their effectiveness.

This study was designed to explore and examine how ICT can help businesses (SMEs) become sustainable in today's market. The study involved twenty SMEs in which have revealed and confirmed some of the issues with regard to the uses of ICT as a competitive tool. All the owners who were interviewed have some basic ICT tools in their businesses and agree that technology plays an important part in their businesses.

The data gathering and analysis was done using the qualitative and quantitative methods, after collecting data using questionnaires, interviews and document reviews. The reason of using qualitative method in this study is that, there is little literature on this topic, especially in Uganda, and secondly, the sample of respondents was too small for pure quantitative research.

The subjects were all from Uganda and they meet the criterion that they should be the owner or manager of an SME, employees of those SMEs, and officials from institutions who are responsible for supporting SMEs. This group of respondents could have given us a better view

of ICT related issues in those SMEs. Many of respondents were happy to be involved in the sample size.

However, there were a number of challenges that the researcher faced in collecting the data, for instance some of the owner/managers were always busy and had no time to sit down for the interview. In such cases they were left with the questionnaires and followed up with a telephone interview. The researcher also had to email some questionnaires to the respondents of which some did not either had time to fill or failed to send it back after filling the questionnaires.

5.1 Summary of Findings

This study found that the basic ICT technologies such as emails, mobile/telephones and Internet are already available in most SMEs. The respondents agree that ICT is important and that it has an impact on their businesses in one way or another. The problem of lack of knowledge and expertise on all ICT aspects is the biggest barrier to competitive implementation of ICT to most businesses. This also leads to poor decision-making regarding ICT by the owners, lack of trust in the value and security of ICT, failure to take advantage of benefits that even simple technologies could give the business, and failure to adapt/use low-cost/no-cost software options.

The research showed that the key reasons for SMEs' failure to integrate ICT to their businesses are lack of knowledge to draw strategic plans and operational tools for business. Other challenges involved the high cost of latest technologies and most SMEs do not have permanent building to install these technologies if they were to invest in them.

The study, cited the opportunity for SMEs in expanding their geographical reach thus extending their customers and the increase in the customer services, ability to decrease cost and increase sales were also not left out as they seem to also be important, but on the other hand, the least

important perceived factor in the benefits of ICT for Ugandan SMEs was the benefits relating to provision of job creation. Moreover, the study confirmed and agreed that ICT in developing country like Uganda, perceived benefits to increase business profits by expansion. The ability to be reachable worldwide and the creation and effectiveness of supply chain of industries were the two main major benefits of SMEs adoption of ICT in Uganda.

Across all sizes of SMEs there is generally clear evidence of ICT, be it through, for example, the telephone, mobile/cellular phone, network, PC, laptop or tablet computer. Invariably, these and many other devices are considered integral to a firm, as they assist employees to, among other things:

- communicate with customers, partners and each other
- prepare and transmit documents and files, and
- Browse online and conduct a wide range of electronic transactions.

However, although such technology is considered integral to an organisation, frequently they are not harnessed to their fullest potential to improve its performance. Below four ways in which technology could be better applied are discussed.

1. To improve service delivery to customers

Generally, today's modern businesses pride themselves on being customer focused and consumer oriented, and many have invested in ensuring that their frontline staff are versed in customer service. However, frequently, little emphasis is given to improving service delivery and efficiency.

From private sector to government, much can be done to improve the customer's experience, and technology can be a major contributor to that transformation. Depending on the SME and the services being provided, it is likely that a detailed list

of improvements can be identified, but some likely to be on the list include: providing certain services online and introducing e-commerce facilities, which would, at the very least, offer customers a more convenient and efficient experience.

2. To improve SME's responsiveness to new developments

Although this point might seem most relevant to complex, goods-oriented businesses that operate in highly dynamic industries, this point is as applicable to small service-oriented SMEs. With regard to organizational responsiveness, ICT/technology can be a major aid in:

- processing data generated from a diverse range of channels (e.g. sales, web analytics, inventory control, customer feedback, industry data, etc.), which, if handled correctly, can flag developing issues and be the impetus for important strategic decisions; and
- facilitating the implementation of the decisions that have been made, through innovative and (hopefully) cost-effective options, some of which it might be possible to build in-house.

3. To change the basis of competition in your industry

Frequently in industry, a degree of complacency can occur when individual businesses no longer strive to distinguish themselves from their competitors. Certain equilibrium has been obtained and the businesses might be doing "okay". However, for SMEs that aim to grow market share; improve visibility; or wish to become the preferred vendor or service provider, ICT/technology can help them achieve those goals. Again, ICT/technology can be instrumental in:

- streamlining, optimizing and automating certain internal processes , which can reduce delays, human error, red tape, and the complexity of certain processes
- introducing operational efficiencies that can reduce costs and improve the bottom line
- implementing new measures that can ultimately add value to the customer and improve his or her experience with the organisation.

4. To improve SME's overall performance

Finally, and as a culmination of all earlier points, ICT can introduce a paradigm shift in SMEs by helping them to re-evaluate, among other things, what might be possible, how they can raise the bar and perform better, and what new services and quality standards should be introduced. This point may be particularly applicable to micro, small and medium sized businesses, many of which have limited resources, and might be looking for ways to take their operations to the next level.

One way of beginning the process of getting more out of the technology SMEs currently possesses, is not to focus on the devices themselves. Instead, the priority in the first instance should be to set the goals or desired outputs that you wish to realize, and to examine and understand current processes or project cycles in order to be in a position to determine how best they can be optimized with technology to achieve the desire outcomes.

In closing, ICT has long been touted as being able to introduce efficiencies into businesses, but too often the SMEs themselves do not actively introducing such measures. Depending on the expertise resident in the firm, some external assistance may be necessary to get the most of the current equipment. However, as the corporate world becomes even more fixated on profits and

savings, and competition increases across various sectors, a more considered investment to harness readily available ICT might be worth the inconvenience in the long term.

5.2 Conclusions

SMEs play an important role in the overall economy of a country; they contribute to the GDP and reduce unemployment especially in developing countries. Many governments around the world are pushing for SMEs to adopt ICT in order for them to survive in the knowledge economy; the Government of Uganda is no exception. The need for SMEs to adopt ICT is driven by governments, globalization, innovation, flexibility and competitive advantage.

The integration of ICT strategy to the business strategy is one that is essential in any business operation and for any size or sector of SMEs or organizations especially in obtaining a competitive advantage and being able to compete with larger national and multinational organizations. In this study, it was confirmed that from the literature review and the research findings that ICT not only serves on benefits and opportunities for SMEs, it also brings a number of barriers for SMEs if they are willing to integrate this technology successfully.

The research was based on the assumption that we are in the new economy known as the "knowledge economy", with ICT as the lifeblood. The most important assets in this new economy are knowledge, which is what we sell and buy. Businesses have invested a lot of money in ICT and have been exploiting it to be ahead of their competitors.

ICT is an enormous subject which covers, amongst others, telephones, mobile phones and related mobile technology, point of sale, systems, ERP solutions, internet, PCs and Networks. ICT is an enabler of global business networking and can be used in different ways, such as:

- General-user where its mainly used for administrative purposes

- Production-integration; where it is used to support business processes and production of goods and services.
- Market-oriented; where it is used for marketing purposes and increasing the company presence on the web.

When it comes to the values of ICT, it's believed that, depending on how it is implemented and used, it could be seen to add some competitive advantage to the business while other people believe that it does not add any value to the business (Lloyd Modimogale, 2010). Thus the manner in which ICT is integrated into an SME is very important because it will determine whether it will gain competitive advantage or not.

The adoption of ICT should take into consideration that SMEs are different and thus have different needs for ICT. It is important for an SME to adopt ICT solutions that are specific to its needs. Barriers that make it difficult for SMEs to adopt ICT are lack of knowledge about strategic use of ICT, lack of necessary IT skills, higher setup fees and power cuts. However, there is need to investigate these problems further more.

There is need for SMEs to take advantage of the emerging technologies to address various socio-economic and technological problems that range from connectivity problems to ICT skills needed. The mobile connectivity however, has helped to address the problems of bandwidth and availability of networks. This one area that SMEs can exploit to achieve their ICT needs in marketing and/or delivery of products and services.

The research has therefore indicated that, there is a need for SMEs to integrate ICT in order to become sustainable in business. Since ICT adds value and will be competitive tool when it forms part of the business strategy and when the necessary ICT skills and knowledge are with

the SMEs, there is therefore need for SMEs in Uganda to seriously consider implement more ICT, order to remain competitive in today's fast-moving global knowledge economy.

The proposed model in this study will help the SMEs integrate their business strategies with ICT strategy in order to come up with sustainable business processes. This will help them identify the requirements for the business that can help improve the performance of an SME in meeting it desired goals and objectives.

5.3 Recommendations

This study was a preliminary exploratory study to learn about aspect in the contribution of ICT in improving the performance of SMEs in business activities. Number of issues such as legal and regulatory interventions from the government, in the adoption of ICT needs further investigation. There is need for a more comprehensive approach needed to undertake this study given the wider range of ICT adoption and integration.

The following should therefore be adhered to in order to achieve the benefits presented by ICTs.

Firstly, the owner/manager and employees of SMEs need to become aware of and understand the benefits and the role of ICT within the SME. ICT therefore needs to be prioritized as a functional area so that SMEs could easily integrate it and utilize in business processes. As recommended by Kotler and Armstrong (2003), whom they stated that business strategy should be adopted to the new economy and further proposed that the three major drivers of the new economy are: digitization and connectivity (computer and networks such as intranet, Extranet and Internet); disintermediation and re-intermediation (new types of intermediaries such as click-only and click & mortar businesses); and customization and customerization (in which the New Economy revolves around information business). ICT culture should be built within

SMEs business, by continually exploring all the various and newest technological options with their possible benefits to the SMEs.

The government and professional trade organizations (such as Chamber of Commerce and Industry, Private Sector Foundation Uganda etc) should assist SMEs in development of different ICT roles and name them in such a way that everyone can relate to them with ease. The aim is to make technology easy and understandable so that everyone feels comfortable with it and applies it effectively.

Secondly, SMEs must establish ICT as a functional area and identify its roles, just like the functional areas of finance or human resources. This will help SMEs to recognize ICT as an important function that deserves to be taken seriously. Skills and experience are important aspects to be considered at the time of filling the roles of this functional area.

SMEs employ staff to fill the positions, but they should make sure that they get a person with the right qualifications and experience to do the job. If it happened that SME cannot afford to employ staff with the required skills, hiring a consultant to give advice and training could be an alternative; for this case the purpose should be to get a consulting company which understands both ICT and the business aspect. The recent study on ICT highlighted random decision making with regards to ICT as a problem that needs to be addressed in order to give SMEs competitive capability.

Thirdly, having a computer is not good enough, connecting it to the internet can bring SMEs closer to its clients and suppliers. This can reduce turnaround times and provide a delivery platform for goods and services. Today, almost everyone has a mobile phone, which can work as a platform for marketing or selling products.

Therefore, by considering the findings of this study, it is recommended that SMEs should start to adoption various new technologies, making sure that such technologies are aligned with their business objectives. SMEs need to explore emerging technologies such as inventory management software, customer relationship management (CRM) software, human resource management and mobile technologies etc. All this needs to be done at a strategic level, meaning that SMEs should employ the right people to assist in these studies and the implementation thereof, as discussed above.

Fourthly, SMEs can integrate ICT to make their businesses sustainable are following the following ways;

i. Identify and set up an ICT strategy for the business. This means a strategy of how technology will be used to help the business achieve its objectives and optimize it business processes. This would include choosing the type of technology; infrastructure and architecture that will best achieve business goals and become sustainable.
ii. Align the business strategy with the ICT strategy. This will enable the ICT strategy to support the business strategy, but ICT strategy should not run the business.
iii. The roles need to make ICT adoption process should be identified. The roles may include the drivers for ICT, the administrator or the maintainer. This also calls for SMEs to hire knowledgeable staff or consult with the professionals in the field of ICT.

Based on the findings of this study, it is also recommended that most of the marketing activities within SMEs should be based on ICT and a desire to make a relationship work. A technological partnership is a type of relationship which offers a natural linkage between the internal environment and the interaction process because it emphasizes how ICT, consumers and organizations are function together with a win-win interaction. Keegan (2002) posits that

marketing clearly is undergoing a revolution as a result of the explosion of ICT and the World Wide Web. The internet represents one of the most important key drivers of the ICT revolution.

Therefore, SMEs need to invest in or outsource analytical tools and skills in order to explore the information for potential benefits. This again reflects the need for knowledge and skills related to ICT.

Knowledge is the answer to decision making, therefore the owner/manager needs to be equipped with ICT knowledge or surrounded by knowledgeable ICT people. As it has been discussed above, SMEs need to establish ICT as a function, with ICT represented at the strategic level with input into decisions affecting the future direction of the business. There should be a dedicated person or group with the main aim of driving and looking after the technology needs of the SME, with the relevant powers to be able to execute such decisions.

Owner/manager can also use consulting agents to obtain information that can help in decision making. The challenge is to choose the right consultant with the appropriate technical and business experience, preferably an independent one with no association with any particular products. The important thing here is the ability to acquire the knowledge from consultant and transfer the same by training the SME staff.

Moreover, Ritchie and Brindley (2005), recommended that, in dealing with barriers to ICT adoption, the first step is to classify all the obstacles or stumbling blocks into impact areas, such as strategic, technological, or organizational and behavioral.

Therefore, the action plan which shows how to overcome grouped barriers should be in place. By grouping the obstacles SMEs can find that the organizational and behavioral barriers can be solved with relative simply, while solving technology related barriers might take time.

Finally, by overcoming organizational barriers, the internet can help conduct market research, expand knowledge of international markets and culture, and reduce the dependence on traditional agents and suppliers via a created virtual network of partners. Market research reports may be excessively expensive, while the same information can be retrieved directly from an internet website for free or a small payment. The creation and proper presentation of an internet website may be used in solving problems of product, which would enable SMEs to create global strategies of a market niche rather than strategies directed aside.

5.4 Suggestion for Further Research

The research study mostly concentrated on the SMEs' internal business processes influencing ICT adoption and integration. However, there are a number of external factors that would affect business institutions directly or indirectly that call for further research. For instance the cost of ICT infrastructure may affect how the owners make their decisions to integrate ICT in their business strategies.

A number of ICT in business policies remain only on draft form and not explored by most SMEs and government. Further study in this area would enable SMEs improve the ICT adoption, usage and integration in business processes on the basis of standard and sound national goals and values.

The problems of measuring productivity impact of ICTs on SMEs should be done to determine the extent in which ICT affects the productivity of SMEs using ICT as a tool for running their businesses.

There is also a need to carryout research to isolate the impacts of ICTs from other micro and macro economic factors that affect productivity and competitive advantage of the SMEs.

5.5 Limitations of the research

As with any research, the findings must be measured in light of its limitations. The following limitations were observed in the study:

1. The researcher could not conduct a comprehensive quantitative research due to unlimited sources of funds for doing the research.
2. The researcher was confined in Lira town majorly. Data was collected only from SMEs operating within Lira town.
3. Lira district being one places affected by the insurgencies, is still developing and the penetration of ICT is still low as people are still adapting to the new trends of the business.
4. The research did not interview the district officials who represent the government.
5. Most of the data analysis was done locally without using the more advance tools for data analysis because the research lacked the knowledge to use such tools and time was not enough to learn them faster.
6. There might be the possibility that the respondents of the questionnaire could have interpreted the questions in their own understanding as opposed to the researcher's view(s).
7. The data was collected qualitatively; hence, the main focus of the study was a small selection of participants from the population for interviews and focus group sessions.
8. The topic of the study had a lot of broad issues; the researcher was constrained by time to explore all the available resources that concerned sustainability.

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Appendices

Appendix I: Research Questionnaire

MSC ICT MANAGEMENT, POLICY AND ARCHITECTURAL DESIGN

RESEARCH QUESTIONNAIRE

Dear Sir/Madam,

I want to thank you for accepting to participate in this study. My name is **Adieku Raphael** a Master of Science in ICT management, and Policy and Architectural Design student at Uganda Martyrs University. I am carrying out a study on how ICT can be integrated into SMEs for Business survival. This study is for academic purposes only and all responses will be kept confidential.

Thank you.

Section One: General Information. ***Please choose one***

1. What is your Gender?

◯ Male ◯ Female

2. Please specify your age bracket. *Tick one*

◯ 18 – 25 ◯ 26 – 35 ◯ 36 – 45 ◯ 46 – 50 ◯ Above 50

3. What is your Education Level?

◯ Certificate ◯ Diploma ◯ Degree ◯ Masters/Postgraduate

◯ PhD ◯ Other (*Specify)*: ……

4. What is your position in this firm?

◯ Managerial ◯ Administrative ◯ General Staff ◯ Support Staff

◯ Other (Specify) ……....

5. What is your firm annual turnover? *(Tick only one.)*

◯ Below 10m ◯ 10 m- 40 m ◯ 40m – 70m ◯ 70m – 100m ◯ above 100m

Section two: About the firm/organization

6. What is the type of your firm/Organization/SME? (*Tick only one that apply)*

◯ Engineering,

◯ Grocery/Food processing

◯ Financial services

◯ Hotel and Accommodation, Restaurant

◯ Tours and Travel, Transport

◯ Chemicals/Electrical/Electronic products

◯ Construction, Real Estate and renting services

◯ Pharmaceuticals

◯ IT services and Communication

◯ Textile and clothing

◯ Manufacturing, Fabrication

◯ Other (*please specify*)……

7. How many employees does your firm have? *Pick One*

1 - 5☐ 6 - 10☐ 11 - 50 ☐ 51 - 150 ☐ Over >250 ☐

8. Does your firm use ICT in for its business?

◯ Yes (*go to section 3*). ◯ No (*go to section 5*).

Section three: Current ICT Usage

9. Which of the following ICT tools does your firm use? (*Tick all that Apply)*

☐ Computers ☐ Internet/Modems ☐ Mobile Phones ☐ Other …….

10. Which of the following ICT applications does your firm use? (*Tick all that apply*)

☐ Email

☐ Internet (External Websites)

☐ Video conferencing (E.g. Skype)

☐ E-commerce/E-business (Online shop)

☐ Social Media (Facebook, Twitter, LinkedIn etc)

☐ Intranet (Internal Website)

☐ Computerized systems such as Accounting (Payroll), Management (Human Resources, Supply chain)

☐ Control Systems (E.g. Tracking, monitoring etc)

☐ Data Sharing Systems (E.g. Peer-to-peer network, client-server network)

☐ Office Applications (Word, Excel, Desktop publishing)

☐ I don't know

☐ Other (*Please Specify*) ……..

Section Four: ICT Investments and Impact

11. Does your firm have a documented ICT strategy/plan?

◯ Yes ◯ No ◯ I don't know

12. Is there any ICT policy in place that you use in this organization?

◯ Yes ◯ No ◯ I don't know

13. If your answer is yes in above question, which of the areas is addressed in the ICT policy of your firm? (Tick all that Apply)

☐ ICT Strategy ☐ Procurement of Resources ☐ Usage of computers

☐ Hire of ICT staff ☐ Information Sharing ☐ Information Security

14. Which of the following is considered the benefits of ICT on your firm? *(Tick all that apply)*

☐ It's helping the firm access new sales opportunities.

☐ It makes the business become sustainable.

☐ It helps the firm become competitive.

☐ It's helping the firm improve customer relations.

☐ It's helping the firm improve product/service delivery to its customers.

☐ It's helping the firm improve supplier/stakeholder relations.

☐ It's helping in making the employees more productive.

☐ It's helping in keeping better control of the firm's finances

15. What sort of support do you think government agencies could provide that would help firms like yours get the most out of ICT?

☐ Information on the web about ICT

☐ Workshops, seminars or other events about ICT

☐ Demonstration facilities

☐ Free review/audits of businesses' ICT systems

☐ Support in training staff

☐ Grants for equipments or software

☐ Tax breaks for ICT equipments or software

☐ Other *(please specify)*……

16. What changes has ICT adoption brought to the performance of this firm?

☐ Cost Reduction
☐ Increase in inventory control
☐ Time saving
☐ Improvement in brand awareness
☐ Increase in overall business productivity
☐ No Effect/result

Section Five: Non-ICT Usage

17. Please give reasons why you do not use ICT in your firm. (*Tick all that apply*)

☐ Not needed for the business

☐ Too expensive

☐ Lack of time (management or staff)

☐ Lack of skills (management or staff)

☐ Uncertainty over the benefits to the business

☐ Concern over the integration with existing systems

☐ Reluctance to change (management or staff)

☐ Security concerns (viruses, hackers, etc.)

☐ Low levels of IT awareness/understanding of managers

☐ Other (please specify): ……

18. Would you consider this firm adopts ICT in future?

◯ Yes ◯ No ◯ I don't know

Thank you for your time

Appendix II: Interview guide questions

Interview Guide Questions for SMEs (*Questions for Owners/Managers*)

Section 1: Background of the Organization

1. Where do you want to see this firm in the next five years?
2. How many employees do you have in your company?
3. What is your target market?
4. How has your target market changed over the years?
5. Who are your competitors?
6. Does the organization/firm have any ICT policies in place?
7. Do employees abide by the ICT policies?

Section 2: Questions on Decision making/Implementation of ICT

1. Do you use ICT in the organization?
2. What were the major reasons/drivers/motivators for your decision to start using ICT for business in your firm?
3. What were the inhibitors to the adoption process?
4. What challenges have you faced/do you face as you use ICT??

Section 3: Questions on ICT Evaluation after adoption

1. What are the impacts of ICT on your company's organizational performance?
2. Are there any factor(s) affecting the effective utilization ICT in your firm?
3. Would you consider adopting more sophisticated/advanced ICTs in the future?
4. Are there any drawbacks associated with the use of ICT in your company?
5. From your point of view, what factors contribute to the success of business when using ICT?

Section 4: Questions on Business Sustainability

1. How would you like see the performance of this company in years to come?

2. Are there any strategies (ICTs) that you have set aside to improve on the performance to achieve you sustainability goals/objectives?

Appendix III: Model validation Questionnaire

Questionnaire to validate
The proposed Model for Integrating ICT into SMEs for Business Sustainability

1. Do you think the proposed model will improve existing SMEs business activities?

   Yes ☐ No ☐

2. How would you rate the proposed model in relation to the integration of ICT to SMEs?

   Poor ☐ Good ☐ Average ☐

3. Do you think the model would help ensure better ICT adoption strategies?

   Yes ☐ No ☐

4. Is involving all stakeholders in the ICT adoption important?

   Yes ☐ No ☐

5. The proposed model has four key areas to consider. Select the areas that you believe to be relevant to ICT integration.

   Adoption ☐ Usage ☐ntegration ☐ Enterprise Architecture ☐

6. Would you propose to have another area added to the model? Why?
   ……
   ……
   ……
7. Would you propose to remove a specific area from the framework? Why?
   ……
   ……
8. The model assumes that there is need to validate the adoption of ICT and verify the ICT usage by the SME using the enterprise architecture. Do you think that is only requirement needed in the model?

   Yes ☐ No ☐

9. Would you suggest any other requirement other than the ones mentioned in 8 above
   ……
   ……
10. What is your attitude towards the proposed model?

    Poor ☐ Good ☐ Very good ☐ Excellent ☐