The Adoption of e-business Technologies and Processes in Nigerian Small Business Enterprises

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Abstract

Small businesses are often considered important to a nation's economy. In Nigeria, the small business sector contributes about 48% to the GDP, and there is an increasing effort to support the small business sector as a way of combatting societal ills.

Within the last decade, there has been a global increase in the use of e-business by both large and small companies. Today, it is generally acknowledged that e-business provides a range of opportunities for small businesses to operate and compete effectively; however, in developing countries such as Nigeria, there is very limited research on e-business adoption in the small business sector.

This thesis examines the adoption of e-business technologies and processes in Nigerian small businesses. Using an inductive approach, informed by a case study strategy, a longitudinal study of six small businesses in Lagos, Nigeria was conducted. Data was collected using interviews and questionnaires, and both thematic analysis and framework analysis were utilised to analyse the cases.

Research results indicate that small businesses in Nigeria are utilising e-business systems. Key issues impacting upon e-business adoption and eight critical influencing factors that affect adoption were identified. Based on the case study findings, a framework for the development and implementation of e-business strategy in the Nigerian small business sector was developed and validated. This framework will be of value to small business owners involved in e-business operations, and also provides a basis for follow-up research in developing world countries.

Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

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Dedication

This thesis is dedicated to my parents, Mr and Mrs P.O. Olayinka, thanks for all the support and encouragement.

List of Publications

The following publications have been a result of this research.

Olayinka, O., Wynn, M. G. and Bechkoum, K. (2016a) 'E-business Adoption in Nigerian Small Business Enterprises', *International Journal On Advances in Systems and Measurements*, 9(4), pp. 230–241.

Olayinka, O., Wynn, M. G. and Bechkoum, K. (2016b) 'Process Analysis and e-Business Adoption in Nigerian SBEs: A Report on Case Study Research', in *eKNOW 2016, The Eighth International Conference on Information, Process, and Knowledge Management*, pp. 57–63.

Acronyms

API	Application Programming Interface
B2B	Business-to-Business
BBC	British Broadcasting Corporation
BSc	Bachelor of Science
CBN	Central Bank of Nigeria
CEO	Chief Executive Officer
CMS	Content Management System
CNBC	Consumer News and Business Channel
CNN	Cable News Network
CPIT	Connect, Publish, Interact and Transform
CRM	Customer Relationship Management
CSV	Comma Separated Values
CV	Curriculum Vitae
DHL	Dalsey Hillblom Lynn
DIT	Diffusion of Innovation
DTI	Department of Trade and Industry
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
GB	Gigabytes
GDP	Gross Domestic Product
HND	Higher National Diploma

HR	Human Resources
HTML	Hypertext Mark-up Language
IBM	International Business Machines
ICAN	Institute of Chartered Accountants of Nigeria
ICT	Information and Communication Technology
IFC	International Finance Corporation
IS	Information Systems
ISP	Internet Service Provider
IT	Information Technology
ITIL	Information Technology Infrastructure Library
IVR	Interactive Voice Response
KVA	Kilo Volt Ampere
LMS	Learning Management System
MBA	Master of Business Administration
MD	Managing Director
MS	Microsoft
MSME	Micro, Small & Medium Enterprises
NAPB	Nigerian Agriculture People's Bank
NISER	Nigerian Institute for Social and Economic Research
NITDA	National Information Technology Development Agency
OECD	Organisation for Economic Co-operation and Development
PHP	Hypertext Pre-processor
POS	Point of Sale

REST   Representational state transfer

RFP   Request for Proposal

SAPP   Specify goals, Analyse current situation, Prioritise action areas, Plan
strategy implementation

SBE   Small Business Enterprise

SCR   Status assessment, Cost benefit analysis and Review goals &
objectives

SME   Small and Medium Enterprise

SMEDAN   Small and Medium Enterprises Development Agency of Nigeria

SMS   Short Messaging Service

SOAP   Simple Object Access Protocol

SOG   Stages of Growth

SQL   Structured Query Language

STEER   Startup, Trial, Expand, Embed and Review

TAM   Technology Acceptance Model

TOE   Technology Organization Environment

UK   United Kingdom

UPS   Uninterrupted Power Supply

US   United States

USA   United Stated of America

UTAUT   Unified theory of acceptance and use of technology

VPS   Virtual Private Server

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Chapter One

Introduction

Chapter One Introduction

1.1   Introduction

Advancements in technology have changed how businesses operate. For small, medium and large businesses, the deployment of IT and e-business systems has become a necessity (Gordijn and Akkermans, 2001; Rahayu and Day, 2015). Today, the increased use of the internet, social media, smartphones and several other technologies by customers, has created an environment where the adoption and deployment of e-business strategies and technologies can no longer be overlooked by companies in order to compete and succeed (Ongori, 2009; Bocij, Greasley and Hickie, 2015).

This research focuses on e-business adoption in the context of Nigerian Small Business Enterprises (SBEs), which are defined as companies with less than fifty employees. In the following section, the context and problem statement of this research are defined; then, the purpose and aim of the study are presented. The research objectives are elucidated in the next section, while the chapter concludes with a presentation of the thesis structure.

1.2   Problem Statement

In developed countries, the use of the internet technologies for business purposes has transformed small businesses (Putra and Hasibuan, 2015) and yielded productivity gains (Prananto, McKay and Marshall, 2003). In developing countries like Nigeria, the same level of success has not been widely reported.

Nevertheless the cost of the internet is becoming affordable, and the small business sector, which contributes immensely to the economy of Nigeria, is now beginning to adopt internet technologies and e-business systems (Agwu, 2014; Erumi-Esin and Heeks, 2015). However, there is limited knowledge of the factors that influence successful adoption.

For small businesses, there currently exists no proven strategy, model or framework to aid the adoption of e-business, and thereby increase the chances of success for these businesses. Some of these businesses operate with an ad-hoc approach with

no clarity of direction in the early stages of adoption (Prananto, McKay and Marshall, 2003; Chaffey, 2009). This research addresses the issue by investigating the critical factors which affect adoption and develops a framework that can be used by SBEs in the adoption of e-business.

1.3   Purpose of the Research

About twenty years ago, the application of internet technologies to business processes was mainly implemented by large corporations (Chiemeke and Evwiekpaefe, 2011). During that time, most small businesses chose not to invest because of cost, lack of technical knowhow and limited perceived value gain from its deployment (Apulu, Latham and Moreton, 2013). As a result of increased internet penetration and increased availability of handhelds devices, today's business environment has been transformed (Chatzoglou and Chatzoudes, 2016).

The global internet population is estimated at 4.57 billion (Statista, 2020), and global online retail sales in 2019 were $3.46 trillion (Young, 2019). This digital economy has become attractive and difficult to overlook for small businesses who wish to compete in today's business landscape (Putra and Hasibuan, 2015). E-business, which is described as the use of internet technologies to improve business processes (Chaffey, 2009), has quickly become the standard way of operating in many companies in developed countries such as United Kingdom, Italy and United States of America (Oliveira and Martins, 2010b). Various governments have also put into effect initiatives and programs to enable medium-sized and small businesses to quickly adopt and derive value from e-business (Chatzoglou and Chatzoudes, 2016). The same, however, has not been the case for several developing countries such as Nigeria, which up until recently, had very low internet penetration and a low person to computer ratio (Chinn and Fairlie, 2010).

In developed countries, research has shown that large enterprises, as well as SBEs, have successfully adopted e-business technologies and processes to gain competitive advantage (Wagner, Fillis and Johansson, 2003), transform business models (Oliveira and Martins, 2011), and improve relationships with customers and suppliers (Sharma and Ranga, 2014). In developing countries such as Nigeria, there

is a dearth of research on the adoption of e-business technologies and processes in SBEs.

With a population of 206.14 million (Plecher, 2019) and a GDP of $397.27 billion in 2018 (The World Bank, 2019), Nigeria is one of the biggest economies in Africa. The small business sector in Nigeria contributes 48.47% to its GDP and comprises over 90% of the businesses in the country (SMEDAN, 2013). Many SBEs in Nigeria are attracted to the adoption of e-business technologies mainly as a way to sell to international markets (Agwu and Murray, 2015), sell to geographically dispersed individuals (Agwu and Murray, 2014), improve business processes (Avgerou, Hayes and La Rovere, 2016) and interact with customers (Apulu, Latham and Moreton, 2013). Research into e-business adoption and deployment in SBEs in Nigeria has, however, been limited.

Several recent studies have focused on the adoption of e-business technology and processes by small-to-medium sized enterprises (SMEs) in developed countries - for example, in the UK (Parker and Castleman, 2007; Wynn, Turner and Lau, 2013), in the USA (Kim, Lee and Lee, 2013), in Australia (Prananto, Mckay and Marshall, 2004), and in Canada (Ifinedo, 2011). The definition of SMEs, however, varies from country to country (Ayyagari, Beck and Demirguc-Kunt, 2007). The European Commission defines SMEs as business with less than 250 employees and a turnover of no more than 50 million Euros or an annual balance sheet total not exceeding 43 million Euros (European Commission, 2015). In Canada, SMEs are businesses with less than 500 employees (Rispoli, Leung and Gibson, 2011). In Nigeria, the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) defines SMEs as companies with less than 200 employees and less than 500 Million Naira worth of assets excluding land and buildings (SMEDAN, 2014).

There is, however, considerable debate in the existing literature on the value and productivity gain e-business has to offer to SBEs (Basu and Muylle, 2011). Current and potential customers of SBEs in Nigeria are not only equipped with desktop computers and laptops but also with mobile devices such as smartphones and tablets, which has increased demand for e-business capabilities. This research aims to investigate the adoption of e-business technologies and processes in Nigerian

SBEs and identify the key issues impacting upon their current and future deployment.

1.4   Research Objectives

E-business has the potential to transform businesses and increase revenue as seen with several large organisations, multinationals, and as indicated in numerous studies in developed countries (Zhu, Kraemer and Xu, 2006; Chen and Holsapple, 2013). The dynamics of use, culture and challenges often differ from country to country (Adebanjo *et al.*, 2016) and as a result, this research sets out to achieve the following objectives:

- Investigate the extent to which Nigerian SBEs are adopting e-business systems and processes.
- Identify the key issues impacting upon the adoption of e-business technology and processes in Nigerian SBEs.
- Develop a framework that can be applied to aid Nigerian SBEs in the development and implementation of an e-business strategy.

1.5   Thesis Structure

This thesis comprises eight chapters. **Chapter One** provides an introduction to the research, its objectives and purpose of the study. In **Chapter Two**, literature relevant to this research area is reviewed. The chapter critically reviews the literature on e-business adoption, use of IT systems in Nigeria, SBEs in Nigeria and e-business strategy, models and frameworks.

Chapter Three discusses the essentials of an e-business framework, derived from the literature, and presents a conceptual framework for the deployment and analysis of e-business in Nigerian SBEs. In **Chapter Four,** the research methodology, including the methods of data collection and analysis, is presented. This chapter also provides an overview of companies studied, description of interview structure and ethical considerations of the approach.

In **Chapter Five**, key findings from the companies are presented, and a general descriptive analysis of the data collected from the interviews, questionnaires and observations is discussed. **Chapter Six** provides a detailed analysis of data collected from each organisation involved in the research and presents critical factors that influence the adoption of e-business.

In **Chapter Seven**, an overview of the SAPP-STEER-SCR e-business strategy framework is presented, and the various phases and stages are discussed in detail. **Chapter Eight** concludes the thesis and presents a summary of findings, recommendations and limitations of the study. This chapter also presents summary answers to the research objectives which this study set out to investigate.

Chapter Two

Literature Review

Chapter Two Literature Review

2.1   Introduction

As noted in chapter 1, e-business can be described as the use of internet technologies to transform business processes in organisations (Chaffey, 2007). The term e-business has been defined by various scholars over the years (Sawhney and Zabin, 2001; Zhu, Kraemer and Xu, 2006). This chapter provides a review of the various definitions of e-business and related terms and an appropriate definition for this research is selected.

Within the last decade, there has been a general increase in the use of e-business by both large and small corporations (Basu and Muylle, 2011; Agwu, 2014; Zabukovsek *et al.*, 2015) and today, it has become the norm to use e-business in most industries in order to remain competitive (Prananto, Mckay and Marshall, 2004; Olayinka, Wynn and Bechkoum, 2016b) as well as reach a global audience (Wu, Mahajan and Balasubramanian, 2003; Oliveira and Martins, 2010b). This chapter reviews existing literature on e-business adoption and discusses some of the benefits and motivation for e-business technology and process deployment. The benefits and motivation of e-business adoption in SBEs are discussed and reviewed in detail.

While the potential of e-business to transform businesses has motivated adoption in many developed countries (Daniel, Wilson and Myers, 2002; Akeel, Wynn and Zhang, 2013), existing literature on the adoption of e-business in developing countries has highlighted some challenges and adoption barriers (Erumi-Esin and Heeks, 2015). This chapter reviews e-business adoption from both a developed and developing countries' perspective and discusses important elements of adoption. Factors affecting e-business adoption, challenges faced and general adoption barriers are also critically examined.

Next, a review of existing literature on SBEs in Nigeria is presented. Detailed analysis of what makes up SBEs in Nigeria, their characteristics and contribution to the economy in terms of GDP contribution, employment and societal contribution are discussed. The chapter also reviews the Nigerian economy and its peculiarities, as well existing literature concerning the use of IT systems and e-business in SBEs in Nigeria.

The chapter also reviews existing literature on e-business models and frameworks. The need for e-business strategy, models and frameworks is discussed while relevant academic publications on e-business strategy and frameworks are explored.

2.2   E-business Definition

There has been some debate amongst academics and information system (IS) consultants on the meaning of e-business and e-commerce (Mendonca, 2003; Laudon and Traver, 2011). Over the years, the term e-business has meant different things to different people and several researchers have attempted to define e-business. Some definitions, however, seem to overlap with e-commerce and to clarify the meaning of e-business in this context, the definition of e-commerce and some of its history is first examined.

The term e-commerce came into popular use in 1995 when Amazon - the world's largest bookstore - was launched (Tian and Stewart, 2007). Today, the internet has changed the way we buy and sell goods and services. E-commerce is now part of our everyday lives, as individuals and businesses now rely on it for the daily transaction of goods and services. Online sales from retailers, banks, insurance and the travel industry have increased significantly and this digital economy contributed about 21.4% to UK's GDP in 2019 (Office for National Statistics, 2020).

According to Chaffey (2014), e-commerce is often used to describe buying and selling using the internet. Turban (2010) also defines e-commerce as "the process of buying, selling, or exchanging products, services and information via computer networks". While these two definitions consider e-commerce to involve only commercial activities, Rayport and Jaworski (2000) argue that e-commerce involves all electronic based organisational activities which some would refer to as e-business (Laudon and Traver, 2011; Bocij, Greasley and Hickie, 2015).

As consumers' reliance on the internet increased, e-commerce gradually became one of the most discussed topics in the world (Daniel, Wilson and Myers, 2002). Existing business models were disrupted (Chaffey, 2014), new business models were created (Mendonca, 2003; Laudon and Traver, 2011) and some of the enabling technologies of e-commerce started to be used internally in organisations to improve business processes (Bocij, Greasley and Hickie, 2015).

The term e-business was initially crafted by IBM in 1996 as part of their marketing campaign and it was defined as "the transformation of key business processes through the use of the internet" (Chaffey, 2007; Schneider, 2014). According to Chaffey (2014), e-business generally aims to improve the effectiveness and competitiveness of an organisation by deploying IT equipment throughout the organisation. Beynon-Davies (2004) defines e-business as "the utilisation of the information and communication technology to support all the activities of a business".

According to Turban *et al.* (2017), e-business "is a broader definition of e-commerce, which is not just the buying and selling of goods and services, but also servicing customers, collaborating with business partner and conducting electronic transactions with an organisation". In similar vein, Zhu, Kraemer and Xu (2003) assert that "e-business facilitates major business processes along the value chain, which leads to the common constituents of e-business – web marketing, online selling, online procurement and service and support". Laudon and Laudon (2017) define e-business "as the use of digital technology and the internet to execute the major business processes in the enterprise".

For this thesis, e-business is taken to mean the deployment of internet technologies to enhance business processes, in line with the definition of Bocij, Greasley and Hickie (2015). While the broader definition of e-business by Chaffey (2014) was considered for this research, the researcher felt that quite a number of studies already existed on the use of IT systems by small businesses in Nigeria and this particular research is more interested in the adoption of internet technologies in these type of businesses. Also, although some literature refers to e-commerce and e-business interchangeably, the definition of e-business for this thesis takes the position that e-commerce and on-line interaction with clients/customers, are some of the activities that constitute e-business.

2.3   E-business Adoption

The commercialisation of the internet has brought about an increased use of information technology in business (Chen and Holsapple, 2013). According to a 2012 study conducted by the Organization for Economic Cooperation and Development

(OECD), over 95% of companies in two thirds of OECD countries use the internet for various business activities (OECD, 2012). Today, an increasing number of multinationals and large companies have automated their entire business processes using internet based technologies; simple activities such as leave booking and room reservation have now been moved to online portals (Oliveira and Martins, 2010b; Taylor, 2015). Empirical evidence has also shown that e-business adoption could be regarded as a strategy for organisations to compete and outperform competition (Wagner, Fillis and Johansson, 2003; Oliveira and Martins, 2010b).

Research has shown that organisations have adopted e-business to significantly change how they operate (Putra and Hasibuan, 2015), improve their business processes (Basu and Muylle, 2011), increase sales (Olayinka, Wynn and Bechkoum, 2016b) and reach global markets (Taylor and Murphy, 2004). The twenty first century customer is not only equipped with laptop and desktop computers, but a wide range of mobile and handheld devices such as a IPads, tablets and smartphones; and the increased use of these devices has allowed a growing number of organisations to employ e-business technologies and processes mainly to improve relationships with customers and suppliers (OECD, 2012; Janita and Chong, 2013).

In this era of globalising economies, many SMEs are making use of e-business to serve customers in geographically dispersed locations and are becoming more internationally focused (Savrul, Incekara and Sener, 2014). Research has shown that SMEs are not being left behind in the adoption of e-business and in fact, e-business in SMEs has moved from a 'nice to have', to a requirement in order to transact business with some large companies and government establishments (Afolayan *et al.*, 2015; Adebanjo *et al.*, 2016). As indicated by Seyal and Rahman (2013) in their study on Bruneian SMEs, businesses adopt e-business in order to increase sales, improve decision making, improve customer service, provide better access to information and compete effectively. E-business researchers such as Heeks (2002), Levy and Powell (2003), Wagner, Fillis and Johansson (2003) and Fillis, Johannson and Wagner (2004) have explored the benefits and motivation of e-business in both large and small organisations with various unique factors identified. Irma, Chong and Ram (2016), makes it clear that top management buy-in into e-business is one of the main factors that affect e-business adoption and its success in SMEs.

Technology adoption theories such as the Technology Organization Environment Framework (TOE) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have been applied to study e-business adoption with varying results, identified by researches such as Zhu, Kraemer and Xu (2002), Rahayu and Day (2015) and Erumi-Esin and Heeks (2015). Specific aspects of e-business, such as the challenges faced by e-business users (Olatokun and Bankole, 2011), factors responsible for e-business adoption (Windrum *et al.*, 2002; Oliveira and Martins, 2010b; Molla and Licker, 2014), as well as drivers and barriers of e-business adoption in both developed and developing countries (Dubelaar, Sohal and Savic, 2005) have been explored. Researchers such as Oliveira and Martins (2010a) , Zhu, Kraemer and Xu (2003) and Jahanshahi, Zhang and Brem (2013) have also conducted studies across multiple countries, while other studies have been industry specific (Zhu and Kraemer, 2005; Chen, Ruikar and Carrillo, 2013), sector specific (Daniel, Wilson and Myers, 2002; Janita and Chong, 2013), and, in some cases, gender specific (Erumi-Esin and Heeks, 2015). Limited research work has, however, been done to investigate the extent of e-business usage in SBEs in developing countries.

2.3.1 E-business Adoption in Developed Countries

Over the years, the adoption of e-business in developed countries has significantly increased in both large and small scale organisations (Oliveira and Martins, 2010a). In Industries such as supply chain and retail, large organisations often insist on some form of electronic invoicing and communication as a requirement in order to trade with smaller servicing firms (Basu and Muylle, 2011; Afolayan *et al*., 2015).

For several years, with the objective of understanding e-business adoption and possibly applying learnings to other cities and locations, researchers and e-business consultants have studied e-business with various scopes and focus. In the United Kingdom, United States, China and Australia, their respective governments put together initiatives and programmes to overcome e-business adoption barriers and increase e-business adoption particularly for SMEs (Lawson *et al.*, 2003; Taylor and Murphy, 2004) whereas, in some other countries, the focus on the digital economy and support by the government to increase e-business adoption for companies has been significantly lower.

Daniel, Wilson and Myers (2002) investigated the use of e-commerce in SMEs in the United Kingdom. By exploring the level and sequence of adoption, the study set out to understand e-commerce adoption patterns beyond general statistics. Using mailed questionnaires from 678 SMEs, their research identified 4 unique clusters of adoption namely - developers (companies at the start of e-commerce), communicators (companies using email and web for business information), web presence (companies using the web for product information) and transactors (companies accepting orders online and implementing online payment). These unique clusters represent a series of sequential stages SMEs go through when adopting e-commerce. The research, emphasises that the current stage of adoption of a company will vary based on relative variables at industry and organisational level.

In the United States, Vlosky and Smith (2003) researched e-business adoption and use in the hardwood lumber industry. Using data from a mail survey to 1,700 members of National Hardwood Lumber Association, the research explored implementation strategies, success, benefits and impediments of e-business in the hardwood lumber industry. With a 12% response rate, they identified that over 50% of the companies studied made use of e-business and that these companies had corporate strategy as a key driver to e-business adoption. With respect to the purpose of adoption, their research identified that e-business was mainly used for communication with customers; 13% used emails for sending and receiving order status notifications, while only 3% of respondents used email for sending business documents and invoicing.

Balocco, Andreoni and Rangone (2008) also researched the adoption of e-business in SMEs in Italian industrial districts. Their research focused on two important districts with a high volume of export - the textile district in Como and the wood/furniture district in Brianza. Using a qualitative approach and a mixture of surveys and interviews as tools, their research focused on getting an overview of e-business adoption in the sectors as well as analysing e-business projects already implemented. 169 survey responses were received and 15 interviews with top management of SMEs were conducted. Their research identified that each sector has specific e-business uses and that the improvement in effectiveness and efficiency of interaction between various actors of the supply chain is an opportunity

for organisations to derive value from e-business. As their research focused on SMEs, they identified awareness and lack of IT-Know-How as some of the key obstacles for e-business adoption in SMEs.

Prananto, Mckay and Marshall (2004) also researched e-business adoption in Australian SMEs. They examined the progression of e-business in 8 SMEs using a stage model developed in previous research (Prananto, McKay and Marshall, 2003). Their research also studied the issues, barriers and challenges that affect progress of an e-business initiative. By using interpretive qualitative case studies to gain insights and in-depth information on e-business progress in organisations, they identified that perceived value and management commitment are key issues that affect e-business progress in any organisation. From their research, it was clear that when results are derived from e-business initiatives, it encourages further investment from the management. This clearly resonates with the ideas of Irma, Chong and Ram (2016) that owner-manager buy-in is essential for e-business success. Other challenges identified by their research include cost, skills/staff and building the IT infrastructure.

Zhu, Kraemer and Xu (2003) also researched e-business adoption in European firms. Their research focused on a cross country assessment of the facilitators and inhibitors of adoption. Using survey data from 3,100 businesses and 7,500 customers in eight European countries, they developed a conceptual model based on the TOE framework and identified that technology competence, firm scope and size, consumer readiness and competitive pressure are important adoption drivers while trading partner readiness is a significant inhibitor. Their research also indicated that as e-business intensity increases, consumer readiness and lack of trading partner becomes less important but competitive pressure remains important.

Using responses from questionnaires distributed to 600 companies with 26.84% response rate, Chatzoglou and Chatzoudes (2016) investigated the factors affecting e-business adoption decisions in Greece. In similar fashion to Zhu, Kraemer and Xu (2003), the study identified firm size, firm scope, IT infrastructure and internet skills to be key drivers that affect adoption. By making use of linear regression, exploratory analysis and structural equation modelling, their research indicated that CEOs

knowledge, adoption cost and competitive pressure did not seem to affect e-business adoption.

Jones, Beynon-Davies and Muir (2003) researched the e-business barriers to growth in the SME sector in Wales. Using a quantitative approach, a survey of about 1,100 SME members of the Cardiff chamber of Commerce was taken and the study specifically focused on identifying significance of key barriers influencing adoption such as lack of financial resources, security concerns, lack of personnel and insufficient education on e-business implementation; that had been identified in previous research. The results suggest that SMEs face unique challenges in comparison with larger companies when taking up e-business and that time available to divert to e-business operation and finance significantly affect the uptake of e-business by SMEs.

Wynn *et al.* (2016) investigated the impact of e-CRM systems on SBEs in the United Kingdom. Three case study companies where e-CRM systems had been implemented were monitored over three to four years, and the impact of the systems on the companies were investigated. They also highlighted key operational issues when implementing e-CRM in SBEs, which were grouped into three categories - People, Process and Technology. The research, however, emphasised the need for a balanced approach to progress in all three categories in order to ensure e-CRM deployment success in SBEs.

Bi, Davison and Smyrnios (2017) also explored the effect of e-business on fast-growth SMEs. They proposed that value derived from e-business depends on how fast-growth SMEs deploy, plan and build partnerships to develop process competence and e-business capability. Using structural equational modelling, their theoretical concept was tested on 310 Australian SMEs across varying industry sectors. Findings from this research indicated that business partnership, strategic IT alignment and market orientation, impacted e-business capability. Their study also further validated that alignment of IT strategy with business strategy and objectives is a precursor to achieving value.

Although most of the studies reviewed make use of different methods and focus on different geographical locations, it appears that some challenges and barriers to e-business are quite common. While it is almost two decades since the initial studies

on e-business adoption were published, e-business adoption remains an interesting topic that is constantly being researched with new and relevant findings being discovered. Although the general concept of e-business remains the same, the fast-paced advancements in technology make e-business adoption studies today still relevant and research worthy, particularly in developing countries.

2.3.2 E-business Adoption in Developing Countries

Research conducted on e-business adoption in developing countries has largely focused on factors responsible for adoption (Agwu, 2014; Rahayu and Day, 2015), challenges of adoption (Agboh, 2015), barriers to adoption (Kapurubandara and Lawson, 2006; Janita and Chong, 2013), benefits of e-business and consumer attitude to e-business adoption (Emeti and Onyeaghala, 2015) . While several studies have been carried out in developed countries to investigate some of these topics, when results of such studies are compared with studies in developing countries, it becomes evident that environmental, infrastructural and cultural issues predominant in developing countries do not allow for a simple generalisation (Kapurubandara and Lawson, 2006), hence the need for country specific studies.

As pointed out by Adebanjo *et al.* (2016), e-business deployment in developed countries is somewhat different to that in developing countries, as the culture and environment are different. Kapurubandara and Lawson (2006) investigated the barriers to ICT and e-commerce adoption in Sri-Lanka. Their research indicated that SMEs lag behind and are often skeptical about the uptake of e-business technologies. Their study also suggested that SMEs face unique and significant challenges in the uptake of e-commerce and these challenges could be broadly classified as internal and external barriers. Using data from exploratory pilot studies, surveys and existing literature, they identified nine barriers to adoption of ICT and e-commerce in Sri-Lanka which include lack of skills, security, cultural and political barriers. Their research also proposed relevant support needed by SMEs in developing countries to overcome such barriers.

Quite similarly, Janita and Chong (2013) also researched the barriers of e-business adoption in SMEs in Indonesia, a country with the largest amount of SMEs in South East Asia. Their research identified poor infrastructure, owner or manager's

motivation, lack of power to influence partners and lack of online policies as some of the key barriers to e-business adoption by SMEs. They proposed a conceptual framework which consists of six key indicators (Individual, Organisational, Technology, Market and Industry, External support and Government support) for analysing the barriers of Business-to-Business (B2B) e-business adoption in Indonesian SMEs.

More recently, Rahayu and Day (2015) conducted a study on Indonesian SMEs to determine factors that affect e-commerce adoption. Their research which was based on the Technological, Organisational and Environmental theoretical framework (TOE), surveyed 292 Indonesian SMEs and identified 11 variables as important factors that influence adoption of e-commerce in SMEs. These variables are further grouped into four, - technological factors, organizational factors, environmental factors and individual factors.

Until now, most studies on e-business in Nigerian SBEs have focused primarily on e-commerce i.e., the buying and selling of good and services online, neglecting the potential of e-business in transforming business processes and core operations in the more traditional "bricks and mortar" companies (Taylor and Murphy, 2004; Faloye, 2014). Olatokun and Bankole (2011) investigated the factors influencing e-business technology adoption by SMEs in Ibadan, a city in south western Nigeria. Data was collected by structured questionnaires administered to key personnel in 60 SMEs (30 adopters and 30 non-adopters of e-business), and the results revealed that the age of SMEs was a significant influencing factor on whether e-business was used or not, while company size was of very little significance. It was the younger companies that constituted the majority of e-business users.

Agwu (2014) also conducted an investigative analysis of factors affecting e-business adoption and website maintenance of commercial organisations in Nigeria. This case study research gathered information from six organisations based in three geopolitical zones of the country – North, West and East. Overall, 9 managers were interviewed and the results of the study indicated that consumer readiness, IT Skills shortage and internet connectivity are vital to e-business adoption and website maintenance in Nigerian businesses.

As a follow on to previous research, Agwu and Murray (2015) also researched the barriers to e-commerce adoption by SMEs in Nigeria. The research which was conducted in three states in Nigeria – Lagos, Abuja and Enugu, made use of interviews to gather information from SME owners and their findings indicated that lack of e-commerce regulatory security framework, technical skills and basic infrastructures are some of the main factors that affect e-commerce adoption in Nigeria.

While other studies focused on factors responsible for the adoption of e-business, Nam Jeon *et al.* (2006) investigated the factors that determine the successful adoption of e-business by SMEs in Korea. Using data from a survey, an empirical analysis was conducted to determine the critical success factors for e-business adoption by Korean SMEs. They identified that CEO's knowledge of IT, advantages and direct benefits of implementation, government support, globalization strategy and the North Korean factor are key critical success factors that affect adoption. These results oppose those of Chatzoglou and Chatzoudes (2016) as their study suggests that CEO's knowledge plays no role in affecting adoption. From this study, it is quite clear that factors that determine successful adoption of e-business may vary from country to country and possibly across industries.

Raghavan, Wani and Abraham (2018) explored e-business adoption and trends in Indian SMEs. Similar to existing studies in other developing countries, their research identified owner-manager characteristics, technology factors, organisational factors and institutional influences, as key factors that affect adoption. Their study also recognised the impact that external pressure from industry, external suppliers and government could have on adoption.

Abdullah, White and Thomas (2019) also investigated the adoption of e-business in SMEs in Yemen. Their study particularly focused on e-business adoption pattern of SMEs by using a mixed-method approach where data was gathered through 206 survey questionnaire responses and 5 interviews. Findings from this study confirmed that SMEs progressed from email to more advanced e-business systems over time, but, a significant number of SMEs began implementing e-business by deploying cloud services first. Their research also suggested that SMEs in Yemen often

deployed e-commerce systems in part - payment was mostly done offline or by bank transfer.

Nigeria is often referred to as an emerging country and as suggested by The Economist (2014a), emerging economies often have similar characteristics. Comparative studies on e-business adoption in countries with similar characteristics such as Xu *et al.* (2016) and Oliveira and Martins (2010b), have indicated that the challenges to adoption, factors impeding adoption and motivation for adoption, are often similar in these countries, but as suggested by Chaffey (2009), the cultural and in country factors might differ and influence adoption negatively or positively. By reviewing existing literature in various emerging and developing countries, the researcher was able to get an understanding of how the phenomenon of e-business adoption affects emerging countries and this informed the interview and questionnaire design. Also, peculiar or recurring factors in several studies could be further validated within the context of Nigerian SBEs.

2.4   Nigeria and Small Business Enterprises

2.4.1 Economic Overview of Nigeria

Nigeria is the most populous country in Africa; with an estimated population of 206 million people (Plecher, 2019), it is often referred to as the "Giant of Africa". This does not only refer to the size of its population, but also to the size of its economy and foreign direct investments (Odubajo and Akinboye, 2017; Omoju, 2017). In 2014 after rebasing its Gross Domestic Product (GDP), Nigeria became the largest economy in Africa and the 26th largest economy in the world with a GDP of $509 billion dollars (The Economist, 2014b; The World Bank, 2019), overtaking South Africa whose GDP at the time was $384.3 billion (Bloomberg Business, 2014). As a result of the reduction in oil prices globally, Nigeria entered into a recession in 2016 (BBC, 2016) but nevertheless, retained its position as the largest economy in Africa, with a GDP of $397.27 billion in 2018 (The World Bank, 2019).

For several years, Nigeria's economy has been largely based on oil revenues (Umar and Kilishi, 2010; Jelilov and Bahago, 2017). The non-diversification of the Nigerian economy has been a pertinent issue that has surpassed many governments, and has only become very prominent because of the huge fall in oil prices globally (BBC,

2015; The Guardian, 2015; CNN Money, 2017). While the current government has been working on initiatives to diversify the economy by investing in agriculture, tourism and manufacturing, the impact of these industries on the economy so far is minimal, with crude oil sales still accounting for up to 70% of government revenue (CNN Money, 2017).

In recent times, Nigerian startups have been attracting investments from international investors and venture capital firms such as Y Combinator (Forbes, 2016, 2017), 500 Startups (Tom, 2020), Omidyar Network (Omidyar Network, 2015) and several others (TechCrunch, 2017). The government has also put in place initiatives such as online Visa on Arrival facility to help ease the stress of doing business in Nigeria for foreign investors and businessmen (Vanguard Nigeria, 2017b). There are, however, legitimate questions about how investor friendly the current government is, as quite recently, MTN (Nigeria's largest telecommunication provider) which is owned by investors from South Africa, was fined a record of 330 billion Naira (£ 662 Million) as a result of non-compliance to terminating the telephone service of unregistered subscribers (Vanguard Nigeria, 2016).

In 2016, the African Development Bank (AfDb) approved a loan of $ 600 million to help with diversifying and reviving the economy having suffered slow growth as a result of fall in oil price (The Guardian, 2016). Also, in recent years, the contribution of the agricultural sector to the GDP has been on the increase with the government keen to increase the contribution level of the sector (DailyTrust, 2017; Jelilov and Bahago, 2017; Plecher, 2020). While the unemployment rate in the country is still quite high (Quartz Africa, 2017), there has been increased emphasis on entrepreneurship as a way to reduce it and great encouragement for SMEs to operate at more optimal levels. However, as reported by several researchers, Nigerian businesses still experience power outage about 5 to 10 times weekly, with each one lasting an average of one hour (Ohimain, 2014).

From all indications, a lot still needs to be done by the government at both Federal and state levels to help reduce challenges faced by SMEs as these businesses are known across the world as catalysts of progress to the economy (DailyTrust, 2017). Currently in Nigeria, SMEs contribute about 48.47% to the GDP with SBEs making up about 99% of SMEs in Nigeria (SMEDAN, 2013). In other developing countries,

SMEs have proved to be a reliable source of economic transformation, as they not just contribute to the GDP, but help with employment generation, foreign exchange conservation, optimal resource utilisation and equitable wealth distribution (Vanguard Nigeria, 2017a).

2.4.2 Small Business Enterprises in Nigeria

SBEs are essential, if not critical, for the survival of all economies (Ayanda and Laraba, 2011; Osotimehin *et al.*, 2012); often times, they represent one of the key indicators of the performance of an economy, be it developing or developed (Hitchens *et al.*, 2005; SMEDAN, 2013; Woldie, Hagshenas and Thomas, 2017). According to The World Bank (2015), in emerging economies, SMEs contribute up to 40% of national income and 60% of total employment. In developing countries such as Nigeria, SMEs contribute about 48.47% to the GDP as well as provide employment opportunities, reduce poverty and create wealth (Ayanda and Laraba, 2011; SMEDAN, 2013).

As a result of the limited capital required to start these businesses, SBEs tend to be innovative and dynamic companies and supply effective solutions to major developmental issues in the community such as access to basic housing, access to water, access to energy, quality education and several other services (Hitchens *et al.*, 2005; SMEDAN, 2013).

SBEs in Nigeria can be traced back to 1946 (Ayanda and Laraba, 2011) and their relevance to the Nigerian economy has increased over the years (Mambula, 2002; Osotimehin *et al.*, 2012). Studies conducted by the Federal Office of Statistics show that 97% of businesses in Nigeria have below 100 employees (Agwu & Emeti, 2014; Ifinedo, 2009); thus, going by the definition of SMEs, it is indicative to conclude that 97% of businesses in Nigeria are SMEs and according to a recent joint survey report by SMEDAN and the National Bureau of Statistics (SMEDAN, 2013), SMEs in Nigeria contribute 48.47% to the nations GDP and 7.27% to the country's export. The micro and small businesses in Nigeria also referred to as Small Business Enterprises (SBEs), make up about 99% of SMEs in Nigeria.

For the purpose of this research, SBEs are defined as enterprises which employ fewer than 50 persons and as at 2013, there were 37.1 million SBEs in Nigeria (SMEDAN, 2013). Today, the unemployment rate in Nigeria is 33.5% (Thisday, 2020) and as a result of this, there is an increasing number of small businesses springing up daily (Adisa, Abdulraheem and Mordi, 2014). Owing to the increasing number of SBEs in Nigeria and their contribution to the economy in terms of employment and their support for larger businesses, this specific business sector has become an interest to the federal, state and local governments (Osotimehin *et al.*, 2012; SMEDAN, 2013). One of the major challenges faced by small businesses in Nigeria is that of funding.

Research has shown that over 90% of small businesses are funded by owners or through family contribution (SMEDAN, 2013; Adisa, Abdulraheem and Mordi, 2014). Funding from financial institutions is often difficult to get and in cases where they provide an offer, the rates are usually very high (Adisa, Abdulraheem and Mordi, 2014). This is quite unlike developed countries such as United States and United Kingdom where funds for small businesses are generally accessible for businesses starting out (Woldie, Hagshenas and Thomas, 2017) and various government grants are available to support the sector (Calabrese, Girardone and Sun, 2017).

To alleviate this funding problem for SBEs, in 2012, the Central Bank of Nigeria (CBN) mandated the recapitalisation of Microfinance banks in 3 categories – 20 million Naira paid up capital to operate in one location, 100 million Naira paid up capital to operate in one state and 2 billion Naira paid up capital to operate nationwide (Vanguard Nigeria, 2013). The government also created the Nigerian Agriculture People's Bank (NAPB) and funded the Bank of Industry (BOI) with the aim of providing microloans to small businesses and lowering the barriers created by other financial institutions when it comes to access to loans (Adisa, Abdulraheem and Mordi, 2014; Taiwo, Agwu and Benson, 2016); yet studies still show that access to starting and operating capital remains one of the main challenges for small business formation, survival, and growth (OECD, 2009; SMEDAN, 2013; Adisa, Abdulraheem and Mordi, 2014).

Across the globe, small businesses are generally limited by various internal and external factors which include infrastructure, management know-how, political and

economic factors (Chittithaworn *et al.*, 2011; SMEDAN, 2013). In addition to these, SBEs in Nigeria have their unique challenges some of which comprise of lack of power, lack of skills, limited funding and limited government support (Osotimehin *et al.*, 2012; Quartey *et al.*, 2017). In a 2013 report, the International Financial Corporation (IFC) estimated that about 84% of SMEs in Africa are "either unserved or underserved in terms of access to capital" (IFC, 2011; Omidyar Network, 2013). Studies have also shown that the survival rate of small businesses in Africa is low and most SBEs die within the first 5 years with only 5-10% surviving to maturity (Adisa, Abdulraheem and Mordi, 2014). While it is evidential that small businesses play an important role in the economy (Quartey *et al.*, 2017), at present, small businesses in Nigeria have to contend with numerous hardships which include undercapitalization and poor infrastructure.

Significant internal factors which affect SBEs in Nigeria negatively - are lack of management skills of the business owner and poor record-keeping (Osotimehin *et al.*, 2012; SMEDAN, 2013; Adisa, Abdulraheem and Mordi, 2014). Many small business owners are either not educated or do not have a first degree and prerequisite experience to manage a company (Ekpenyong and Nyong, 1992; SMEDAN, 2013). Often, these SBE owners start the business out of a need to survive, unemployment or need for flexible employment. For small businesses to survive and significantly contribute to the economy, the owners and decision-makers of such businesses need to be trained in strategy, business financing, record keeping and other areas (SMEDAN, 2013). The mindset of SBE owners also need to be shifted from not just running the business as a hobby or means to survive, but taking cautious effort to consider profit and scaling the business.

Nevertheless, while most government initiatives targeted at SBEs in the past have failed to transform the sector as often planned (Ekpenyong and Nyong, 1992; Mambula, 2002; Ayanda and Laraba, 2011), the SBE sector in Nigeria still remains attractive and has grown by about 46.7% between 2010 and 2013 (SMEDAN, 2010, 2013). The current management of SMEDAN also appears to be putting a lot of effort into making an impact and in recent times have partnered with private firms such as SAGE and Globacom Telecoms (The Eagle Online, 2015; Vanguard Nigeria, 2017c).

Following this review into SBEs in Nigeria and their challenges, it is appropriate to examine the role e-business could play in the growth of Nigerian SBEs. The succeeding section reviews the current use of IT systems and e-business in Nigerian SBEs.

2.4.3 Use of IT systems and e-business in Nigerian SBEs

IT systems generally provide operational and strategic value to large and small organisations (Wynn *et al.*, 2016) and in order for companies to compete in today's fast-paced business environment, deployment of these systems, has become a necessity (Ongori, 2009). Over the years, scholars such as Levy and Powell (2003), Heeks (2002), Chaffey (2007), Laudon and Traver (2011) have explored how IS, and the internet affect businesses. From accounting systems, Customer Relationship Management Systems (CRMs), e-commerce and e-business systems, the adoption and derived value to the organisation has been thoroughly investigated.

Particularly, in the context of small businesses, researchers such as Avgerou (2007), Laudon and Traver (2011), Oliveira and Martins (2010b), Wynn and Zhang (2008) and Erumi-Esin and Heeks (2015) have explored topics which range from understanding the use of IT systems, adoption, non-utilisation and challenges in both developing and developed countries contexts. To better understand the current use of IT systems and e-business in Nigerian small businesses, this section reviews existing literature specifically focussed on use of ICT and e-business in Nigerian small businesses.

Owing to limited literature on factors inhibiting internet spread among SMEs in Sub-Saharan Africa, Ifinedo (2009) set out to research the internet and SMEs in Nigeria. Using the survey method, data was collected from 3 of Nigeria's largest commercial cities – Lagos, Ibadan and Port Harcourt. Results indicated there is an urban-rural divide in the adoption of ICT by SMEs, as SMEs in larger cities were seen to more likely adopt ICT faster than those in rural areas. Their research also uncovered that the diffusion of internet amongst businesses in Sub-Saharan Africa is the lowest in the world.

Apulu and Ige (2011) also investigated reasons for non-utilisation of ICT by SMEs in Nigeria. In similar fashion to Ifinedo (2009), data was gathered through the use of surveys; however, only one city was studied in this research. With questionnaires

received from 180 SMEs in Port Harcourt, their research identified that lack of utilization of ICT by SMEs can be linked to many factors such as electricity, Infrastructure and poor service from Internet Service Providers (ISP). Their results also indicated that in the SMEs studied, ICT was used for basic functions such as word processing and printing while other advanced computer uses for planning, strategy and decision making, were not explored by most.

Afolayan *et al.* (2015) also studied the use of IT in SMEs in Nigeria. Unlike Apulu and Ige (2011) who studied businesses in Port Harcourt, this study focussed on SMEs in Lagos – the commercial capital of Nigeria. Using a survey method, data was collected from 161 SMEs and initial findings indicated that a significant number of companies had deployed IT for operational purposes. But, future development and optimal use seemed to have been limited by lack of training and awareness. Common reasons for using IT systems in companies studied varied from operational efficiency, better communication, cost reduction and increased marketing. When compared to results from Apulu and Ige (2011), it becomes obvious that businesses in Lagos, appear to adopt IT systems in far more advanced activities than those in Port Harcourt; thus confirming the postulation by Ifinedo (2009) that there is an urban-rural divide in the adoption of ICT by SMEs. Nevertheless, just like (Apulu and Ige, 2011) indicated, this research also identified lack of consistent power and internet service as key factors affecting effective use of IT systems in Nigerian SMEs.

Despite the widely reported benefits of the use of IT systems in SMEs, myriad factors still affect adoption in developing countries such as Nigeria. Due to the dearth in literature, Apulu, Latham and Moreton (2013) studied the issues that limit Nigerian SMEs from adopting ICT. Using a qualitative approach, data was gathered from 105 SMEs in Lagos, Nigeria through the use of surveys targeted at owners and managers of SMEs. Their research identified 11 key issues affecting adoption by SMEs, but at the top of the list was lack of electricity, lack of skills amongst employees, lack of knowledge and cost. This result echoes those of Ayantoyinbo (2015), who studied the impact of ICT on the performance of freight industries in Nigeria using descriptive statistical analysis with data from 22 companies in Lagos and Ogun State.

In similar regard, Adebambo and Toyin (2011) analysed the impact of ICT usage on logistics activities in the manufacturing industry. Using sampling technique, they identified 100 manufacturing companies which were either medium or large businesses. Their results indicated that managers fully understood the importance and benefits derived from ICT usage and in most of the companies, ICT was deployed to save cost rather than to improve quality of service. Today, effective adoption of ICT has become very critical for manufacturing companies be it small, medium or large; however, factors inhibiting adoption identified by this study included owner/manager perception of IT, cost of technologies, uncertainty of business benefits and lack of ICT expertise. To eliminate these barriers, their research suggests that government should promote technological adoption and facilitate compliance procedures.

While most studies examining the use of IT systems in Nigerian small businesses have focused primarily on the formal sectors, it is important to note that the informal sector still accounts for several small businesses. Oluranti *et al.*(2016) investigated the role ICT plays on the performance of Micro and Small businesses enterprises in this informal sector. By making use of primary data collected by the Nigerian Institute for Social and Economic Research (NISER) in 2014, their research set out to access use of IT systems in the informal agricultural sector. They identified that 68.7% of the 2,378 businesses studied make use of mobile phones and that the use of IT contributes to earning but that electricity on its own as a variable did not contribute to earnings. Their research also identified that the effort the government is taking towards ensuring IT Systems and electricity is available for small businesses, is an important one that will increase profitability and sustainability for these businesses. Already, according to data from the Federal Ministry of Communications, in 2015, ICT related activities accounted for nearly 11% of GDP and with this growth pattern, it is expected to overtake traditional industries such as energy, construction and media in the near future (Oxford Business Group, 2017).

With an understanding that small businesses need efficient accounting systems in order to make informed decisions, Ogundana et al. (2017) reviewed the relationship between ICT and accounting systems in Nigerian SMEs. Their study focused on SME businesses in Lagos and made use of quantitative approach to research. By making use of a survey instrument, data was collected from 55 SMEs and their

findings revealed, that ICT adoption and ICT knowledge were directly related to accounting systems in SMEs.

Quite recently, Hassan and Ogundipe (2017) also investigated ICT adoption in Micro and Small Scale Enterprise (MSMEs) in Nigeria. By using the Technology Acceptance Model (TAM) and Technological Organizational Environment (TOE) frameworks, they studied the adoption of ICT In MSMEs in Abuja, the federal capital territory of Nigeria. Using questionnaires and observation as research instruments, responses were received from 91 businesses across various sectors. Results indicated that employers with formal education were more inclined to adopting ICT in their businesses. Also, their results indicated that 85.7% of businesses studied owned internet facilities and 84.6% make use of computers in their businesses. When compared with other studies on ICT in the Nigerian small business sector such as Apulu and Ige (2011) and Oluranti *et al.* (2016), their results indicated an increased use of internet and ICT in Nigerian small business sector. This increase can be explained as a result of urban-rural divide as indicated by Ifinedo (2009) since the city where the businesses studied is Abuja, the national capital which is largely made up of elites. Also, this increase can be further attributed to the increased internet penetration in Nigeria in recent times (Vanguard Nigeria, 2014).

Research into the use of e-commerce and e-business systems by small businesses in Nigeria is not totally omitted from the extant literature. Several studies have focused on the use of IT systems in Nigerian small businesses, and studies on e-business adoption in Nigerian small businesses have largely focused on factors affecting adoption, with most studies focusing mainly on e-commerce.

Ekong *et al.* (2012) investigated the factors impacting the acceptance of e-commerce in small businesses in Nigeria. Using a research model based on the Diffusion of Innovation (DIT) and the Technology Organization Environment (TOE) frameworks, their study identified that factors such as poor infrastructure, legal constraints, cultural constraints and economic constraints are factors which affect adoption of e-commerce in countries like Nigeria. They also noted that poor infrastructure as a limiting factor, is gradually losing its relevance as a result of increased adoption of internet.

Research conducted by scholars such as Agwu (2014), Olatokun and Bankole (2011) and Agwu and Murray (2015) which were reviewed in section 2.3.2 above, also identified various factors that directly impact e-business adoption in small businesses in Nigeria. Erumi-Esin and Heeks (2015) researched e-business adoption and use among African Women Owned SMEs. Their study which made use of both qualitative and quantitate methods of research, surveyed 140 SMEs in Warri - a commercial city in southern Nigeria. Using questions informed by the Unified Theory of Acceptance and Use of Technology Model (UTAUT), they examined factors that influence adoption in women owned SMEs in sub-Sharan Africa. Their results indicated that perceived usefulness plays an important role in e-business adoption, market forces serves as drivers, while lack of infrastructure and resources serve as impediments to adoption.

While the various papers reviewed have shown clear indication of the use of IT systems and potential e-business has in SBEs in Nigeria, no study has focused on the extent of use of e-business in Nigerian SBEs and this study aims to fill this research gap while also providing insight into the key issues impacting upon e-business adoption in Nigerian SBEs.

2.5   E-business Strategy, Models & Frameworks

2.5.1 Overview

The internet has dramatically changed the way information is communicated (Chaffey, 2014), and its continued adoption in business has transformed how several industries such as supply chain, retail and hospitality now conduct business (Wynn and Olubanjo, 2012; Afolayan *et al*., 2015). New business models which would not have been feasible without the internet exist today, offering both consumers and organisations some form of additional benefit.

In the hospitality sector, the internet has made it possible to book hotels and car rentals from the comfort of your home several miles away before embarking on a holiday. Also, with the likes of websites such as AirBnB and HomeAway, it is now possible for home owners who have spare rooms to earn extra income and share their home with holiday makers from geographical dispersed locations. In the retail industry, direct sales by manufacturers, pure e-tailers, click and mortar stores and

the electronic mall are some of the uprising business models (Beynon-Davies, 2004; Chaffey, 2009).

Nevertheless, as organisations lean toward a digital workplace by the application of e-business technologies, processes and strategies, tools such as intranet portals, e-CRM and other e-Portals have become the hub of the corporate environment (Wynn and Zhang, 2008; Turban, 2010; Chaffey, 2014) . Usually, the journey to becoming a fully transformed e-business organisation begins with the simple introduction of ICT that helps to expand market reach (Cerasale and Stone, 2004; Gloor, 2012). As the organisation grows and data begins to increase, the need to invest in more robust integrated systems usually surface and it is at this point that the need for an IS or IT strategy becomes clear (Levy and Powell, 2000).

The e-business adoption process has been argued by some to be sequential and has been captured by several maturity models such as the DTI Adoption Ladder (Martin and Matlay, 2001; Department of Trade and Industry, 2003), DTI's Connect, Publish, Interact, Transform (CPIT) model (Department of Trade and Industry, 2003; Wynn, Turner and Lau, 2013), Stages of Growth e-Model (McKay, Prananto and Marshall, 2000) and Chaffey's Stage model for e-business development (Chaffey, 2009). Other researchers have explained that e-business adoption is a complex subject of study and reducing it to sequential stage models does not adequately capture what is required to study this phenomenon in depth (Gray and Zappala, 2012). Nevertheless, irrespective of the side of argument an organisation aligns to, it is important to note that it is the corporate strategy that should drive all IS initiatives within any organisation and all e-business initiatives should be led by e-business strategies (Robeiro and Love, 2003; Chaffey, 2014). The following section discusses e-business strategy in SBEs.

2.5.2 E-business Strategy in SBEs

An e-business strategy is important for any organisation deploying e-business systems (Laudon and Laudon, 2017). First, however, strategy in general and IS strategy are briefly considered.

Strategy is defined as "a plan of action designed to achieve a long-term or overall aim" (Oxford, 2018) and while this word could be used in so many different contexts, in a business context, Johnson, Whittington and Scholes (2010) define it as "the long-term direction of an organisation". From time to time, organisations both large and small need to define what their strategy is and this often encompasses marketing, sales, communication strategy and many others (Campbell, Edgar and Stonehouse, 2011). Today, for organisations to compete in the business landscape, an explicit definition of strategy is needed (Bocij, Greasley and Hickie, 2015). What is often common, is that while an organisation sets out to implement and achieve its corporate strategy, the need to make use of IS become evident and at this point, the organisation's IS Strategy needs to be defined.

Globally, investment into IS for business purpose is on the rise (Farrell, 2004; Laudon and Laudon, 2017) . As of 2017, investment into IS by large organisations and multinationals in the UK was $ 124.8 billion annually (Statista, 2018). In small and medium enterprises, research from American Express suggests that an average of £190,000 is spent on investing in technology (Smallbusiness.co.uk, 2017). Nowadays, IS have become fundamental and strategic to organisations achieving their goals (Bocij, Greasley and Hickie, 2015) and to this extent, value derived from such systems and approach to investment in IS, needs to be clearly defined for companies who wish to succeed.

Chen *et al.* (2010) defined IS strategy as "an organizational perspective on the investment in, deployment, use, and management of information systems". To put it simply and according to Bocij *et al.* (2015), an IS strategy "defines how IT is applied within an organisation". Today, core operational processes in organisations are now reliant on IT and as such, IS have become an integral part of organisations and as result of this, the IS Strategy should be an integral part of the overall corporate strategy (Oh and Pinsonneault, 2007). Organisations that fail to define a clear IS strategy, will often deploy IS that offer limited value to the business (Wynn, 2008; Bocij, Greasley and Hickie, 2015) and as indicated by Levy and Powell (2000), when an organisation doesn't have a clearly defined IS Strategy that ties into its overall corporate strategy, it leads to strategic applications being deployed in piecemeal with little contribution to strategic vision.

An IS strategy is important for the strategic planning of IS resources in an organisation (Chen *et al.*, 2010; Hovelja, 2010). A well-implemented IS strategy will help an organisation achieve increased process efficiency, increased profit and reduced cost (Bocij, Greasley and Hickie, 2015). Organisations are increasingly beginning to see the need for clearly defined IS strategies and the value and productively gains it brings to the organisations (Robeiro and Love, 2003). Deciding what IS applications to deploy and when, is a question an effective IS strategy sets out to help organisations answer (Hovelja, 2010). By making use of an IS Strategy, IS systems that an organisation neds to compete are clearly thought through and could lead to the implementation of internal IS systems for efficiency or external facing IS Systems for competitiveness (Levy and Powell, 2000). As generally identified by Oh and Pinsonneault (2007), investments in growth-oriented applications usually have a direct positive impact on the firm's revenue.

Small businesses are not being left out in the deployment of IS, but very often, their approach is fragmented and often reactive with limited strategy implemented (Wynn, 2008). Quite often, SMEs deploy IS in an ad-hoc approach with limited planning and primary focus is on improving efficiency and solving other operational challenges while very little thought is put on competitiveness and other strategic uses (Levy and Powell, 2000; Erumi-Esin and Heeks, 2015). While the importance of an IS Strategy in a small business cannot be over emphasised, it is important to remember that SMEs have a general informal approach to operation and business strategy and this should be taken into consideration while developing an IS strategy (Levy and Powell, 2000). Also, It is important to note that the focus of IS Strategy should not just be on the technology aspect alone, but be concerned with other change related factors that affect IT adoption such as people and processes (Levy and Powell, 2000; Heeks, 2002).

Empirical research has shown that organisations which align their IS strategy with their business strategies tend to outperform those who don't (Chan and Reich, 2007). Chen *et al.* (2010) suggests that IS Strategy should also be examined independent of business strategy as an IS Strategy can both support and in some occasions, lead the business strategy. Nevertheless, other scholars have also argued that IS strategy should challenge the business strategy and not follow it (Chan and Reich, 2007).

In similar fashion to IS strategy, e-business strategy has been studied by several researchers since the early 2000's. Chaffey (2009) defines it as the "definition of the approach by which applications of internal and external electronic communications can support and influence corporate strategy". It can also be seen as "a long-term plan for putting in place the right digital technology for a company to manage its electronic communications with all partners - that's internally through the intranet and externally through to customers, suppliers and other partners." (Smart Insights, 2017)

Today's businesses are interested in strategies and systems that put them ahead of competition and companies like to invest in an existing strategy that works, or in other less risky strategies (Sheung, 2014). With the increased use of the internet in business, organisations cannot compete effectively today without an e-business strategy. In their research on a strategic approach to developing e-business, Rodgers *et al.* (2002) indicated that every organisation that wishes to be successful in the future, is striving for the successful implementation of an e-business strategy. They also suggest that firms who wish to deploy e-business should first define the e-business strategy, before implementing the e-business solutions. Also, they advise that firms should regularly refine and refresh their e-business solutions and strategies as speed and innovation are key to an entire e-business success.

Today, e-business systems are becoming prevalent in SBEs due to reduced cost of IT infrastructure and general advancements in technology (Jones, 2013). Deployment modes and approaches vary from one organisation to another, for some, it is simply the deployment of brochure websites for marketing purposes while for others, it is the application of systems to effectively engage customers (Wynn and Zhang, 2008; Putra and Hasibuan, 2015). While it is generally acknowledged that e-business technologies can provide internal value as well as opportunities to reach different local and international markets, for both large and small organisations (Hernández, Jiménez and Martín, 2009), in all deployment of e-business systems, it is clear that a properly defined e-business strategy will help derive benefit for the organisation as well as reduce wastage of resources (Levy and Powell, 2000; Rodgers, Yen and Chou, 2002).

One important question organisations ask is how do they decide what departments or processes to apply e-business to? Essentially, is there an underlining strategy, model or framework that organisations use when applying e-business? And is there a guarantee of success when such strategy, framework or model is applied? Also, do the strategies applied in large corporations work similarly in Small businesses? Or are there specific frameworks and models to be used in small businesses.

A number of researchers have investigated and developed models, frameworks and strategies to be used when implementing e-business in organisations (McKay, Prananto and Marshall, 2000; Putra and Hasibuan, 2015) while researchers, governments and e-business consultants have developed several analytical and operational frameworks (Jones *et al.*, 2006; Gatautis and Vitkauskaite, 2009) to help clearly develop e-business strategies in organisations as well as evaluate the extent of e-business deployment. The next section reviews some frameworks relevant to this research.

2.5.3 E-business Models and Framework

E-business models can be traced back to the 1990s when the use of internet technologies in business started to rise (Jones *et al.*, 2006) and researchers such as Bakos (1991) started looking into the strategic use of electronic market places and the transformational impact of IT on the organisation (Merali, Papadopoulos and Nadkarni, 2012). Over the years, various models and frameworks have been developed by researchers and practitioners to help in the implementation and adoption of e-business by organisations. This section reviews some of these models deemed relevant to this study.

2.5.3.1   DTI Adoption Ladder

The DTI Adoption Ladder is one of the early e-business frameworks designed in the United Kingdom by the Department of Trade and Industry, to measure level of e-business adoption in SMEs (Department of Trade and Industry, 2003). This framework breaks down e-business elements into 5 sequential steps which are - email, website, e-commerce, e-business and transformed organisation. As depicted in Figure 1 below, this framework suggests that SMEs progress over a series of stages in a well-planned, progressive and sequential process with the use of email through to the development of website, selling & payment online, integration of

internal processes and external partners and finally, the transformation of the entire business (Taylor and Murphy, 2004; Wynn, Turner and Lau, 2013).

In this framework, the first two stages suggest e-business adoption will start by the implementation of basic ICT skills and technologies, while the third to fifth stages, indicate the implementation of more advanced systems that will aid buying and selling online (e-commerce), inter connected systems with internal and external partners (e-business) and eventually transform the organisations business model (Lee, 2007). This is not always the case because small businesses differ in size, sector and age and their adoption of e-business could be different (Putra and Hasibuan, 2015). Also, Taylor and Murphy (2004) point out that this approach is problematic as all SMEs don't have to follow one prescribed course and that lack of completion of the prescribed linear path does not necessarily mean failure. In fact, the linear progression can only be justified when considering e-business adoption solely from a technology point of view.

Figure 1 The DTI Adoption Ladder

Martin and Matlay (2001) also argue that simplistic linear models such as the DTI Adoption Ladder that attempt to offer an explanation to e-business adoption in SMEs through a series of simple sequential steps, are problematic and quite rigid. They

assert that small businesses vary from sector to sector and these variations could be because of economic activity, geographic position, resource availability and other factors; hence a generalisation on small business for this type of models may not be entirely correct.

E-business adoption is complex, and while the linear progression clearly shows technology progression and sophistication, it does not quite explain adoption patterns in all SMEs (Lee, 2007). Besides, this model does not encompass other important factors such as size, sector, ethnicity, gender, financial resource, customer base and level of internalisation; some of which have been identified by various researchers as important (Martin and Matlay, 2001; Putra and Hasibuan, 2015).

2.5.3.2 The Connect Publish Interact Transform (CPIT) Model

In similar fashion to the DTI adoption ladder, the CPIT model was developed by the Department of Trade and Industry in the UK. Rather than apply a one size fits all approach to e-business adoption across the whole organisation, the CPIT model measures e-business adoption at individual process levels (Department of Trade and Industry, 2003; Wynn, Turner and Lau, 2013). This model offers a 2-dimensional matrix to evaluate the impact of e-business technologies across six main business processes over 4 stages which are Connect, Publish Interact and Transform (see Figure 2).

PUBLISH   INTERACT   TRANSFORM

Logistics and delivery

Finance

Purchasing and procurement

Operations, processing and assembly

Marketing and sales

After sales service

CONNECT

Automated billing

Automated payment

Automated stock replenishment

Mass customisation

Customer driven relationship marketing

Publish product warranty, servicing & statutory information

Capture & analyse customer feedback to monitor product/ service performance

Customer driven design & relationship marketing

Figure 2 The CPIT Model

The Connect stage signifies the beginning of e-business adoption and implementation of basic IT technologies in the organisation. The Publish Stage signifies a one-way interaction where information is published by the organisation and can be consumed by the customers. Essentially, the Publish stage offers a simplex communication where customers are not able to relate with organisation via their e-business channels and often times, this involves the development of an informative website and brochureware (Taylor and Murphy, 2004; Wynn, Turner and Lau, 2013).

The Interact stage refers to a position where the organisation can publish information as well as interact with customers via its e-business channels. This stage allows for a full-duplex communication between various stakeholders which could be company and its suppliers or customers. This Interact stage often also involves the implementation of online ordering, online payment and online contact forms. The final stage, Transform, refers to a stage where e-business processes and systems have transformed the organisations existing business processes and models of conducting business. This also refers to a point where the existing business models

had been changed as a result of adoption of e-business technologies (Martin and Matlay, 2001; Wynn, Turner and Lau, 2013).

One key advantage of the CPIT model over other models, is that it explains the overlap that could occur as a result of the adoption of e-business across various business processes, and how the sophisticated utilisation of e-business techniques could yield a fully automated and transformed organisation. Also, with the CPIT Model, it is clear that an organisation might decide not to advance the development of e-business in particular business areas where the need cannot be justified; yet this would not prevent the implementation of e-business in the organisation from being tracked and the implementation would not be considered a failure as it would have been for non-completion of the linear flow in the DTI Adoption Ladder (Taylor and Murphy, 2004).

One of the limitations of the CPIT model is that the e-business adoption journey of an organisation does not necessarily start at the implementation of e-business system (i.e. Connect Stage) as suggested by the model. Prior, to the actual purchase of an e-business system, the organisation as well as its founder or management, would have first regarded such system as value adding to the organisation and it can be argued that it is at this point of determining the value and benefit of such system to the organisation, is the actual starting point of the e-business journey.

The CPIT model doesn't capture or reflect various other aspects that affect implementation of e-business in an organisation. From research by Galliers and Sutherland (1991) and Heeks (2002), the deployment of new IT systems would only be successful, when elements of change such as People, Process and Structure, progressively mature with Technology.

A simple maturity in technology without maturity in process and people skills, would not necessarily yield a successful e-business implementation and there is need to consider a framework that takes this into account.

2.5.3.3   The Stages of Growth (SOG)-e Model

The SOG-e model developed by McKay, Prananto and Marshall (2000) charts the course of e-business maturity in an organisation and presents an assumption that there would be seamless integration between front facing internet commerce activities and back office activities. While maintaining a six-stage maturity model, the SOG-e model combines of a six stage IT maturity model developed by Galliers and Sutherland (1991) with a six stage Internet Commerce maturity model (Figure 3). And like other models, it suggests organisations move from less mature to more mature/sophisticated systems over time. In stage 1 – **No presence**, the organisation is considered to have no online presence and adopting a wait and see type of strategy. This is often due to ignorance, lack of skill or uncertainty with regards to cost and benefit.

Source: McKay, Prananto and Marshall (2000)

Figure 3 The SOG-e Model

In Stage 2- **Static Online-Presence**, the organisation maintains an online presence. This is somewhat static and offers limited interaction to customer. It is synonymous to the publish stage of the CPIT model and information flow at this point is unidirectional. In stage 3, **Interactive Online Presence**, the online presence is interactive as the name suggest and at this point the organisation has decided to broaden their market reach. Also, the process becomes more structured and the staff skilled. In Stage 4, **Internet Commerce**, the organisation begins to effectively

embark on internet commerce. Customers can buy and pay for good from the companies' websites and online channels. In stage 5, **Internal Integration**, the organisation begins to think about efficiency and, the front office activities become integrated with back office processes, thus enabling an efficient approach to work. In Stage 6, **External Integration**, Integration of external parties such as suppliers and delivery systems to the organisation begins to happen thus enabling an inter connected business network.

The SOG-e model can be used by e-business consultants as an analytical tool to understand and describe a company's position with regards to e-business. Also, in similar fashion to the CPIT model, the SOG-e model recognises that it is possible for an organisation to have different levels of e-business maturity in different areas of a business. One of the limitations of the SOG-e model is that, although it helps with evaluating the current position a company is at, it does very little in planning out strategy for companies that have no systems in place to draw out strategy apart from following its stages. In addition, as with small businesses, the model does not carefully address what business processes might need e-business implemented.

2.5.3.4   Chaffey's Stage Model for e-business Development

Chaffey (2009) also proposed an e-business framework for organisations to assess their current use of e-business. The framework consists of four stages and presents four aspects of e-business through which organisations can evaluate their position across the four stages. The four stages of the model are web presence, E-commerce, Integrated E-commerce and E-business; while the four aspects of e-business are **service available** which is used to evaluate the service available at various stages, **Organisation Scope** which helps to analyse departments of the organisation where service deployed are used, **Transformation** which determines what type of transformation has occurred within the organisation and **strategy** which helps to understand what strategy is currently being employed by the organisation at each stage.

	1. Web Presence	2. Ecommerce	3. Integrated E-Commerce	4. E-Business
Services available	Brochureware or interaction with product catalogues and customer service	Transactional e-commerce on buy-side or sell-side	Buy –and –sell side integrated with enterprise resource planning (ERP) or legacy systems. Personalization of service	Full Integration between all internal organizational processes and elements of the value network
Organizational Scope	Isolated departments e.g. marketing department	Cross-organizational	Cross-organizational	Across the enterprise and beyond('extraprise')
Transformational	Technological Infrastructure	Technology and new responsibilities identified for e-commerce	Internal business processes and company structure	Change to e-business culture, linking of business processes with partners
Strategy	Limited	Sell-side- e-commerce strategy, not well integrated with business strategy	E-commerce strategy integrated with business strategy using a value-chain approach	E-business strategy incorporated as part of business strategy

Source: Chaffey (2009)

Figure 4 Chaffey's Stage Model for e-business Development

Using this framework, an organisation can easily evaluate its current position for each of the four aspects of e-business. As indicated by Jones *et al.* (2006), this framework was developed for large companies and also doesn't take into consideration various barriers that affect e-business adoption or barriers that affect growth from one stage to another.

2.5.3.5   E-business Measurement Evolution Model

Abdullah *et al.* (2018) proposed the e-business Measurement Evolution model (figure 5), which contains nine sequential stages that small business deploying e-business are expected to pass through. The model is based on the DTI adoption ladder; however, it introduced social media, mobile applications and cloud services, to cater for new technologies that have become widely adopted by SMEs since the development of the DTI adoption ladder.

By using this model, businesses are expected to progress sequentially, starting at email, with the expectation to become a transformed organisation. Further research by Abdullah, White and Thomas (2019) putting this model to use in Yemen, indicated that businesses could have two points of entry: stage 1 (email) or stage 6 (cloud services). Businesses that began adoption from stage 6 (cloud services) could either

progress to stage 8(Transformed organisation) or retrospectively deploy other technologies.

Source: Abdullah et al. (2018)

Figure 5 E-business Measurement Evolution Model

Although interesting and it is perhaps one of the first studies in a developing country with a somewhat different model to map the adoption pattern of SMEs, the reliance on technology-focused stages means it could easily become obsolete as technology advances. It also has a keen focus on technology and does not take into consideration the People, Process and Technology dimensions suggested by Wynn *et al.* (2016) that are relevant for SBEs. The ability to begin adoption at two stages also makes it somewhat confusing.

2.5.3.6   Strategic e-business Framework

Chen, Ruikar and Carrillo (2013) developed a holistic e-business framework for e-business strategy formation and implementation in the construction industry. The framework authors advocate the need for multiple elements to be considered in order to adequately develop an e-business strategy and roadmap for the construction industry. By combining various aspects and approaches from already

existing models and framework, the model was designed for senior management staff to define e-business strategies and implementation plans. The model suggests six sequential stages - Access Situation, Establish Vision, Define Critical Success Factor, Develop Action plan, Implementation and Review. It also takes into consideration people, technology, process and management capabilities that are required for the successful development of an e-business strategy in these stages.

Figure 6 Strategic e-business Framework

Although the framework appears to be comprehensive, it has been designed specifically for the construction industry and is yet to be rigorously tested for its validity.

2.6   Summary

In this chapter, e-business adoption related literature has been discussed. The definition of e-business applicable to this research has been presented, as well as other related terms relevant to this research. The chapter has also reviewed e-business adoption from both developed and developing countries' perspectives. From the literature, it is clear that e-business adoption in a developing countries

context is quite different from that of the developed world. Though there is increasing use of e-business in the developing world, a number of challenges and barriers still hinder adoption.

The chapter also reviewed SBEs in Nigeria, the definition of SMEs as defined by SMEDAN, and the definition of SBE used for this research. This chapter reviewed the general current economic outlook of Nigeria, and it was clear that SBEs are very relevant and at the heart of the economy. In addition, the chapter reviewed the use of IT and e-business in Nigerian SBEs and indicates that there is emerging interest in this area of research with researchers such as Erumi-Esin and Heeks (2015), Olatokun and Bankole (2011) and Faloye (2014) studying various areas.

The chapter further discussed IS strategy and e-business strategy in small businesses. E-business models and frameworks relevant to the research were also reviewed thoroughly and critiqued. From the underlying review of relevant literature and studies put together by various academic scholars, it is clear that there is a considerable gap in the implementation of e-business systems in SBEs in developing countries, and as such this research aims to study e-business adoption in Nigerian SBEs and aims to address to the following objectives:

1. Investigate the extent to which Nigerian SBEs are adopting e-business systems and processes.
2. Identify the key issues impacting upon the adoption of e-business technology and processes in Nigerian SBEs.
3. Develop a framework that can be applied to aid Nigerian SBEs in the development and implementation of an e-business strategy.

Chapter Three

Conceptual Framework

Chapter Three Conceptual Framework

3.1   Introduction

This chapter presents a conceptual framework to provisionally support the analysis of the case study findings in this research. From extant literature, core concepts and constructs have been identified, which in combination constitute a new framework for the analysis and study of e-business adoption in SBEs in a developing countries context. Section 3.2 presents four essentials of this e-business framework, their theoretical underpinnings, relevance to SBEs and how they specifically affect e-business adoption and implementation.

Section 3.3 summarises and presents a conclusion for this chapter. The section also discusses how the conceptual framework will help as a theoretical lens for the researcher to develop questionnaires and evaluate case study companies.

3.2   Essentials of an E-business Framework

Several theories, frameworks, analytical tools and models exist to interpret and understand IS adoption in a business environment. Frameworks and models such as UTAUT, TOE and TAM have been applied and tested in various IS literature over the years in developed and developing countries' contexts (Iacovou, Benbasat and Dexter, 1995; Oliveira and Martins, 2010b; Erumi-Esin and Heeks, 2015). To examine the extent of use of IS, maturity models such as the DTI Adoption Ladder (Department of Trade and Industry, 2003), Transporter Model (Levy and Powell, 2000) and SoG-e Model (McKay, Prananto and Marshall, 2000) have been used by researchers. E-business adoption, however, is not just concerned with either 'extent of use' or 'reasons for use' alone, but a combination of these two contexts that have often been studied in isolation (Zhu, Kraemer and Xu, 2006; Ghobakhloo, Arias-Aranda and Benitez-Amado, 2011) and an understanding of the barriers that limit adoption.

Four core concepts that are essential to an e-business model have been identified, and this section discusses them in detail. A conceptual framework has been

developed using a combination of concepts from TOE and various Stages of Growth models, figure 7 below, shows the four concepts and how they relate to each other.

Figure 7 Four Concepts of an E-business Framework

3.2.1 Identifying Perceived Benefits to Business

The e-business initiative of an organisation often starts with identifying the benefits of such systems to the organisation (Zhu, Kraemer and Xu, 2006). Oliveira and Martins (2010b) explain that when the benefits of e-business are clear to the management of an organisation, resources are allocated, and success can be derived from the implementation. As a result of cost and possible complications in the deployment of IS, organisations no longer deploy IS solutions because it is fashionable, but because of the perceived benefit that could be derived from the deployment of such systems (Farrell, 2004). With SBEs, given their limited resources, the choice of deployment of IT systems is not taken lightly and often requires that the management is convinced that such system will help achieve the perceived benefit (Fillis, Johannson and Wagner, 2004).

Researchers using the TOE framework have identified perceived benefits as one of the key factors that aid IS adoption. Iacovou, Benbasat and Dexter (1995) while studying the adoption of EDI systems, indicated that perceived benefits is perhaps one of the most important factors for IT adoption in small businesses. Likewise, Chau and Hui (2001), while conducting a similar study on EDI adoption in SMEs,

identified direct and indirect benefits as a precursor to adoption. Ramdani, Chevers and Williams (2013), also while applying TOE to study enterprise application adoption by SMEs, identified relevant advantage, i.e. perceived advantage of the new systems over its predecessors, as one of the technological factors that influence adoption.

Ghobakhloo, Arias-Aranda and Benitez-Amado (2011), while studying e-commerce adoption also using the TOE framework, assert that perceived relative advantage is a significant factor in determining adoption. In their study of e-business adoption in European countries, Oliveira and Martins (2011) also identified perceived benefit as one of the variables that positively affects e-business adoption.

In SBEs, the thought process around identifying perceived benefit in e-business systems could be quite informal (Levy and Powell, 2000). The owner/manager is often responsible for making most or all the decisions (Fillis, Johannson and Wagner, 2004) and the identification of perceived benefits or conviction on the use of e-business systems comes from the manager (Ghobakhloo and Tang, 2013). This realisation could sometimes be subconscious, or as a result of his/her knowledge and or experience (Chatzoglou and Chatzoudes, 2016).

Research has shown that CEO innovation (Ghobakhloo, Arias-Aranda and Benitez-Amado, 2011) and owner/manager perception affects adoption of e-business but ultimately, the owner/managers perception of IT and ability to innovate, influences his/her thoughts about the benefits that could be derived when such a system is implemented (Kapurubandara and Lawson, 2006; Ghobakhloo and Tang, 2013).

Owners and managers who are IT aware are often very proactive and positive about the deployment of e-business systems in their organisations, while owners with little or no knowledge often have to be convinced (Ifinedo, 2011; Chatzoglou and Chatzoudes, 2016) or pass through the skills or knowledge gap that Willcocks and Sauer (2000) identified in their research. Benefits could differ from organisation to organisation and from process to process, thus making perceived benefit difficult to qualify and quantify and also making it seemingly subjective.

3.2.2 Identify and Overcome Barriers

The adoption of e-business in small businesses often comes with the need to overcome several barriers (Wachira, 2014). Extant literature has discussed several barriers that affect the adoption of e-business in developing and developed countries as well as in large and small-scale organisational settings (Kapurubandara and Lawson, 2006; Janita and Chong, 2013). This research groups the barriers to adoption into two - pre-adoption barriers and post-adoption barriers.

For an organisation to implement/ adopt e-business, pre-adoption barriers must be overcome. In small businesses, this step is often the second step after the perceived benefits have been identified and management has decided to implement e-business systems (Ghobakhloo, Arias-Aranda and Benitez-Amado, 2011). Common barriers at this stage identified in the literature include cost of IT systems (Agwu and Murray, 2015), staff literacy and access to Internet (Wachira, 2014). In developing countries like Nigeria, other pertinent pre-adoption barriers include Power, Trust and Internet speed (Olayinka, Wynn and Bechkoum, 2016a).

Organisations that wish to deploy e-business systems must proactively determine how best to overcome these barriers in order to progress on their e-business initiative (Wachira, 2014). For others, the decision not to deploy could also be reached at this point, because while the system they wish to deploy will be of benefit to the organisation, the overall cost of overcoming the relevant barriers to adoption is not worth it for them (Zhu, Kraemer and Xu, 2002; Ghobakhloo and Tang, 2013; Agwu and Murray, 2015). While pre-adoption barriers in various industry sectors might be quite similar, the response to overcoming such barriers could be unique to each organisation. For example, instead of making an entire purchase of a CRM system, organisations have, as a result of cost, decided to go with open source alternatives or implement cloud-based alternatives that offer limited free number of users (Nguyen and Waring, 2013).

Post-adoption barriers are barriers that are faced after the initial adoption/implementation of e-business systems. While barriers are more pre-dominant at the early stages of adoption, post-adoption barriers tend to limit the increased adoption/extent of use of e-business in organisations (Kapurubandara, 2008). Post-adoption barriers are relevant because the adoption process may be

complicated and costly thus, not encouraging the company to further invest (Oliveira and Martins, 2011). Some of the common post-adoption barriers include maintenance cost of IT systems (Agwu and Murray, 2015), cost of staff training (Arendt, 2008), ability to maintain/recruit knowledgeable IT technician (Arendt, 2008; Janita and Chong, 2013) and customer awareness (Kapurubandara, 2008). According to Oliveira and Martins (2010b), e-business adoption requires a reasonable level of technical and organisational competence, and because of the informal and unstructured nature of SBEs, some might struggle with keeping the systems running or with reluctance by users to use the system.

3.2.3 Adoption and Implementation

Adoption and implementation refers to the actual deployment of physical IT systems in organisations. Existing research has used stages of growth models to evaluate the use of e-business in organisations (Galliers and Sutherland, 1991; Daniel, Wilson and Myers, 2002; Olayinka, Wynn and Bechkoum, 2016b). Jones, Muir and Beynon-Davies (2006), in their research on 65 different stages of e-business growth models, identified that four stages of growth was the mean and median. This conceptual framework adopts a four-stage approach to measure e-business adoption and implementation.

Strategy researchers have also indicated the need to have clearly defined adoption or implementation strategies in order to increase the likelihood of success and avoid a full rollout leading to chaos (Rodgers, Yen and Chou, 2002; Laudon and Laudon, 2017). Studies on the implementation of different types of e-business technologies such as Intranet (Damsgaard and Scheepers, 2000), CRM (Ramdani, Chevers and Williams, 2013), ERP (Wynn and Rezaeian, 2015) and Web portals (Wynn and Zhang, 2008), have thoroughly evaluated reasons for failure and success of deployments in a bid to predict the outcome of a project. From the various scholarly publications, it is clear that strategy plays a very important role in e-business implementation success, and quite often, it is the companies without a clearly defined strategy that fails (Bocij, Greasley and Hickie, 2015).

Over the years, researchers have examined variables, change elements or factors that can be tracked throughout the implementation or adoption of new technology as

a strategic way to measure progress. Galliers and Sutherland (1991) proposed Strategy, Structure, Systems, Staff, Style, Skills and Superordinate goals as the 7S that affects the implementation of e-business systems to be tracked over a six-stage growth model. McKay, Prananto and Marshall (2000) also applied the 7S in their SOGe Model. Heeks (2002) in a bid to explain high rates of failure in IS in developing countries, identified People, Process, Technology and Structure as four change elements that affect IS success or failure in developing countries but their study also recognised that there are situation-specific factors that will determine success or failure. More recently, Wynn (2018) proposed 12 factors that determine the success or failure of IT innovation projects in SMEs in the UK. Using People, Process and Technology from Heeks (2002) as a basis, his research further identifies four specific factors for each of the change dimensions.

This study's conceptual framework builds on ideas from Galliers and Sutherland (1991), Heeks (2002) and Wynn (2018). The change dimensions of People, Process and Technology can be assessed throughout the e-business life-cycle.

3.2.4 Continuous Improvement

For most e-business models, the last stage of adoption is often advanced e-business integration; where e-business systems and processes have been implemented across the organisation, and the organisation is considered to have been transformed. Because IT is, however, never static and advancement in technology frequently occurs, there is a need for organisations to always be on the lookout for how new technologies can change their business.

Continuous improvement as a theoretical concept has been studied in various disciplines such as manufacturing (Aurich, Ostermayer and Wagenknecht, 2009) and Education (Park *et al.*, 2013). In IS-related research, continuous improvement has been explored as an approach to improve work processes and increase competitive advantage (Bosilj-Vuksic *et al.*, 2002). Commercial frameworks such as Information Technology Infrastructure Library (ITIL) also suggest a similar concept in order to ensure the IT services of an organisation improve over time.

The business environments are also, however, never static. Business strategies change, business processes changes, and so do the e-business systems that drive the organisations. By including this concept in the conceptual framework, questions relevant to continuous improvement can be formulated and answers found as to how this concept applies in Nigerian SBEs.

3.3   Summary

This chapter presented the essentials of an e-business framework and proposed a conceptual framework for investigating e-business adoption in Nigerian SBEs. The framework proposed is based on extant literature and takes into consideration pre-adoption, adoption and post-adoption of e-business in an organisation. The framework emphasises understanding the value and benefit of e-business systems before adoption and presents a strategic linear method for the adoption of e-business that could be run in parallel in multiple business units, while also emphasising the importance of various elements of change.

The conceptual framework takes the focus of e-business adoption from technology, but includes perceived value to the organisation, process improvement and people and skills development. The presented conceptual framework will be used to develop a questionnaire for the research and enable a better understanding of e-business adoption in Nigerian SBEs. The next chapter presents the research paradigms, methodology and approach to data collection and analysis.

Chapter Four

Methodology

Chapter Four Methodology

4.1 Introduction

This chapter presents an in-depth overview of the methodology used to conduct this research and justification for the chosen research methods. The chapter begins with this introduction, followed by a detailed discussion on research philosophies while the epistemological and ontological position of the researcher is presented. Next, the chapter presents inductive and deductive research approaches and justifies the use of an inductive approach in this study.

The qualitative approach to research is discussed in detail with particular focus on how it applies to this research. The chapter also presents the case study method and techniques used for data collection and data analysis. Data collection methods such as questionnaires and interviews are discussed, and the use of thematic analysis and framework analysis for case study research is elucidated. The chapter concludes by explaining how the research was validated, the ethical considerations taken into account for this research, and presents a summary.

4.2 Research Philosophy

The idea that there are diverse views of the world is a part of science known as philosophy (Mason, 2014). Philosophy is fundamentally the study of knowledge, reality and existence when viewed from an academic perspective (Nicholson, 2016). In research, philosophy deals with the source, nature and development of knowledge. Research philosophies describe the various views of knowledge and how they affect research (Heeks and Bailur, 2007).

Knowledge can be acquired in several ways, which include: intuition knowledge, logical knowledge, and empirical knowledge (Jackson, 2014). The research philosophy selected by a researcher could be influenced by practical considerations as well as his/her perception of knowledge acquisition in the subject area (Hughes and Sharrock, 2016). The selected research philosophy aligns with the researcher's view about acceptable knowledge in the subject area, which is often referred to as epistemology (Bryman, 2016).

Saunders, Lewis and Thornhill (2015, p. 132) define epistemology as "what constitutes acceptable knowledge in a field of study" while Bryman (2016) describes

it as the theory of knowledge. Epistemology refers to what is accepted as knowledge and the various methods of acquiring knowledge. Ontology, in contrast, deals with the nature of what is real and what reality is comprised of (O'Leary, 2017). According to Grix (2002), ontology is the starting point of all modern research, from which the researcher's epistemological and methodological positions logically follow.

Every research project should be underpinned by a research philosophy (Grix, 2010; Scotland, 2012) and the combination of the researcher's epistemological and ontological position determines the philosophical stance and paradigms through which the research should be conducted. This philosophical stance that informs the researcher determines the research methods and approaches to be used in order to obtain relevant findings (Davies, 2007; Creswell, 2013). Various research philosophies exist that could inform a researcher's position. Three of the commonly used research philosophies are reviewed below.

4.2.1 Positivism

Positivism is a research philosophy that utilises the application of natural science methods to study a phenomenon (O'Leary, 2017). In positivism, the researcher is neutral to the phenomenon, and the data collected is entirely objective (Flick, 2014). With this philosophical position, the researcher often follows a strict methodology that allows the whole research process to be replicated at a later time by another person to achieve comparable results (Gill and Johnson, 2002).

As with natural science, the positivist researcher deals with quantifiable observations (Myers, 1997) and the researcher's belief is entirely independent (Fox *et al.*, 2014). With this philosophical stance, researchers test theories with a hypothesis with the aim to develop laws (Collis and Hussey, 2013). Positivism is based on the premise that whatever exists can be verified through experiments, observations and proofs (Gray, 2017). IS research that makes use of the positivists' philosophical stance are often studies investigating phenomena using surveys (McKenzie, Powell and Usher, 1997).

4.2.2 Post-Positivism

In natural science, it is relatively easy for the researcher to separate himself or herself from the phenomenon being studied and be objective. In social science, it is quite complicated to separate the researcher from the phenomenon being studied; because of this, post-positivism was developed (Willis, 2007). Post-positivism as a paradigm emerged from positivism (Blaxter, Hughes and Tight, 2010) and unlike positivists, post-positivist believe that knowledge or theories can be refuted and challenged (Phillips and Burbules, 2000; Creswell, 2013). Post-positivist are concerned with the subjectivity of reality (Howell, 2012), and according to Gray (2017), post-positivists believe that independent reality could be studied; but, all observation is fallible, and truth can only be approximated.

Post-positivist research often entails a rigorous social involvement for both researcher and participant (Morris, 2006). Researchers using this philosophical approach, often embark on empirical studies and adopt similar characteristics to positivism, where the research regularly transcends from theory to observation (Fox *et al.*, 2014). In IS, researchers such as Baskerville and Wood-Harper (1996) and Shanks and Parr (2003) have advocated the use of post-positivist approach to research, and it is becoming increasingly popular by the adoption of action research (Avison, Kock and Malaurent, 2017; Kock, Avison and Malaurent, 2017).

4.2.3 Interpretivism

Interpretivism is a view of the world that believes the researcher must understand interactions and differences between humans in the social world as social actors (Robson, 2011). Interpretivists believe that the social word is quite complex and when such complex nature is reduced to simple laws or generalisations, a degree of insight can be lost (Collis and Hussey, 2013; Silverman, 2015). An interpretivist asserts that natural reality and social reality are different, and therefore the approach to study them should differ (Holder, 2016). Interpretivism requires the researcher to understand the subjective meaning of social actions (Blaikie, 2007), unlike most positivism and post-positivism studies, an interpretivists approach is often qualitative and subjective in nature (Gill and Johnson, 2002). Researchers have indicated that

interpretivism is appropriate for studying business and management research (Saunders, Lewis and Thornhill, 2012).

Interpretivists seek to understand human behaviour and the social world (Sideridis and Patrikakis, 2009). In this type of research, the researcher and the context of the participants cannot be separated from the study itself (Bell, Bryman and Harley, 2018). According to Fox *et al.* (2014), this philosophical stance is well suited to the inductive research approach where data gathered from the field is interpreted to provide meaning to the phenomenon being studied. Unlike with positivists, interpretivists understand that there may be more than one way of understanding a social phenomenon (Gray, 2017), and, assert that all research is influenced by pre-existing theories and the world view of the researcher (Willis, 2007).

In the research of IS, interpretivism has been widely adopted and is a very well established philosophical viewpoint to investigate the phenomena (Walsham, 2006; Johari, 2009). This philosophical stance has been applied in several IS studies to understand the social context of an IS use and adoption by researchers such as Prananto, McKay and Marshall (2003), Avgerou (2007) and Akeel, Wynn and Zhang (2013). According to Goldkuhl (2012), an IS researcher should adopt an interpretivist stance when the research aims to understand interesting phenomena. For this research, an interpretivist approach was adopted as it seemed the most appropriate to help the researcher understand the underlying objectives.

Interpretivism was chosen as the philosophical approach through which this research should be carried out as this paradigm recognises that the social world could be influenced by various social actors and factors (Nelson, Groom and Potrac, 2014). From IS literature, it is clear that technology factors, as well as several social factors, affect the adoption of systems. Therefore, within the context of Nigerian SBEs, using an interpritivist lens provides a distinct viewpoint through which the various factors affecting e-business adoption can be studied.

The researcher was also interested in the depth of information on the extent of use of e-business in Nigerian SBEs, and only the interpretivist paradigm provided a means to describe, interpret and understand the phenomenon from the view of multiple social actors (Yin, 2003; Wahyuni, 2012). Figure 8 below shows the

research onion and indicates the research philosophy, approach, methodology and strategy selected for this research.

Source: Saunders, Lewis and Thornhill, 2015, p. 128

Figure 8 The Research 'onion' (from Saunders, Lewis and Thornhill, 2015, p. 128).

4.3   Theoretical Approach

Theories are essential for research, and all research should be rooted in one theoretical framework or another. Using theory is a mark of research seriousness and respectability as it aids the organisation of data and also simplifies the complexities of the social world (Pettigrew and McKechnie, 2001).

Theories are generally deemed important to research because they help to provide an explanation of an event and also give a sense to the empirical data (Grix, 2010). Kerlinger (1986, p.9) defines theory as "a set of interrelated constructs (concepts), definitions and propositions that present a systematic view of phenomena by specifying relations among variables with the purpose of explaining and predicting the phenomena."

Using theories, researchers can generalise about a phenomenon or occurrence. Theories provide the researcher with a unique lens through which to look at complex

problems and social issues; thus helping to focus attention on different aspects of data and also providing a structure for conducting analysis (Reeves *et al.*, 2008). Fawcett and Downs (1986) explained the relationship between theory and research as "a dialectic, transaction whereby theory determines what data are to be collected and research findings provide challenges to accepted theories".

Theories provide a framework that can direct research investigations and also generate discovery of new phenomena that require explanation (Ghauri and Grønhaug, 2005). In quantitative research, theories are often tested as an explanation for answers to research questions (Newman, Benz and Ridenour, 1998) while in qualitative research, the use of theories varies from theory generation to using theories to guide research and interpret facts (Miles, Huberman and Saldana, 2014).

How theory is integrated with research varies with regards to the selected research approach. Conventional research approaches used in IS research are deductive and inductive approaches which are further explored in the section below (Gill and Johnson, 2002).

4.3.1 Deductive Approach

The deductive approach to research concentrates on the collection of data to test a clearly defined theoretical position (Glaser, 2014). When using a deductive approach, the researcher is testing existing theories with data collected. This research approach involves testing hypotheses which emanate from existing theories or laws with a notion to prove or disprove them (Porta and Keating, 2008). In this type of research, the researcher draws on what is known in a particular body of knowledge and existing theoretical ideas to develop a hypothesis, which is then tested in the research being conducted (Bryman, 2016).

According to Beiske (2003), the deductive researcher thinks about a specific hypothesis and tests to check whether that hypothesis holds over the expected conditions or not. The deductive research approach works by making an assumption given the current speculations and shaping an exploration intended to test the assumption (Wilson, 2014). While the deductive approach may apply either

qualitative or quantitative methods, it is mostly quantitative in nature (Creswell and Creswell, 2017) and is often considered a low-risk strategy as it makes it easy to schedule timescales appropriately (Mason, 2017).

4.3.2 Inductive Approach

The inductive approach to research is concerned with developing theory from findings obtained (Flick, 2014). In inductive research, the researcher aims to explore a topic and develop a theoretical explanation to the phenomenon studied using data collected and analysed (Gill and Johnson, 2002). This approach to research suggests no hypothesis is connected at the beginning of the examination, but, the researcher should be without preconception and presumption and be observant, with a mind attuned to interpret the data.

While in the deductive research approach, theory drives the research process in all its phases, in the inductive research approach, theory is a product of the research process (Ghauri and Grønhaug, 2005). With the inductive approach, the theory is the outcome of the research as generalisable inferences are drawn from observation and data collected. The research is data-driven and not theory-driven in inductive research (McDaniel and Gates, 2000).

Meanings emanate from data in order to identify patterns and build theory in inductive research (Maylor, Blackmon and Huemann, 2016). When compared with the deductive approach, the inductive approach allows for the generation of more relationship between variables, while the deductive approach only tests the validity of existing relationships and variables defined by the hypothesis. The key strength of an inductive approach is that it helps the researcher to understand their social world in a way that is unrestrictive (Saunders, Lewis and Thornhill, 2012).

Inductive researchers often work with qualitative data and sometimes make use of a variety of methods to gather data in order to get different views of the phenomena studied (Yin, 2017). One of the main concerns of this approach to research is that researchers could be affected by the constrained nature of the information and the relations between the information available for exploration (Wilson, 2014; Silverman, 2015). According to Collins (2018), the inductive approach to research is more suited

for research where there is little existing study so that data collected will help generate theoretical themes. While the inductive research approach does not suggest the researcher should explicitly define a theoretical position, the researcher still needs to be aware of existing theories in the subject area (Bell, Bryman and Harley, 2018).

This research adopts the inductive approach to study e-business adoption in Nigerian SBEs as there are limited studies conducted in this regard, and the researcher is keen to holistically understand the relationships and interrelationships between existing concepts and new concepts that will be derived from the research.

4.4   Methodological Approach

Most academic research follows a thorough, very ordered and systematic process that often requires the researcher to clearly define the problem statement, using a clear aim with measurable objectives and an appropriate methodology before the commencement of the study. Blaxter, Hughes and Tight (2010) describe methodology as a philosophical term that refers to the approach or paradigm that informs the researcher. The chosen methodology dictates how researchers go about studying a phenomenon (Kumar, 2019) and according to Silverman (2015), methodology refers to choices a researcher makes in the planning and execution of the research study, such as methods of data collection, forms of data analysis and cases to study.

There are three main methodological approaches for research, which are quantitative, qualitative and mixed-method (Almalki, 2016). The quantitative approach is rooted in science and concerns itself with proving or validating theories or laws (Davies and Hughes, 2014). The qualitative approach, however, is reflective and interpretive in nature and concerns itself with understanding the meaning people ascribe to problems (Creswell, 2013); while mixed methods is a balance of the two approaches where one set of findings is used to further explore or backup findings from another approach used in research (Wisdom and Creswell, 2013; Creswell and Creswell, 2017).

The chosen methodology decided for use in any research is determined by the philosophical stance of the researcher and the research approach (Bailey, 2008). The nature of the research also plays an important role in deciding the choice of research methodology as researchers regularly choose the quantitative approach to deal with research questions requiring arithmetical information, while the qualitative approach is chosen to study questions demanding textural data (Silverman, 2015).

The most widely recognised techniques for coordinating research are the quantitative and the qualitative methods, but in the end, the researcher decides the appropriate method that suits the research and helps to answer the research questions (Collis and Hussey, 2013). This section briefly examines two types of methodologies and presents an argument and justification for the qualitative methodology as a choice for this research.

4.4.1 Quantitative Methodology

The quantitative methodology enables the researcher to examine large quantities of data and represent them using measures that can be easily understood (Burns, 2000). This approach to research is often adopted by researchers that are investigating a subject matter that requires data to be quantified (Blaxter, Hughes and Tight, 2010). This methodology is ideal for examining statistically significant relationships between variables (Barbour, 2013) and the quantitative researcher is frequently perceived to be applying measurement to provide context to social life (Bryman, 2016).

The quantitative researcher often adopts a positivist stance and is not involved in the research as an active actor, thus providing a framework for objectivity (McDaniel and Gates, 2000). One of the key advantages of the quantitative research methodology is that the researcher has little influence on the results or findings of the research. The choice of which research methodology to use is predominantly determined by philosophical stance, personal preference, supervisory preference and principally, the research questions to be answered (Davies, 2007).

The quantitative research is very structured with the researcher focusing on a set of defined hypothesis and variables to be examined. This style of research is often

concerned with testing hypothesis and relationships between variables (Neuman, 2011), and it tends to employ a deductive approach (Bernard and Bernard, 2012). The quantitative researcher is concerned with generalising findings beyond the context of the study; hence the need for selection of a representative sample. One of the fundamental tenets of the quantitative research methodology is to produce results that are objective, valid and can be replicated by other researchers (Gray, 2017).

Research strategies that are commonly used in quantitative studies are surveys and experimental strategies. Data collected is often arithmetical in nature; therefore, they can be obtained in a variety of ways and from numerous sources such as surveys, experiments, biophysical measurements and many others.

4.4.2 Qualitative Methodology

The qualitative research methodology focuses on understanding the social world by examination and interpretation of the world by social actors operating in it (Burns, 2000). In qualitative research, the goal of the researcher is to gain a holistic overview of the context being studied (Sarantakos, 2012) and to achieve this goal, the researcher often brings himself or herself close to the participants and interacts.

Qualitative research is intense, engaging and challenging, but it does provide a powerful source of information for analysis (Mason, 2017). This research methodology is largely data-driven with researchers often following an inductivist, constructivist or interpretivist paradigm (Terrell, 2012). Qualitative researchers tend to avoid making early hypothesis but try to generate underlying meaning from their data, and in this type of research, theories are generated at the end of the studies.

By using the qualitative research methodology, the researcher seeks to understand and investigate people in a natural environment and the various factors that affect such environments (Sarantakos, 2012). This research method is well suited for studies that wish to understand behaviour, values and beliefs in a particular context (Bernard and Bernard, 2012). In this type of research, the researcher is closely involved with the participants being studied, and this approach helps to imbue the

research authenticity, understand the view of the world from the participants (Ghauri and Grønhaug, 2005).

The qualitative method usually involves the analysis of soft data, i.e. words, sentence and photographs which are gathered through semi-structured interviews, observations, focus group, documents sources, diaries, pictures, voice recording and several other methods (Sarantakos, 2012; Barbour, 2013; Gray, 2017). As this research involves understanding the adoption of e-business in SBEs in Nigeria, the researcher thought it appropriate to adopt a qualitative approach because of the context and rich information that this approach would yield over the quantitative method.

Without the researcher immersing himself in the field by observing the day to day use of e-business systems in these organisations, it would be difficult to effectively examine this phenomenon, and the depth of data that would be derived through other methods would be limited (Yin, 2003; Creswell, 2013). The extent of e-business usage in Nigerian SBEs has also not been previously studied and reported in literature; thus, the researcher sought to investigate and see first-hand how the systems are being utilised, what the users and managers had to say about such systems and some of the challenges encountered that inhibit the adoption of e-business systems.

The use of the qualitative research methodology has also been proven in IS literature over the years with studies from Zhu, Kraemer and Xu (2003), Oliveira and Martins (2010), Wynn *et al.* (2016) and many others yielding new discoveries, adequate context and great depth.

4.5   Research Strategy

Research strategy is defined by Saunders, Lewis and Thornhill (2015) as "a plan of how a researcher will go about answering his/her research questions". It is a plan that provides a clear path to a researcher's thoughts about conducting research in a systematic way. It provides a link between methodology, philosophy and the methods used to collect and analyse data (Guba and Lincoln, 1994). In qualitative research, common research strategies include case study, grounded theory, action research and ethnography (Burns, 2000). The research strategy selected for this

research is the case study strategy. It has been chosen because it provides an ideal strategy to examine e-business adoption in Nigeria SBEs while enabling the researcher to examine first hand, how SBEs adopt, implement and use e-business in their daily operations.

The case study as a research strategy has been widely adopted in fields such as sociology (Grassel and Schirmer, 2006), law (Lovell, 2006), marketing (Perry, 1998), software engineering (Runeson and Host, 2009) and medicine (Taylor and Berridge, 2006). The case study research strategy helps to examine and permits the investigation and comprehension of complex issues (Yin, 2017). It empowers a researcher with the tools necessary to inspect the information within a particular setting (Bernard and Bernard, 2012) and it is a powerful research strategy that provides an all-encompassing, inside and out examination of a particular phenomenon (Thomas, 2015).

Yin (2009, p. 18) defines the case study research strategy as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used." Simons (2009, p. 21) also defines case study as "an in-depth exploration from multiple perspectives on the complexity and uniqueness of a particular project, policy, institution, programme or system in a real life context." The case study strategy is considered the ideal research strategy to adopt when conducting an in-depth and holistic investigation of a phenomenon where few insights already exist (Collis and Hussey, 2013). This research strategy provides the researcher with in-depth knowledge of the cases in question and the social interaction between the social actors within the cases (Gomm, Hammersley and Foster, 2000).

The case study strategy has been acknowledged as an exploration strategy for researchers who were concerned about the constraints of quantitative strategies to examine a phenomenon, and has been used to gain a more comprehensive outlook of the same (Silverman, 2015). Through case studies, researchers can explore beyond the quantitative factual outcomes and comprehend the behavioural conditions (Gomm, Hammersley and Foster, 2000). The case study strategy also allows for the combination of quantitative data collection methods such as surveys

and other qualitative methods as ways to clarify and study a phenomenon of interest in-depth (Yin, 2017).

The case study strategy consists of three broad categories which are: exploratory, explanatory and descriptive case study. An exploratory case study explores objective to uncover elements of knowledge around an issue or to refine a hypothesis (Hesse-Biber and Leavy, 2011). The essential research objective is to utilise the case to see more about a specific issue. A descriptive case study, on the other hand, explores the unique characteristics of a particular case and the research objective is to see more about the case itself, since it is extraordinary, or atypical in a way that is fascinating (Bickman *et al.*, 1998). An explanatory case study is one where the exploration objective is to distinguish causes and clarify results (Yin, 2009). Normally this includes utilising a few cases and drawing correlations between them. In this type of studies, the fundamental plan is to utilise the case studies to test a theory or speculation and achieving general decisions about the subject of study (Cavaye, 1996).

While case study research usually involves working with one or more related cases, it often leads to the generation and collection of a lot of data (Gomm, Hammersley and Foster, 2000) and some researchers have indicated that conducting case study research can sometimes be rigorously long and hard to direct (Noor, 2008). It has, however, been widely adopted across several fields as the ideal strategy for studying complex real-life phenomena in great depth (Yin, 2017).

4.5.1 Use of Case Study Strategy in IS Research

In IS research, the case study strategy has been widely adopted over the years by several researchers such as Zhu and Kraemer (2005), Wynn (2008), Prananto, McKay and Marshall (2004) and several others. According to Myers (1997), the case study research strategy is the most widely used qualitative method in IS research, and it is well suited for this discipline as the research interest has over the years shifted from technology issues to organisational and management issues (Benbasat, Goldstein and Mead, 1987; Myers, 1997; Laudon and Laudon, 2017).

Although a significant number of IS researchers adopt the case study strategy using the interpretivist or constructivist philosophical positions, other researchers have adopted case study strategy while having a positivist philosophical position

(Benbasat, Goldstein and Mead, 1987; Shanks and Parr, 2003). Shanks and Parr (2003) emphasise that the combination of a positivist philosophical position and a case study strategy offers a systematic approach for conducting a critical analysis of a single case study in IS research.

The case study strategy may be used to achieve different objectives, which range from the description of a phenomenon, testing theory or deploying new theories (Yin, 2017). Benbasat, Goldstein and Mead (1987) argue that the use of idiographic research strategies like case study in IS research helps provide more context and understanding of phenomena, rather than nomothetic strategies that make them abstract. Although their research notes that ultimately the goals of the researchers should help in determining the appropriate research strategy, they identify that the case study strategy is often appropriate for studies where research and theories are at the early formative stages. Walsham (2018), in his paper on research methodologies for conducting IS research in developing countries context, suggests that an interpretive or critical stance is well suited for researchers working in developing countries, and particularly suggests the use of case study or action research.

4.5.2 Justification of the Case Study Strategy

For this research, the case study strategy was selected as the research strategy because it allows for the use of multiple methods to capture data (Bryman, 2016). Rather than use surveys which would only provide a snapshot of information at a particular time (Silverman, 2015), the case study strategy was chosen as it provides a systematic approach where multiple data collection methods can be utilised to examine a phenomenon in depth (Noor, 2008) as well as allow the use of triangulation to analyse and explain the phenomenon.

According to Yin (2017), case study is well suited for situations where the researcher has little control over the phenomenon being studied. Creswell (2013) and Yin (2003) also suggest that case study is a valid choice of research strategy when the researcher has limited or no control over behavioural events that are to be examined. In much IS research, this is the case, and the case study strategy has been applied in studies by Wynn *et al.* (2016), Zhu, Kraemer and Xu (2002) and Olayinka, Wynn and Bechkoum (2016a). In this study, the researcher is concerned

with identifying key issues impacting upon adoption of e-business technology and processes in Nigerian SBEs and the case study is ideal as it provides multiple perspectives, while the researcher has little or no control over the behaviour of personnel in the organisations studied.

Case studies are viewed as a valuable investigation tool as they empower researchers to look at information at the smaller scale level (Cavaye, 1996). According to Burns (2000), the case study method of research is well suited for observations where the researcher aims to probe deeply and analyse rigorously to make generalisations about the wider population in which the unit being studied belongs. This research aims to get in-depth knowledge on the deployment and adoption of e-business systems and processes in Nigerian SBEs by conducting six case studies in selected organisations, and use the analysed data to develop a framework that could be used by other SBEs, thus making case study the preferred research strategy.

As with any research, the need to generalise findings to a wider population is of uttermost importance. With the case study strategy, being able to generalise from one case study is quite complex (Thomas, 2015), and this is often seen as a limitation of the case study strategy. Tight (2017) suggests that the use of multiple case studies offers an obvious acceptable strategy to combat this limitation. Yin (2017) argues that when it comes to generalisations in case study research, the goal is to generalise theories and not to extrapolate possibilities and over the years, various researchers have adopted this approach to generalising findings in case study research and in a similar manner, this study makes use of multiple case studies in order to generalise findings.

The case study strategy was also selected as it is widely adopted as an appropriate method to carry out business-related research (Tsang, 2013). The use of case study as a rigorous strategy for research has been evidenced in business-related disciplines like accounting and marketing (Perry, 1998). Following similar research design in other notable studies, this research adopts the case study method to evaluate e-business adoption in the context of SBEs in Nigeria. According to Saunders, Lewis and Thornhill (2015), the study of a case within its real-life setting

or context makes the case study research strategy uniquely suited to evaluating a phenomenon and can generate insights leading to the development of theory.

Studying the use of IS in any organisation be it small or large, is quite complex as it involves people, processes and various technologies. It also involves studying the relationship between various types of people or systems users with the systems and processes. The various challenges and perceptions that affect the use of IS are also essential to examine, thus, studying this phenomenon with a research strategy like surveys is not ideal as it would reduce the context of the organisation to simple variables. As suggested by Noor (2008), case study is well suited for studying complex real-life phenomena in great depth, and according to Neuman (2011), the case study method is a flexible research strategy, that allows a lot of data to be gathered and enables the exploration of multiple aspects of business and management, some of which form a part of this study.

Yin (2017) advises that the case study strategy is well suited for research when the main research questions are 'how' and 'why' questions. From the research objectives defined for this study, it is clear that the researcher is concerned with investigating how e-business systems and technologies are being adopted in Nigerian SBEs and therefore, the case study method was chosen.

4.5.3 Multiple Case Studies

The use of multiple case studies allows the researcher to seek similarities or differences between cases (Baxter and Jack, 2008), and although information from one case study unit provides insight into a phenomenon, multiple case studies allow for the aggregation of knowledge from multiple units (Noor, 2008).

With multiple case studies, data from wider perspectives can be gathered and analysed rigorously with a mind to generalise the findings beyond just a single unit but across industries, locations or other particular interests. In this study, six Nigerian SBEs based in Lagos were selected as case study companies through which the researcher sought to gather data, analyse and generalise findings across SBEs in Lagos, while also identifying some factors that could be generalised across the country.

Yin (2009) suggests that one of the main advantages of using multiple case studies is that it helps theory building and can indicate when a theory will or will not hold. Prior to this research, little information on the extent of the use of e-business in Nigerian SBEs existed. Thus, the need to rigorously study e-business deployment patterns and adoption in Nigerian SBEs made the selection of multiple case study design the most appropriate for the depth of knowledge required.

Perry (1998) asserts that multiple case study design allows for increased reliability, validity and replicability of results of the research. The multiple case study method allows the researcher to analyse the phenomenon with every single unit/case and across cases (Baxter and Jack, 2008), thus offering insights into different contexts that would be peculiar to certain cases as well as a holistic view of the phenomenon across cases.

Multiple case studies are widely adopted in IS research and accepted within the discipline. Although they are generally considered time consuming, expensive and complex to carry out (Gustafsson, 2017), the results from these studies are generally accepted in academia to produce more reliable results when compared with single case studies (Baxter and Jack, 2008; Blaxter, Hughes and Tight, 2010). Yin (2017) suggests that the use of 6-10 case studies is sufficient to provide compelling support for an initial set of propositions, and this research makes use of six Nigerian SBEs in Lagos as cases to study.

4.5.4 Overview of Case Study Companies

The selection of cases is an important part of the case study strategy (Gerring, 2006). The choice of appropriate cases is one of the critical factors that determine the success of a case study research (Tight, 2017), and in order to ensure the success of a research, the researcher needs to carefully evaluate the cases being considered with regards to the phenomenon to be studied. When a research study incorporates multiple case studies, the cases must be carefully chosen on the basis that comparable results are predicted from each one (Yin, 2003; Saunders, Lewis and Thornhill, 2015).

Benbasat, Goldstein and Mead (1987) suggest that studies which focus on organisational level phenomena should select cases based on characteristics of the firm such as industry sector, company size, structure, profit/not-profit status,

ownership, geography and a number of other factors. In the selection of the six SBEs, location, company size, ownership structure and use of e-business were considered.

Following a brief survey, ten companies indicated an interest in being contacted and from these ten, a rigorous process of determining geographical location to be studied, industry sector and researching information about the organisations from websites and various other media, helped the researcher to finally arrive at these six SBEs chosen to be part of the study.

The rigorous process to shortlist the six SBEs involved the researcher reviewing each of the tem companies based on income, turnover, implementation of e-business, geographic location, years in business, industry of operation and several other factors. The researchers focus was principally to ensure that the SBEs were selected from a variety of industry sectors to ensure that the selection was representative of the various industries in Nigeria, and to avoid a situation where only one industry sector was studied in depth.

Studies from other countries had also suggested that the age of a company has an impact on e-business adoption; thus, the researcher ensured to select businesses that covered various age ranges such as businesses that have been in existence for over ten years, businesses new in operation (less than two years) and other established businesses (generally less than ten years). These selections allowed for comparison between cases as suggested by Yin (2017) and for conclusion to be derived from SBEs in Nigeria.

The geographic location of the SBEs was also considered in the selection process of the case study companies. The researcher ensured to select businesses that have geographic coverage across Nigeria to ensure that the perspective of e-business adoption and usage in Nigeria as a whole is studied, rather than in Lagos alone. Each one of the businesses selected although were headquartered in Lagos, they either operated in other states or conducted business with clients extensively in various other geopolitical zones in the country.

Each of the SBEs was contacted and agreed to participate in the research. Table 1 below provides an overview of the six Nigerian SBEs that made up the case study

companies for this research and the geo-political zones they had extensive operations in.

Table 1 Case Study Companies

Company	Year Founded	No. of Staff	Industry	Turnover 2016/17	Geo-political zone of Operation
ABC Laundries	2010	7	Laundry	£22,000	South West
GPY Properties	2012	23	Construction	£90,000	South West & South East
KDE Energy	2012	10	Energy	£260,000	South West, North East, North Central & North West
LTE Consulting	2007	7	Training	£26,000	South-West & North Central
HGB Stores	2015	5	Retail	£38,000	South West, South South & South East, North Central
OMO Legal Services	1971	15	Legal	£80,000	South West & North Central

4.5.5 Selection and Profile of Interviewees

To gather insight from the selected case study companies into the use of e-business and motivation for deployment, the researcher ensured that at least two individuals from each case study company were interviewed. The questionnaire and interview respondents needed to be staff in the companies involved with at least one of the following: general management of the company, day to day e-business usage, IT systems deployment, and company operations.

Table 2 below shows a brief profile for respondents of each of the case study companies.

Table 2 Case Study Companies Respondents

S/N	Case Study Company	Respondents
1	ABC Laundries	**Respondent 1 – Owner/CEO** An IT project manager with over eighteen years' experience working in one of Nigeria's telecommunication houses. He works part-time and is responsible for managing the finance and oversees the strategic operation of the business.
		Respondent 2 – Manager A 32-year-old man who holds a bachelor's degree in business administration and over eight years of experience working in a professional context in a microfinance bank. He oversees managing day to day operations of the company.
		Respondent 3 – IT Manager A 25-year-old recent graduate from one of Nigeria's private universities. He is responsible for developing and managing IT systems in the organisation.
2	GPY Properties	**Respondent 1 –Founder/CEO** A 39-year-old marketing professional with an MBA from Warwick University and a bachelor's degree in accounting. He oversees general activities of the company from day to day and drives company strategy.
		Respondent 2 –Head of Finance The head of finance is a graduate of accounting at the University of Lagos and a member of the Institute of Corporate Accountants of Nigeria (ICAN). Her day to day activity involves managing the site manager and

3	KDE Energy	**Respondent 1 – Founder/Owner** An electrical engineer with over ten years of experience, he works part-time and oversees the strategy and finance sections of the business. project managers while also ensuring the company is in good financial position.

		project managers while also ensuring the company is in good financial position.
3	KDE Energy	**Respondent 1 – Founder/Owner** An electrical engineer with over ten years of experience, he works part-time and oversees the strategy and finance sections of the business.
		Respondent 2 – Managing Director A graduate of Economics, she manages the company from day to day, and her role involves supervising the operations manager and primarily converting various leads placed to customers.
		Respondent 3 – Operations/Sales Manager A 26-year graduate of business administration of the University of Lagos. He is responsible for the day to day operations and managing company projects.
4	HGB Stores	**Respondent 1 –Owner/Managing Director** A BSc graduate of Economics from the University of Ibadan. She is in her 30's, works full time and manages the company activities from day-to-day.
		Respondent 2– Operations Associate A 22-year-old HND graduate who is responsible for managing most of the sales and marketing process, customer management and some part of the delivery management.

| 5 | LTE Consulting | **Respondent 1 – Owner/CEO**

An Insurance consultant and trainer with 30+ years' experience working in West African insurance industry. He is responsible for strategy, training planning and oversees the operation of the business.

Respondent 2 – Learning Technologist

A Master's degree graduate of Information system. She was responsible for researching learning management solutions to be deployed by the business and her daily role involves working with content creation, supporting workshop attendees with the Learning Management System (LMS). |
| 6 | OMO Legal Services | **Respondent 1 –Managing Director/Principal partner**

He is a dual-qualified lawyer and son of the original founder. He oversees various lawyers and partners in the practices and is in charge of strategy and overall finance of the firm. He joined the firm officially nine years ago.

Respondent 2 – Admin Associate

She is an HND graduate of Business Administration. She solely manages the administrative activities of the firm, and her role involves sending out invoices, generating contracts and liaising with new customers. |

4.6   Methods of Data Collection

Qualitative research often involves asking questions and making observations in the field (Dey, 2003), and most studies make use of at least one method for rigorous data collection. Having utilised case study strategy for this research, a variety of data

collection techniques were adopted over a period of time to adequately understand the phenomena of interest.

Selecting the right data collection techniques is of uttermost importance to any research (Baxter and Jack, 2008; Farquhar, 2012), and without it, the entire study could fail to answer the research questions set out or fail to meet the objectives outlined at the beginning of the research. While selecting the data collection techniques for this research, the researcher gave thought to how they would help achieve the research objectives set out for the study. A combination of questionnaires, semi-structured interviews, observation and documentary evidence was used to acquire data relevant for this research. Figure 9 below shows the research process and precisely how and when each data collection method was utilised.

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Figure 9 Research Design Process

The researcher made use of a multi-method approach to data collection, which is often referred to as triangulation and, as advocated by Yin (2011), the use of multiple methods for data collection allows for a rigorous understanding of the phenomena being studied from multiple perspectives. Dooley (2002) also ascertains that the strength of the case study method is in its ability to make use of multiple methods of data collection to compare and validate as part of the research process.

Triangulation as a research concept is often used in social sciences where more than one data collection method (usually three) is used to evaluate a phenomenon (Flick, 2018). This approach to social science research often allows for validity within the research (Merriam and Tisdell, 2015) and enables data to be captured from different dimensions, thus allowing for a more robust and thorough data set. Bryman (2016) defines triangulation as "the use of more than one method or source of data in the study of a social phenomenon so that findings can be cross checked". Qualitative researchers have applied this research concept in several ways, such as ethnographic research where observation, as well as an interview, is used to validate the observation of the ethnographers (Yin, 2009).

The concept of triangulation has become popular in case study research today and is central to several case study designs (Baxter and Jack, 2008). This research makes use of triangulation as a way to better understand the phenomenon in question, validate data gathered and as indicated by Farquhar (2012), it provides the researcher a basis for arguing that the research is credible.

Following a thorough review of literature in chapter two and development of a conceptual framework in chapter three, the researcher set out to gather data using questionnaire, interviews and observation. An initial survey questionnaire was developed and sent to 80 SBEs in Lagos Nigeria, out of which 52 responded. The survey sought to identify SBEs that had adopted e-business technologies and systems in their organisation and identify potential case study organisations. The survey was short, distributed via email and consisted of only seven questions. Appendix III shows the survey questionnaire.

From the initial response, six SBEs were chosen as case study organisations based on the information filled in, willingness to participate in the study and meeting the criteria of having implemented e-business in their organisation. The six selected

SBEs were later sent a detailed questionnaire which was filled in by founders and owners of business, managers, IT managers and relevant management staff. This detailed questionnaire was then followed up with a semi-structured interview of the questionnaire respondents in each organisation. Other methods utilised included observation and documentary evidence. Table 3 below shows each of the research objectives and the methods used for collecting data.

Table 3 Research Objectives and Data Collection Methods

S/N	Research Objective	Data Collection Technique
1	Investigate the extent to which Nigerian SBEs are adopting e-business systems and processes.	Literature Review Surveys Questionnaires Interviews
2	Identify the key issues impacting upon the adoption of e-business technology and processes in Nigerian SBEs.	Literature Review Questionnaires Interviews Observation & Documentary Evidence
3	Develop a framework that can be applied to aid Nigerian SBEs in the development and implementation of an e-business strategy.	Literature Review Questionnaires Interviews Observation & Documentary Evidence

The following section discusses the data collection techniques used for this research.

4.6.1 Questionnaires

Social science researchers often use questionnaires as a method of data collection (Burns, 2000). Questionnaires could be administered using various methods: post, email, face-to-face or fax; however, the questionnaires for this research were sent via email. As indicated by Barbour (2013), respondents might have challenges with filling very long questionnaires, and this could result in a reduced response rate; in this research, the researcher ensured that the questionnaire was not too long and could be easily completed within one hour.

The questionnaire used as part of this research was designed with a focus on the research objectives set out at the beginning of the study. During the questionnaire design phase, the researcher focused on ensuring the questions were easy to understand, and ambiguity was avoided. The researcher drew insights on specific questions from a combination of the literature review as well as the conceptual framework. Figure 10 below shows the relationship of the questionnaire design to the conceptual framework.

Figure 10 Relationship Between Conceptual Framework and Questionnaire

The questionnaire was developed and tested for clarity, and then for the potential of the responses to reveal relevant information that would help with answering relevant research objectives. To test the questionnaire, it was distributed to fellow PhD

Students from the University's Business School and family friends who are entrepreneurs, and was further reviewed by supervisors. The goal of the test was to ensure that the questions were clearly written, easily understandable, and that the questionnaire was not too long that it would not put off respondents.

The questionnaire primarily made use of open-ended questions allowing the respondents to express themselves and share insight about e-business usage in their organisation. One of the challenges that the research found with questionnaires was that it took a while for the respondents to return them. Although the respondents were advised to return the questionnaires within three weeks of receipt, on average, it took about five weeks for the respondents to send the questionnaire back. This is perhaps understandable as the managers and owners of these companies have a lot to deal with in their businesses during working hours, thus leaving only their personal time to complete the questionnaire.

Two sets of self-administered questionnaires were used in this research. The first was a 7-question survey which had the main goal of helping the researcher understand the current use of e-business across a broad range of Nigerian SBEs and primarily to identify companies that wished to be contacted for the research. The second questionnaire focused on more rigorous questions about e-business usage in the case study companies.

One of the advantages of using a questionnaire is that it allows for easy collection of data from a wide sample (Bailey, 2008). As indicated by Flick (2018), questionnaires are better used with other methods of data collection in a multi-method research design and in this research, the questionnaire was used in conjunction with interviews, observation and documentary evidence. The initial results derived from the questionnaires were also influential in the design of the interview questions.

To avoid uninformed responses, the questionnaire was specifically targeted at the owner, manager, and IT Officer/Manager in the companies studied. As suggested by Saunders, Lewis and Thornhill (2012), open-ended questions may be used for questionnaires in exploratory research when the research requires a dedicated answer or what is most important to the respondent.

4.6.2 Interviews

Interviews are another common method of data collection in qualitative studies that involves questioning and discussing issues around the phenomenon being studied (Barbour, 2013). It is generally considered a useful method for collecting data which would normally not be available through other means, such as questionnaires (Bailey, 2008). Yin (2017) emphasises the use of interviews as one of the most important data collection techniques for case study research and regards it as a dialogue between the interviewer (researcher) and the interviewee about a phenomenon of interest using pre-set questions, with a mindset of gaining insight and more knowledge from the interviewee about the phenomenon.

Research interviews are classified into structured, unstructured and semi-structured interviews. Semi-structured or unstructured interviews help the researcher get more insight from the interviewees perspective and point of view and as a result, they tend to be less structured compared to interviews in quantitative studies (Edwards and Holland, 2013). Semi-structured interviews were used for this research as they allowed for the researcher to ask follow on questions that might not have been documented and allowed for a conversation around e-business adoption in the company of interest.

The researcher selected semi-structured interviews as a means of data collection over unstructured interviews as they allowed for in-depth and complex information to be gathered while still maintaining a structure and preventing the discussion from wandering off to other areas that might not be as beneficial to the research, which could be possible in an unstructured interview schedule.

The selection of semi-structured interviews was also deemed appropriate as the researcher already had a clear focus of themes and questions to ask as this was already informed by the literature, conceptual framework and questionnaire responses (Silverman, 2009). As this research made use of multiple case study, the use of semi-structured interview was the most appropriate and consistent with the approach recommended by Bailey (2008), who states it is important to have some structure when using interviews in multiple case studies as this allows for cross-case compatibility.

Semi-structured interviews were also selected because, as indicated by Bernard and Bernard (2012), they are particularly attractive to researchers who wish to explore experiences that have been ignored or rarely studied. E-business adoption in developing and emerging countries has been understudied, and research interest in this field is only just growing. Most studies have focused on factors and challenges affecting adoption in SMEs with very little research on the extent of use, particularly in SBEs, which often have different organisational structures from SMEs.

The semi-structured interview method of data collection is considered useful as a method of data collection to be used when the researcher is conducting an exploratory study using an inductive approach. For example, the discussions during a semi-structured interview could allow the researcher to gain knowledge from areas which might not have been previously considered, but are important for the exploration of the phenomenon of interest.

Interviews can be carried out over the phone through Skype or face-to-face; for this research, the researcher made use of face-to-face interviews, and the key respondents from each of the case study companies were the owner, managing director and relevant senior management. Figure 11 shows the relationship of the interview questions to the conceptual framework.

Figure 11 Relationship Between Conceptual Framework and Interview Questions

Interview questions were developed based on the information from literature, the conceptual framework and responses from the questionnaires. The respondents of the questionnaires and interviews were the same from each company, thus allowing for the researcher to gather more in-depth information through oral form that helped understand the use and deployment of e-business in these organisations.

The interviews took place in the case study companies and were recorded and transcribed for analysis. Consent from each interviewee was sought before starting the recording, and the researcher ensured to take notes at the interviews for quick reference and to enable more insight into the interviews while analysing. The average interview lasted 50 minutes to 1 hour. Appendix VI contains the interview protocol and questions.

By interviewing various individuals from each organisation, the researcher was able to get different insights and multiple perspectives of e-business usage in the organisation. For example, the owners of the businesses were able to highlight reasons for adoption and the business justification of their e-business usage while the IT managers were able to discuss in more depth their choices and strategies for using the chosen technology road map. They were also able to discuss challenges from an IT perspective while the owners and managers discussed challenges from a general business scope.

4.6.3 Observation

Participant observation is one of the common methods of data collection in qualitative studies. It normally refers to the extended involvement of the researcher in the life of those he is studying (Bernard and Bernard, 2012). Participant observation is regarded as a very good data collection method when the research is concerned with what people do, and Saunders, Lewis and Thornhill (2015) defined it as a method where "the researcher attempts to participate fully in the lives and activities of members thus becoming a member of their group, community or organisation".

The researcher visited the six SBEs in Lagos and spent between 2- 3 days working from the location of each organisation in the normal working hours of 9-5 pm. Aside from the 3 days' visits, at other times, the researcher visited the organisations for part of the working day. These visitations presented the opportunity for the

researcher to interact with employees informally and observe their use of various e-business systems as well as the processes in each organisation.

Employees of the organisations were informed about the researcher's visits, and he maintained his status as an observer in all the companies while asking questions where relevant to clarify actions and purposes. Giving the nature of the research, the researcher did not see the need to conceal his identity of why he was there. Explicit details of patterns or factors being studied and examined were, however, avoided to be shared with employees. As with any observatory study, the researcher was able to interact with employees at various levels within the organisation while using this method of data collection to validate the information that had been collected using questionnaires and interviews from more senior members of staff.

Observation as a method of data collection in business-related research is quite relevant as it provides an avenue for researchers to see first-hand what participants are doing and possibly ask questions to clarify (Ghauri and Grønhaug, 2005). Data was collected using field notes and written up for further analysis as a way to compare with what was provided during interviews. In some companies, the researcher sat with staff while uploading content to the website, visited construction sites and was able to capture how the managers/owners interacted with employees, suppliers and customers.

According to Creswell (2013), participant observation allows for useful information that could have been missed during interviews to be captured and provides the researcher with the rare context of capturing information as it occurs. Participant observation also helps eliminate/identify bias that might have been reported during interviews through poor recollection or other reasons (Farquhar, 2012).

4.6.4 Documentary Evidence

Most research projects involve the use and analysis of documents (Gray, 2016). As indicated by Davies and Hughes (2014), collection and analysis of secondary data is often relevant to case study research and data gathered using these sources would regularly include both quantitative and qualitative data. Historically, documentary evidence has been deemed relevant to qualitative research (Yin, 2003; Bryman,

2016) as this usually provides more context into data that has been gathered using other sources. As indicated by Scott (2014), the researcher needed to ensure that the documentary sources being used were authentic, current, credible and meaningful to the research.

When reviewing documents made available by organisations for this research, the researcher kept in mind document interconnectedness; the researcher tried to identify documents which linked together and that further enhanced data collected using other mediums (Atkinson and Coffey, 2004). The researcher also made use of documentary evidence as a data source to corroborate and validate information gathered from other sources such as interviews and questionnaires.

Although documentary evidence was not one of the main sources of data collection for this research, it constituted some of the data used in the research. For example, the researcher reviewed websites of the proposed case study companies to choose what companies would be finally selected to form part of this research. Other forms of documents that were reviewed include minutes of meetings, system and architecture documents, project progress reports, company organogram, profit and loss account statements, monthly operations report, email correspondence with vendors, memos and operation plans.

4.6.5 Practical Aspects of the Field Research

This research involved data gathering over an extended period from the various case study companies using a variety of data collection methods. As with any research, there were practical implications of conducting this longitudinal study in Lagos, Nigeria and this section discusses a few of the challenges and practical aspects of the field research.

Firstly, following the selection of the six case study companies, one of the immediate practical challenges faced by the researcher was response to the initial survey. The respondents from each company had been informed that the response should be returned within three weeks. However, on the average, the responses from each company took about five-six weeks to be duly sent. This delay meant that the researcher could not begin the initial analysis in good time as an overall picture in each case study firm could not be gotten until all respondents in the company had submitted their response. To resolve this challenge, the researcher followed up with

the owners of the companies via email frequently and when the owner of the company had responded, it was a lot easier to collect responses from other staff in the firm.

Secondly, another challenge that the researcher encountered was that during the interviews, some staff in the case study companies did not want to be recorded as they felt it could be used against them, or the recording could be made available to their employers. To overcome this challenge, the researcher reassured the concerned staff members, provided a copy of the consent form and showed them the interview questions that they were not in any way personal that could be detrimental to them but questions to understand the use and challenges of e-business usage in the organisation.

Thirdly, in order to get in-depth insight into the case study companies, the researcher visited each company's headquarters in Lagos Nigeria for a few days to conduct interviews and for observation. Although the owners of the business were informed of the itinerary of the researcher and agreed to the suggested dates for the interviews, it was often still difficult to get the CEO's interview done without rescheduling several times due to their very busy schedules and availability. The initial itennairy set out by the researcher before leaving the UK to Nigeria was disrupted and the researcher needed to extend his trip while in Nigeria by about two months in order to accommodate all the interviews.

Fourtly, Lagos is a busy metropolitan city and commuting to different locations is often a challenge with individuals having to spend several hours in traffic. During the course of the field research, the researcher experienced this while navigating to the case study companies from his base on the mainland. There was an instance where the researcher had to leave his vehicle in one of the case study companies location so as to hop in the vehicle of the CEO to complete the interview before travelling back to the office to collect the car the next day. There was also an instance where the researcher factored in all the traffic and was planning to be at least 1 hr early only to realise that he was 30 mins late due to traffic. Overall, this experience was an enjoyable one for the researchers as it provided him with experience of conducting field research first hand. Figure 12 below shows the map of Lagos and the location of the various case study companies.

Finally, prior to conducting this research, the researcher possessed limited experience with conducting extensive qualitative research and although the researcher found the process to be interesting, it was quite rigorous. The process of coding the questionnaire and interview responses were quite time consuming and the theme generation process was initially thought to be very difficult and abstract. The researcher read extensively existing literature and textbooks on qualitative research to validate that he was doing the right thing. Guidance from supervisors also helped during this process.

It was however rewarding to see that the various CEO's and IT professionals that were part of the validation process understood the framework and felt it was useful for their businesses.

Figure 12 Map of Lagos showing Case Study Companies from Wikipedia (2006)

4.7   Data Analysis

Qualitative research often leads to the collection of large textual data which is usually not straight forward to analyse (Willis, 2010). Some well-defined strategies such as grounded theory, analytic induction and thematic analysis, have become popular choices for researchers when analysing qualitative data obtained from interviews,

observation, questionnaire and other mediums of data collection (Miles, Huberman and Saldana, 2014).

There are different schools of thought about how data collection and data analysis interplay. Some strategies suggest an iterative approach to data collection and analysis (Walliman, 2015) while others (mostly quantitative studies) suggest that all data should be collated before analysis begins (Gerring, 2011). With the iterative approach, one of the key advantages is that initial results of the analysis will inform further data gathering exercises (Walliman, 2015) and yield more insight into the phenomenon being studied.

The iterative approach ensures that at each stage of data collection, the researcher can ask the right questions that allow for a better understanding of the phenomenon being studied; and because qualitative data is largely textual in nature, analysis of this data could be viewed as moving from chaos to order with a view of understanding the phenomenon being studied (Blaxter, Hughes and Tight, 2010).

Upon the completion of the initial analysis of survey responses, the questionnaires were sent out to the relevant respondents in the case study organisations selected. When each questionnaire was returned, the researcher read through the responses and ensured that the questions were properly answered and once all responses from an organisation were received, the researcher began data analysis. This approach allowed the researcher to reflect on the themes, ensure that themes relevant to the research were being captured, and these themes informed questions to be followed up on at the interview stages or looked at while visiting the organisation, thus allowing the research to benefit in great detail from the various data collection methods used.

Following the analysis of responses from the questionnaire, the researcher arranged interviews with managers and proprietors of the case study companies who all agreed to audio recording of the interviews and upon completion of all interviews across the case study companies, the data was transcribed. According to Miles, Huberman and Saldana (2014), to get rich insight from semi-structured interviews in qualitative research, the researcher needs to transcribe that data and ensure it is a true account of the interview.

The researcher also ensured that the data was cleansed by going through the transcripts of the interviews as well as the audio recording at least once to ensure there were no errors in the transcripts. Upon completion of this process, the researcher analysed the data using thematic analysis and performed first order, second order and third order coding on all the dataset retrieved from the interviews. Thematic analysis and framework analysis were approaches used in this research to analyse the data collected about the social context and phenomenon being studied.

4.7.1 Coding

The concept of coding is central to qualitative research and has widespread acceptance in academic research (Dey, 2003). Coding is a process in qualitative data analysis that involves reviewing transcripts and labelling parts that appear to be of theoretical importance or generally relevant to the phenomenon being studied (Johnson and Christensen, 2010). It is popularly used in qualitative data analysis strategies such as grounded theory and thematic analysis (Charmaz, 2014). There are three stages of coding in qualitative research, which are often used together.

The first stage - open coding - refers to the process of breaking down, examining and categorising data into concepts (Miller and Yang, 2007). At this stage, the researcher is open-minded to generate new ideas, and the researcher is progressing one line after the other until the entire data has been traversed in a very detailed manner. Next, axial coding - which refers to the categorisation of open codes into context - is performed by comparing open codes with each other and emphasizing codes that reveal information about the data (Klenke, 2008). In this stage, some new codes would be generated by traversing the data once or twice again but also by combining several open codes (Creswell, 2007). The third stage of coding is selective coding, which refers to selecting categories and establishing relationships between codes (Bell, Bryman and Harley, 2018). This stage involves bringing together codes from the previous stages with a mind of providing theoretical understanding of the phenomenon being studied (Klenke, 2008).

The process of coding qualitative data enables the researcher to generate an index of terms that allows the researcher to theorise and interpret the data (Wellington and Szczerbinski, 2007). As indicated by Saldana (2015), the coding process is usually very immersive and intensive and an imaginative process that helps the researcher

make sense of the data gathered using various techniques. In this research, the researcher read through each transcript and response from questionnaire twice before starting out to code the data. This allowed the researcher to familiarise himself with the data as well as gain an understanding of the data prior to coding.

The first stage of coding was done by the researcher traversing each respondents' data twice with about three days' interval between each traversal, thus allowing the researcher to return to the data with a fresh eye. For each instance, the researcher read through the responses and identified codes that stood out as relevant using a top to bottom approach. Once completed, the researcher went through the same document again with the intention of identifying new codes and possibly codes that related to the literature and this same approach and process was repeated for all questionnaire responses. The same approach was followed for the transcripts from the interviews.

Once all open codes were identified, the researcher traversed through the open codes and tried to see how some of the codes could be grouped together. On completion of the second stage of coding for all questionnaires and interview transcripts, the third stage of coding was performed. The third stage (selective coding) was about looking at the axial codes and identifying how theories could emerge from them as well as identifying possible linkages and relationships between the various axial codes and literature.

4.7.2 Thematic Analysis

Thematic analysis is a process of coding data into themes that are relevant to the phenomenon being studied as a way of providing meaning and interpretation of data gathered as part of the research (Bell, Bryman and Harley, 2018). Themes are a way to analyse and generate patterns in qualitative research (Gray, 2013). Although some researchers often use themes and codes interchangeably, as indicated by Ryan and Bernard (2003), themes emanate from code identified in transcript and provides a means by which a researcher can theoretically understand the data and present a theoretical contribution to literature. In qualitative research, thematic analysis is one of the most popularly used analysis method as it allows for a structured process to be followed in order to analyse data collected using interviews, questionnaires and other collection methods.

The researcher made use of thematic analysis as an analytic framework to analyse and extract meaning from the data collected. As qualitative research often involves large, voluminous data sets, data reduction techniques were employed (Klenke, 2008). Data reduction can take different forms such as generating summaries, coding and categorizing data. In thematic analysis, data reduction is achieved through coding and usually a theme would refer to one or more codes that emerge from data (Saldana, 2015). Data reduction helps the researcher generate a basis for theoretical understanding of a phenomenon (Miles, Huberman and Saldana, 2014). Once the interviews were complete, the researcher ensured to transcribe the recorded interviews and derived extended text which was analysed.

During the analysis, themes were generated from the researcher reflecting on initial codes with a mind of generating linkages between them. Although thematic analysis is fluid and some researchers argue it is not an analysis method on its own, given that it is used in other methods such as grounded theory, critical discourse analysis, content analysis and several other qualitative analysis techniques (Bell, Bryman and Harley, 2018), it was regarded as appropriate for this research.

The researcher followed the six steps identified in Gray (2013, p. 610). Themes and sub-themes were identified from a rigorous process of reading and re-reading of the extended text generated from interview transcription process. By applying open, axial and selective coding techniques, themes relevant to the phenomenon being studied emerged, and by reflecting and iterating over the coding process, the researcher was able to identify themes which are reported in chapters 6.

NVivo was used as the qualitative analysis tool to code the data. I.e. all the transcribed interviews and questionnaire responses were loaded into NVivo and codes were generated. After which themes were identified from the existing data and the codes.

4.7.3 Framework Analysis

Framework analysis is a systematic approach to the analysis of data that is increasingly becoming popular in qualitative research (Ward *et al.*, 2013). This approach to qualitative data analysis has been applied to different disciplines such as policy research, health services, IS and several others in the last decade (Gale *et al.*, 2013; Ward *et al.*, 2013). Although it has similar stages to grounded theory, it is

unique in that it often produces a matrix that helps researchers easily generate frameworks and analyse across multiple cases (Srivastava and Thomson, 2009).

Framework analysis was developed in the UK by researchers working in an independent social research institute, NatCen (Ritchie *et al.*, 1994) while conducting applied policy research. This method of analysis is comprehensive and allows the researcher to summarise the raw data, generate themes and understand social behaviour within the context of the phenomenon being studied (Furber, 2010). It allows for transparent analysis of qualitative data thus enabling an easy explanation to how findings of a research were derived (Mason, Mirza and Webb, 2018) and allows for a rigorous inductive process as a way to explain the social interactions in the phenomenon being studied.

Framework analysis consists of five sequential stages which are: familiarisation with data, developing a theoretical framework, indexing, charting and synthesizing the data. These five distinct phases makes this method of analysis rigorous and methodological, enabling researchers to interpret data within the context of the case (Furber, 2010; Gale *et al.*, 2013).

The first stage, familiarisation with data, involves the researcher getting familiar with the data that is to be analysed. This involves transcribing and reading the data with an aim to get a very good understanding of what the data is about and the respondents responses on the phenomenon being studied (Ward *et al.*, 2013). The next stage is developing a theoretical framework, where coding and categorization of codes are done, and a theoretical framework generated. This coding activity is synonymous to open coding carried out in other qualitative analysis techniques, such as grounded theory and thematic analysis(Saldana, 2015). After the coding is completed, the researcher groups some of the codes together into categories based on similarity in hierarchical fashion to generate a theoretical framework which will later be used to analyse the data (Mason, Mirza and Webb, 2018).

The next stage, which is referred to as indexing, involves the researcher using the framework developed in the earlier stage, to index all raw data. Following the indexing stage is Charting, which involves the researcher summarising the data into thematic charts and generating a two dimensional matrix where rows represent respondents from each case and the columns represent each theme (Gale *et al.*,

2013). The final stage is Synthesizing the data, in this stage, the researcher is mapping and interpreting the data to generate descriptive analysis of the phenomenon being studied.

The framework method of analysis was chosen as one of the approaches to explore because it involves analysing data from multiple cases and the framework analysis method has proven to be suitable for such analysis (Mason, Mirza and Webb, 2018). This approach to qualitative data analysis has also been used in other IS research with interesting results emerging; thus, the researcher felt it wise to adopt this method of analysis given the rigour and transparency in analysis it offers (Wynn, 2018b).

Although a thematic analysis was initially conducted, framework analysis was used to further analyse the data.

4.8   Research Validation

Validation in research helps asserts that the findings are credible, and the research fulfils its objectives. In qualitative studies, research validation exists to verify the authenticity and credibility of the research (Creswell, 2007).

According to Bell, Bryman and Harley (2018), qualitative research projects that involve theoretical conjectures, guidelines or frameworks, must be validated before they could be put to use, generalised or accepted as a valid explanation of the phenomenon being studied. Ritchie and Lewis (2003) assert that research projects ought to be validated both internally and externally. Bygstad and Munkvold (2007) however, explain that case study research that is externally validated increases the validity and reliability of the findings of such research, but as suggested by Modell (2005), the research must first obtain internal validity before external validity.

Internal validation was achieved through the constant comparative process of coding and cross-case synthesis (Riege, 2003), while external validation was achieved through triangulation and respondent validation (Sensing, 2011). Following the development of the e-business strategy framework presented in chapter seven, the framework was validated through semi-structured interviews of SBE owners and IT professionals who were familiar with e-business and SBEs in Nigeria. Twelve participants were recruited to participate, six were the owners of the case study

companies, and the other six were IT professionals (Business Analyst or Project Managers) with at least ten years' experience. Table 4 below shows the profile of framework validation participants.

By inviting SBE owners (who had already been part of the initial research) and IT professionals who were new to the study to validate the framework, a basis for comprehensive evaluation and external validation was provided. The experience of the IT professionals and the strategic business focus of the SBE owners complemented each other and allowed for a thorough assessment of the framework to ensure that it could be used by SBEs in Nigeria to develop and implement e-business strategy.

Each respondent was provided the framework, brief description of the cases and a shortlist of the questions 48 hours to an interview. This allowed them to review the framework prior to the phone interview. On average, each interview lasted about forty minutes and the participants were asked questions about the usefulness of the framework in Nigerian SBEs. The framework validation focused on four key areas – user-friendliness of the framework, usefulness within the Nigerian SBE sector, strengths and weaknesses, and suggestions for improvement.

Given that the process made use of business owners and IT professionals, the practical applicability of the framework was validated and the relevant issues or concepts of the framework were raised. By conducting the validation, the findings of the research were further substantiated and ideas which were thought to be important but missed or detailed in reduced quality were further explored by the researcher and the participants. This process of validation also helped improve the quality of the framework as ideas suggested by the participants which were deemed relevant and within the scope of the study were used to improve the quality of the overall framework. Appendix VII below shows the questions that were sent to the participants, while Appendix VIII shows a sample transcript from the interview.

Table 4 Profile of Research Validators

S/N	Participant	Profile
1	Participant 1 (Case Study participant)	Owner HGB Stores.
2	Participant 2	A business analyst with over 12 years' experience in the Nigerian telecom sector working primarily with SMEs.
3	Participant 3	A business analyst with 10 years' experience working in the banking and retail sector in Nigeria.
4	Participant 4 (Case Study participant)	Principal Partner OMO Legal.
5	Participant 5	A project manager with over 20 years' experience working in Nigeria, Ghana and the UK. He also runs a small business in Nigeria.
6	Participant 6 (Case Study participant)	Owner ABC Laundries
7	Participant 7 (Case Study participant)	Owner KDE Energy
8	Participant 8 (Case Study participant)	Owner GPY Properties
9	Participant 9	A business analyst with over 15 years' experience working in various industry sectors in Nigeria including Pharmaceuticals, Agriculture, Retail and Logistics.
10	Participant 10	IT enthusiast, small business owner and possess 11 years combined experience as both

		Business Analyst and Project Manager in SMEs in Nigeria
11	Participant 11	Owner LTE Consulting
12	Participant 12	IT project manager with over 12 years' experience working with startups and small businesses in Lagos, Nigeria.

4.9   Ethical Consideration

Research ethics is often referred to as an important topic in qualitative research, primarily because this type of research frequently involves collecting data from people and the validity of any research; relies on the ethical considerations taken into account when conducting such study (Oliver, 2010). Universities, research organisations and funding bodies maintain ethical procedures and standards that researchers working in these organisations need to adhere to. Apart from the key areas covered in these standards, the researcher must ensure duty of confidentiality, that participants provide informed consent, there is no coercion and that the research is generally embarked on in a professional manner in order for the research to be accepted as a contribution to the body of knowledge in the field being studied (Wiles, 2012).

While conducting this research, the researcher adhered to the University of Gloucestershire's Ethical research guideline (University of Gloucestershire, 2008) as well as obtaining necessary approval and written consent from participatory organisations used as case studies. Given the depth of information gathered from each organisation as part of this research and the need to publish the result of this research publicly, aliases have been used to represent each of the case study organisations.

As this research involved some interview respondents, consent was obtained before interviewing and recording. All respondents were required to sign an opt-in form and were informed that their personal data would be anonymised and raw data available

to the researcher would be kept in accordance with the Data Protection Act (Information Commissioner's Office, 2018).

4.9.1 Confidentiality

This study ensures all data gathered through interviews, questionnaires and documentary observations are anonymised in accordance with the agreement with the case study companies prior to the research. The researcher also ensured that only relevant personally identifiable information such as name and age-range was collected as part of the research and that the data collected would only be used in completing this research project and derivative publications related to the research.

4.9.2 Integrity

In line with University of Gloucestershire (2008), the researcher ensured that there were no deceptive methods used to lure participants into the study. The researcher also ensured that interviewees in the companies participated willingly and provided authentic information without being lured into the research by the company's management or the researcher.

4.9.3 Withdrawal from the study

All participants and case study companies were clearly informed from the beginning of the project that they could withdraw from the study at any time if they felt the need to do so.

4.10 Summary

This chapter presented the research philosophy adopted for this research as well as justifying its use while explaining other research philosophies that could have been utilised. The interpretivist paradigm was selected for this research, given its extensive use in IS literature and its appropriateness for the context of this study. As indicated by Bryman (2016), interpretivists seek to understand human behaviour and the social world, and IS research is often concerned with understanding the social context of the IS.

Using the research onion (Saunders, Lewis and Thornhill, 2015), the chapter described the entire research design and the various research approaches were

discussed, while providing a clear justification for the use of an inductive approach for this research. Although both deductive and inductive approaches have been used for IS research in developing countries with varying levels of success, the application of a deductive research approach to this study would have meant primarily testing existing theories to understand the phenomenon of e-business adoption in SBEs in Nigeria, which would not allow for all the research objectives set out at the beginning of the research to be explored.

The researcher also discussed the difference between qualitative and quantitative methods to research and provided an explanation as to why the qualitative research method was the most appropriate for the study by clearly considering the research objectives outlined in chapter one of this thesis. Although some quantitative data was gathered through the initial survey, it was only used as a basis to identify particular SBE case studies to take part in the study.

As this study employed case study as its research strategy, the researcher explained the rationale behind the choice of this approach and notably justified the use of multiple case studies. An overview of each case study organisation was presented, as well as the selection criteria. Six SBEs were selected with varying years in operations, across multiple sectors and with varying revenue.

The chapter discussed in detail the various methods used for data collection and the application of the conceptual framework in this process. Questionnaires and semi-structured interviews were selected as appropriate for this research and questionnaires were sent to at least two key personnel of each SBE, after which a semi-structured interview of each of these persons was conducted. The chapter also presented details of how the data collected was analysed using a combination of thematic analysis and framework analysis. Thematic analysis was chosen, giving its wide adoption for analysing qualitative research while framework analysis was selected as it has been successful in cross-case analysis of IS studies. Existing adoption models and the conceptual framework also helped to contextualise further and rigorously analyse each case within the context of the research.

The ethical considerations for the research were also discussed. The researcher reviewed permissions for participants to take part in the research and procedures for

storing personal data. General research guidelines which the university sets out for research studies that involve human participants were also reviewed.

Chapter Five

Findings

Chapter Five Findings

5.1 Introduction

This chapter presents and discusses the relevant findings from the survey, questionnaires and interviews conducted as part of this research. Firstly, the results of the initial survey of SBEs in Lagos, Nigeria, are presented with basic statistical metrics drawn. Next, case study findings from the six case study companies are presented in sections 5.3-5.8, after which the chapter concludes with a summary. This chapter specifically addresses research objective one by exploring the extent of e-business adoption in Nigerian SBEs through the survey, as well as through the presentation of in-depth findings from each case study company. The company names, as well as their respondents, have been anonymized, and aliases have been used throughout the thesis.

For each case study, the background of the company, questionnaire respondents and an overview of the processes in the company are presented. The chapter makes use of pre-adoption, adoption and post-adoption phases described in chapter three, to present and examine e-business adoption in each SBE. The use of process mapping is also employed to identify processes and sub-processes in the firm, while initiating the analysis of e-business adoption in each firm.

5.2 Findings from Survey

An initial survey was distributed via email to comprehend the extent of the use of e-business in Nigerian SBEs and to identify companies that could be contacted for further research. This survey (Appendix III) was short (contained seven questions) and was sent to 80 companies out of which 52 responses (65 %) were received. This response rate is above average, and Rogelberg and Stanton (2007) suggested surveys with good response rates often yield findings with high credibility, from which generalisations of the phenomenon being studied can be drawn.

First, the researcher set out to understand the number of employees in the respondent's organisation. As indicated in chapter 2, this research adopts the definition that SBEs are businesses with less than 50 employees. Only 47 (90.3 %)

of the responses were from SBEs (the target audience of this survey). Figure 13 below shows the number of companies based on their respective employee count. Expressly, from the 47 companies with 50 employees or less, 40 indicated they had between 1 and 10 employees while 7 showed they had between 11 and 50 employees. Only responses from these 47 companies are considered and presented throughout this section.

Figure 13 Number of Employees in Respondent's Organisation

5.2.1 Use of IT and e-business to Support Core Activities

From the SBEs surveyed, 45 (95.7%) specified that they use IT & e-business systems to support their core operations and business activities. The activities supported by these systems vary from contacting customers via email to managing internal processes and taking orders online. A further breakdown based on the number of employees (Figure 14) indicates that 7 (100%) of the companies with 11-50 employees use IT & e-business for core operations while 38 (95%) of the companies with 1-10 employees make use of IT & e-business for core business activities.

Figure 14 Use of e-business and IT-based on Employee Count

5.2.2 Website Presence

From the 47 Nigerian SBEs surveyed, 38 (80.85%) indicated that they had a website, while 9 (19.15%) stated that they did not have a website. Once again, 100% of the companies with 11-50 employees indicated that they had a website, while only 31 (77.5%) of the businesses with 1-10 employees specified that they had deployed a website (Figure 15). In total, only 36 (76.59%) of the SBEs surveyed indicated that they had deployed a website and made use of e-business & IT for their core business operations. Most companies reported that their website was used to showcase their service and product offerings but companies that didn't have a website were mainly from the Fashion & Beauty and Health sectors. Figure 16 below shows a bar chart of sectors in which the businesses without website operated.

Figure 15 Number of SBEs With and Without Website Classified by Employee Count

Figure 16 Number of SBEs Without Website Classified by Sector

5.2.3 Industry Sector

To understand e-business usage and adoption in particular sectors, the survey questionnaire asked respondents what industry sectors their business operated in. In total, 20 sectors were identified from the survey responses; figure 17 below shows the number of companies represented from each of the sectors.

Figure 17 SBEs Based on Sectors

Although the two companies that indicated that IT and e-business was not used for core business activities in their firm were from IT and Health sectors, in general, initial results on IT and e-business usage and adoption in these sectors revealed that e-business is utilised in all the business sectors represented in the survey. As depicted in figure 16, further analysis based on deployment of a website revealed that three businesses in Fashion & Beauty, two companies in Health and one from each of Charity, Education, Household and Travel sectors had no websites.

While some studies (Oyelaran-Oyeyinka and Lal, 2004; Chinn and Fairlie, 2010) have suggested that the use and adoption of IT & e-business varies from sector to sector, and businesses in some sectors are more inclined to adopt e-business, from the initial findings of this survey, the same conclusion cannot be reached.

5.2.4 Company Turnover

The effect of the turnover of a company on IS adoption has often been contested by researchers (Daniel, Wilson and Myers, 2002; Ghobakhloo, Arias-Aranda and Benitez-Amado, 2011). To understand this relationship in the context of Nigerian SBEs, the respondents were asked what the turnover of their company was. Of the 47 SBE respondents, 16 (34 %) had revenue between 1-5M naira, while only 3 (6.38%) companies had revenue over 100M naira. In general, most of the companies surveyed had between 1M naira (£2,200) and 10M naira (£22,000) as turnover (Figure 18).

Figure 18 SBEs Categorized by Turnover

The findings also indicate that the two companies which did not make use of e-business in their core activities had revenues less than 5M naira [0-1M (1) and 1-5M (1)]. Figure 19, below shows the breakdown of the companies with no website based on turnover.

Figure 19 SBEs Without Websites Categorized by Turnover

5.2.5 Company Age

Extant literature (Raymond and Bergeron, 2008) suggests that the age of a business is sometimes one of the factors that affect the adoption of IT and e-business. The questionnaire asked respondents to indicate when their company was established to ascertain how company age impacts adoption in the context of Nigeran SBEs. Figure 19 below shows the breakdown of companies surveyed based on the number of years in operation. Appraising e-business and IT adoption in core business activities, however, revealed that the two companies which did not make use of e-business for their core business activities were companies that had been operating for less than three years.

Figure 20 SBEs Categorized by Years in Operation

5.2.6 Contacted for Further Study

From the 47 SBEs, 10 (21.27%) indicated that they would like to be contacted for a further and detailed study on the use and adoption of IT & e-business within their organisations. Figure 21 below shows the sectors which these ten businesses operate in. These ten businesses were further evaluated, and six case study companies were selected for detailed analysis. The following sections present findings and an initial account on e-business usage and adoption in each of the six case study organisations.

Figure 21 SBEs that can be Contacted for Further study Classified by Sector

5.3 ABC Laundries

5.3.1 Background

ABC Laundries is a family business founded in 2010. The motivation for starting the business was to gainfully employ a friend who was jobless, but had skills in doing laundry, as well as for the founder to make some extra income. The business started from the founder's home and he was initially involved in fulfilling ironing services, while his friend concentrated on dry-cleaning and washing. It originated as a home-based operation, but has now expanded to become a budget laundry and dry-cleaning service for people living in Lagos. The company provides a wide range of laundry and dry-cleaning services to people living in the Lagos Metropolis from its locations in Yaba and Surulere (urban areas within Lagos). With its main operations office in Surulere strategically located within the Lagos University Teaching Hospital, ABC Laundries can offer its laundry services to students and staff at the hospital, as well as pickup and delivery services to companies, corporate services, and guest houses across Lagos State. In 2016, the company turned over circa 10 million Naira (£22,000) per annum and employs seven staff. (Staff wages are very low in comparison with developed world norms, averaging less than £1000 a year for these staff). The current business plan is to further increase revenue by expanding the company's customer base and increasing market share.

The business started as a manual operation using paper invoices and sales booklets, but as the workload increased, the first computer was bought in late 2012 and two more mobile devices for invoicing were added a few years later. The management of ABC Laundries view e-business as a critical enabler of corporate growth and, to this end, invested in a bespoke web portal in 2013, to handle its key Sales & Marketing and Financial Management processes. Before this, most business processes were handled by a combination of paper-based receipts, Microsoft Excel spreadsheets and open source accounting tools. This became difficult to manage with the opening of a new branch in 2012, and this was the catalyst for investment in a new web portal. The key objectives of this investment were:

1. To provide a system where orders could be captured in real-time at both locations.

2. To provide a mechanism to allow staff and customers to track the status of a laundry order from pickup to delivery.
3. To enable top-level financial reporting in real-time.
4. To maintain a database of customers and contact details.

Rather than purchase an off-the-shelf application, a bespoke web portal system was developed. The web portal was implemented in phases, adding new functionality as the old support systems were phased out. Currently, the key objectives have been met, with the addition of a few functionality enhancements. The web portal was built using PHP and the MYSQL database and integration with email servers as well as SMS gateways have enabled emails and SMS notifications to be sent to customers. At the time of data collection, the web-based system implemented at ABC Laundries enabled it to generate receipts and invoices at its sales desk in real-time, as well as manage the status of each laundry order throughout its lifecycle (i.e., from pickup/drop off to delivery/pickup). The company's business plan now entails the opening up of multiple locations across the State, and this will involve leveraging further benefits from its web-based system.

5.3.2 Questionnaire and Interview Respondents

The questionnaire and interview respondents at ABC Laundries were CEO/Owner, General manager, and IT manager. The CEO/Owner is an IT project manager with over 18 years' experience working in one of Nigeria's telecommunication companies. He possesses a master's degree in IT Management and Business and at ABC Laundries, he manages the finance and oversees the strategic operation and direction of the business. Although he visits the stores from day to day, he is not very involved in the daily operation of the business. Key business processes he contributes to regularly include Finance, Marketing and Strategic planning.

The general manager is a 32-year-old man who holds a bachelor's degree in Business Administration and has over 8 years' experience working in a professional context in a microfinance bank. He joined ABC Laundries in 2015 as the company was expanding: the owner needed someone with professional experience and managerial capability to manage the day to day operations as well as deal with customer complaints. The general manager is in charge of ensuring that the laundry outlets open on time and that jobs to be picked up from customers are picked up in

time. He is also in charge of ensuring that all items for dry-cleaning are processed in time and for purchasing day to day operational materials necessary for dry cleaning.

The IT manager is a 25-year-old recent graduate of computer science from one of Nigeria's private universities. He joined the company in 2013 to assist with the deployment of a bespoke web portal system as well as to help the company transition from its paper-based systems to a more functional e-business system. Prior to joining ABC Laundries, he had worked with the CEO/owner of the business on several IT projects as a software developer. Initially, his daily activities involved identifying requirements, prioritizing requirements and developing the web portal system. He now actively explores the entire business operations with a mindset to improve existing systems and processes while maintaining and patching existing systems.

5.3.3   Process Mapping

Using data from the questionnaire responses and semi-structured interviews, seven core processes were identified in ABC Laundries (Figure 22). The Laundry Operations process involves the actual dry-cleaning of the clothes that have been dropped off by the collections team or directly by the customers themselves. This process involves labeling the item dropped off for dry-cleaning with an appropriate tag to avoid errors, separating colorfast clothing, and actual dry cleaning of the materials. For materials that require special service that is provided by a partner company, the laundry operations process involves arranging delivery and pick up of this item from the partner.

Figure 22 Core Processes at ABC Laundries

The Financial Management process involves managing the income and expenses of the company as well as preparing various reports to be reviewed by the CEO and general manager of the firm. The Sales & Marketing process, however, consists of lead management, design of posters and e-fliers, executing sales campaigns and order management. The Collection & Delivery process primarily encompasses timely scheduling of laundry items to be picked up and delivered and this process mainly involves the delivery staff working with operations staff to ensure that items are delivered in time. Payroll & HR Management at ABC Laundries follows standard activities such as generating payroll ledgers, paying staff at the end of the month, writing job descriptions and sometimes advertising vacant roles. Table 5 below, indicates the sub-processes in each of the seven core processes identified.

Table 5 Sub-processes at ABC Laundries

Core Process	Sub-processes
Financial Management	Invoicing
	Expense Tracking
Sales & Marketing	Lead Management
	Campaign Management
	Order Management
Collection & Delivery Management	Collection
	Delivery
Laundry Operation	Sorting and Washing
	Fabric Transfer
Customer Services	Call Centre
	Problem Resolution
	Messaging
Stock & Procurement Management	Inventory
	Procurement
	Delivery
Payroll & HR Management	Employee Tracking
	Payroll
	Recruitment

5.3.4   Pre-Adoption

Prior to the implementation of the web portal at ABC Laundries, most of the processes were manual. When customers brought in items to be dry-cleaned, the receptionist would normally write out a receipt listing the items and the expected pickup date. The duplicate of the receipt is then used to fill an item received booklet as well as a cash receipt booklet. Figure 23 below shows the manual process flow that the company used when a customer brought in an item for dry-cleaning. With this system, there was no easy way to detect whether a customer was an existing customer or a new customer. It was also a challenge to know how much initial payment a customer had deposited if they did not come with their receipt for pickup and didn't know the date they visited.

Figure 23 Manual Process Flow at ABC Laundries

This process led to a lot of errors, cash shortages and usually required staff to look through several receipt duplicates from time to time as a way of ensuring that errors were reduced. As narrated by the IT manager, when he joined there were times when the cash received in a day did not tally with total monies received as indicated in the booklet and required the receptionist to stay quite late to identify where the errors came from (cash is the primary mode of payment in Nigeria). This also led to a very high turnover of receptionist staff as they often did not stay more than 5-6

months on the job as most felt it was a thankless task and were not adequately remunerated.

For the owner of the business, the process of understanding the financial position of the business and calculating total payments in a month often required him to work two weekends to reconcile the numbers. Only when the daily figures were accurate and correct, could he enter those numbers into his Excel model to track revenue and expenses of the company. Also, given that several micro expenses are incurred during the business day, a similar process was repeated for the expenses and according to the CEO/Owner, this caused him significant problems of reconciliation.

With regards to Sales & Marketing, this initially was based on flyer distribution, billboards and event sponsorship. As the main location of the business was the teaching hospital, the owner of the business would normally hire 2-3 students to distribute flyers and create awareness for the company. Also, from time to time, the laundry sponsored entertainment shows and events on the campus such as concerts and comedy nights. These provided the owner a 5-15 minutes' session to address the students about the various services and offers they had running. Besides, the owner ensured that billboards were placed at strategic locations, thus encouraging patronage. It was difficult to track how the marketing effort affected monthly revenue. For ABC Laundries, the real reasons for considering implementation of web portal system came while the owner was considering expansion and a possible franchise business model. The perceived business benefits were to improve operations, and to create competitive advantage and improved customer service.

5.3.5   Adoption

To help ensure effective operations, ABC Laundries implemented the web portal system using a phased approach. The key objectives of the system at deployment were for real-time order capture, order tracking and financial report generation. The first two objectives of the system were the activities that took the most time in the organization and as such, resulted in many errors when done manually. The IT manager joined the company to help with the development of this system, and this was done via requirement capture, wireframe designs and deployment. Given the owner's experience in IT project management in his day job, he ensured that the

timelines and features were clearly defined, leading to an iterative implementation and deployment in phases.

Once the ordering system was developed, the financial reporting system followed. This system allowed for the presentation of data captured from invoices to be presented to top management (owner and general manager) of the company. The delivery of this initial feature helped the company reduce the total time spent in receiving an order. The web portal system also made it easy for the owner of the business to adequately determine the financial position of the company.

Upon delivery and development of each phase, the IT manager conducted relevant training to the staff who would make use of the systems. Also, during the initial transition process from manual invoicing to the web portal, the owner ensured that the items received booklet was still filled out in addition to the portal. This was done for 3 months to ensure that the systems worked well and that bugs identified could be fixed without critically affecting the company.

With the deployed system, the CEO could track where an item was and at what stage of the laundry flow. In addition to the web portal, ABC Laundries also invested in a website to showcase its offerings and experimented with the use of Facebook Adverts to drive sales through a dedicated phone number, but this was not entirely successful. Due to overtime resulting from increased demand, the company realized it did not have enough staff to handle the volume of calls being placed to it daily, and therefore the company invested in a Cloud IVR system that allows calls to be logged to a voice mailbox and transferred to an extension of choice. Thus, for calls that could not be picked, a voice message could be left, and sales staff could follow up on some of those leads at a later time. As for power, they used inverters, mobile printers and laptops to handle electricity. Also, the company purchased a 13KVA diesel generator that was used for a maximum of 2 hours every day.

Before actual coding of the web portal by the IT manager, the various process flows were documented to ensure understanding, and this was reviewed with the owner of the business. Wireframes of what the screens would look like and how they would progress from one screen to another was presented and discussed with the CEO/owner and a phased approach to development was adopted. The phased approach, as well as process documentation, was very instrumental to the success

of the e-business adoption by the organisation and in total, the web portal deployment in the organisation cost 800,000 Naira (£1,800).

5.3.6   Post-Adoption

ABC Laundries took a unique approach to e-business adoption as it not only invested in bespoke technology, but also in its people and processes. Upon implementing the web portal in ABC Laundries, the organisation ensured a culture where every staff member had to be able to use the web portal. In particular, the company ensured that recruits were computer literate and within their first week in the business, the IT manager or other nominated colleague provided new staff with training on the web portal system. According to the owner, there were a lot of features that could be implemented in the web portal however, at the time of data collection, he did not feel they had fully utilized the existing system in place. The company maintained 10% of its revenue as the budget for IS and e-business initiatives, but it was not always utilized as what was important for the owner was that there must be some real value to the revenue or customer experience for it to warrant further development and justify the cost.

The company was in the early stages of considering the development of a mobile app that was to enable potential and existing customers around Lagos to book pickups of their laundry. The owner was not entirely convinced they had the resources and investment required to run at the scale that the app would make possible. For him, customer service is essential and based on his current analysis, while the idea of the mobile app was good, the necessary infrastructure to support that was not yet in place. The idea was being considered such that when their current internal process had improved, or they have been able to partner with a very reliable dry-cleaning firm that could provide services at scale, they would be able to deploy the mobile app technology. In the interim, the company was investing in the use of videos for adverts on social media platforms, whereas previously social media adverts had been text and images only.

5.4   KDE Energy

5.4.1   Background

KDE Energy is an energy solutions company established to meet the energy demands of Nigerians. By offering alternative energy solutions using solar technologies, the company has been able to provide cost-effective solutions to both residential and commercial customers. Upon completion of a degree in Electrical Electronics in the UK in 2012, the founder returned to Nigeria and subsequently identified an opportunity in the energy sector in Nigeria.

At the time of data collection, with two full-time staff and eight temporary staff, the company turned over 130 million Naira (£260,000) and had plans to increase this in the following year. The company started in 2012 with manual operation, and at the time, the founder prepared a 20-page brochure to liaise with potential customers. In the early days, personal email and mobile phone constituted most of the company's e-business technologies. When contracts were signed, the founder would source materials needed for execution of the job locally within Nigeria and when not available, e-commerce sites were used to purchase from international suppliers.

KDE Energy's core service includes installation and supply of solar panels and inverters, electrical building maintenance and electrical installation. Given the huge power deficit in Nigeria, the adoption of alternative energy is on the rise and as a result, companies, as well as individuals, are continually procuring solar-related services and gadgets to power their homes and businesses. Inverters have become popular in many urban regions and in more affluent households, solar panels and inverters having the capacity to generate up to 50KVA are being purchased regularly.

In 2014, KDE Energy invested in a website to provide information about its products and services to potential customers. This investment was part of the company's growth strategy as it intended to take on more commercial projects, and having a website made the company look more professional. At the time of data collection, the company made use of a cloud-based accounting tool for its quarterly accounting and most of the day to day expenses were handled with Microsoft Excel. According to the founder, the company was very aware of how e-business positively affected its operations, particularly with the sourcing of goods.

Although most of KDE Energy's revenue is currently generated from corporate clients, the company has a plan to gradually increase its residential and retail offerings. In 2018, KDE Energy employed a new sales manager to help with and strategize growth and it also came up with a pay monthly plan for residential customers who were willing to purchase solar gadgets, through a partnership with a credit lending agency based in Lagos.

5.4.2 Questionnaire and Interview Respondents

In this firm, the questionnaire and interview respondents were owner, general manager and operations/sales manager. The owner of the business oversees the strategy and finance of the business. He was an electrical engineer with over ten years of experience who worked part-time at KDE Energy. Being quite friendly, he maintained a network of friends including Nigerian elite businessmen who had mostly become his customers. He leads sales at KDE Energy by leveraging his primary network to source for referrals and potential new leads and he was also in charge of relationship management, calling and keeping in touch with existing customers and servicing their needs even after a project had been completed. He maintained relationships with local suppliers to ensure good rates were offered when needed. He also kept an eye on the income of the business and outgoings, thus ensuring the company was at a point where it was profitable, and targets had been met.

The operations/sales manager was responsible for the day to day operations of the business. He was a 26-year graduate of business administration from the University of Lagos. He managed the current projects portfolio and also managed the engineers and contractors that worked at various sites. He was responsible for ensuring that projects were successful by ensuring that everything needed by the engineers was provided at different sites and also ensuring that the contract was executed to the required quality. In addition to managing ongoing projects, the operations manager identifies possible small businesses that KDE Energy can provide electrical maintenance and solar installation to. As the company maintained no IT manager, it seemed appropriate to speak to the sales/operations manager as he liaised daily with other members of staff.

The managing director was a 30-year-old graduate of Economics, whose role involved supervising the operations manager, converting various leads established by the business owner and handling escalations from the operations manager. She often prepared proposals, responded to RFPs, attended meetings with prospective customers and dealt with issues arising from existing customers' on ongoing and completed projects. Using emails, she placed orders with existing suppliers for electrical equipment and parts. She also maintained a daily site expense report using Microsoft Excel that was sent to the business owner daily to ensure the business was running smoothly.

5.4.3   Process Mapping

Six core processes were identified at KDE Energy (Figure 24). The Financial Management process consisted of activities such as invoicing, expense tracking, company accounting, and taxation. The company made use of Quickbooks software as a service platform to issue invoices and maintain company accounts while expenses were tracked with a combination of manual activity and an excel sheet.

Figure 24 Core Processes at KDE Energy

Next, the Procurement & Logistics process consisted of activities such as the purchase of items required for projects at sites, tracking of goods purchased, transporting items purchased to site and maintaining the inventory of electrical items owned by the company. Given that the company works on large projects for sometimes 3-6 months, in diverse locations, it was important to keep an inventory of items per location such that this could be managed, replenished and transferred to other sites if needed. This activity was managed by an excel sheet which the operations manager updated from time to time.

The Sales & Marketing process at KDE Energy primarily involved lead generation and order management. At the time of data collection, the company traded mostly with companies on complex projects and as such, this involved sending physical copies of contracts back and forth between the companies using local courier providers until the final award. Email was sometimes used to confirm orders, project start date and expected completion or to notify customers of delay in delivering the project. The Installation & Repair process at KDE Energy was largely manual with engineers on-site managing most of the activities and only reporting their activities to the operations manager via text or phone calls. Table 6 below shows the sub-processes in each of the core processes identified at KDE Energy.

Table 6 Sub-processes at KDE Energy

Core Process	Sub-processes
Financial Management	Company Accounting
	Invoicing
	Daily Expense Tracking
Installation & Repair	Installation
	Repair
Sales & Marketing	Order Management
	Lead Generation
Logistics & Procurement	Procurement
	Good Tracking
	Inventory
Customer Services	Problem Resolution
	Messaging
Payroll & HR Management	Payroll
	Recruitment

5.4.4 Pre-Adoption

KDE Energy started most of its operations manually with limited automated system. In the early days, the personal email address of the business owner was used to send emails to customers as well as using his phone for business-related activities; for example, the company started operating from an office which had no internet connection and the owner's Blackberry phone was used to send emails and make calls to customers.

For Payroll & Finance management, the company made use of Microsoft Excel sheet to keep track of income and expenses. As the business grew and the revenue increased, it became difficult for the business owner to keep up with managing the accounts and an online system to help with managing the accounts was sought. For payroll, it was still realistic to prepare the schedule in Microsoft Excel/Word and then use the company's internet banking to make the salary payment or visit the bank for this transaction to be made.

Marketing at KDE Energy initially started with the personal contacts of the owner and some cold calling. As the business grew and the need to appear more professional to attract more corporate customers arose, the business sought to develop a website and maintain an official domain name linked to an email service, such that staff could send email from corporate email addresses. Processes at KDE Energy evolved based on company growth and the need for increased automation of some of the day to day activities.

5.4.5   Adoption

For KDE Energy, email was adopted from day one as a way to communicate with customers and prospective customers as most of its prospects were large businesses where emails were used as the primary communication tool. But for KDE Energy, the company made use of the owner's personal device and email.

In 2014, the company invested in a website that provided information about its services to prospective customers. This was essential for the company as from time to time, they dealt with corporate clients and as such, the website was part of branding and creating an image of the business. Rather than being part of a concentrated effort to utilize IT in the organization, the website sought to create an image of the company as one other established companies wanted to work with.

As the company grew, and revenue increased, the use of an accounting software became very necessary for efficiency purposes. To achieve a cost-effective purchase, a cloud-based software, QuickBooks, was recommended by the accountant as what was needed to fulfil the activities. However, Invoicing was still done by Microsoft Excel for a while even though QuickBooks provided a feature for it

to be done. From the interviews, it was clear that the company needed more of the reporting functionality of QuickBooks on initial procurement. At the time of data collection, QuickBooks was being used for invoice generation.

Apart from QuickBooks, the company has not had to purchase or develop specialized software. A lot of their internal process were largely based on Microsoft Excel. From the work schedule, current projects bid, daily expenses log and several other activities, Excel templates were in use. This is partly because the company is a B2B company and the fact that the company was still managed by a small team, which consisted of 2 admin staff, 1 operations manager, one general manager and the owner. In total, while the company revenue had increased, it still had fewer than 200 customers; thus the need for a sophisticated system was not evident. Currently, the company maintained one android tablet, four laptops and outsourced its IT services to a local IT servicing firm that provided email hosting and website support. Internet is made available in the office via a Wi-FI dongle and on various sites, the engineers used internet access from their phones.

From a project management point of view, given the large projects the company worked on, the managing director commented that MS Excel just worked: *"We could use a fancy tool like Microsoft Projects, but we do not, partly because of the capacity of the staff in charge to use Microsoft Projects and also the complexity of the projects (majorly)"*. In addition, there had been no request from their customers to share complex project reports that were not possible in Excel and there was no need to complicate a simple system that already worked. The findings indicated that e-business adoption at KDE Energy was facilitated by a combination of business needs to create perception and increase sales.

5.4.6   Post-Adoption

Following the deployment of QuickBooks for accounts and the development of the website, KDE Energy was looking at new ways in which e-business could help improve their business in general. Particularly, the owner of the business was focused on revenue generation processes and they were currently exploring how the use of social media advertising, Google adverts and search engine optimization could increase their revenue. Also, KDE Energy's website was initially a static site providing opportunities for customers to find out about its services. Having diversified

into electrical equipment supplies, the company was in the process of investing in an e-commerce facility for the website that would enable customers to purchase and pay for services online.

Nevertheless, the managing director believed internal operations were optimal as they were and did not see any need to further invest in e-business and IT for their internal operations. While this was true at time of data collection, it would become difficult to manage when orders were being accepted through the website and on the success of the e-commerce advertising which was being explored, there would be need to further improve internal processes either with the development of bespoke systems or purchase of a cloud-based software as a service system.

The company had started to use online business directories as a way to source leads. The business owner understood that this process could be slightly automated such that the company was able to purchase a CRM tool to help manage its sales funnel. However, it was still early days, and when this process began to impact revenue, the owner believes it would be worth investing in. Overall, while there was no clearly written out e-business/IT strategy, there were opportunities for impacting revenue and driving innovation that e-business initiatives at KDE Energy addressed.

5.5   HGB Stores

5.5.1   Background

HGB Stores is a retail outlet that designs, makes and sells children's clothing. Founded in 2015, the company started from humble beginnings at the founder's kitchen. While the founder was expecting her first child, she had to take time off work and during this period, she started thinking of what to do during her maternity leave. Initially, the business started with her collecting imported materials and reselling to friends and family. This quickly grew into a community of expectant mothers and church members. At the time of data collection, the business had grown, and she was buying directly from some of Nigeria's main wholesalers. To start the business, the founder bought some items and put pictures of the items as "display pictures" on her WhatsApp and made calls to friends and family. As this went on for about three months, she decided to enrol for an online course on selling on Instagram and she

started to sell on Instagram a few months after the course. At the time of data collection, HGB Stores had an average of 20 orders per day and generated N 19 Million (£38,000) in revenue.

The company employed five people who focused on sales and marketing, merchandise sourcing and delivery fulfilment. The company sourced its garments locally; however, plans were in place to start production of self-branded children's wear. The company sold and delivered to all 36 states in Nigeria, but maintained its main operation base in Ojodu, Lagos. To achieve nationwide deliveries, they partnered with a low-cost logistics firm that helped ensure delivery of items within Nigeria in 2-3 days and 24 hours delivery in Lagos. The company was also planning to start selling on Jumia (Africa's largest e-commerce marketplace) as they believed their internal process had prepared them for this next step of their business.

With only two laptops, a tablet, a digital camera, and internet connection, the company started selling online; although mostly just advertising, as most transactions were still paid for offline using cash or bank transfer. The company uses Spectra Net (40GB monthly) at a cost of N 12,500 (£25) for its operation as this is considered one of the fastest internet providers in Nigeria and specifically, in the Ojodu area of Lagos where the business was headquartered.

Late in 2017, the company invested in a website. However, this had not been delivered and, the company was holding off on capital IT investments until the delivery of the website. Currently, as far as e-business was concerned, besides the use of Facebook and Instagram for sales and marketing, the company was working on the possibility of selling on Jumia (the e-commerce marketplace). Also, the company was currently experimenting with dropshipping in Nigeria, a concept the owner of the business believed would help them increase revenue.

5.5.2 Questionnaire and Interview Respondents

At HGB Stores, the respondents were the owner of the business and the administration associate who managed most of the operations and order fulfilment process. The owner of the business was a BSc graduate of Economics from the University of Ibadan and on getting married and expecting a child, selling clothing to

the children sector seemed to appeal to her. She was 31 years of age, computer literate and oversaw most of the business processes in the company. She ran the office a few meters from her home, and she was able to work full time while maintaining contact with her children. Primarily, her activities in the company involved managing the financing, stocking products and sales initiatives.

The second respondent at HGB Stores was a 22-year-old HND graduate. She was responsible for managing most of the Sales & Marketing process, Customer Management and some part of the Delivery Management. Before joining HGB Stores, she worked as a teacher in a secondary school in eastern Nigeria. She was quite IT literate and according to her most activities she performed in the organization were well optimized and made effective use of IT.

5.5.3   Process Mapping

At HGB Stores, six primary business processes were identified (Figure 25). The Procurement Management was centrally managed by the business owner and it involved sourcing products from suppliers, managing their delivery and price checking on various local sites.

Figure 25 Core Processes at HGB Stores

Next, the Sales and Marketing process consists of sub-processes such as lead generation, order management and advertising. Generally, it involves managing

various social media platforms, running adverts on Instagram and Facebook, order management and generating customer sales receipts. When interviewed, the company accepted payment through transfers to its bank account and Paystack payment pages. However, a large number of customers did not complete their order process entirely online; as often times they called before the actual order was placed.

The Finance Management process was managed by MS Excel and involved activities such as order reconciliation, Cash/Income management and expense tracking. At the end of each business day, orders were inputted into an excel sheet, and the payment method was indicated as this helps the associate in the company track order payment status. Also, expenses that the company made in a month were tracked in an Excel sheet.

Similarly, Inventory Management was achieved using MS Excel and it involved updating the stock of items once purchases were made and keeping track of how many new items had been purchased and their purchase price. The Customer Management process involved keeping customer data as well as dealing with customer queries and complaints. To handle this business process, HGB Stores made use of Microsoft Access Database with forms. Also, from time to time, the company made use of BulkSMS systems to target customers and keep them aware of what items were currently on offer with links to the company's Instagram page.

The Delivery Process at HGB Stores was outsourced to a local logistics company. In addition to standard pickup and delivery service offered, the logistics firm handled cash on delivery processing and allowed order tracking such that once an order was placed either over the phone or from the Instagram page, all orders for the day were batched and a pickup scheduled for 3 pm. The courier company picked it up and delivered it to the destinations within 24 hours for orders in Lagos. Customers were sent tracking code and a link to enable them to track items. Table 7 below shows the core business processes and their various sub-processes that have been derived from the interview and questionnaire.

Table 7 Sub-processes at HGB Stores

Core Process	Sub-processes
Financial Management	Income Tracking
	Order Reconciliation
	Payroll
	Expense Tracking
	Cash Management
Inventory Management	Stock Tracking
	Inventory Storage & Management
Sales & Marketing	Lead Management
	Order Management
	Social Media Management
	Advertising & Campaign
Procurement Management	Procurement
	Supplier Liaison
	Item Sourcing
	Delivery
Customer Services	Order Tracking
	Customer Liaison
	Customer Management
	Complaints
Logistics & Delivery Management	Delivery & Fulfilment Management
	Pickup & Packaging

5.5.4 Pre-Adoption

HGB Stores immediately started utilizing e-business for its day to day operations as it sold children's clothing on the internet using Instagram. Before the establishment of the business, the owner thought deeply about selling on Instagram, what to sell and whether it would work. The decision to make use of Instagram was principally based on other people's success. She had purchased from other Instagram sellers and was convinced that there was enough market to be serviced. Also, the decision was influenced by cost as an early-stage enquiry about the cost to set up a shop was in the millions of Naira, which she could not afford at the time.

Principally, the CEO had analysed the market and other retailers to understand that this model worked for them and it was cost-effective. This decision was also

influenced by the availability of customers and her network. Expecting mothers she talked to in her network were already using Instagram and purchasing from the platform was not strange to them.

In general, while HGB Stores started sales and marketing online in the early days, other processes remained manually done due to cost and limited knowledge of IT.

5.5.5 Adoption

As HGB Stores grew and its client base and sales revenue began to increase, it had to standardize its processes. The very first step was the use of Microsoft Excel and without very much thought, an Excel template for tracking daily orders and inventory was created.

The use of MS Excel for other activities came naturally to the owner as she had used Excel extensively in her previous job and did not know any other tools to use to run her business operations. For the procurement of materials, most of the suppliers were gathered through phone calls and visitations of recommended parties. This was mainly as a result of trust and the idea of trusting someone unseen with a large amount of money without escrow was alien to her and due to several stories of meeting independent sellers/people online in Nigeria, it was less risky to use a recommended source with physical verification.

While the CEO of HGB Stores started most of the operations on her phone and laptop, it did not take long for her to decide to invest in an Android tablet, due largely to the unreliable supply of electricity, thus allowing her staff to make use of tablets for most of the days' activities as the batteries lasted longer. While not fully automated for the Customer Management process, the company had begun to use campaign systems such as SMS live and Mailchimp, to send and email campaigns about offers and discounts to its customers; rather than having to use a phone to send it multiple times.

After six months of operating, the company decided to invest in WhatsApp for business as a way to reach out to existing and potential customers. HGB Stores created a WhatsApp group of expecting mothers where inspirational quotes and tips about coping with pregnancy were shared and this helped increase audience and sales. The company initially accepted payment via direct bank transfer and cash on

delivery only. However, when interviewed the company accepted online payment through Paystack payment pages, which allowed Nigerians in the diaspora to easily purchase gifts for friends and family in Nigeria from her Instagram Store. Since this adoption, payment through debit cards had become the second most popular source of payment after cash on delivery and this had increased international patronage.

According to the CEO, if she had used other mediums to start selling, she doubted she would be as successful as she was. For example, she explained that an average website for her type of business costs at least 350,000 Naira (£800) and at the time she started, she did not have the funds and it would have taken a lot of time before she was able to launch. Findings from HGB Stores indicated that e-business adoption was influenced by initial market research, competitors, customers perception and IT knowledge.

5.5.6 Post Adoption

HGB Stores was investing in a website with the hope that it would help to increase revenue significantly, although this had been delayed by the development company to which the contract was awarded. As a way to get ready for the next stage of the business, the owner had decided to enrol herself in a number of digital marketing courses on Udemy. While she was somewhat disappointed with the length of time that the website had taken, she had seen some of the work that the company had done and was quite encouraged and enthusiastic about what would be possible as the website would not only impact external-facing processes such as Sales & Marketing alone, but would also impact internal processes and have modules such as CRM, inventory management and stock tracking, which would be useful when the company's products are finally listed on Jumia and Konga marketplaces.

From a sales and marketing perspective, the company was investing in e-business initiatives primarily to drive sales. Apart from those processes that would be impacted by the website, other internal processes were not planned for re-engineering until the website was deployed as the owner believed that the website would solve all their internal issues as well.

As an organization, HGB Stores was open to the use of IT and e-business and continued investment in it. The critical predicator for them was that it adds to the bottom line.

5.6   GPY Properties

5.6.1 Background

GPY Properties is a property development and marketing company founded in 2012. In the context of Nigeria's housing deficit and the acute absence of quality housing in the country, the company aimed to become the most successful and reliable real estate firm worthy of mention by all. Its core mission was to rebuild Nigeria's residential scenery through the provision of innovative, high quality and affordable homes.

GPY Properties originated as the property sales division of a larger consulting company called PYI Consulting Limited. However, as sales of developed properties increased, the owner decided to hive off the division into a separate corporate entity to focus on property development sales and marketing as its core business. In 2016, the company turned over about 45 million Naira (£90,000) and the forecast for the following year was even greater.

In 2013, GPY Properties invested in a website mainly for marketing purposes and showcasing its ongoing projects to customers and potential customers. The company also invested in a cloud-based Customer Relationship Management (CRM) system for keeping in touch with customers and storing customer contact details. So far, the owner of the company affirmed that their investment in IT and e-business had yielded value as they had been able to keep a very lean team of only three full-time staff and twenty contract staff. A decent number of their processes were automated and from time to time, the company advertised on Facebook and various other property aggregator websites. Invoice generation and other accounting activities were managed by Excel spreadsheets, but plans were in place to subscribe to a cloud-based accounting solution such as Wave Accounting or Xero Accounting.

5.6.2 Questionnaire and Interview Respondents

There were two respondents at GPY Properties, the owner and the head of finance. The owner was a 42-year-old marketing professional with an MBA from Warrick University and a bachelor's degree in Accounting. He had over 15 years of experience working in the Nigerian telecommunications sector before starting out his firm and prior to investing in property development, he helped other developers market their properties via a sister company. After succeeding at this several times, he saw the opportunity and decided to start his own development. Primarily, his key activities involved setting company strategy, overseeing accounts and overseeing project operations. Although he was not responsible for general activities of the company from day to day, he oversaw the site manager, architects and head of finance, who made most of the day to day financial decisions.

The head of finance was a graduate of accounting at the University of Lagos and a member of the Institute of Corporate Accountants of Nigeria (ICAN). She started in the company as an admin associate and upon completion of her professional qualifications and exams, she took the position of finance lead. Her day to day activities involved working with the site manager, project manager and other associates in the company to ensure the company was in good financial position. She drew up budgets for projects, managed receivables, approved expenses and ensured that installment payments from customers were paid as and when due. She also managed payment of third-party suppliers and reconciliation of job tenders. She joined the company in 2013 and had been involved in the growth and contributed to the decisions to invest in IT systems in the company.

5.6.3 Process Mapping

From the interviews and questionnaire responses at GPY Properties, the researcher identified six processes (Figure 26). The Property Sales and Marketing consisted of activities such as lead management, campaigns and marketing. The company made use of CRM for lead management and actively made use of Facebook for its marketing efforts. The Logistics & Procurement process at GPY Properties involved the purchase of building materials such as cement, granite, sand and other relevant materials. This process was quite manual mainly because the suppliers the company

dealt with were independent self-employed workers whose processes were manually driven and because the company buys in bulk from known suppliers already, the transactions were largely driven by relationship and cost.

Figure 26 Core Processes at GPY Properties

The Finance Process at GPY Properties involves the use of Excel for activities such as expense tracking, receivables and reporting. According to the finance lead, it is operationally efficient until a few people default on their monthly payments. Given that GPY Properties sold its properties in such a manner that allowed its customers to make payment monthly, managing the process in MS Excel was quite time consuming and sometimes led to late follow-up when monthly installment payments were missed.

For most internal communication between staff, this was mainly via email and phone calls when absolutely urgent. The Customer Service process consisted of customer liaison, messaging and problem resolution. In this process, staff of GPY Properties interacted with customers about the current state of development, allocation of estates and complaints. The Payroll and HR process on the other hand, consisted of payroll activity, recruitment and employee time tracking. Given that GPY Properties worked with several contract staff and casual workers, it was essential for the tasks done to be tracked and this was manually done using a timesheet filled on the site. To further understand the processes at GPY Properties, sub-process for each core process was identified and overall, 14 sub-processes were identified (Table 8).

Table 8 Sub-processes at GPY Properties

Core Process	Sub-processes
Financial Management	Invoicing
	Expense tracking
	Management Accounting
Constructor Liaison & Management	Constructor Liaison
Property Sales & Marketing	Lead Management
	Campaign
	Marketing
Logistics & Procurement	Procurement
Customer Services	Call Centre
	Problem Resolution
	Messaging
Payroll & HR Management	Employee Tracking
	Payroll
	Recruitment

5.6.4 Pre- Adoption

GPY Properties started its operation mainly with email as the key tool to communicate with clients. Using PowerPoint, the owner would create a brochure of current offerings that would be emailed to prospective clients as a PDF document. As someone from a marketing background, property sales and marketing was something the owner felt that as a company, they had to be different at and as such, the owner advertised property offerings in national dailies, property magazines and on property listing websites, which was still relatively new to Nigeria. Prior to starting GPY Properties, the owner had good success generating leads from property listing sites such as Laumudi, OLX, and several others.

Although, at the early stage, the sales and marketing activities were already making use of e-business based on the owner's previous knowledge and experience, most of the other internal processes were mainly manual or managed via Microsoft Excel. Within the first six months of the business, there was no reason to spend on IT as the owner made use of his personal laptop to complete most of the activities.

However, as the company started to recruit, the need for a more structured and formal internal communication tool was sought and as such the company started considering buying a domain name and having some kind of corporate email to communicate internally as well as with clients in a more professional fashion rather than using Gmail. GoDaddy email was decided upon and the domain name was purchased from the same provider.

As more leads were generated at GPY Properties, a number of customers asked about their website and when they suggested this was not available, but a brochure could be sent, it limited purchase and caused lack of trust when prospective customers realized that the company had no online presence and website. This led GPY Properties to invest in a website to showcase its offerings.

5.6.5 Adoption

In 2013, the company invested in a website that provided the company with a way to communicate internally via email as well as showcase property offerings. Total investment on the website was 500,000 Naira (£1,100) and this provided an email server and online brochureware site via HTML where customers and prospective customers could access offering and request visitations. The website also allowed interested parties to register their interest and as such, GPY Properties began to send regular mails to update customers of progress of site. This was done because several initial prospects felt that the properties were quite at an early state of development and they wanted to be updated on how development progressed before investing. To achieve this, the company made use of MailChimp, an email marketing tool that allowed the company to send well laid out email campaigns to up to 5000 customers for free. For this lead management and customer relationship management, other platforms were considered but MailChimp was seen as mature and free.

To achieve increased demand for the property offering, the company invested in deploying Facebook adverts. According to the owner, *"we wanted to do something that others were not doing and at the time. Facebook adverts were quite effective for other sectors to reach these individuals."* Particularly, the business had a plan to target Nigerians in diaspora and the only way to effectively reach them was Facebook advert. Every month the company invested 100,000 Naira (£219) to

advertise on the platform and generate leads which fed into their CRM database; within a short while, the company grew its Facebook fanbase to 10, 000 fans and continued to increase.

Although the owner was a trained and qualified accountant, the finance aspect of the business was still handled via Microsoft Excel. He believed that the volume was not yet substantial enough to warrant further investment into new IT system. However, as the company grew and acquired new property sites for development, it became evident that Excel was not suitable for the activities and on taking over of the activities by the new financial head, she advised the company to invest in QuickBooks.

With continued growth, the company decided to further invest in processes and tools that helped clients make payment monthly, and the company invested in a software as a service bulk messaging platform that is used to send SMS to various property investors when their payment is due. At GPY Properties, adoption was influenced by owners past knowledge and perception of IT, perceived value to be derived from systems deployed, customers request, and reactive investment based on growth.

5.6.6 Post-Adoption

The company considered automating its monthly payment system such that people could pay online via their debit cards. However, the cheapest online payment processors in Nigeria charged 1.5% on all transactions and considering an average customer would pay at least 300,000 Naira per month, this would mean the company would lose about 45,000 Naira for the year on that customer to processing charges. According to the owner, *"we are still considering this option but while it would make our work more efficient, the deduction is too much for us because of the amount being paid. Also, I am not convinced that this would solve the problem of defaults."*

The company was investing in a new website that would allow content to be easily editable using Drupal CMS. The Initial website was a brochureware primarily to showcase the products but now, something mobile friendly and easily editable was needed as a result of growth. Also, the initial website had been around for a while, so it needed something fresh and that allowed easy editing and plugged in nicely to the

CRM solution, allowing leads to be captured directly from the website to the CRM with the customers' intention captured.

Also, according to the owner, *"We are currently exploring the effectiveness of Google search engine marketing and principally, display adverts as we are in the process of investing in another property site, we want more people to know about the brand and put us at the centre of property development for young professionals in Nigeria."*

5.7   OMO Legal

5.7.1 Background

OMO Legal is a Nigerian law firm that was founded in 1971. Currently, the company has three branches across Nigeria and employs 15 individuals across these locations. Over the years, the company has evolved its operation as well as its service offerings such that its practice areas when surveyed were litigation & arbitration, regulatory enforcement, acquisition & takeovers and intellectual property.

The founding partner (now deceased) founded the firm in 1971 as a sole practitioner when the practice of law in Nigeria was still in its infancy. He was able to encourage one of his children to study law and as such, the firm is currently run by a second-generation founder. At the initial outset of the company, legal practice in Nigeria was quite new; most of the processes were manual and the use of IT in the organisation at the time was non-existent. The company bought its first computer system in the late 90s and this was initially purchased primarily for word processing and printing corporate documents. After a few years, the company started to automate some of its business processes starting with accounting, but most of the core business operations remained manual.

In 2010, the principal partner (son of the founding partner) returned to Nigeria after studying and working in the legal sector in the UK as both a practitioner and an academic. Upon resuming at the firm, he advised the organisation to actively make use of IT/e-business as a unique selling strategy and later that year, the company invested in a website that provided prospects with information about the firm and its present offerings. That same year, the company opened an office in Lagos - the commercial capital of Nigeria with a plan to target more SMEs as retainer clients.

After about eight months of maintaining a static website with HTML, the company invested in a new WordPress website that allowed for content management and constant updating of the website with news feeds from different relevant news sites. The company also setup an email server that allowed for a more professional and digital way of engaging clients as before then, formal communication was done via posted letters.

In 2012, following an increased growth from the SME market, the company invested in a case management system that comprised CRM, legal case management and basic accounting. Also, in 2015, the company opened a new branch in Abuja to support its expansion and the recent award of a government contract. When surveyed, the company maintained a website to showcase its offerings, a web-based case management system to allow lawyers at various locations to access case information and it made use of a corporate email server.

5.7.2 Questionnaire and Interview Respondents

The respondents at OMO Legal were the Principal partner and Admin assistant. The principal partner, the most senior lawyer in the firm, was responsible for the strategy and management of the firm. All lawyers at the firm report cases to him and he liaises with the admin and accounting team for update on general outreaches of the company. Sometimes, he led cases while at other times, he was just part of the legal team assigned to a case. Depending on the complexity of certain cases, the expertise of some other law firms was required and, in such cases, the decision on which firm to engage lies with the principal partner. Quarterly, the principal partner reviewed the company's income and he was the primary signatory for expenses above 1 million Naira (£2,200) and as such, he had sight of transactions ongoing in the firm. Overall, he was the face of the business and often he was the first point of contact for new company leads.

The Admin assistant was a paralegal who worked closely with the principal partner as well as other lawyers in the firm. She was responsible for opening customer accounts, booking customer meetings, and updating cases with digital/paper copies of court proceedings, newspaper adverts and other relevant information. She also liaised with the accounts team to ensure that the case management system was up

to date and relevant invoices and receipts were attached. Since the company had three branches, she worked centrally from the Abuja office but liaised with lawyers in the other branches. Also, given that law firms generated a lot of documents, the company made use of Dropbox for business as a digital repository to store scanned documents and the admin assistant was responsible for filing these documents based on the case number provided by the case management system.

5.7.3 Process Mapping

Five core business processes were identified at OMO Legal (see Figure 27). The Customer & Case Management process involved registering the client with the firm and managing the various cases associated with that client over the years. The activities in this process was managed mainly by the firms' Case management tool/CRM. In addition to the case management tool, the company also makes use of "Dropbox for business" to store scanned copies of relevant documents.

Figure 27 Core Processes at OMO Legal.

The Financial Management process, which was managed by the accountant and the administrator, involved activities such as invoice generation, expense management, approval tracking, accounts report generation, vendor payout and liaising with the company auditors. The accountants made use of email for communication with external parties and most of the accounting activity was managed using Sage Accounting.

The company maintained an internal process for expense approval where the person who made the expense needed to fill in a form and provide it to the lead lawyer on the case he/she was working on where the expense made, after which payout was

made to various vendors using the internet banking of the firm and on completion, evidence of payment was generally scanned and stored in Dropbox.

The Research & Paralegal process involved junior lawyers and interns researching case laws and doing due diligence on prospective customers. In this process, the web, as well as legal statues and national dailies, were searched. It also sometimes required visiting courts and libraries for documents and books. Generally, paralegal staff made use of the internet quite often and depending on the case, it sometimes required writing a report (using MS Word) or attaching relevant information to the case file. Usually, the information generated by these staff was used by the lead lawyer on the case to make decisions.

The Admin & HR process was concerned with making sure records of employees of the organisation were up to date and that general legal requirements were fulfilled. In particular, that certificates required to be maintained by the company were up to date. This process was managed using MS Excel. However, the certificate expiry date was mainly handled via the staff's manually designed system which involved color-coded calendars. Generally, employee contracts were typed and kept in a file but pay grades and payroll was centrally generated and shared with the accountant. The accountant would verify this, print it out and provide to the principal partner physically for approval before payment of salary could be made.

The Business Development process was primarily handled by the principal partner and it mostly involved lead generation through professional networks and clubs, social clubs and speaking engagement and where there was a possible lead, the details were passed on to the admin staff for account creation. The sub-processes identified in each core process are shown in table 9 below.

Table 9 Sub-processes at OMO Legal

Core Process	Sub-processes
Customer & Case Management	Case Management
	Complaints
	Customer Liaison
Financial Management	Expense Tracking
	Invoicing
Business Development	Lead Management

	Strategy
	Events
Admin & HR Management	Recruitment
	Payroll
Research & Paralegal	Research
	Library Management

5.7.4 Pre-Adoption

In the early days at OMO Legal services, the processes were entirely manual. The company started with only one location, the owner and a staff administrator who did most of the filing. Customers' accounts were opened, and each customer had a physical file. Each case had a separate filing cabinet with a reference to the customers file at the front of the case files. This manual system allowed for the cross-correlation of cases with customers and customers files was used mainly to track payment. As there was no computer, handwritten invoices and receipts were always issued with copies placed in customer files. Around this time, IT was a capital expenditure for big companies and although the company could have afforded an IT system, the lack of IT systems in the early days at OMO Legal could be attributed to several factors which include cost of IT infrastructure (the expense could not be justified), technical know-how and the owners' knowledge.

In the early 1980s the company purchased a typewriter that was often used to type letters and generate invoices for customers. Fast forward to the late 90s, the company identified the need for a computer system for word processing and at the time, the use of computers for business in Nigeria was on the increase and since the company could afford it, it was purchased to replace the typewriter and the use was primarily for processing letter and nothing more.

5.7.5 Adoption

Shortly after the company purchased its first computer system in the late 90s, the company employed a former bank accountant who helped to move the company to start using Microsoft Excel and Microsoft Access databases for its financial processes. This transition helped to gradually reduce the physical storage needed as the company realized that it required a lot of space/cabinets to store files and was gradually running out of space.

In 2010, when the current principal partner relocated to Nigeria, he led the implementation and purchase of several IT & e-business systems which included a case management system, Sage Accounting and Dropbox which were all still used in the organisation at the time of data collection. For him, there were a lot of things that led to this change for example, internet usage at the time was increasingly becoming more affordable and accessible in Nigeria. Also, having lived and worked in the UK for years, there was a standard of doing business he needed and while the business was successful, he felt, for the business to move on to the next level, the investments in IT was essential as top law firms in Nigeria operated in similar fashion.

E-business systems the company invested in included case management system, website and email systems and Sage Accounting. At the time of data collection, the company was reaping benefit from the systems implemented as it has helped their business to be distinguishable, leading to the expansion to several locations. For example, as described by the principal partner, *"we would have had to spend a lot on DHL; shipping documents to lawyers in different locations in order to read proceedings of a case, but now, we can do this over a call and send documents via email."*

E-business adoption at OMO Legal was gradual and staged over several years. Rather than e-business initiatives being driven from the owner, it was driven by the addition of new staff who brought in the knowledge of tools based on previous experiences.

5.7.6 Post-Adoption

Although some of the company's core processes were driven by IT and e-business they could benefit from further integration of the systems. For example, the finance system could be integrated with case management, thus allowing for easy billing. Also, there were still some attributes that were not automated for example, sending reminders for invoices was still manual and although the system noted defaulters, there should be a system for follow up.

From time to time, corporate documents, certificates and lease documents of some of OMO Legal's customers will expire and they had no automated system to track and send notifications to the concerned parties. This process was regarded as quite

a manual process that required further investment from the company. However, as with the transition from no-IT to being an IT-driven company, staff have needed to be trained on how to get the website updated, using computers, how to use Microsoft Office and a special training for case management system for lawyers and paralegal.

At the time of data collection, OMO Legal was looking into social media awareness and advertising but carefully understanding how it was used by the leaders in the field, so as to efficiently pursue the same or similar approach for their organisation. Generally, the findings indicate that OMO Legal was quite cautious in their adoption and only tend to deploy IT and e-business systems on processes that have been tested by other competitors.

5.8   LTE Consulting

5.8.1 Background

LTE Consulting is a training and consulting organisation which offers corporate training, bespoke training, and personalised training services to the financial sector in Nigeria. At the time of data collection, the company organised training programs and circulates its training brochures to target organisations via email and physical training brochures were posted to company HR directors and training managers every year.

Since its existence, the company had been known for its quality-driven, interactive and intensive training thus, making it more popular and preferred to other training houses. With its corporate trainings, organisations nominated individuals to attend the training sessions and payment was often made by the organisation. Also, occasionally, the company organised general personalised training which was open to any individual to attend and pay for. The company started operating in 2007 and gradually carved a niche for itself in providing customer service, agency and sales training for insurance companies. Towards the end of 2009, the company faced significant financial stress as it struggled to generate sales for its trainings. Due to the recession, target companies had significantly reduced or removed training budgets and declined nominating their staff for LTE Consulting's corporate trainings; and the few that offered requested significant discounts.

Given the company's situation, investing in technology became inevitable as its competitors were offering lower rates and although of inferior quality, the clients were not will to pay a premium. LTE Consulting selected to use blended learning as a strategy to compete, and with this learning technique, videos and online materials were distributed via a Learning Management System (LMS), allowing the trainees to access the materials before the training began. This also meant that for the company, lecture materials could be reused, trainings could scale faster, and the cost of facilitators could be significantly reduced.

The company invested in a CRM system to reach and keep in touch with the attendees of its trainings, and this has helped it generate more customers and increase revenue for its individual trainings as attendees of corporate trainings referred their colleagues to LTE Consulting.

5.8.2 Questionnaire and Interview Respondents

The respondents at LTE Consulting were the Owner/CEO and the Learning Technologist. The owner/CEO was a 60+-year-old man with over 30 years' experience in the insurance industry. After an early retirement, he decided to setup a training and consulting firm for the insurance sector. As at the time of data collection, he maintained overall charge of the firm and led the company as the principal trainer. He was involved in curriculum development and training planning for every year and from time to time, he ensured he maintained contact with the management/directors of various companies they served as well as the HR and training leads at the firms.

As with any business, his approval was required for general expenses in the company, and at the end of every month, the accountant sent him an update on income and expenses. Asides being involved with training in the firm, he was the principal consultant and often worked on projects with new players in the insurance industry, businesses interested in innovating or government projects. He drove the strategy of the firm and was open-minded to the use of technology to transform or change processes in the organisation.

The learning technologist was a masters' degree holder from the University of Brunel. She was responsible for directing the organisation on how to effectively use IT systems for learning. Upon resumption, she was tasked with the responsibility of procuring a learning management system. She identified two open-source systems –

E-front and Moodle that could be used by the organisation and eventually, E-front was deployed. By working closely with several facilitators and trainers, she led the use of custom developed videos in their training sessions and at the time of data collection, her role involved assisting facilitators with engaging trainees using technology. From time to time, she doubled as IT support, assisting various staff with technical issues on their systems.

5.8.3 Process Mapping

At LTE Consulting, five core business processes were identified using process mapping (Figure 28). The Curriculum & Training process consisted of activities such as developing programs for the year, recruiting facilitators and delivering training. Towards the end of every year, the company developed its training programs for the coming year. This activity involved the admin staff reviewing trends in the news, major recruitment by government organisations and reviewing feedback filled in by previous course attendees. All of the information gathered from these exercises were used by the MD/owner for generating the core training programs for the year. The final step to creating the programs involved the development of the course content and uploading on the LMS.

Figure 28 Core Processes at LTE Consulting

The Sales & Marketing process involved lead generation, marketing and campaign management. In this process, the company sent out email newsletters to various organisations head of training and previous attendees to inform about their upcoming courses at least once in two months. The company also maintained a published list of training on its website and with this, it was possible to make payment either via bank transfer or via paystack payment pages. In addition to the various digital channels, LTE Consulting still sent a printed brochure of the years' training to

existing customers using a local courier service. The Payroll & HR process involved the payment of staff salary, recruitment and sourcing and payment of facilitators. Generally, the company made use of its internet banking to pay its staff while recruitment was done via job boards and CV's were emailed to the company.

The Finance Management process made use of a combination of systems, although mainly MS Excel templates that had been built to suit the organisation. Activities completed within this process included invoicing, expense tracking and management account reporting. Lastly, the Customer Service process included managing customer complaints and queries and ensuring trainee records were kept up to date such that it is easy to tell what trainings someone has attended in the past. Across the five core processes, thirteen sub-processes were identified, table 10 below shows these sub-processes.

Table 10 Sub-processes at LTE Consulting

Core Process	Sub-processes
Customer Services	Messaging
	Problem Resolution
Curriculum & Training	Training
	Programme Development
Sales & Marketing	Campaign Management
	Lead Generation
	Marketing
Payroll & HR Management	Recruitment
	Time Tracking
	Payroll
Financial Management	Management Accounting
	Expense Tracking
	Invoicing

5.8.4 Pre-Adoption

Like most small businesses, LTE Consulting started with just the owner, and as such, it started with just one laptop which was used by the CEO for word processing activities. Brochure design work and typesetting was outsourced to a local business

support center and as the company grew and hired staff, a new laptop and printer was purchased for the admin assistant who started to take on typing work.

Also, the accounting systems at the firm in the early days was very manual. The admin staff would generate invoices one week before the courses and it would be sent by courier to the various nominated participants. When payment was not made before the training, it would require the nominee (or company) to be followed up on via phone calls. This often led to several missed payments and possible revenue loss. Receipts were batched printed and handwritten. Also, most of the transactions the business did required the owner of the company to visit banks regularly. For example, for staff salary payment, a schedule needed to be submitted to the bank. The process was not very structured and often required the owner to perform most of the tasks as he was the sole signatory to the company's account.

The attendees always left the conference/training expecting a flier from LTE Consulting or the HR at their firm to inform them about the next training; this was quite fragmented, not allowing growth, scale and effective customer engagement.

5.8.5 Adoption

Between 2008 and 2009, business slowed down for LTE Consulting because several of LTE Consulting's customers had limited training budget as a result of the economic recession. This gave rise to the company's' need to invest in IT and e-business in order to remain in business and the need to offer different modes of trainings in order to remain profitable.

In 2009, the company decided to invest in a website, and corporate email as this had become a standard that insurance companies operated by. The website provided an online brochure and a way for prospective customers to reach the firm. The same year, the company purchased an internet modem to serve the staff of the company and they began using it to source training leads and opportunities. The CEO also began using the internet actively to reach out to prospects as well as research training materials. In the same year, the company hired a business development executive who also had a laptop purchased for him to carry out his activities. LTE Consulting soon had a new challenge which was power outage. Although they were

in a serviced office where dedicated power supply was expected during the working hours, the property owner insisted on a one hour break for the generator as power from the national grid was infrequent thus causing a lot of reliance on the generator and this sometimes led to the disruption of work.

In 2011, the owner of the business hired a learning technologist who was tasked with exploring how the development of IT systems could influence and change the course of their business. The learning technologist started her role by researching various possible Learning Management Systems (LMS) and how it would fit their business operations. The owner was largely involved in this process and often times as he recalls, he would research some ideas/systems put forward by the learning technologist.

Late in 2011, the company deployed e-front LMS system which is an open-source LMS system that allowed content and training materials to be deployed on the web. Usually, the learning technologist loaded the necessary materials on the system and creates quizzes based on the materials. One week before the training, the delegate's details are preloaded on the system and they are able to start preliminary reading /learning before the actual training starts. As at the time of data collection, the system had been in use since its deployment by the company with great results and feedback. As time went on, the company has had to invest in creating more dynamic video contents. It also created a new service where it helped other training companies and HR departments of some of its existing clients to create multimedia training content and this has created a new revenue stream for the business.

Since the successful deployment and use of the LMS system, the feedback from training attendees had been tremendous, and as a result, the company had decided to deploy a CRM tool to keep in touch with leads as well as training attendees. The CRM system was contracted to a local software development firm to build a bespoke system and the general requirement was a system that allowed customer details to be uploaded via a CSV and email sent to a batch at once and possibly to track communication with each. Generally, e-business at LTE Consulting was largely driven by the need to innovate in order to offer competitive pricing.

5.8.6 Post-Adoption

Following investment in the CRM system, at the time of data collection, the company was investigating how the use of social media could affect their business. Although their business was still mostly corporate business-driven, it had become a norm for companies to have some presence on social media and as such, the company was exploring content production for clients on their social media and how social media could be used to target customers, for example using LinkedIn for sourcing leads.

From a Finance process perspective, there had been discussion around the need to purchase a more robust platform rather than the use of MS Excel for tracking expenses. As at the time of data collection, the transaction volume was manageable, and invoices were no longer sent via post and but with email only.

For the Sales & Marketing process, the company had started to experiment with Google AdWords and display adverts with the aim to drive more awareness for the brand as well as increase prospective trainees. According to the owner, *"since our approach has been top to bottom for these years, perhaps we want to experiment with a bottom to top approach because in most organizations today, it is the staff that determines the training he/she wants to attend."* By marketing to staff directly, LTE Consulting's management believed they might be able to get some new organisations on to serve and although it was still early days, the results received up until the time of data collection was encourage-able.

5.9 Summary

In this chapter, initial findings from the various case study companies have been presented as well as results from the initial survey of 47 SBEs in Lagos. Findings from the case study companies reveal the adoption of various e-business technologies to optimise processes in different ways. For example, with ABC Laundries and LTE Consulting, bespoke development using web technologies was utilized; while in others, purchase of cloud-based systems or off-the-shelf software packages were adequate. The motivations for adoption varied and ranged from improving customer experience to re-strategizing and innovating to stay in business.

The findings from these case study companies have also revealed some similarities amongst the companies; for example, most of the companies started using MS Excel

and gradually optimised their processes, before the actual deployment of IT systems. Notably, in ABC Laundries and OMO Legal, these organisations transitioned from a full paper and manual based system to an organisation driven by e-business through a stage-based approach of deployment and implementation over the years.

Processes to be automated also varied from one business to another with some businesses focusing heavily on internal processes while others focused on external processes that are revenue-generating.

To address research objective 1- *To what extent are Nigerian SBEs adopting e-business*, this chapter has presented relevant findings from the survey as well as from the case study organisations. From the survey, only two companies indicated that IT & e-business was not used for their core business activities, while only nine companies stated that they did not have a website. In general, SBEs in Nigeria utilize e-business and IT for a wide range of activities and in some companies, e-business drives their core operations.

This chapter has presented the background of each of the case study companies and some findings about their processes at a relatively high level. In the following chapter, each case study company is further analysed in depth using a combination of the conceptual framework presented in chapter 3 as well as existing frameworks such as DTI Adoption model, CPIT and TOE Framework. A cross-case analysis of the case study companies presents commonalities and differences across the cases.

Chapter Six

Analysis

Chapter Six Analysis

6.1 Introduction

This chapter analyses the findings presented in chapter five and discusses e-business adoption in each case study company within the context of existing research. The findings from the interviews and questionnaires are analysed within contexts such as organisational change (Ong and Wang, 2012), planned behaviour (Crespo and Bosque, 2008), adoption patterns and innovation (Rogers, 2003).

For each case study company, this chapter reviews the motivation, barriers, and strategy chosen for adoption. Systems profiling is used as an analytical tool to identify e-business systems deployed in each of the process areas. By employing a simple Red-Amber-Green assessment, the systems are classified to indicate those in need of replacement (Red), those that could be retained (Amber) and those that were deemed strategically and/or operationally sound (Green). Analytical e-business frameworks and models such as the DTI adoption ladder (Department of Trade and Industry, 2003), CPIT (Department of Trade and Industry, 2003; Wynn, Turner and Lau, 2013) and e-business Evolution Model (Abdullah, White and Thomas, 2016), and the conceptual framework, are used to understand adoption patterns, technologies and approaches taken for adoption.

The chapter also presents a multi-case analysis of the findings where similarities and differences between cases are explored. By using a combination of thematic analysis and framework analysis, themes and critical influencing factors from the multi-case analysis are presented which directly address research objective two.

This chapter consists of five sections. Following this brief introduction, the chapter presents the single case analysis of each SBE. Next, multi-case analysis and critical influencing factors are presented, after which the chapter concludes with a summary.

6.2 Single Case Analysis

6.2.1 ABC Laundries

The management of ABC Laundries views e-business as a critical enabler of corporate growth. At the time when ABC Laundries was considering the deployment

of e-business systems, the company was expanding to different locations, and increased growth and expansion was one of the factors that motivated adoption.

Raymond, Bergeron and Blili (2005) suggest that in a bid for SMEs to become 'world-class' enterprises and grow, SMEs often make sizeable investments in internet-based technologies. From a strategic point of view, having run an entirely manual business for years, with their processes now mature, the management of the company believed that the deployment of e-business systems, particularly the web portal, would be instrumental to the company's growth and expansion.

Findings from ABC Laundries (presented in chapter five) indicated that the firm had seven core processes and seventeen sub-processes. By using systems profiling to identify IT and e-business systems used in each of the seventeen sub-processes, nine were found to make use of advanced e-business systems (e.g. the web portal and biometric systems) and were classified as Green. Four sub-processes were classified as Amber as they made use of IT and e-business systems like MS Excel that worked but could benefit from some replacement in the future, while the remaining four were classified as Red as these systems were entirely manual (Figure 29).

Over half of the core processes of this firm operated using one form of IT and e-business system or the other. E-business systems had been deployed mostly in the Financial Management, Collection & Delivery Management, and Sales & Marketing. To further understand the level of automation in the main process areas, the core processes were categorised as automated, semi-automated and non-automated. The majority of processes in this firm were classified as automated/semi-automated, with only two processes mostly manual and non-automated (Figure 29).

Figure 29 Systems Profiling and Sub-processes at ABC Laundries

The deployment of the web portal in the organisation helped automate most of the processes, with at least one sub-process in each of the primary process areas being impacted by the web portal. The company made use of eleven main IT/e-business systems for its core business to be in operation; these are presented in table 11 below.

Table 11 IT/e-business Systems at ABC Laundries

S/N	IT/e-business system	Process Areas
1.	**Web Portal**	All Process Areas
2.	**MTN Cloud IVR**	Customer Services Sales & Marketing
3.	**Biometric system**	HR & Admin
4.	**MS Excel**	Customer Services Sales & Marketing HR & Admin
5.	**Internet Banking**	Financial Management HR & Admin
6.	**Bulk SMS Portal**	Customer Services Sales & Marketing
7.	**Job Boards**	HR & Admin
8.	**POS Terminals**	Finance Management
9.	**Email Software-as-a-Service**	Customer Services Sales & Marketing
10.	**Social Media**	Sales & Marketing
11	**Website**	Sales & Marketing

The DTI adoption ladder (reviewed in chapter two) was used as an analytical framework to explore the level of adoption. The analysis revealed that the company was at stage four (e-business) of the DTI adoption ladder, and at this stage, the delivery of its core business processes was handled by e-business systems. As expected at stage four of the DTI adoption ladder, the internal and external facing business processes make use of e-business systems and mainly, in this case, the web portal which consists of several modules such as invoicing, finance management, laundry item tracking, customer notification, and several others, had made this possible for the company. The company also made use of online bank transfer and POS terminals to accept payment from customers while the order was recorded, and payment receipt generated by the web portal.

ABC Laundries did not offer a self-service online ordering system where customers could place orders online. Customers, however, could make payments for existing invoices through online banking and Point of Sale (POS) terminals as well as track their laundry items. The company had progressed in sequential stages from stage 1 (e-mail) to stage 4 (e-business) of the ladder over the years, and although the company did not operate a full-fledged e-commerce site, it had some e-commerce facility.

Next, the extended stages of growth model suggested by Abdullah, White and Thomas (2016) was used to analyse the firm, and it indicated that ABC Laundries was at stage 7 (e-business) of the model. The e-business stage is synonymous with that of the DTI adoption ladder and indicates that a reasonable number of internal and external-facing processes have been automated. While the firm progressed sequentially through the stages, stage 2 (Social Media) and Stage 5 (Mobile App) of this model had been skipped, and only stage 2(Social Media) was returned to at a later time after achieving stage 7 (e-business). This pattern of adoption contradicts what was expected, as Abdullah, White and Thomas (2016) suggest that companies should progress from Email (stage 1) to Social Media (stage 2) or begin their adoption from stage 2 (Social Media) or stage 6 (Cloud Services).

When the company implemented the web portal (achieving stage 7), the company had no social media presence, and only upon deployment and extended use of the web portal had it begun to gradually initiate the use of social media for customer

service purposes. At the time of data collection, the company had not implemented stage 5 (Mobile App), although they were exploring the possibility of this for the business, it was still in the very early stages and was being thought about several years after the web portal had been designed, developed and put to use.

The company had not exhaustively utilised the reduced cost and flexibility offered by cloud services, which are expected to be very attractive to SBEs. Stage 6 (Cloud Services) of the model was satisfied by the use of a bulk SMS Portal and an email server, which were cloud-based software-as-service platforms. The web portal implemented by the organisation was also deployed on a cloud virtual private server (VPS). The adoption sequence of ABC Laundries contradicts the framework authors' suggestion that small firms either start adoption at stage1 and progress sequentially or start at stage 2 or 6 and progress sequentially.

To critically examine the impact of e-business systems at process level in this firm, the CPIT model (reviewed in chapter two) was used as an analytical tool (Figure 30). This process revealed that e-business systems had made a significant impact on Financial Management and customer-facing processes. For example, decision-makers within the organisation were easily able to keep track of daily, weekly and monthly revenue from any of the two premises, or remotely, thus helping the organisation to plan effectively and take appropriate action when needed. From the web portal, customer details could be easily obtained, and SMS and email notifications were quickly sent out from the web portal. When customers items were ready for pickup, an SMS was automatically sent from the web portal, and when an item had been left unpicked for a few days, reminders were sent. The web portal allowed for improved customer service, and it was gradually transforming the firm's customer experience and Financial Management process.

Figure 30 CPIT Analysis at ABC Laundries

From an internal process efficiency perspective, the Collection & Delivery Management process could be easily managed with the ability to track the status of each item that has been brought in by customers. The Sales & Marketing process had also been made more efficient with the ability to automate and notify selected groups of customers via SMS or emails when there were special offers. There remain, however, further benefits to be gained by automating the communication of marketing information to customers and by making relevant information available across processes. This may allow, for example, special offers to be made to customers in specific geographic locations, with a high frequency of delivery, with a mind to keep delivery cost constant and increase orders to be delivered. This type of further development, which is akin to what, in a larger organisation, would be termed Business Intelligence, would arguably move the company into the transformation stage on the CPIT model.

The adoption of e-business systems often brings about organisational change. Elmorshidy (2013) emphasises that the management of the company needs to align with the aim of the IS for it to be a success. In this firm, only two people were

required to align with the aim - the owner and the general manager, but, staff members were carried along in the process. Nguyen (2009), from an organisational change perspective, suggests that strategic changes in small businesses often come from the top-down. While this approach to change has its merits, it is not always an overall success as other members of staff of the company need to be on board with the change. In this firm, the approach to change was top-down and the owner of the business was primarily responsible for most of the initiatives. However, the staff members were carried along and according to the business owner, most of them were excited about the opportunity and innovation. This kind of morale helped the success of e-business deployment in ABC Laundries.

The adoption of e-business resulted in change in business processes and changes in people's role. The company had to re-engineer its processes to ensure that e-business systems deployed were effective. Rodgers, Yen and Chou (2002) suggest that for real value to be derived from e-business systems deployment, the existing processes should be evaluated and possibly re-engineered. In this firm, the order management process was re-engineered such that customers were not waiting in the line for too long when collecting or dropping off items in the laundry. New processes were also developed to notify customers when orders/items were ready for collection and for storing items that had remained uncollected after several reminders. From a manager's perspective, inefficiencies that existed in the existing processes were entirely eliminated; for example, the company's finance/sales record could be assessed with ease in real-time.

Willcocks and Sauer (2000) suggest that small businesses need to overcome the organisational and anxiety gap in order to derive core value from e-business initiatives. In this case, the company had overcome the anxiety and organisational capability gaps. ABC Laundries' implementation of e-business focused more on improving efficiency for staff and customers, and there has been an immediate value derived from doing so. The ability to overcome these gaps could arguably be linked to the company's financial position, the owner's experience of working on IT projects, and clarity in aims and goals when the company set out to embark on the e-business initiative.

One of the primary goals for e-business adoption at ABC Laundries was improved efficiency. According to the owner of the business, their increasing growth meant that manual processes were gradually becoming ineffective and, thus, needed a system to automate their processes. In their study on IT usage in SMEs in developing economies, Afolayan *et al.* (2015) elucidate that small companies implement IT for purposes such as enhancing operational efficiency, cost reduction and providing improved service to customers. Levy, Powell and Yetton (2002), however, suggest that SMEs are often too obsessed with short-term efficiency and operational benefits, while strategic long-term business benefits are not sufficiently considered. In this case study, although there was no written strategy at the outset, long term benefits and sustainability of the system were considered.

The decision to adopt e-business in ABC Laundries was also largely influenced by the desire to make better decisions using real-time data. Ongori and Migiro (2010) assert that the adoption of IT in small businesses allows for quick and easy access to information, which helps to make thoughtful business decisions. In this case, although the owner of the business had visibility into the financials of the company to make decisions, before e-business adoption, the process to compile the transactions was cumbersome and took many days to reconcile, this meant that the business owner could not get up to date, real-time information to make business decisions.

Various studies based on UTAUT (Chiemeke and Evwiekpaefe, 2011; Erumi-Esin and Heeks, 2015) and TOE (Oliveira and Martins, 2011; Rahayu and Day, 2015) have suggested that perceived benefit represents one of the key motivators for the adoption of e-business technology. In this case, several perceived benefits motivated adoption, and given the owners' wealth of experience in IT, adopting e-business at the time was a natural progression. Studies have also indicated that the owner-managers knowledge of IT/e-business is sometimes a factor that affects adoption (Iacovou, Benbasat and Dexter, 1995; Lin and Lin, 2008; Wymer and Regan, 2011) and the same was evident in their approach to deployment.

The deployment of e-business systems does not come without challenges; the initial cost of adoption is often a significant barrier to deployment of IT systems, especially in small businesses (Kalinic, 2015). In developing countries, the initial cost could significantly deter an organisation from deploying e-business systems (Mokhtar,

2013; Wachira, 2014). In this case, the initial cost of adoption did not serve as a deterrent, but it affected the choice of the system that could be deployed. As mentioned by the owner of the business, *"we needed to get the system in place, but we had to get it done cheap. Although, if it were to have cost significantly more, we would have still progressed with it".* This finding corroborates Chatzoglou and Chatzoudes (2011)'s position that although the cost of adoption is often a barrier to adoption, it does not play a key role in deterring the adoption of e-business.

Another initial challenge to adoption for ABC Laundries was lack of reliable power supply. Adopting e-business meant that the entire business had to be reliant on computers and these computers were reliant on power supply that was not reliable, and mitigating against these through the use of generators meant an increase in adoption cost as well as increased monthly operational cost. Scholars in e-business and e-commerce in Africa and particularly Nigeria, have indicated that lack of reliable power supply is one of the core challenges and barriers faced by businesses working to digitize their processes (Mpofu, Milne and Watkins-Mathys, 2009; Agwu and Murray, 2014). In this case, the company was quite creative in overcoming this challenge in that they invested in laptops instead of desktops, as these would last for several hours after a power cut. Also, they invested in inverters, generators and tablets to provide backup power.

Another initial challenge faced by ABC Laundries was a slow internet connection. Studies on e-business in Africa have identified internet connection speed and cost as inhibitors to adoption (Olatokun and Bankole, 2011) and although the price has been seen to improve over the years (Wachira, 2014), the speed and poor network infrastructure is still a problem (Erumi-Esin and Heeks, 2015). In this case, internet connection speed was a significant problem that could have jeopardised their whole deployment. In the early days, they had to purchase internet connection from about four different providers due to slowness of the connections and they found that in a week, they often switched between various providers in order to ensure that the business could operate efficiently. Also, they had a unique problem where the network access was very poor, and the internet connection strength was very weak in several parts of the office. This meant they had to identify a specific spot where the wireless router could be placed, which had the best network connection and if

the router was placed in a separate place from that specific spot, there would be no connection.

Figure 31 TOE Factors Affecting ABC Laundries

The TOE framework was used to get a view of the impact of Technology, Organisational, and Environmental factors. Figure 31 above shows the twelve factors which affected adoption. Organisational factors of top management support and owner knowledge of e-business were central to the successful adoption of e-business. According to Jeyaraj, Rottman and Lacity (2006), top management support is often one of the factors that significantly help IT adoption in small businesses to become successful. According to the owner of the firm, *"what makes us different from our competitors is the careful deployment of e-business as other business owners are not aware of how to deploy IT cost-effectively."*

Figure 32 People, Process and Technology Factors Affecting ABC Laundries

'People, Process, and Technology' factors affect the adoption of technology and adoption patterns. Nine such factors were identified. From a technology perspective, cost and in-house IT skills played a vital role in adoption, while from a process perspective, the fact that the company's processes were mature allowed for a smooth adoption.

6.2.2 KDE Energy

KDE Energy started operating with the use of the owner's personal email address and phone for business purposes. As indicated by Matlay and Addis (2003), in a small business, the owners' perspective of the technology being adopted, plays a strong influence on adoption. This idea is also resonated by Fillis and Wagner (2005), who suggest that in a small business, the owners' entrepreneurial drive and IT knowledge critically impacts the adoption of e-business. In the case of KDE Energy, the owner was already using email for personal purposes; thus, this made adoption and use of e-business by the organisation, almost immediate. Janita and

Chong (2013), suggest that in businesses where the owner or senior management are IT savvy and open to innovation, adoption decisions are made faster.

Figure 33 Systems Profiling and Sub-processes at KDE Energy

The findings from chapter five indicate that the firm had six core processes and fourteen sub-processes. By using systems profiling, from the fourteen sub-processes, five were classified as Green as these processes made use of systems that were considered efficient for the process (e.g. the use of QuickBooks accounting), four sub-processes were classified as Amber because they made use of systems that though worked, could benefit from an upgrade, while six sub-processes were classified as Red as they were entirely manual. From this analysis, only the Finance Management and Procurement & Logistics Management made use of e-business systems efficiently in their operations. The website, Email system, and QuickBooks accounting also appear to be the only e-business systems explicitly deployed by the firm for its core operations.

The level of automation in each of the core processes at KDE Energy was categorised as automated, semi-automated, and non-automated (Figure 33). By analysing the systems used in the sub-process of each core process, the core

processes were classified accordingly, and, three processes were classified as automated/semi-automated, while the other three were classified as non-automated.

This relatively simple analysis of the systems and processes indicated that the Financial Management process and Procurement & Logistics Management were the most mature processes in the firm. Although Johnston, Wade and McClean (2007) suggest that SBEs mainly deploy e-business for customer-facing activities, the same was not entirely the case in this firm as, although they made use of emails for the Customer Service and Sales & Marketing processes, other sub-processes in this core process were made up of mostly manual activities. For more insight into the IT and e-business systems used in the firm, table 12 below, presents an overview of each of the systems used and the core process areas where they are utilised.

Table 12 IT/e-business Systems in KDE Energy

S/N	IT/e-business system	Process Areas
1.	**Website**	Sales & Marketing
2.	**QuickBooks**	Financial Management
3.	**MS Excel**	Procurement & Logistics Management
		Financial Management
		Payroll & HR Management
4.	**Email (Webmail)**	Customer Services
		Sales & Marketing
		Payroll & HR Management
		Procurement & Logistics Management
5.	**Internet Banking**	Financial Management
		Payroll & HR Management
6.	**Logistics Tracking**	Procurement & Logistics Management
7.	**Supplier E-commerce Sites**	Procurement & Logistics Management
		Financial Management
8.	**Inverter Monitoring**	Installation & Repair
9.	**WhatsApp**	Customer Services
		Sales & Marketing
10.	**Social Media (Facebook & Instagram)**	Sales & Marketing
11	**Job Boards**	Payroll & HR Management

The DTI adoption ladder (reviewed in chapter 2) was used to explore adoption analytically. This analysis revealed that the firm was at the e-commerce stage (stage 3) of the model. While a complete e-commerce system had not been deployed, intending customers could view the prices of power backup solutions like inverters and solar panels on the website as well as on the company's social media pages

with orders placed over the phone or via email. As a business, KDE Energy had adopted some e-business systems for both internal and external-facing activities; but, several of its business processes were still mostly manually driven or driven via MS Excel.

With respect to the e-business adoption pattern, the company had progressed sequentially from stage 1 to stage 3 (email to e-commerce) as suggested by the model's authors. In the early days of the company, only emails were used (particularly the owner's personal email), but as at the time of data collection, the company was exploring advertising its inverters and other electrical gadgets using social media and its website.

As a business, they were keen to explore the use of IT and e-business systems to improve growth and efficiency. They were still in search of an ideal product that would suit most of their internal needs but keep the tasks, processes and activities practicable and straightforward. Over the years, they had piloted several e-business systems, but these had failed due to complexity, unclear requirements, and staff adoption.

During the interview, the owner of the firm said, *"I don't want a situation where the e-business system we implement, creates a burden and are impracticable for our staff in the field."* The company was interested in deploying a mobile-friendly application because a large percentage of their staff worked on the field and as a result, the systems to be used for their internal operational needs, should support this type of work pattern (preferably a mobile app); otherwise, adoption by staff would be impacted as had been the case with some e-business systems that had been experimented with.

The adoption of e-business in KDE Energy was also explored based on the e-business Measurement Evolution Stage model (Abdullah, White and Thomas, 2016). The analysis indicated that the organisation was at the cloud services stage (stage 6) of the model. At this stage of the model, it is expected that some of the core business processes utilise cloud-based systems and the organisation is expected to be advancing its adoption to multiple business processes. At the time of data collection, this was the case for KDE Energy; the organisation maintained a cloud-based accounting tool and had a website that showcased its products and services,

although payment for most services was often made offline or via online bank transfers. Exploring the adoption pattern in the firm through this model, exposed that the firm skipped the social media stage (stage 2) and progressed through to stage 4 (e-commerce) in a sequential fashion, and had only just gone back to exploring social media as a way to reach customers and advertise their products.

The firm was exploring the possibility of the use of mobile apps as a way to cater to the e-business needs of field workers who generate most project-related data. Before achieving stage 6 (Cloud services) through the company's deployment of QuickBooks as an accounting tool and inverter monitoring solutions, several other off-the-shelf and open source applications were piloted for various business processes, but they all failed due to limited understanding of the business problem to be solved, unclear processes and limited knowledge of the suitability of the software. From this analysis, the researcher can deduce that the firm traversed sequentially through the stages 1-6 but skipped the social media and mobile app stages (stage 2 and stage 5), only to return to them.

The CPIT model was also utilised as an analytical tool to evaluate adoption in the firm. This analysis (figure 34) indicated that only the Financial Management and Procurement & Logistics processes were adequately supported by e-business technology, but the Sales & Marketing, as well as Installation & Repair processes, were beginning to derive some value from the systems deployed. As highlighted by the founder of the firm, most of their income was made from transactions with other companies, and this emanates typically from discussions at management level; therefore, there was very little justification for implementing a full-fledged e-commerce site as there was no demand for it.

With the current e-business systems deployed in the firm, only the Financial Management process had been transformed such that the staff of the firm now found it easy to generate invoices and track payment receivables. The owner of the firm and senior management had full visibility into the accounts of the firm, and the entire financial process was easily manageable. For example, customers on retainers could be easily identified and emailed for outstanding monthly/quarterly payments. The Procurement & Logistics process, although not transformed, had also improved as staff of the firm could track items purchased via a tracking service. For example,

when transferring heavy items from one location to another, the staff of the firm could track these items, thus providing a reasonably secure way for the firm to manage customers' expectations.

As at the time of data collection, inventory management was mostly managed via Excel and communication with customers was primarily done with emails and phone calls. Although limited e-business systems had been deployed in the firm, promising results had been derived that should encourage increased adoption.

KDE Energy Business Processes	Publish	Interact	Transform
Financial Management	Invoices & company accounts created on QuickBooks	Full visibility of company accounts	Capability to efficiently manage financial performance
Sales & Marketing	Customers are able to view services and products on the website	Limited ability to pay for products	
Installation & Repair	Engineers are able to track and diagnose inverter issues remotely		
Customer Services	Message trail made available via email		
Payroll & HR Management	Ability to easily access staff records		
Procurement & Logistics Procurement	Full visibility of procured items	Ability to track & keep up to date with purchases	

Figure 34 CPIT Analysis of KDE Energy

From an organisational perspective, the firm failed to achieve user adoption on some systems deployed with the field workers; this was partly as a result of unclear requirements and limited involvement of field staff in the procurement process. The company had experimented with project management systems that allowed field staff to submit requisition requests, work extension requests and inventory migration requests, but these systems required the staff to work from a desktop computer which was often not the case for field staff and as a result, this impacted adoption. Heeks and Hawari (2010) in their study, suggests that for successful e-business deployment, the users of the system must be involved in the initiative early in the process. This position is also echoed by Chaffey (2007) and Wilson, Daniel and Mcdonald (2002).

One of the primary motivations for e-business adoption in KDE Energy was organisation readiness. Stockdale and Standing (2006) in their study, identified that several small businesses often fail to deploy e-business systems until the organisation is ready and although this is a multi-faceted criterion as it is concerned with readiness of people in the organisation (Lai and Ong, 2010), readiness of processes (Zhu, Kraemer and Xu, 2006), readiness of management to support the initiative (Mazzarol, 2015) and several other factors, in the case of KDE Energy, while there were initial challenges which limited adoption such as support from field workers and limited process documentation, with respect to appetite for e-business adoption across the firm and management support, the firm was ready for adoption. The prevalence of several manual processes or processes driven by MS Excel can arguably be attributed to the limited value the deployment of e-business will yield for those processes, given the type of customers the firm serves.

Analysing e-business adoption in the firm using the model suggested by Willcocks and Sauer (2000) reveals that the firm is at stage 2 of the model. The firm had been able to overcome the anxiety gap by investing in QuickBooks as a result of a business need since the accounting process, when using MS Excel, became ineffective. The owner of the business still struggled to invest in other IT systems due to the limited value that will be derived. Levy and Powell (2003) suggest this and opine that companies need to overcome the organisational gap by re-organising processes. Zheng et al. (2004) emphasise the need for perceived benefit in order for e-business to truly transform the organisation. From the interview with the owner of the firm, the suggestion by Zheng et al. (2004) appears to explain his position and limited use of e-business in some business processes.

Another factor that motivated e-business adoption in KDE Energy was customer demand for e-business systems, such as the website and inverter monitoring. Given that the firm was marketing to already established companies who often dealt with businesses with an online presence, the owners of the firm felt compelled to develop a website as this request from customers kept reoccurring in meetings. Studies by Depaoli and Za (2013) and Zheng *et al.* (2004) have indicated that customer motivational factors are important factors that influence e-business adoption. Janita and Chong (2013), who evaluated e-business adoption in B2B markets, also found that factors such as owner-manager characteristics, consumer readiness, and

adoption of e-business by a supplier were often what contributed to the adoption of technology and speed of adoption. Clearly, if KDE Energy were marketing to an industry where online presence was not the norm, the drive to adopt e-business in the Sales & Marketing process would have been limited.

The management of most companies engage in decision-making tasks to progress the business, and in most cases, these decisions rely on data available in the company. In order to facilitate access to such data and the decision-making process, companies deploy and rely on e-business systems, and in this case study, this was one of the motivations for adoption. In the Finance Management process, while the use of MS Excel worked fine, it was not optimal and ideal when the company's revenue increased, and more than five projects were being executed simultaneously; the accounting for each became challenging to manage. According to Avgerou (2000), the deployment of IS in small businesses is often motivated by growth and efficiency. In their research Wu, Mahajan and Balasubramanian (2003) indicated that efficiency is an essential condition when an organisation is at the early stage of its IT deployment. For the Finance Management process, not only was the desire for easy access to data a motivation, efficiency was a significant driver of e-business adoption as well.

There was no clear IT/e-business strategy defined by this firm. For the systems deployed, the firm had reacted to operational challenges and there was limited evidence of strategic planning for their e-business initiatives. This finding corroborates research by Apulu and Ige (2011) on ICT usage in SMEs in Nigeria. In this firm, there is some evidence of deployment of cloud-based applications with their implementation of inverter monitoring solutions and QuickBooks, a cloud-based accounting tool. This approach to deployment has meant that upfront cost required to either develop a bespoke tool or purchase off-the-shelf applications has been reduced and the speed of deployment increased. According to Alshamaila, Papagiannidis and Li (2013), small businesses are beginning to leverage cloud-based platforms to deploy IT systems effectively, and they argue that given the cost of cloud-based systems, small businesses should not struggle to implement IT systems anymore, but in reality, the knowledge of this cost savings by regular individuals and small business owners, is still limited.

Though their argument can be considered to be somewhat valid, deploying cloud-based systems has challenges in a country like Nigeria, where internet connection speed is slow and internet penetration is still growing. For example, with this firm, although they deployed a cloud-based system that would help with accounting in their Financial Management process, internet connection availability, and speed was an issue and in the early days, they had to purchase internet connection from several providers. Although one of the internet connection providers, they subscribed to worked most times, from time to time, it was slow, and this meant that productivity was often affected. As at time of data collection, a more reliable provider was sourced but even at that, the company still maintained two subscriptions, with the other as a backup in case the first one stopped working.

One of the factors that limited adoption in this case study was cost, specifically, cost of infrastructure and increased operational cost. As indicated by the owner of the firm, the ongoing cost required for data subscription to enable remote inverter monitoring meant that their maintenance service fee was more expensive than the competition when this was passed on to customers. When the owner was first giving the quote for the website, the company's financial position at the time meant that they could not afford it and, this impacted the speed of adoption. For small businesses, the cost of e-business adoption is often a deterrent, and as indicated by Seyal and Rahman (2013), it is amongst the top three barriers to adoption in small businesses.

Another challenge faced by KDE Energy was that of limited IT capability. Although the business owner was generally familiar with IT systems, he is not an IT expert, and, his knowledge was limited, specialist consultants sought by the organisation were expensive. As elucidated by Yeh, Lee and Pai (2015), limited IT capability and lack of expert IT knowledge are sometimes factors that inhibit organisations from deploying e-business systems. In small businesses, given their limited size and budget, getting IT capability and IT skills required for e-business adoption and continued used at an affordable rate, is often a challenge (Gatautis and Vitkauskaite, 2009). Afolayan et al. (2015), in their study on IT usage in small businesses in a developing economy, reiterated that lack of IT skills is a significant challenge that companies face. To combat this challenge, the firm had to rely on a third-party IT

servicing and support firm to manage its systems and relied solely on hiring staff who had basic IT knowledge.

The TOE framework was used to analyse adoption in the organisation retrospectively (Figure 35). From a technology perspective, key factors that affected adoption were the cost of IT systems, limited IT capability, Expert IT knowledge, internet connection speed, and cloud services. From an organisational perspective, factors impacting were organisational readiness, clarity of requirements and processes, owner perspective and competitive advantage, while from an environmental perspective, factors included internet availability, lack of reliable power, customer pressure and competition.

Figure 35 TOE Factors Affecting KDE Energy

The change dimensions of 'People, Process and Technology' often play a role in e-business adoption in organisations. To understand the impact of these change dimensions in this organisation, the researcher critically examined each change dimension (Figure 36). From a people perspective (the owner's perspective), knowledge of IT and lack of support from field staff were predominant factors that affected adoption. From a process perspective, the lack of clarity in some of the processes negatively affected adoption and resulted in several systems been tried out and lastly from a technology perspective, adoption and operational cost, internet

connection speed and availability, reliable power and staff IT knowledge were some of the primary factors that affected adoption.

Figure 36 People, Process and Technology Factors Affecting KDE Energy

6.2.3 GPY Properties

One of the first e-business systems deployed by GPY Properties was a website with the primary purpose of showcasing its property offerings to prospective customers. Given the company's focus, the website was one of the most cost-effective e-business systems that the company deployed to increase awareness of its offerings.

Findings from the interviews and questionnaire identified that the company had six core processes and fourteen sub-processes. Using systems profiling for a more in-depth appraisal of each of the sub-processes, indicated that eight sub-processes made use of systems that were efficient and operationally sound (Green), five sub-processes made use of systems that could be changed but still operational (Amber), and two sub-processes, were entirely manual (Red) (Figure 37). The Procurement process, which was seen to be entirely manual, involved staff of the firm placing phone calls to suppliers of building materials (such as granite and cement), negotiating price over the phone and waiting on the site for delivery of the items.

From this analysis, it can be seen that most of the sub-processes at the firm made use of one IT/e-business system or the other, be it MS Excel, emails, or the firm's CRM tool.

Figure 37 System Profiling and Sub-processes at GPY Properties

For an understanding of technology deployment in each of the core processes, the processes were classified as automated, semi-automated and non-automated and from this classification, five processes were classified as automated/semi-automated, making use of one form of e-business technology or the other while only one core process was mostly manual. From this basic analysis of systems in the firm, it is deduced that Property Sales & Marketing and Customer Services, were the core processes with the most advanced systems in place while the Logistics & Procurement process was entirely manual.

According to the owner of the firm, the nature of the business was very dynamic, with several competitors; thus, the buying decision of customers often had to do with the location of property, affordability, relationship with selling company and awareness. As an organisation, they felt the need to automate their marketing and customer service processes to stay relevant to prospective customers. Most of the processes operated a combination of automated and semi-automated systems, but it was clear that GPY Properties had invested in e-business operations to not only improve its internal processes but significantly in external-facing processes as well. A review of e-business systems at GPY Properties reveals that the firm made use of eleven IT/e-

business systems for its core operations, table 13 below shows the applications and the relevant core processes where the systems were used.

Table 13 IT/e-business Systems at GPY Properties

S/N	IT/e-business system	Core Processes
1	**CRM**	Customer Services
		Property Sales & Marketing
2	**Website**	Property Sales & Marketing
		Customer Service
3	**MS Excel**	Customer Services
		Financial Management
		Payroll & HR Management
4	**Bulk SMS Portal**	Customer Services
5	**Email Campaign Manager**	Customer Services
		Property Sales & Marketing
6	**Social Media (Facebook, Twitter)**	Property Sales & Marketing
		Customer Services
7	**Internet Banking**	Financial Management
		Payroll & HR Management
8	**Job boards**	Payroll & HR Management
9	**WhatsApp**	Customer Services
10	**QuickBooks**	Financial Management
11	**Online Property Aggregators**	Property Sales & Marketing

The DTI adoption model (reviewed in chapter 2) was used as an analytical framework, and this analysis revealed that the company was at the e-business stage (stage 4) of the adoption ladder. The company had invested in some internal-facing systems such as QuickBooks and several customer-facing systems for communication with customers such as CRM, Bulk SMS platforms and a website. The company made use of social media to reach its customers and prospective customers, and although order subscription requests sometimes started from the website, often, the initial payment for a subscribed property is usually made via online bank transfer or cash deposit at the bank. GPY Properties was utilising e-business systems to ensure a wider market reach and to provide effective customer service, and as Ongori and Migiro (2010) suggest, this is often one of the first drivers for adoption.

A critical look at the adoption pattern at GPY Properties over the years, revealed that the company had progressed sequentially through the stages of the DTI adoption ladder and although e-business systems deployed were somewhat limited to Customer Service and Property Sales & Marketing, other processes were expected to follow since marketing was the core of the business. As Levy and Powell (2003) explained, entrepreneurs adopt internet technologies based on business value, for this firm, the Property Sales and Marketing processes yielded more business value.

Next, analysing the adoption of e-business in GPY Properties based on the extended stages of growth suggested by Abdullah, White and Thomas (2016), revealed that the firm was at stage 7 (e-business) of the model. With this model, it can be said that the company progressed sequentially through the first four stages. However, stage 5 (mobile app) was skipped as the company progressed through to stages 6 and 7. As at the time of data collection, the firm did not have a mobile app, and the use of such an app was not in the scope of the firm for the next five years.

Being a property development and marketing firm, there was a limited incentive for the firm to invest in mobile apps, especially from a customer-facing perspective. The company has, however, made use of several cloud-based software-as-a-service platforms such as QuickBooks, Mailchimp and others. To achieve the e-business stage (stage 7), most of the internal facing applications had been cloud-based software-as-a-service applications and as Rath *et al.* (2012) suggest, the flexibility and cost savings of software-as-service applications make them attractive to small businesses.

The CPIT model (reviewed in chapter two) was also used to analyse the firm and analysis of this firm with the model shows that its Sales & Marketing processes were well supported by e-business technology and a deeper dive indicates that the firm's investment in e-business had been more customer-focused than internal operations focused (Figure 38). This analysis also indicated that the firm had so far only two processes at the transform stage with most other processes at either the connect or publish stages. As affirmed by the owner of the firm, the volume of data generated in other process areas did not justify further investment in e-business systems at the time of data collection.

The Property Sales & Marketing process of the firm had been transformed by the adoption and use of Facebook, online property portals, and listing on its website. With these channels, prospective customers interact with the adverts and the company was able to gather leads and track various relevant metrics for the adverts such as the number of clicks, the number reached, impressions and several others. For the Customer Service process, the organisation had full visibility of leads and contact points to both customers and prospective customers. There was also improved customer profiling and future contact points with a customer could be easily scheduled. The customers were also able to unsubscribe from various email communication/list they had been added to and suffice to say that e-business deployment in these process areas had a direct impact on the company's turn over.

Figure 38 CPIT Analysis of GPY Properties

The deployment of e-business in the firm has also brought about some changes in the organisation that has required some existing staff to pick up new skills. For example, while the Property Sales & Marketing team were largely still involved with traditional mechanisms such as advertising in national dalies and property magazines, staff in this team have had to learn the use of CRM and social media and advertising platforms. The company has invested in training for these staff to

yield better results, and as a policy, the company now only employs staff that are IT literate in any of their roles. Furthermore, some tasks in the finance management process have had to be altered slightly to adequately work with QuickBooks as well as customer's instalment payments. The staff of the company has received these changes very well, and according to the owner of the firm, given that e-business was deployed in the company primarily for marketing and to operate effectively, they have derived value from the deployment of e-business as it has made them competitive and one of the trendsetters in their industry. For example, as an organisation, they were able to service customers outside the country relatively quickly, this would have been very difficult were it not to have been for the deployment of e-business.

Appraising GPY Properties using the model proposed by Willcocks and Sauer (2000) indicates that the firm was at stage 3, and the anxiety gap was easily overcome as they derived value quickly, with new customers visiting their website and social media channels. Contrary to the suggestion by Pavic *et al.* (2007) that small businesses often fail to realise the importance of internet technologies and effective uses, this firm understood the significance and deployed cloud-based systems to reach their target audience effectively and to outperform the competition. Implementing cloud-based systems meant that they paid monthly fees, and the usual capital cost often required at purchase of off-the-shelf applications, was not relevant for them as an organisation. Being a cost-conscious organisation, the decision to deploy these types of systems was primarily influenced by cost and given their small size, re-engineering processes and re-organising staff needed to be achieved without complexity.

One key motivator for deploying e-business systems in the firm was growth. According to the owner, "we have recently acquired another property site requiring development, and we need to grow quickly in a market that is gradually becoming competitive. We regard our expertise in online marketing and deployment of technology as critical to enabling our growth". This same position was echoed in a study by Raymond, Bergeron and Blili (2005), as they indicated that growth is one of the predicators of continued use of e-business and particularly for small businesses, the more the depth of use of e-business, the more impact on growth is derived.

Another motivation for deploying e-business, particularly the website, was to increase sales. The fact that property development in Nigeria is quite competitive meant that the firm had to use techniques that ensured they remained visible to their target audiences. Although the relationship between purchase intentions and quality of a website, mainly when it contains no e-commerce facility is often contested (Bai, Law and Wen 2008), in the case of this firm, by deploying a simple website, they were able to generate a lot of leads through the marketing effort and channels which eventually led to sales. The combination of the deployment of the website with other initiatives, such as advertising on property sites, Facebook and regular contact with existing leads, led to increased sales.

The adoption of e-business in the firm was motivated by the owner's previous success advertising on property sites. Although Marijke van der Veen (2004) suggest that the effect of prior knowledge and experience on adoption of e-business could be unclear, in this firm, e-business adoption in the Properties Sales & Marketing processes, was primarily influenced by the owner's previous success of advertising on property listing sites; as that previous experience provided existing relationships, knowledge of property listing sites that provided value and types of listings that customers will respond to.

In this case study, another motivating factor for adopting e-business systems was to improve customer engagement. Given that the company sells property via off-plan sales, customers pay for the property in instalments for about 36 months before the property development is completed, the amount of work involved in updating customer data manually, was unbearable, and, to reduce payment defaults, encourage payment on time and provide regular updates to the customer, the firm decided to implement the CRM system. Yin and Straub (2002), suggest that by increasing communication with customers through internet-based technologies, companies can improve trust and influence customers intention to buy. This was precisely what the firm hoped to achieve.

In this case, cost played a factor in the adoption, but rather than serve as a deterrent, it was considered as a business expense that needed to be incurred. As highlighted in chapter five, the owner of the firm has several years experience working in the telecommunications sector of Nigeria. His knowledge and exposure to

IT systems is beyond that of a basic IT user and, to reduce the initial adoption cost, cloud-based systems were considered and eventually chosen as appropriate for the firm.

Although the owner of the firm considered purchasing software to be deployed locally on an internal server, his research helped understand that with minimal fee a month, a CRM tool and an emailing system like Mailchimp, could be easily deployed. Research into cloud-based software-as-a-service adoption often considers this flexibility/reduced capital cost as one of the core benefits of choosing these systems over internally deployed systems (Lin and Chen, 2012). In a study on cloud-based system deployment in small businesses in sub-shararan Africa, by Abubakar, Bass and Allison (2014), identified that the pay-per-usage which cloud computing model offers makes it attractive to small businesses as it reduces the upfront cost of adoption.

One of the main challenges the firm faced was the lack of a reliable internet connection provider. Before identifying a provider with excellent service in their location, they had to purchase from several providers. After settling on one, on several occasions, they have had downtime as a result of internet connection outage and extremely slow speed that has meant that most of their systems could not be used. This experience corroborates the findings of Abubakar, Bass and Allison (2014) on cloud computing adoption.

Another challenge that GPY Properties had while deploying various e-business systems in their organisation was lack of reliable power. As described by Scott *et al.* (2014) in their report on the effect of electricity insecurity on small businesses in low and medium-income countries, 86% of SMEs in Nigeria use generators to mitigate the impact of a power outage on their businesses. According to Apulu, Latham and Moreton (2011), the intermittent power supply is often regarded as one of the core barriers that prevent small and medium businesses in West Africa, particularly in Nigeria, from deploying e-business systems. As the firm could not rely on the national grid for power, they had to purchase generators and inverters to supplement power supply from the grid. Although their monthly operational cost increased, the benefit from deployment of the various systems far outweighed the cost of maintaining power. Liao, Chen and Yen (2007) suggests, though there is limited

immediate return on investment in the early days following investment in e-services, as long as the outright cost of deployment and maintenance of such systems does not outweigh the perceived benefit, the motivation to focus on improving service quality will be retained.

From a strategic perspective, GPY properties did not have a written e-business strategy document and only reacted to business needs. The firm appeared to have adopted a cloud-based software-as-a-service strategy (Janssen and Joha, 2011), where most e-business systems were software-as-a-service systems. Although this was albeit unintentionally, it is perhaps one of the most cost-effective approaches to deploying e-business. As asserted by Rath *et al.* (2012) cloud-based software-as-a-service systems are becoming increasingly attractive to small businesses as they not only offer the most cost-effective option for deploying technology, but provide a more manageable approach.

The TOE framework was used to assess the organisation to get a clearer perspective of e-business adoption from technology and organisational factors perspectives. Technology factors that affected the firm included initial IT cost, compatibility of cloud systems, IT Capability (the ability to source appropriate systems for the firm) and IT skills. Organisational factors that influenced adoption were primarily perceived benefit (growth), management buy-in, and management's (mostly owner) exposure to existing systems and approaches. From an environmental perspective, key influential factors were reliable power and competition. Figure 39 below shows the various TOE factors that affected the firm.

TECHNOLOGY

CLOUD
INITIAL COST
INTERNAL IT SKILLS
SYSTEM COMPATIBLITY
IT CAPABILITY

ORGANISATIONAL

OWNER KNOWLEDGE
PERCEIVED BENEFIT (GROWTH)
MANAGEMENT BUY-IN
MANAGEMENT EXPOSURE

ENVIRONMENTAL

RELIABLE POWER
INTERNET CONNECTION AVAILABLITY
COMPETITION
CUSTOMER PRESSURE

ADOPTION

Figure 39 TOE Factors Affecting GPY Properties

The 'People, Process and Technology' framework was also used to identify factors that affected the firm's adoption from these change dimensions. From a people perspective, staff support and management buy-in were some of the main factors that influenced the adoption. From a process perspective, the company's clearly defined process (though not mature) allowed for the smooth deployment of cloud-based applications that suited their needs. From the technology dimension, the owner's IT knowledge positively influenced adoption, while the initial cost of adoption was a challenge; the cloud-focused strategy helped reduce the impact of this challenge.

PEOPLE

STAFF SUPPORT
MANAGEMENT BUY-IN
IT SKILLS

PROCESS

CLEARLY DEFINED PROCESSES

TECHNOLOGY

IT KNOWLEDGE
CLOUD
ADOPTION COST
INTERNET CONNECTION AVAILABILITY

ADOPTION

Figure 40 People, Process and Technologies Factors Affecting GPY Properties

6.2.4 HGB Stores

E-business was deployed in this firm because the owner of the firm required a platform to showcase her clothing stock and after limited market research, the use of WhatsApp and Instagram became choice platforms for the business. Findings from the questionnaire and interview identified six core processes and twenty-one sub-processes; and using systems profiling, the researcher deduced that eleven sub-processes made use of operationally efficient systems (classified as Green), nine used systems that could be managed (classified as Amber), and one made use of systems that required change (classified as Red). From this analysis (Figure 41), it was apparent that several sub-processes in this case study made use of IT and e-business systems.

Figure 41 Systems Profiling of Core Business Process at HGB stores

Systems profiling was also used to analyse the firm, and each core process was classified as automated, semi-automated, or non-automated. Figure 41 shows that the core processes in the firm were mostly automated/semi-automated, and only the Inventory Management process was non-automated. It is also evident that the Finance Management process could benefit from the deployment of an accounting system but specifically, both the Sales & Marketing and Procurement & Logistics processes have benefited from the implementation of several IT/e-business systems. Table 14 below lists all IT/e-business systems used and the processes where they are used.

Table 14 IT/e-business Systems at HGB Stores

S/N	IT/e-business system	Core Processes
1	**Instagram**	Customer Services
		Sales & Marketing
2	**Ms Access**	Customer Service
3	**MS Excel**	Customer Services
		Financial Management
		Inventory Management
		Logistics & Delivery Management
		Sales & Marketing
4	**WhatsApp**	Customer Services
		Sales & Marketing
5	**Email**	Customer Services

		Sales & Marketing
		Procurement Management
6	**E-commerce Sites & Marketplaces**	Procurement Management
7	**Internet Banking**	Financial Management
8	**Third-party Tracking API**	Logistics & Delivery Management
9	**Canva (Graphics Design)**	Sales & Marketing
10	**Paystack Payment Pages**	Financial Management
		Sales & Marketing
11	**Bulk SMS**	Customer Services
	(Transactional & Promotional)	Sales & Marketing
12	**Buffer (Social Media Management)**	Sales & Marketing

The DTI adoption ladder was used as an analytical framework to understand the pattern of adoption, and it revealed that the business was at stage 3 (e-commerce) of the model. As at the time of data collection, the company made use of Instagram and WhatsApp to sell its products online, and their e-business adoption was primarily focused on e-commerce activities since they focused mainly on sales and marketing using online platforms. With regards to e-business adoption pattern, the company started from email stage where Emails, WhatsApp messages and SMS was used to communicate and immediately proceeded to e-commerce stage where various social media platforms were used for advertising their products. The company skipped the website stage (stage 2), and as at the time of data collection, they still did not have an operational website but had begun the process of developing one. This adoption pattern is rare but had been influenced mainly by the lack of initial capital required for website development and the increased use of social media.

Analysing the adoption of e-business in HGB Stores based on the e-business stages of growth model proposed by Abdullah, White and Thomas (2016), revealed that the company was currently at the e-commerce stage (Stage 4). Rather than move sequentially from stage 1 (e-mail) to stage 4 (e-commerce), the company had skipped stage 3 (Website) only to return to it. The company had been able to achieve e-commerce sales by advertising on social media platforms as well as listing its products on third-party marketplaces. After attaining the e-commerce stage through this other means, the development of a website was being explored. From this analysis, it is evident that this approach has been cost-effective and yielded value for the organisation.

Figure 42 CPIT Analysis of HGB Stores

To get a clearer perspective on the impact of e-business in each process area, the CPIT model was used as an analytical tool (figure 42). Analysing the adoption of e-business in the firm using this model indicated that three of the company's processes were at the 'interact stage' while the others were at 'Publish stage'. With the Sales & Marketing and Logistics & Delivery processes, the company not only created information for consumption, but customers could interact with the organisation by placing orders online and tracking statuses, delivery dates and time of their shipment.

With the Procurement process, the staff members in the company could source wholesale items, compare prices, place orders and track delivery. A closer look indicated that the most advanced processes were customer/supplier facing processes such as Sales & Marketing and Logistics & Delivery. This reveals that the adoption of e-business in this firm has focused more on external facing business processes while the internal-facing processes were yet to be developed further. This approach could be justified since the transactions conducted by the company were

still small, and the use of MS Excel for some processes still provided a decent result. As average daily orders grew, the expectation of implementing more advanced systems was imminent.

In this firm, there had been limited change in the organisation's processes or structure as a result of e-business adoption. This is partly because the company started operating with this approach from the beginning. It is, however, expected that upon the deployment of the website, several process changes would be required. This significant change in business processes is what Willcocks and Sauer (2000), describe as the organisational gap that must be overcome to begin to derive even more value from e-business deployment. Upon analysing this firm with Willcocks and Sauer's model, it was discovered that the firm was at stage 2 of the model. Although the firm's web presence was achieved via social media (Instagram), it has been able to overcome the anxiety gap, since the owner of the business had been able to derive value in e-commerce sales, and there was an appetite for further investment in technology.

There was no clearly documented e-business strategy in this firm. Although the decision to make use of Instagram as the platform to showcase its products can be deemed strategic, for companies to derive value from e-business, their e-business strategy must be in line with the business objectives. This was the case in this firm, although ad-hoc and not formalised, the core business goals for establishing the firm was in line with their use of e-business. Plans for continued use and increased adoption needed to move from an ad-hoc fashion of merely responding to business needs, to become more strategically focused for increased value to be derived (Josiah, 2013).

One of the primary motivations for adopting e-business through the use of Instagram was the low-cost of adoption. For the owner of the business to start operating and selling online, all she required was her stock, her phone, internet subscription, an Instagram account and a WhatsApp account. Most of the technology necessary for her to begin the business was already owned by her and, taking her business online required a very low barrier to entry. As Wang, Cavusoglu and Deng (2016) indicated in their study, when companies have a low barrier to entry, willingness to deploy increases. As already discussed earlier in the chapter, the cost of adoption is a

relevant factor that affects adoption, and very often, it has been said to inhibit adoption. In this case, the low cost of adoption was a motivator for adoption.

Another key reason why the owner decided to adopt e-business was access to broader market reach. Before embarking on this business, the owner conducted a preliminary survey and market research about the material she wished to sell and her platforms of choice and the feedback she got encouraged this approach to deployment. The owner discussed with potential customers and was convinced that by using Instagram as a platform, she could reach more people that potentially she would not have been able to reach were she to open a shop. As indicated in their research on e-commerce in developing countries, Rahayu and Day (2017) identified that small businesses often adopt e-business, particularly e-commerce technologies with a goal to reach more customers or expand market reach and these often result in derived value for the company. Ahmadinejad and Najafi Asli (2017), also referred to Instagram as a cost-effective e-business deployment strategy that could be adopted to reach a wider audience.

The owner's knowledge of social media also played a factor in motivating the adoption of e-business. As asserted by Nantembelele and Gopal (2018), the owners' knowledge and confidence with the technology being deployed often plays a factor in adoption. In this case, the owner was very familiar with Facebook, Instagram, and Twitter as she uses them in her daily life thus, the learning curve to understand how it worked was low for her, and she just progressed with things as they were. As an individual, the owner of the firm was quite comfortable with the use of technology, albeit not as an advanced user but, she knew how to source items online and was comfortable and confident doing this. Mpofu, Milne and Watkins-Mathys (2009) and Abdullah *et al.* (2018) elucidate that when small business owners are familiar with technology, adopting e-business is often straight forward and purposeful in the organisation.

While not one of the main motivations for adoption, competitive pressure played a role in motivating e-business adoption as the owner felt the need to compete with similar retailers to her who had shops. For the owner, the thought of being able to purchase items and sell for profit while competing with others that had invested heavily in real estate was a motivator. She had seen others with perhaps not good

knowledge of how social media works attempt to sell using Instagram, and she felt that her expertise would help her to compete. The ability for customers to track their shipments via a third-party provider was motivated by the need to stand out from the competition.

One of the critical challenges faced by the firm in the early days was the lack of reliable power. Reliable power has been reported as a pertinent problem affecting SMEs in Nigeria, and Faloye (2014), asserted that it is one of the factors that limit the adoption of e-commerce. Although the business initially operated from the owner's smartphone, the average time the phone lasted when fully charged was four hours. In her case, given the business operated mostly from her phone, it meant that she ran out of power relatively quickly and was required to charge the phone at least twice a day. According to the owner *"the reliability of electricity supply in Ojodu area almost killed my business as orders were coming in, I needed to respond quickly but once the battery was flat, and I am not responsive for 1-2 hours, prospective customers sometimes lose interest, this meant we had to look for alternative solution quickly."*

Initially, the firm purchased a tablet to complement this, but this multi-device solution lasted for a few months as, after a while, the firm had to invest in an inverter as it became difficult to operate. Erumi-Esin and Heeks (2015) have pointed out that one of the main barriers to e-business adoption for small businesses in Nigeria is lack of reliable electricity and frequently, this meant that only companies with a backup solution could adopt e-business. In this case study, they still went ahead to adopt e-business despite no backup power option.

E-business deployment often requires knowledge of IT from either the business owner, staff of the firm, or third-party consultants. In this case study, another challenge was that of limited expert IT knowledge and difficulty in identifying a reliable IT firm. Although their initial adoption progressed without the need for specialised tools, and since they focused on buy-side e-commerce using Instagram, the business progressed smoothly in the early days. When the firm, however, decided to invest in a website, it was a challenge to locate a capable software development firm that was affordable. After settling on a development firm that was recommended, the development of the website was subsequently delayed.

According to the owner of the firm, *"if not that we have heavily invested in this system, we would have decided on taking the job elsewhere, possible to reliable software providers outside the country".* In Indonesia, a developing country similar to Nigeria, Irma, Chong and Ram (2016) in their research also identified that the ability to identify a reliable IT provider who offers cost-effective prizes suitable for SMEs is often a challenge and could be a barrier to adoption.

The continued use of e-business is mostly driven by derived results. In the case of HGB Stores, value has been derived from their e-business deployment as the company processed averagely 20 orders per day as at the time of data collection. As Rahayu and Day (2017) indicated in their study on e-commerce in developing countries, when business owners derive value from IT investment and comprehend the advantages, the likelihood of further investment is high. This has simply been the case for this firm because, as a result of the value derived from e-business deployment so far, the company has committed to exploring other e-business channels such as marketplaces and drop shipping with the primary motivation of increased revenue.

Another motivation for continued use of e-business by HGB Stores was improved customer experience. Auguste (2001) advises that companies should consider ways of improving customer service as part of their e-business initiatives. Also, Agboh (2015) who studied ICT adoption in Ghana, identified this as the most critical factor for adoption and assert that deployment of IT services should not just be for cost-cutting and improving efficiency, but to improve customer service and experience as well. Given the amount of data generated by the systems, depending on the type of systems deployed, organisations can utilise this to offer some better customer experience.

To understand the factors that impacted e-business adoption in HGB stores the TOE framework was used to access technology, organisational and environmental factors while the People, Process and Technology framework was utilised to assess factors that influenced adoption in these three change dimensions, Figures (43 & 44) below show the factors identified using each framework. In the process dimension, one of the factors that was advantageous to the company was that their adoption started

early in the company formation process, and, their processes were dynamic and could be easily adapted.

Figure 43 TOE Factors Affecting HGB Stores

Figure 44 People, Process and Technology Factors Affecting HGB Stores

6.2.5 OMO Legal

OMO Legal operated for several years without the use of e-business; however, the decision to adopt e-business was motivated by the need to compete and outperform the competition. According to the principal partner, *"we believe that if we adopted e-business in our organisation effectively, we would be in a better place than our competition".* For OMO Legal, the idea was to improve internal efficiency while directly outperforming the competition.

From chapter five, five core processes and twelve sub-processes were identified. Systems profiling was used as an analytical framework and, three sub-processes were classified as underperforming (Red), six processes made use of systems that could be changed (Amber), and three were deemed to be operationally sound (Green). From this simple analysis, the researcher concluded that some of the customer-facing sub-processes were deemed to be operationally efficient and those that required change, were mostly internal-facing sub-processes.

Figure 45 System Profiling and Sub-processes at OMO Legal

Table 15 IT/e-business Systems at OMO Legal

S/N	IT/e-business system	Core Processes
1	**Website**	Business Development
2	**MS Excel**	Customer & Case Management
		Business Development
		Admin & HR Management
		Financial Management
		Research & Paralegal
3	**Case Management**	Customer & Case Management
4	**Email**	Customer & Case Management
		Financial Management
		Business Development
5	**Sage Accounting**	Financial Management
6	**Internet Banking**	Financial Management
		Admin & HR Management
7	**Facebook**	Customer & Case Management
		Business Development
8	**DropBox**	Customer & Case Management
		Research & Paralegal
9	**MS Word**	Research & Paralegal
		Admin & HR Management

Each one of the core processes was further classified as either automated, semi-automated and non-automated (Figure. 45). Using this form of analysis, the Financial Management and the Customer & Case management processes were deemed as automated/semi-automated as these processes made use of e-business systems such as a case management system and Sage Accounting to improve staff efficiency and customer service. The other three processes were classified as non-automated since they were made up of sub-processes that were entirely manual or several sub-processes where limited technology was utilised. To understand the IT/e-business systems used in this firm, table 15 above, provides a list of various IT/e-business systems and their respective core processes.

The DTI adoption ladder was also used as an analytical framework and this indicated that the firm is at the e-business stage (stage 4) of the model. Given that the firm is a professional services firm providing legal services, most of their e-business implementation focused on internal processes with effectiveness in mind. Some systems that affect external clients, such as the website and case management

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system, had also been implemented. The firm had deployed a case management system for managing communication with customers, managing case files as well as keeping track of court appearances. This system, though deployed to resolve internal efficiency issues, had a direct impact on the customers and, from the deployment of a robust system such as this, the company was not only resolving internal efficiency but able to provide an excellent customer experience.

The firm had moved through the stages of the DTI model sequentially from email to website (stage 1-2), but it skipped e-commerce (stage 3) and went ahead to e-business (stage 4). Although the firm's customers were able to pay for services through online bank transfer, as a company, they did not have the ability for orders to be placed online and initial service requests were often placed on the phone or after a first meeting. This limited e-commerce usage was partly due to the fact that legal service providers in Nigeria are not allowed to advertise their business, and as such, most of their customers were gotten through referrals or business networks.

The extended stages of growth model proposed by Abdullah, White and Thomas (2016) was also used to analyse the firm and this revealed that the firm was at the e-business stage (stage 7) of the model. Rather than progress sequentially as suggested by the model authors, the firm skipped stage 2 (Social Media), stage 4 (e-commerce) and stage 5 (Mobile App) of the model. Following their adoption of email as a communication tool with customers and staff internally, and the deployment of a website, systems such as the case management systems and Sage Accounting, focused on improving efficiency for staff in the firm. Although the use of social media was being explored by the firm (and several other law firms in Nigeria), it was not a priority tool for the firm and only after achieving the e-business stage, was the firm exploring this. Analysis using this model further emphasises the extent of e-business deployment in this firm but the impact at each process was not yet clear.

The CPIT model was also used analytically and this indicated that four processes were at the interact stage while only one process was at publish stage of the model (Figure 46). The firm's e-business capabilities were mostly internal facing and so far from the CPIT analysis, it can be implied that the impact had been mostly derived from processes at the interact stage. The core value for the organisation is derived from Customer and Case management processes where staff could easily access

more information about a case, retrieve customer account and add new details to customer accounts. Although the Admin & HR process relied largely on MS Excel, for payroll activities, recruitment activities largely made use of e-business functionalities as applicants upload CVs via Job boards that provide the ability for shortlists to be created and messages sent to applicants. There remained the transformational impact of e-business in the firm across all its processes.

OMO Legal Business Processes

	Publish	Interact	Transform
Customer & Case Management	Customer records and case details are easily retrieved	New cases are easily added to customer accounts	
		Staff members can update relevant fields easily	
Financial Management	Company accounts is easily reviewed by management in QuickBooks	Customers are able to pay online using bank transfer	
Business Development	Potential customers read about offerings on the website	Leads captured from the website and events are stored in MS Excel	
	Events for sponsorship are stored on company calendar		
Research & Paralegal	Internet is used to source relevant materials for cases	Paralegals can upload documents to library and assign to cases	
Admin & HR Management	Payroll & Staff personal records stored in MS Excel	Applicants submit application by using Job boards	

Figure 46 CPIT Model Analysis of OMO Legal

The deployment of e-business in OMO Legal had brought about several changes in the organisation. There had been changes in the firm's core process to enable ease of working with the case management system. Most of the staff members have had to undergo one form of training or the other to be able to perform their duties, but in general, there had been an immense value derived from the adoption of e-business in the firm. As indicated by Markus (2004) some managers often deploy e-business as a strategy to drive organisational change, and precisely in OMO Legal, this was

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the case as they needed to compete and using an incremental approach deployment, they were able to deploy systems that added value to their core business operations.

The firm had to re-engineer several of its processes which were paper-based to enable e-business deployment to be smooth and effective value to be delivered. To achieve this, the company had to invest heavily in IT infrastructure such as mail servers and case management servers based on the cloud, as well as in training staff to ensure everyone in the firm had a basic understanding of how to use the case management tool. Given the company's history of working manually, initial challenges were easily overcome and the thought of a better way to work and outperform competitors, meant increase support from the management.

Although several IS researchers have commented on the need for an e-business strategy and also the need for this strategy to be aligned with the organisation's strategy (de Vaujany, 2009; Josiah, 2013). In this firm, while there was no written strategy, but from the interviews, the researcher could infer that there was a commitment to e-business deployment to enable growth, efficiency and effective competition.

While the company's adoption of e-business was staged incrementally and over several years, the strategic deployment of e-business in the firm was made possible because of top management buy-in. As a result of the principal partner's position within the firm and his previous experience, the management of the firm was able to accept the decision to implement and invest in several IT and e-business systems which included the case management system. Yeh, Lee and Pai (2015) assert that when adopting technology in small businesses, there needs to be top-management buy-in otherwise, there will be several adoption barriers and continued-use will always be a challenge. Kartiwi and MacGregor (2007) also indicated that in most small businesses, the owner or a small group of people are always key to decision making and, work needs to be done to convince them to ensure e-business adoption success.

Another motivation for e-business adoption in this firm was competitive pressure. According to the principal partner, *"other big law firms are effectively using these technologies, there was no way we would offer the same level of service that they*

did if we did not adopt these e-business systems". Chatzoglou and Chatzoudes (2016) suggest that small business owners often deploy e-business systems as a way to compete with larger businesses. Luqman and Abdullah (2011) also explains that companies that do not adopt e-business technologies for their processes today, will struggle to compete with others tomorrow. This was exactly the case for this firm, having been in the industry for several years with minimal growth, they had seen businesses come into the market and take on some of their clients because of the way they operated and, they needed to focus on effective service delivery to compete.

In this case study, technology advancement and reduced infrastructure cost played a factor in the firm's adoption of e-business. Several years ago, when the company started, usage of technology in the industry was limited and when possible, the value derived was minimal for the level of investment required, thus limiting innovation. Given the rise of cloud-based platforms and off-the-shelf applications, specialised software can be deployed easily at a more affordable price. The same is the case with the adoption of social media platforms to reach more customers and interact with existing customers and today, businesses can now innovate without having to struggle financially. Upon return of the principal partner to the firm, the cost of technology adoption had gradually reduced and given that the company had grown, they were willing to invest technology even for longer-term purposes.

One of the core barriers faced by the firm in the early days was also a lack of IT knowledge. Putra and Hasibuan (2015) in their research on small businesses indicate that the knowledge gap is sometimes one of the most important barriers that limit adoption. Nam Jeon, Seok Han and Jin Lee (2006) suggests that if the senior management of a small business (CEO/owner) is not aware of how an e-business technology can help their organisation, they are unlikely to adopt it. This was the case for OMO Legal in the early days as the founding partner was not quite an IT savvy individual and as he ran the company primarily based on manual processes until the hiring of someone with more knowledge and experience with technology.

Another challenge that OMO Legal faced while trying to adopt e-business, was the lack of reliable power supply. Apulu and Ige (2011) in their research identified that the main barrier to adoption of IT by small businesses, is lack of reliable power. To

overcome this barrier, the company purchased a generator at its main office location and inverters were used at the branch offices to supplement power from the grid. This allowed the company to operate effectively for most of the business hours.

To critically understand the factors that affected the adoption of e-business adoption in OMO Legal, the TOE framework was used to assess the relevant factors from technology, organisational and environmental perspective. This analysis indicated that the initial cost of adoption and IT knowledge were key technology factors that affected the firm while management buy-in was a key factor from the organisational perspective. Figure 47 below shows all TOE factors that influenced the firm.

Figure 47 TOE Factors Affecting OMO Legal

Various factors affected adoption across the change dimensions of 'People, Process and Technology'. To understand what these factors were and how they affected this firm, each change dimension was analysed and figure 48 below presents the factors identified. The mature processes the firm had, was a relevant factor, while

management buy-in and lack of IT knowledge were factors that affected the people dimension.

Figure 48 People, Process and Technology Factors Affecting OMO Legal

6.2.6 LTE Consulting

The adoption of e-business by LTE Consulting was mainly to outperform the competition. As a result of the global financial crisis in 2008 and 2009, LTE Consulting began losing customers to several other training outfits as their customers were cutting costs and working with a reduced budget. This meant that training sessions where there would normally be about 45 participants had reduced to only about 18 participants and, the firm needed to be creative in its delivery of training in order to stay in business.

As part of an organisational strategy, the firm deployed a learning management system such that the firm may save on facilitators and was able to offer a blended learning approach while offering more value to the organisations. In their study on factors that affect the adoption of e-business in European countries, Oliveira and Martins (2010b), identified competitive pressure as one of the perceived benefits that motivated adoption. Kalakota and Robinson (2001) also suggest that when business existence is threatened, the innovative cap is worn and businesses that were not generally innovative, become innovative as a way to survive. This is exactly what transpired in this firm as the quest to stay in business became a key driver for innovation and e-business adoption in the firm.

Findings from chapter five already indicated that the firm had five core processes and thirteen sub-processes. In order to understand IT/e-business systems used in these core processes and sub-processes, systems profiling was used as an analytical framework. Through this analysis, two sub-processes were classified as underperforming (Red), six classifieds as averagely performing (Amber) and five classified as operationally efficient (Green) (Figure 49). From this analysis, the researcher was able to understand that the Sales & Marketing process consisted of several sub-processes in which the systems utilised were considered to be operationally efficient. The use of MS Excel was prominent in other core processes such as Payroll & HR and Financial Management. Very few sub-processes were considered entirely manual and operationally inefficient.

To get a clearer perspective on the extent of adoption in each of the core processes, still using systems profiling, each core process was classified as automated, semi-automated and non-automated. Four core processes were classified as automated/semi-automated, while only one (Customer Service) was classified as non-automated. This was because most of the sub-processes in this process were either manual or made use of MS Excel. Although the firm made use of email campaign management tool/CRM to keep in touch with existing customers, it was mainly for marketing purposes and, the customer service process could benefit from some automation. Table 16 below, shows the main IT/e-business systems deployed in the firm and the corresponding core process which utilised each system.

Figure 49 Systems Profiling at LTE Consulting.

Table 16 IT/e-business Systems in LTE Consulting

S/N	IT/e-business System	Core Process Areas
1	**Website**	Sales & Marketing
2	**eFront (Learning Management System)**	Curriculum & Training
3	**CRM**	Sales & Marketing
		Customer Service
4	**Internet Banking**	Financial Management
		Payroll & HR
5	**MS Excel**	Payroll & HR
		Financial Management
		Curriculum & Training
6	**Ms PowerPoint/Word**	Curriculum & Training
		Sales & Marketing
7	**Email**	Customer Service
		Sales & Marketing
		Payroll & HR
		Financial Management
8	**Job Board**	Payroll & HR
9	**Facebook/LinkedIn**	Sales & Marketing
10	**Paystack Payment Pages**	Sales & Marketing

The DTI adoption ladder was used as an analytical framework to assess LTE Consulting. This analysis revealed that the firm was at stage 4 (e-business) of the ladder. As already discussed in chapter five, LTE Consulting had to adopt e-business and became largely innovative at a time when the organisation was losing some of its market share to other training outfits. The company deployed a website, a learning management system, and ensured that its customers could purchase its training services from its websites without talking to anyone. With regards to adoption pattern, the company progressed sequentially from stages 1-4 over a couple of years in an incremental and staged manner. In this firm, the adoption of e-business had impacted customer-facing activities through the use of emails, social media and website and also internal activities through the deployment of accounting systems and learning management system.

A critical analysis of e-business adoption in LTE Consulting using Abdullah, White and Thomas' (2016) extended stages of growth model suggests that the firm was at the e-business stage (stage 7). Although similar to the adoption pattern identified in the DTI adoption ladder, while traversing the stages of this model, it is clear that at the initial adoption of e-business, the firm skipped stage 2 (social media) and stage 5 (Mobile App). Upon achieving stage 6 (Cloud services) and stage 7(e-business), the company was now exploring the use of social media (stage 2).

To get an understanding of e-business adoption at the process level, the CPIT model was used as an analytical tool. Analysing the adoption of e-business in LTE Consulting using the CPIT model indicated that only two core processes in this firm had been transformed by the adoption of e-business. Notably, from figure 50, it can be seen that the impact of e-business on the Sales & Marketing process had transformed the process from several sub-processes which relied on several manual tasks to be performed by staff, to a situation where prospective customers could easily view a listing of pieces of training and prices on the website with options to make payment.

Since the implementation of these e-business systems, the firm had seen several orders being initiated from various avenues. The company had cut down on its cost of reaching existing customers as it was able to send emails to them indicating new pieces of training upcoming. The impact of e-business deployment in the Sales &

Marketing process had not only been felt by the customers through easy to use self-services, but the staff working in this process had also benefited from the deployment as several complex tasks such as lead follow-up and cold calling had reduced as there was now a lot of inbound requests. From a revenue perspective, the owner of the firm attests to the impact of these systems on their revenue.

The Curriculum & Training process had also been transformed. As at the time of data collection, the training facilitators in the firm were able to source materials easily online and develop interactive and multimedia content for training that could be easily published on the LMS system. Prior to the adoption of e-business, it was impossible for trainees registered on the training to interact with the materials of the course before the programme. Today, trainees enrolled on a course were able to interact with materials of the training before the actual training period. From this analysis, it is clear that the adoption of e-business in this firm had generally transformed this process as LTE Consulting now offered a unique value to customers that other training providers did not offer, thus resulting in increased customer satisfaction and repeat customers. While other processes had also been improved, they had not been entirely transformed but were very much on the path to achieving this.

Figure 50 CPIT Analysis of LTE Consulting

Apart from the transformative impact the adoption of e-business had brought to some processes in this firm; there had been other changes to the organisation as a result of the deployment. For example, the deployment of e-business systems in various processes had resulted in the entire change of processes such as the Sales & Marketing. Rather than relying on fliers been sent out to existing customers and waiting days before they are delivered, email marketing campaigns were sent, and the result from the integration was easily tracked. The deployment of these systems also meant that staff had to upskill to be able to work with the various systems that the organisation implemented, essentially these deployments had entirely changed how some staff worked and the feedback from the staff was that they were happy with what the change had resulted to.

E-business deployment for LTE Consulting was at a time when the organisation needed to innovate to stay in business. The very focused implementation and carefully tailored deployment had created an avenue for the firm to diversify its business operations, and as suggested by Pavic *et al.* (2007), by utilising innovative approaches and technologies, the company hoped to change the rules of competition. It is, however, worthy of note to mention that the deployment of e-business in this firm was strategic, given the implications of their existing methods of practice and the changing market at the time. As suggested by Raymond and Bergeron (2008), the organisational strategy in this firm hinged entirely on innovation and e-business deployment. Their strategic focus was the cost-reduction of expenses incurred on each training so that they could reduce their price and compete while still offering a similar level of service. All of the transformative value received would not have been possible if the owner of the firm had not been innovative and technologically inclined.

As Nam Jeon, Seok Han and Jin Lee (2006) explained, companies where the CEO is innovative and open to the change in market and processes that the deployment of technology will result, tend to deploy IS quicker and offer limited delay once the value of such a system is clearly established. In the case of this firm, they were in a position where something had to be done for them to be able to compete and remain in business. One of the considerations was to reduce the quality of facilitators at the sessions but while this would solve some problems temporarily, it was not a sustainable long-term solution and, the search for an innovative approach began.

According to Ghobakhloo, Arias-Aranda and Benitez-Amado (2011), CEO innovativeness is one of the motivators for small businesses, to adopt the technology.

An essential factor that influenced e-business adoption was improved customer experience. Given their gradually reducing market share, the company needed to be proactive and ensure that customer experience was of a high standard and they did not want to lose their remaining clients. Although they were cutting costs and trying to ensure that they could compete on pricing with other training outfits, the motivation for improving efficiency and improving customer experience was still at the core of their operations. Uzoka, Shemi and Seleka (2007) in their study of e-commerce adoption in Bostwana, identified that one of the reasons why businesses in developed countries adopted e-commerce was to get their customers better serviced and avoid them going to more prominent competitors. It is, therefore, no surprise that improving customer experience was one of the reasons why this firm adopted e-business.

Having carefully understudied their competition, the owner of the business understood that the application of e-business in the firm would make them stand out and giving the steep cost and expertise often required for such systems, the company will be ahead of its competition. According to the owner of the firm, *"although we might not be able to compete on traditional training, we would be setting the pace with respect to online training".* Selamat, Jaffar and Kadir (2013) assert that companies in a bid to take advantage of a new market, sometimes result in the deployment of e-business in organisations. Although this strategy is often seen with large enterprises that benefit from a wide range of resources and investment for e-business initiation (Zhu, Kraemer and Xu, 2006), some small and medium enterprises could deploy this strategy when an opportunity that needs to be taken advantage of is sighted. The same was the case for LTE Consulting.

One of the challenges faced by LTE Consulting at the outset was lack of IT knowledge. Although most of the staff in the organisation were consumers of IT, there was not one person in the organisation that was technically competent to explore the adoption of e-business for the organisation. To overcome this barrier, the company had to hire a new learning technologist to explore the area and advise on

possible technologies that could be adopted. The recruiting process was somewhat cumbersome for the company as they needed someone with experience of learning technology but what they often found were people with decent knowledge of technology but had no experience with its use in the education sector. The initial problem of lack of IT Skills and Knowledge, quickly morphed into inability to recruit for specialised IT skills.

Another challenge that the firm faced was lack of reliable power. As a training business that had embedded online and digital training into their operations, there was a need for the constant supply of electricity in order to keep their business moving especially during the training. Although their office and training location had backup generators, as a result of the terrible power supply in the area, the landlord had to reduce the quality of service, by restricting how long the generator could be used in a day and this resulted in power cuts during training. To combat this, the company had to invest in inverters for their training rooms and ensure that there was a guaranteed backup supply of electricity, (albeit at more cost) to the company to offer reasonable training and seamless service. The facilitators also made use of presenters' laptops which had several hours of charge (about 6 hours) and were always advised to have backup activities in case there was a power cut or internet connection speed was slow. The issue of power outages in Nigeria has been discussed in various literature as a barrier to the adoption of IT, particularly in small businesses (Yeboah-boateng and Essandoh, 2014).

Another challenge that impacted this firm in the early days of adoption was slow internet connection. While most of the online training materials were to be used outside of the classroom by trainees, a handful of trainees often could not watch the pre-sessional materials citing poor internet connection at home. Some facilitators liked to engage the participants with quizzes and videos within the class, and when internet connection speed was slow, it became a challenge, particularly for the video.

The TOE framework was utilised, and as presented in figure 51, initial cost, internet connection speed and lack of IT knowledge were key factors that affected adoption from a technology perspective. From an organisational perspective, the owner's perspective of technology and management buy-in were relevant factors that affected adoption. The People, Process and Technology change dimensions were

also used to identify factors affecting e-business adoption. Figure 52 below presents this, and for example, in the people dimension, owners 'perspective and customer feedback are primary factors that affected adoption.

Figure 51 TOE Factors Affecting LTE Consulting

Figure 52 People, Process and Technology Factors Affecting LTE Consulting

6.3 Multi-case Analysis

This section presents a cross-case synthesis, discusses commonalities amongst the case study companies, and highlights distinct features in each case.

From the in-depth analysis of each of the cases, the researcher identified that the motivation for the adoption of e-business varied from one company to another, but it was mainly centred on showcasing offerings (GPY Properties and HGB Stores), increasing efficiency (ABC Laundries and OMO Legal), boosting revenue (KDE Energy) and outperforming competition (LTE Consulting) (see table 17 below). Though the motivating factors varied, what was common is that for each organisation, there was at least one perceived business value that the organisation hoped to achieve by deploying e-business systems. This finding corroborates the suggestion in the conceptual framework (chapter 3) that before actual adoption, the perceived value of the systems to be deployed is first conceived.

Though the case study companies had a clear perceived value, there was often no clearly documented e-business strategy that informed what applications should be deployed and when. With the exception of ABC Laundries, in most of the cases, applications were thought about and procured as and when the owner of the firm thought there was a need to automate or deploy e-business in certain process areas and although the desire to deploy applications was often driven by business need, the lack of a formalised strategy allowed for silos to be created with several data redundancies and limited consideration of integration. As suggested by Lin and Lin (2008), for true success with e-business, internal integration of e-business systems is critical. This finding is interesting as although there has been some research about e-business adoption in small businesses in Nigeria, there has been limited discussion about the e-business strategy employed in these companies. Empirical research from Raymond and Bergeron (2008) suggests that merely investing in e-business systems is not enough but it needs to be in line with other strategic and environmental objectives of the business. When compared to Earl's three-pronged approach (Earl, 2000), the companies had utilised a combination of "top-down" and "inside-out" approaches (Wynn, 2008) though not formalised in any way.

Table 17 Motivational Factors Evident in the Case study Companies

ABC Laundries	GPY Properties	KDE Energy	LTE Consulting	HGB Stores	OMO Legal
- Improve efficiency - Reduce Cost and complexity - Increased Growth	- Showcase offerings - Growth - Increase in Sales - Improve customer engagement	-To boost revenue - A cheaper way to reach customers - Expand market presence - Efficiency - Customer demand	- Outperform Competition - Improve customer experience - Cut cost	- Showcase offerings - Low cost of adoption - Wider reach - Improve customer service	- Outperform competition - Improve efficiency

When the six companies were compared with each other on the DTI adoption ladder (figure 53), it became apparent that the firms were at different levels of e-business adoption, although mainly in either stage 3 (HGB Stores, GPY Properties) or stage 4 (ABC Laundries, KDE Energy, OMO Legal and LTE Consulting). At these stages, various e-business and e-commerce systems had been deployed, and the companies had progressed beyond basic IT systems implementation to deploying applications to address specific business needs. These findings corroborate findings from Agwu and Murray (2014) and Apulu and Ige (2011); however, it contradicts the findings of Erumi-Esin and Heeks (2015); but the fact that these businesses are based in Lagos, the commercial capital of Nigeria which is a more urban city, might explain the difference.

From this review, it becomes clear that all the case study companies had progressed sequentially through the ladder, with the exception of HGB Stores, which did not deploy a website, but was still able to accept orders online through social media and

paystack payment pages. This is interesting because the ability for companies to deploy and transact with e-commerce without significant investment in e-business systems has been brought about by the advancement of technology and as Mpofu, Milne and Watkins-Mathys (2009) asserts, the cost of deployment decreases as innovation in technology increases. Although not all the case study companies had the ability for the user to transact through their website, the companies at the e-business stage (stage 4)- ABC Laundries, GPY Properties, OMO Legal, LTE Consulting, had implemented a type of e-commerce or the other before achieving their current stage. Therefore, this further buttresses the point that the SBEs studied were using IT/e-business systems for more than basic tasks but were also utilising technology advancement to their advantage.

Figure 53 DTI Adoption Ladder Showing All Case Study Companies

When these six companies were compared on the Willcocks and Sauer's model (Willcocks and Sauer, 2000), the analysis suggests they were all on or between stages 2 and 3 (Figure 54), whereas other authors (Levy, Powell and Yetton, 2002) have indicated that many small companies do not progress past stage 1 because they often do not see the benefit in investing in capital intensive e-business projects.

This apparent contradiction is partly explained by the reduction in the cost of e-business infrastructure in recent years, and, partly because of this, it has become a de facto norm to use e-business in the Sales & Marketing processes in many organisations, including SBEs. Moreover, in the case study companies investigated here, the management sees e-business as a key enabler to growth.

Figure 54 Six SBEs Based on Willcock and Sauer (2000)

Most of the companies studied deployed e-business systems in a phased approach, with more systems being added as the business need arose. In ABC Laundries, in particular, their success with e-business to date can be attributed to the phased introduction of new e-business features which had helped the organisation derive value from relatively small scale, staged, expenditure. This had also allowed a phased upgrade in technology, accompanied by appropriate process improvement and staff training, before moving on to focus on another process. Given the evidence from these cases, it can, therefore, be generalised that for SBEs in Nigeria to succeed in e-business, a phased approach is recommended.

The processes where e-business systems were deployed varied across the businesses, however, what became apparent is that service-focused businesses such as, LTE Consulting, KDE Energy, OMO Legal & ABC Laundries, deployed e-

business mostly on internal processes as a way to improve their internal efficiency before more customer-facing systems. Product-focused businesses such as GPY Properties & HGB Stores, on the other hand, invested more in customer-facing e-business systems first, before deploying systems that contributed to the internal process of the organisation. For these product-focused companies, MS Excel was used for a while in a number of their internal systems, even after deploying e-business systems to the customer-facing processes.

Although customer-facing systems deployed in these companies included websites, CRM systems, and social media platforms, product-focused companies (GPY Properties and HGB Stores), started with the use of social media from the early days of the business with the intention of using it for competitive advantage and wider market reach, while in service-focused businesses, social media adoption came at a later point and specifically in some, as at the time of data collection, they were still at early trial stage. The discovery about service-focused businesses first focusing on internal operation, suggests different possible adoption sequence for SBEs depending on the type of organisation. Although most stage-based framework suggests that companies will first progress with e-commerce/ customer-facing activities before the deployment in internal processes, this research shows this might not always be the case as the focus/goal of each business could be different and there is likely an alternative path/sequence to adoption that could be explored.

Only two companies from the study invested in bespoke application development and were already deriving value from the deployment of those systems. Others that did not develop bespoke applications utilised open source and cloud-based (Software as a Service) applications as strategies to reduce/limit initial adoption cost. Given the numerous benefits that cloud-based systems offer to small businesses, it was expected that the preference to this type of deployment would be apparent, however, as Doherty, Carcary and Conway (2015) asserts, the adoption of cloud-based applications still requires widespread knowledge and awareness for it to be widely adopted by SBEs in developing economies such as Nigeria.

Top management support was seen as a critical factor for success in all the case study companies. In five of the case study companies, e-business adoption was driven by the owner of the business, while in OMO Legal, it was driven by the

principal partner who is a senior management staff of the firm and was being pitched to take over the firm. This finding supports existing literature by Zhu, Kraemer and Xu (2002) and Alshamaila, Papagiannidis and Li (2013) , which asserts that the buy-in of top management is important for the success of IT initiatives. Nguyen and Waring (2013) elucidate the need to have the owner involved mainly in the adoption process, and as described by various business owners interviewed, their commitment to the e-business initiative was instrumental to successful deployment leading to the transformation of some of their business processes.

The challenges identified were common in the case study companies. The most recurring across all case study companies was the internet connection speed and cost and lack of reliable power. Their solutions to overcome these core challenges were quite similar as well. For the most part, companies have had to make use of back up internet connection to ensure that their operations were not affected by the internet speed and availability. To resolve the issues with power supply, most of the firms purchased backup generators and made use of creative approaches such as relying on tablets/laptops with battery once there as a power cut, limiting generator usage/timing per day and several others.

Cost of adoption was mostly a challenge across the case study companies and strategies to overcome this challenge, varied amongst the companies. For example, GPY Properties deployed cloud-based applications to reduce cost. ABC Laundries was able to procure a bespoke web portal cheaper than purchasing an off the shelf application. Although there was evidence of the deployment of open source and cloud applications as a way to reduce the effect of cost on adoption, the cost associated with hardware such as computer systems, internet modems and tablets still had to be handled by the companies. The cost of adoption for these companies was in two parts – the initial adoption cost and the cost implication of deployment on operational cost. In most of the case study companies, the deployment of e-business meant that there was an increased operational cost that the company either needed to absorb or transfer to its customers, and in most cases, the latter was the case, except in LTE Consulting and ABC Laundries where the companies decided to absorb the cost.

Several recurring factors influenced the adoption in the companies, and an attempt to correlate these factors is presented in figure 55 below.

Figure 55 Correlation of Factors Affecting the Adoption of e-business

6.4 Critical Influencing Factors

Following the thematic analysis and framework analysis (explained in chapter four), as well as the single and multi-case analysis presented in this chapter, eight critical influencing factors (main themes) that address research objective two emerged and are presented below.

6.4.1 Owner Perspective

Most SBEs in Nigeria are run by one individual or at most, a partnership of two people. Business decisions are made solely by the owner, and his/her perspective is thus critical to intending projects that consume business resources such as e-business deployment. To enable successful deployment of e-business in an SBE, it is important for the owner of the firm to be comfortable with changes in processes that such a deployment could result in, as well as the resulting cost of the systems and future maintenance.

In the case of ABC Laundries and LTE Consulting, the company owners were very much in favour of IT and had a general belief that the careful introduction of new systems would make them more productive and profitable. For example, the owner of ABC Laundries made it explicit that he made most of the decisions in the organisation, and that if he had not promoted the use of e-business in his organisation, it would have been difficult for the company to fund the necessary investment, let alone overcome the various challenges the staff encountered as a result of e-business implementation.

In the case of GPY Properties and HGB Stores, the owners of the firms were also keen to see how the use of technology could help the organisation grow, but their adoption of e-business was more marketing and growth focused rather than on the entire business. In the case of OMO Legal however, the limited IT knowledge of the founder meant that the company had invested very little in technology until the new founding partner joined the company.

To help founders with limited IT knowledge still assess the potential impact that the deployment of e-business could have on their organisations, a guideline was developed as part of the SAPP-STERR-SCR e-business framework to assess their current situation and the possible impact of the deployment of such systems on their organisation. This factor, although critical to Nigerian SBEs, has also been reported in literature to be one of the factors to be considered when deploying e-business systems in SBEs in developing countries (Ismail, Jeffery and Belle, 2011).

This factor was derived from various codes in the thematic analysis of the data some which include - e-business champion (some of the owner's of the companies were champions of the systems being deployed and were quite instrumental to its success), top- management buy-in, Owner involvement and IT experience.

6.4.2 Customer/Consumer Perspective

This factor emerged from two thematic codes - customer demand and adoption in industry.

The more IT savvy a company's customers are, the more likely they influence the company to adopt e-business. Customer and consumer perspectives are essential to most aspects of an SBE's operation. In Nigerian SBEs, consumers often drive e-

business usage and in some industry sectors, notably those focused on retail sales, consumers are increasingly expecting a range of mobile and web-based services. In other businesses, for example those focused on business-to business sales and relationships, there is no significant pressure from the customer side to introduce e-business into customer service processes primarily because their customers (other businesses) are often not well advanced in the use of e-business themselves.

In ABC Laundries and HGB Stores, their customers were already used to being provided automated service and as a result, there was a demand for such services. In the case of KDE Energy, although the company's focus was business-to-business (B2B), there was still a request from their prospective customers that the company have a website. In OMO Legal, there was already widespread use of e-business systems in the industry and although it was not directly demanded by the customers, it was onus on the firm to implement such technology if they indeed wanted to compete with other law firms and offer exceptional service to customers.

Although GPY Properties and LTE consulting were at the forefront of deploying e-business in their industries, their customers were already used to a myriad amount of e-business services provided in various other contexts of life and because of this, there were subtle requests for similar e-business systems.

In order to ensure the customer's perspective is taken into consideration when deploying e-business systems, the implementation phase of the SAPP-STEER-SCR e-business framework focuses on informing users early and seeking user feedback in each of the five stages. This factor, however, is not unique to Nigerian SBEs, as the work of Oliveira and Martins (2011), identified customer perspective and requests as one of the factors influencing adoption of e-business in an enterprise. In developing countries, this factor has not been reported in existing literature, thus this research suggests customer perspective as one of the factors affecting e-business adoption in a developing countries context.

6.4.3 Internet Penetration, Cost & Availability

From the framework and thematic analysis, several codes referred to issues with the internet such as availability, cost and speed. In each of the six businesses, there was at least one of these issues mentioned by either the owner or the staff of the company interviewed. Although the businesses had a decent use of e-business,

there were several challenges the reliance of the internet posed for these organisations and various approaches were used to resolve them.

In many of the companies, there was an increased use of a backup internet provider to allow for a failover if something went wrong with the main provider. In some companies, there were issues related to speed of the internet and the backup solution often meant that they could switch providers at will. This workaround meant increased cost for many of these businesses as the reliance on the internet already increased their cost, but now having to set up a backup provider of similar cost was considerably a challenge for many of them.

For SBEs in Nigeria to effectively take up e-business, the internet needs to be suitably available at their office and work locations, at an acceptable cost. In addition, the speed needs to be such that the organisation can progress with its daily operations and utilizes the e-business systems without disruption. All the six companies in this study attested to the importance of internet penetration in their areas. Specifically, in the case of KDE Energy, they had several disruptions as a result of internet connectivity in various work locations leading to sometimes the installation of several devices without remote monitoring. For some client projects, the regular monthly cost of a reliable internet provider meant that their project costing was a lot more expensive than others.

The issue of internet availability, speed and cost, is however not unique to Nigeria but a common factor that affects e-business adoption in developing countries. Research by Janita and Chong (2013) in Indonesia and Ahmed Abdullah, White and Thomas (2019) in Yemen has indicated this as an issue. Although internet penetration is on the increase in Nigeria generally, it remains one of the critical issues affecting e-business adoption in Nigerian businesses; and with tight cost control often of paramount importance, internet costs are particularly relevant in an SBE environment.

6.4.4 Trust

Another vital issue affecting e-business adoption in Nigerian SBEs is trust. From the thematic analysis, trust emerged as a sub-theme of failed systems with codes such as limited usage, fear and fear of purchase as recurring codes in the various case studies.

Trust can be seen as a multifaceted factor as it relates to both staff trust and confidence in the e-business systems and processes, and also customer/consumer trust in online purchases in the Nigerian technology and regulatory environment. In many of the case studies, lack of trust has impeded the progression of online order capture and created a situation where most of the businesses have their products or services listed on their website and although the purchase process often starts out from the website, the payments of goods and services will eventually be completed offline. This was the case in HGB Stores and GPY Properties.

Trust in the e-business system by the staff of the organisation is also a key issue of concern. For example in ABC Laundries, it took awhile for the staff of the organisation to have full confidence in the e-business system and regard it as the single source of truth. When deployed, the system initially had errors that had to be fixed and in the early days, a combination of the new system as well as the manual system was maintained. The same was the case in OMO Legal as the e-business system and manual system had to be in place for the staff to get used to the new system although it was error free and an off the shelf application.

As a way to manage trust in a newly deployed e-business system, the SAPP-STEER- SCR framework developed as part of this thesis suggests carrying staff and users of the system along as early as possible within the implementation of e-business strategy as well as constantly obtaining their feedback throughout the lifecycle of the system as a way to ensure trust internally amongst staff and among customers of the firm.

6.4.5 Government Policies & Regulations

From the various case studies, the issue of government support was a recurring issue that impacted on adoption of e-business. Although this did not emerge as a theme or subtheme from the thematic analysis, various codes which refer to government support were identified and from the framework analysis, it was apparent that this was a recurring issue that affected the case study companies.

Currently, in Nigeria, there are no government policies or incentives regarding the adoption of e-business by SBEs. As already identified in the literature review, this has been a key enabler in the adoption of e-business in the UK and Australia. The move to e-business in Nigeria could be promoted and progressed by Government subsidies for relevant investment, support for skills development and also by acting as an exemplar in using e-business in parastatal authorities and government ministries – for example, for online bidding for government contracts.

Although there is an increasing interest and support for Digital Transformation in Nigeria, this is still very much in its early days and the policies to encourage government ministries to deploy such systems are yet to be developed but the deployment of online portals to support company registration, electronic passport and tax collection are welcome e-business systems.

The lack of government policies and regulations to support the online purchase and procurement of systems that would allow trust, could also be seen as a factor for e-business adoption. Although the federal government enacted the Cybercrime Act 2015 to help combat e-business fraud and cybercrime, there are still other issues brought about by e-commerce and e-business in Nigeria that regulations do not clearly address such as online contracts, Jurisdiction, data protection and electronic transactions (Vanguard Nigeria, 2020).

This factor is definitely not unique to Nigeria as several other developing countries particularly in Africa are still in a similar position to Nigeria where the regulations to support e-business are still being developed and making their ways to various senates and houses of parliament for enactment into law. Globally, it is very evident that government support generally leads to the development of a sustainable e-business environment where small businesses feel supported and can grow.

6.4.6 Investment Costs

From the thematic and framework analysis, several codes regarding cost, initial investment, open source and cloud adoption which were referred to by the various participants, infomed the identification of this factor. As with any infrastructure project in an organisation, there is an initial cost associated with the uptake of e-

business - the cost of software, cost of hardware devices and cost of additional resources (staff or consultants) required to help in running a successful e-business deployment.

The average setup cost amongst the six SBEs studied was about 900,000 Naira (£2,000). This may seem a relatively small amount, but when compared to the revenue of each of the companies (table1), it is a sizeable investment. As highlighted by the owner of ABC Laundries, the deployment of e-business in the organisation had become a necessity and they needed to get the systems in place, but it had to be done cheap. Given the owner's expertise in IT project management, he was able to utilise existing relationships as well as his skills to put a system in place that made their investment cost reduce but several other businesses did not have that advantage.

As a way to reduce the initial setup costs, several companies turned to the use of cloud based systems and open source tools as was the case with KDE Energy, GPY properties and LTE Consulting. The cost associated with hardware, however, still had to be handled by the companies.

The deployment of e-business in SBEs results in significant investment which includes not only the initial setup costs but also the general operational and maintenance costs associated with keeping the system operational. SBEs also need to be confident regarding payback and benefits when deploying these systems. Government incentives to invest in such technology would be of benefit, as would the encouragement of in-country production of appropriate hardware and software systems which would eventually help reduce the investment cost. This factor has also been identified in other developing countries by Wachira (2014).

6.4.7 Power Availability

IT systems generally rely on power; power availability is paramount amongst the key issues influencing e-business adoption in Nigerian SBEs. All the SBEs studied identified power availability as one of the main problems affecting e-business adoption. On average, Nigerian businesses lose about 10 hours a week to power cuts. This has a significant impact on businesses reliant on e-business and other IT systems, making it very difficult to work productively in these periods.

From the thematic and framework analysis, power availability was a recurring theme among all the case study companies. To overcome this challenge, the companies used various approaches, ABC Laundries used laptops instead of desktop computers as well as inverters and generators, in GPY Properties, they relied heavily on the use of inverters and generators as primary alternatives to the power grid while HGB stores relied on an inverter as a backup power supply.

Many companies in Nigeria have sought alternative sources of power as backup solutions to ensure that their businesses do not solely rely on the electricity supply from the power grid. Although this is often considered a more resilient approach, it increases the overall setup and operational costs for several SBEs looking to deploy e-business who are already stretched with their financial resources. From the case study research conducted, all the companies studied had backup generators, but in two of the companies studied , they had resorted to the use of tablets with long-lasting battery power as this was considered to be more cost effective operational backup than the use of generators.

This research identified this factor to be unique to Nigeria given its scope and the wide spread power availability issues in Nigeria. However, it is suspected that this factor could be relevant in other developing countries with similar issues with power. The reaction and backup solutions relied upon by the businesses in such countries, remain to be explored from further research.

6.4.8 ICT Skills

Codes emerging from the thematic and framework analysis relevant to this factor included limited IT skills, outsourcing, technical partner, limited knowledge and training. For any SBE to effectively implement e-business, it will likely need access to third party IT professionals, whilst at the same time, some of its staff need to be proficient in the use of IT. This is problematic in many Nigerian SBEs, where 90% of staff are semi-skilled and have little or no ICT skills or experience.

From the cases studied in this research, all the companies either had to employ someone specifically to assist with deploying their e-business systems, or rely on third party providers. In general, the experience of most of these business owners was that it took a while to be able to source these technical talents. Certainly, a hub of certified/accerteited IT providers for SBEs provided by local or national

government would be something of value to these businesses as they will not only be able to easily source IT professionals, but will be able to do so knowing they have been accredited by the government.

In addition to technical expertise required, other staff in the company also need to be comfortable with technology and possess everyday IT skills to be able to work appropriately with their company's e-business systems and remain productive. This also proved to be challenging for many of the case study companies and many of the existing staff had to be trained. To ensure that a good level of IT skills were maintained in these organisations, a number of approaches were taken.   In the case of GPY Properties, the company made good knowledge of IT a prerequisite for the recruitment of most employees. ABC Laundries had a 'buddy' system whereby the more computer literate staff members trained other staff for a couple of hours in a week. ICT skills remain a critical influencing factor in the uptake of e-business in the SBE sector.

6.5   Summary

This chapter first presented a single case analysis of each of the companies studied. The primary motivators for adoption and challenges were explored for each case study. From this in-depth analysis, it was identified that the motivation for each organisation was different from the other, with only a few having similar motivations. The challenges faced by each of the case study companies were mostly common challenges with internet availability and lack of reliable power, most prominent. The in-depth analysis of each case using various analytical tools indicated that the level of adoption varied from one case to another, but services companies deployed e-business mainly on the internal processes with a mindset of efficiency for better customer service, while the product-focused companies focused more on deploying e-business for sales and marketing.

A multi-case analysis was then presented where similarities and differences between the adoption in the cases were discussed, and trends emerging across these cases were presented within the context of existing literature. As indicated in the introductory part of the chapter, both thematic analysis and framework analysis were conducted, and eight critical influencing factors that emerged were presented to address research objective two. The next chapter utilises these findings and

analyses to present an e-business strategy framework for the adoption of e-business in Nigerian SBEs.

Chapter Seven

E-business Strategy Framework

Chapter Seven E-business Strategy Framework

7.1   Introduction

Following the analysis and presentation of findings from the case study research, this chapter presents an e-business strategy framework that can be applied to aid Nigerian SBEs in e-business strategy development and implementation. In chapter six, various factors that are important to e-business adoption in Nigeria were identified as being of significance for e-business strategy. From the detailed analysis of each case study company, it was clear that most of the SBEs studied had no formalised e-business strategy to guide their deployment and adoption. They often used ad-hoc approaches, without clearly defined roadmaps.

The need for a properly documented e-business plan and strategy to aid implementation and successful deployment of e-business cannot be overemphasised. Chen, Ruikar and Carrillo (2013) explained that organisations need to take a holistic approach to e-business deployment, which encompasses careful consideration of expected benefits, technologies to adopt and management theories. Chaffey (2014) also asserts that without a clearly defined e-business strategy, the adoption of e-business in organisations will often result in resource wastage, limited integration, missed opportunities and ultimately, suboptimal performance. To aid Nigerian SBEs in deploying e-business strategically and to address research objective three, this chapter presents an e-business strategy development, implementation and review framework.

This chapter consists of seven sections; following this introduction, the chapter presents an overview of the e-business strategy framework, and then explains in sequence the various phases of the framework, encompassing strategy development, strategy implementation and strategy review. Following this, the chapter presents the results of the framework validation and concludes with a summary.

7.2   E-business Strategy Framework Overview

The e-business strategy of an organisation defines the approach through which internal and external IT and e-business applications can support and influence corporate strategy (Chaffey, 2009). For most large organisations in developed

countries, e-business initiatives are often driven by e-business strategies and management support which guide the implementation choices made, e-business systems to be deployed and roadmap of adoption (Windrum *et al.*, 2002), while ensuring alignment with the corporate strategy. In small businesses, the use of e-business strategy to guide e-business adoption is minimal, and according to Zheng *et al.* (2004), it is as a result of a focus on core operations and limited customer pressure. Tetteh and Burn (2001) assert that the complexity involved with using complex strategy frameworks stretches the already constrained and limited resources that small businesses have.

In developing countries, where the small businesses have even more limited resources, the level of adoption of an e-business strategy is insignificant (Hinson and Boateng, 2007; Kapurubandara, 2008), and from the analysis of the case study companies in chapter six, the need for a formal framework is evident, given the limited use of formal strategies by the businesses studied. By building upon the conceptual model, and using the case study findings, this chapter presents a framework to support Nigerian SBEs in developing and implementing an e-business strategy.

The e-business framework (Figure 56) consists of three phases – strategy development, strategy implementation and strategy review. Each phase comprises a number of stages (for which the acronyms SAPP-STEER-SCR can be used), which define the set of activities and planning required for an SBE to derive value at each stage. The three dimensions of change discussed in Chapter 2 – People, Process and Technology –are in evidence at each stage of the model. In the sub-sections below, each phase (strategy development, strategy implementation and strategy review) of the SAPP-STEER-SCR e-business framework is explained in detail.

People ♦ Secure Management Buy-in ♦ Acquire IT Skills ♦ Create e-business Project Team ♦ Select e-business Champion

Process ♦ Shortlisted Process Selection ♦ Document Revised Processes ♦ Define Success Metrics ♦ Create Project Roadmap ♦ Legislation Review

Technology ♦ Select Proposed e-business system ♦ Select Proposed Hardware ♦ Select Internet Provider ♦ Plan for Power Backup ♦ Develop Proposed Technology Deployment Timeline ♦ Formulate existing data migration plan

People ♦ Identify Resource Constraints

Process ♦ Shortlist and Prioritise Processes ♦ Review Mature Processes

Technology ♦ Shortlist e-business systems ♦ Shortlist Proposed Hardware ♦ Assess Technology Cost

People ♦ Audit Staff IT Knowledge ♦ Assess Internal IT staff Skills

Process ♦ Process Review ♦ Process Documentation

Technology ♦ Review Existing Technology ♦ Review e-business Availability Constraints

People ♦ Get Management Buy-in ♦ Identify Resource Constraints ♦ Ensure Knowledge of processes ♦ Audit Staff IT Knowledge

Process ♦ Identify Core Processes ♦ Identify Underperforming Processes ♦ Identify Process Constraints ♦ Review business goals

Technology ♦ Review existing Technology ♦ Identify Proposed Technology ♦ Review Competitors Technology ♦ Identify e-business Availability Constraints ♦ Estimate Technology Cost

People ♦ Select e-business champion ♦ Inform Users Early ♦ Train Staff ♦ Inform Stakeholder about Process Change

Process ♦ Process Review and Re-engineering ♦ e-business Project Tacking

Technology ♦ Select e-business systems license ♦ Deploy Relevant Hardware ♦ Deployment of e-business system ♦ Deployment of Internet Connection ♦ Deploy Power Backup

People ♦ Obtain User Feedback ♦ Provide Technical Support

Process ♦ Re-Engineer and Review process

Technology ♦ Migrate Data ♦ Reconfigure and Setup Systems

People ♦ Upskill Technical & IT Staff ♦ Obtain User Feedback ♦ Train Staff ♦ Manage Resistance to Change ♦ Obtain Management Buy-in

Process ♦ Document Processes ♦ Identify Process Requiring Automation ♦ Review and Prioritise processes

Technology ♦ Deploy Prerequisite Hardware ♦ Reconfigure and Setup System ♦ Migrate Data ♦ Deploy New e-business System

People ♦ Upskill Technical & IT Staff ♦ Train Staff ♦ Obtain User Feedback

Process ♦ Standardise Processes ♦ Document Processes and Process Integration ♦ Dataflow Diagrams

Technology ♦ Assess Technology Compatibility ♦ Migrate Data ♦ Deploy New Hardware ♦ Deploy New e-Business Systems ♦ Integrate Systems

People ♦ Obtain User Feedback

Process ♦ Review & Improve Processes ♦ Update Process Documentation

Technology ♦ Review System Performance ♦ Assess System Improvement Options

PLAN STRATEGY IMPLEMENTATION

PRIORITSE ACTION AREAS

ANALYSE CURRENT SITUATION

SPECIFY GOALS & OBJECTIVES

E-BUSINESS STRATEGY DEVELOPMENT

STARTUP

TRIAL

EXPAND

EMBED

REVIEW

E-BUSINESS STRATEGY IMPLEMENTATION

E-BUSINESS STRATEGY REVIEW

REVIEW GOALS & OBJECTIVES

STATUS ASSESSMENT

COST-BENEFIT ANALYSIS

Process ♦ Success Metrics Review ♦ Business Goals Review ♦ Review and Adjust e-business goals ♦ e-business Project Tracking

Technology ♦ e-business Value Analysis

Process ♦ Identify & Quantify Benefits ♦ Analyse Cost Benefit

Technology ♦ Review Spend on IT Infrastructure

People ♦ Acquire Staff Feedback ♦ Conduct e-business project Team Review

Process ♦ Identify processes requiring Adjustments ♦ Assess impact on Processes

Technology ♦ Assess Technology Suitability and manageability ♦ Assess Systems Performance

Figure 56 The SAPP-STEER-SCR e-business Strategy Framework

7.3   Strategy Development

This phase is concerned with strategic activities that must be carried out prior to the adoption of e-business. It is important, particularly in small businesses, to critically evaluate what needs to be automated and why. Prananto, McKay and Marshall (2003) suggest that conducting an assessment of current systems, as well as competitor's systems, are some of the tasks that an organisation looking to adopt e-business must perform. From the case study findings, prior to adoption, some of the businesses compared themselves with other businesses in their sector, while in the case of ABC Laundries, there was a clear identification of underperforming processes that needed to be automated.

The strategy development phase (Figure 57) consists of four stages, which are: Specify goals and objectives, Analyse current situation, Prioritise action areas, and Plan strategy implementation. Each of these stages is explained in detail below. The people, process and technology activities to be considered in each of the stages are also discussed.

Figure 57 SAPP e-business Strategy Development Framework

7.3.1 Specify Goals and Objectives

Small businesses vary in size, structure and focus, and as such, the reasons for adopting e-business will vary from company to company. From the analysis of the case study companies, it was evident that the motivation for adopting e-business varied widely, from increasing efficiency to increasing growth or outperforming the competition. For a small business looking to implement e-business, the primary goals and objectives of the deployment need to be made clear and be in alignment with the company's business goals. This stage is primarily concerned with helping small businesses clarify and set e-business goals and objectives. The activities to be performed from the three change dimensions of people, process and technology are presented below.

People

Get Management Buy-in

As indicated in chapter six, one of the critical influencing factors for adopting e-business in Nigerian SBEs, is management buy-in. SBEs are often run by an individual, a partnership or a family, and in most SBEs, the decision-making process usually lies with one or two individuals. For an e-business initiative to be successful, it is vital to have these individuals buy-in at the very early stage of the strategy development. Their buy-in helps to ensure alignment of vision, an understanding of cost implications and approval. In all the case studies, the owner of the firm, or a senior member of the management team, was the driving force behind the e-business adoption and deployment process.

Identify Resource Constraints

The firm needs to evaluate what resource constraints might hinder the adoption of e-business. For example, resource constraints for some businesses might be the number of staff, while for others, it might be the IT literacy of staff members. By identifying the resource-related constraints early, a firm looking to implement e-business can plan for specific interventions that could increase the likelihood of successful deployment in the firm. For example, if the staff in the firm are not IT literate, the firm can plan out and cost relevant training as part of its strategy development. In OMO Legal, the training on the use of case management was

undertaken by all staff. If this had not been planned for and costed at the outset, it could have resulted in the failure of the e-business initiative.

Ensure Knowledge of Processes

E-business deployment involves automating some or all of the business process in an organisation through e-business systems. Before this can be done adequately, it is essential for the staff of the firm and those implementing the new systems to have a thorough understanding of the current processes, as this will ensure that the systems deployed are compatible with the existing processes. Bosilj-Vuksic *et al.* (2002) advised that having IS administrators understand as-is processes prior to adoption, is one of the first steps towards successful implementation. For example, in the case of KDE Energy, the lack of clarity in several business processes led to non-robust requirements, which eventually led to the deployment of systems that were not fit for purpose for the firm.

Process

Identify Core Processes

Most SBEs operate in an ad-hoc manner, where one person completes multiple tasks, and there is no documentation of what the core processes are. In order to be able to specify goals and objectives, the firm needs to first identify core processes in the firm. As presented in chapter five, this activity can be done using a process mapping approach, where the owner or primary stakeholder identifies these processes.

Figure 58 Identified Core Processes Using Process Mapping - HGB Stores

Identify Underperforming Processes

Upon identifying core processes in the firm and the value of those processes to the firm, it is essential to identify processes that are not performing optimally. As Evans (2006) suggests, processes not performing optimally but which are important to the running of the business are often candidates for improvement. For example, in ABC Laundries, upon identifying the core problem area for customers as well as its staff, the Invoicing process became one of the first processes for e-business to be implemented in.

Figure 59 Underperforming Processes at ABC Laundries

Identify Process Constraints

While working on specifying the goals and objectives of the e-business strategy, processes that have constraints and are too difficult to automate should be identified. For example, in some manufacturing companies, there might be some processes that are manually done or that rely heavily on third-party partners, which might be too complex to implement e-business in. The Procurement & Logistics process in GPY Properties was one of such as it was very dependent on third-party building materials providers, who were often uneducated and made little or no use of computers in their daily activities. By identifying process constraints, processes that might prove difficult to automate and should be deferred, can be recognised.

Table 18 Process Constraints KDE Energy

Core Process	Sub-processes	Constraints
Financial Management	Company Accounting Invoicing Daily Expense Tracking	Payment is usually made to different bank accounts. Several expenses are cash-based and difficult to track. Not all expenses have receipts.
Installation & Repair	Installation Repair	This process involves the engineer visiting the site. This process largely involves several third parties – suppliers, clients and logistics provider. Appointments are subject to availability of engineer, equipment and the client location.
Sales & Marketing	Order Management Lead Generation	This largely involves working with several large organisations with limited IT drive.
Logistics & Procurement	Procurement Goods Tracking Inventory	Involves working with some local suppliers who use limited IT systems Logistics companies used are generally sole traders
Customer Services	Problem Resolution Messaging	N/A
Payroll & HR Management	Payroll Recruitment	N/A

Review Business Goals and Set Objectives

The need for the alignment of e-business strategy with overall business strategy is well documented. The first step to this alignment is that the SBE business goals need to be made clear as these will eventually affect what processes to prioritise for e-business implementation. This task is concerned with reviewing business goals and setting e-business objectives that align with these goals. From chapter six, it was clear that the adoption patterns of service businesses were somewhat different from the adoption patterns of product-focused businesses, primarily due to their different business goals. Identifying and reviewing business goals early on in the e-business strategy development phase will help ensure that technology deployment is in line with the overall business strategy.

Identify Proposed Technology

Once underperforming processes have been identified, decisions regarding what could be done to achieve improved performance need to be made. For some firms, the proposed system or technology to be implemented might come from a review of what systems competitors are using. Common systems are CRM, Email, websites, e-commerce websites and cloud-based SMS platforms. In the case of OMO Legal, the identification of the case management system as an e-business system to be deployed came as a result of previous use of such a system by the principal partner, and its use by other, bigger law firms.

Review Competitors' Technology

The deployment of certain technologies or systems might result in a strategy that sets the competition apart. It is a good idea to review systems and technologies that have been put to use in the industry and particularly, by competitors, at the strategy development phase as this might influence the choice of systems to deploy in a firm. As an example, in the case of KDE Energy, after the deployment of systems that had failed, the owner of the firm took time to explore what systems their competitors were using and identified two systems that they could deploy to help their project management in the firm. If these had been introduced earlier, it might have prevented the failed deployments.

Identify e-business Availability Constraints

E-business systems normally require good internet connection and power availability. A firm looking to deploy an e-business initiative should proactively identify what availability constraints exist for the type of systems they wish to deploy, and ensure there are mitigations available to support the availability of such systems. From chapter six, most of the systems deployed in the companies relied on internet connection speed and reliable power. These were identified as critical influencing factors, and the firms had to put plans in place to ensure availability. Although this study has identified power and internet connection, there might be others that are specific to an organisation that need to be identified early.

Estimate Technology Cost

The deployment of technology often has various cost implications, and at this stage where the goals and objectives of the e-business initiative are being specified, the firm needs to estimate the cost of the proposed initiative. By evaluating cost early on, firms such as HGB Stores and GPY Properties were able to deploy e-business systems that were cost-effective and affordable.

7.3.2 Analyse Current Situation

Once the goals and objectives have been set, having a thorough understanding of the current situation of technology deployment in an organisation is crucial for the success of developing an effective e-business strategy. This stage focuses on helping businesses analyse their existing technology, process, and people capabilities with a mind to determine what changes and investment must be made in order to implement e-business successfully. The assessment should be comprehensive in order to avoid replicating systems and planning based on outdated processes and procedures. The people, process and technology change dimensions in this stage are explored below, and particular activities that need to be conducted are discussed.

People
Audit Staff IT Knowledge

Understanding and auditing the IT knowledge of the staff helps understand what IT skills the staff have and what potential opportunities might exist for upskilling, given the type of systems they wish to deploy. In most of the case studies, staff members' IT knowledge had to be audited so that proper training plans could be put in place and this is better done in early stages in order that it can be planned into the implementation strategy.

Assess Internal IT Staff Skills

The limitations and skills set of the IT staff (or outsourcing company) should be assessed, as this will help prevent a situation where a system is selected, and IT staff do not have the necessary skills to use or deploy such a system. Technology is

also quite dynamic; the assessment of the IT skills of the internal IT staff can help understand possible training that needs to be planned for. For example, in ABC Laundries and LTE Consulting, the firms had to recruit individuals with specialised skills to enable the deployment of e-business in the organisation to be smooth. It is advised that this should not be left too late; if the firm does not have an IT team or an existing outsourcing partner, the firm should shortlist some at this stage.

Table 19 Skills Gap Analysis Template from ABC Laundries

Staff Name: Role: Developer/IT Manager				
Competency	Behavioural Description	Lack	Need to Improve	Competent
MYSQL	Advanced knowledge of MYSQL database and server		✓	
Web programming (PHP, ASP.NET)	Good knowledge and experience of web application programming			✓
Web design	Knowledge of HTML and CSS			✓
API	Advanced knowledge of API development, securing API and integration of third-party API		✓	
Apache webserver	Understanding of Apache web server and experience with debugging		✓	
Experience with Digital Ocean	Experience working with Digital Ocean as a service provider	✓		
Networking	Advanced understanding of networking, routing and DNS	✓		
JavaScript	Knowledge and experience working with JavaScript particularly using jQuery		✓	
WordPress	Knowledge and experience working with WordPress to develop and manage website			✓
Ubuntu Linux	Comfortable working with Linux servers, this includes deploying web applications, managing them and basic system administration		✓	
Software Testing	Experience using automated testing frameworks		✓	
Firewall Configuration	Experience working with Iptables on Linux web servers			
Git	Advanced Knowledge of Git using GitHub and Bitbucket		✓	

Process

Process Review

This activity refers to evaluating the efficiency of the process, its effectiveness, impact on revenue and adaptability. This review is expected to utilise review of

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underperforming processes conducted in the 'specify goals and objectives stage' above but in addition to that, indicate how the process affects the bottom line, its effect on other processes and if the process could be more efficient. In the case of ABC Laundries, by conducting this activity, the owner of the firm was able to creatively communicate clear requirements to the IT manager.

Process Documentation

While conducting a process review is good, it is equally essential for the process to be documented. At the strategy development phase of an e-business initiative, documenting as-is processes will ensure the processes are accessible to various stakeholders and facilitate understanding of what could be changed. This documentation will also serve as a reference point that can be used to communicate with developers, e-business systems implementers and other third parties that might be involved in the firm's e-business initiative.

Technology

Review Existing Technology

Existing technologies implemented in a firm should be reviewed in order to understand what systems are already in place, strengths and weaknesses of existing technology, and also explore issues of compatibility. Conducting this activity might also unveil processes and systems that could be further optimised for efficiency. In ABC Laundries and KDE Energy, the review of their existing systems helped the company to understand what was not working and identify what new systems could be deployed.

Table 20 Existing Technology Review at GPY Properties

S/N	IT/e-business system	Status	Comments
1	CRM	OK	
2	Website	Needs adjustment	It is difficult to update. Always have to rely on the developer.
4	Bulk SMS Portal	External	
5	Email Campaign Manager	External	
6	Social Media (Facebook, Twitter)	OK	
7	Internet Banking	External	Difficult to export bank transactions data into the accounting system.
8	Job boards	External	

9	WhatsApp	OK	
10	QuickBooks	External	
11	Online Property Aggregators	External	

Review e-business Availability Constraints

In organisations where e-business or IT systems are already implemented, there is a need to review mitigations or procedures that have been put in place to ensure that those systems are available to meet the business objectives. This can range from inverter solutions, to internet providers, server storage space used, server bandwidth and several others. For each of the constraints understood to affect the availability of IT/e-business systems, the firms should be asking the question – is it still fit for purpose? And what is required to ensure a continued level of quality of service?

7.3.3 Prioritise Action Areas

This stage focusses on prioritising action areas for the e-business initiative, identifying business processes where e-business systems could be implemented, shortlisting systems and exploring some cost implications. The firm should be answering questions such as – What systems do we want to implement now (and later)? What do we need for the e-business systems to operate effectively? Will the new processes differ from the existing processes? It is expected that there will be several e-business systems that an SBE may wish to deploy, but the idea is to prioritise, given the limited resources available and in order to avoid a 'big-bang' implementation approach. From the case studies, the benefits of trialling a few process areas yielded good results.

People

Identify Resource Constraints

This activity utilises findings from a similar activity in the "Specify goals and Objectives stage"; however, in this stage, the activity is concerned with understanding what skills and people resources are needed for the shortlisted processes and intending systems, and what their constraints are. By identifying constraints in the prioritised action areas, adequate training needs and resources can be planned for in the e-business implementation strategy.

Process

Shortlist and Prioritise Processes

For successful e-business deployment in organisations, it is often advised that deployments progress in stages (Zheng *et al.*, 2004); the processes that need e-business technologies must first be shortlisted and prioritised. This activity is concerned with shortlisting and prioritising the processes where e-business implementation could add value based on a firm's goals and objectives. Shortlisting and prioritising processes can be guided by factors such as most mature process, processes that will have the most impact on the organisation, or processes that cause staff the most pain. In ABC Laundries, the processes prioritised were processes that took a long time to complete and processes that had an impact on the revenue.

Review Mature Processes

Mature processes are often ideal candidates for systems automation (Adzroe and Goulding, 2004), as they generally make it easy for system requirements to be drawn up and developers to understand. This activity is concerned with identifying mature processes and reviewing these processes with a mindset for increased efficiency and improved value to the firm. In the case of KDE Energy, some of the e-business systems were deployed on processes that were not well thought through, and this led to failed deployment and cost for the business.

Technology

Shortlist e-business Systems

Upon shortlisting and prioritising processes, it is equally important to shortlist e-business systems that could be used to improve or automate the processes shortlisted. This activity is concerned with shortlisting e-business systems based on comparison with the various e-business system options from a compatibility perspective, effectiveness, and possibly cost implications. In the case of HGB Stores, the shortlisted e-business systems were Instagram, WhatsApp and the development of a bespoke website.

Shortlist Proposed Hardware

This activity is focused on shortlisting proposed hardware that is needed for the e-business system options; this could include computers, tablets, printers and several others but careful consideration should be made on compatibility issues with existing hardware systems in place. In ABC Laundries hardware devices shortlisted to complement their deployment were thermal printers, laptops, biometric readers and servers.

Table 21 Sample Hardware Inventory from ABC Laundries

S/N	Hardware Item
1	Laptop
2	Desktop Computers with Accessories
3	Mobile Phone
4	3 Android Tablet
5	Wireless Router
6	Internet Provider
7	LG Television
8	Monitor
9	Inverter
10	UPS
11	Barcode Reader
12	Fingerprint Reader
13	Thermal Printer
14	Laser Printer
15	HP ProLiant Server
16	Generator
17	Seagate Backup Drive
18	Surge Protector
19	Switches
20	Network Cables
21	Digital Camera
22	Wi-Fi Repeater

Assess Technology Cost

This activity focuses on understanding and identifying the cost of the shortlisted e-business systems. This task focuses on taking a holistic approach to estimate the possible implications of the shortlisted systems from a cost perspective. IT projects often fail as a result of poor estimating; the estimates should be comprehensive and

not only include one-off costs but also take into consideration the operational cost of each of the shortlisted items.

7.3.4 Plan Strategy Implementation

This stage is the final stage of the strategy development phase. It is concerned with finalising all pre-adoption activities, getting ready everything that needs to be in place for implementation of the e-business strategy and putting together a realistic plan for strategy implementation. The various constraints and challenges involved with running an e-business system will also be considered, and a decision will be reached on whether to progress with implementing the systems.

If a decision is made to progress, the metrics for success of the e-business implementation will be set, and the process or processes to be implemented first will be selected, with a clear roadmap created. The activities that need to be performed in this stage from a people, process and technology perspective are explained below.

People

Secure Management Buy-in

The management team needs to buy-in to the roadmap, as well as the first selected processes to be implemented. By ensuring that management buys into not just the initiative, but also the roadmap, guarantees their commitment to providing the necessary resources to ensure success. Should challenges occur during the implementation, the management will be able to support.

Acquire IT Skills

From the last two stages, the IT skills of all staff members in the firm would have been audited and appraised. In this stage, the focus is on putting actionable plans in place to ensure prospective users of the new systems acquire the IT skills that have been identified as deficient. This plan should be a component of the roadmap but should also involve identifying and shortlisting training providers.

Create an e-business Project Team

An e-business project team should be constituted to monitor and govern the execution of the project roadmap. The team ideally should be made up of a

management staff (if possible the owner/CEO), the e-business champion, and someone from IT. The e-business project team will provide governance, help to ensure various staff members are carried along and discuss challenges or issues faced thoroughly with perspectives provided from a range of business areas. It is, however, important that the team is open to user feedback, clearly communicates its plans and handles change management professionally.

Figure 60 E-business Project Team at OMO Legal

Select an e-business Champion

An e-business champion is a change maker in an organisation and studies (e.g. Rodgers, Yen and Chou, 2002) have shown that they are essential for e-business implementation success. From the various case studies, the e-business champion was a senior member of the management team or the owner of the firm; this framework recommends selecting an e-business champion that is passionate about the initiative, has excellent people skills and is part of the management of the firm. The role of the champion is to encourage the use of the e-business systems across various business processes and continuously showcase the success achieved from the e-business systems deployed.

Process

Shortlisted Process Selection

This task involves selecting the process to be first implemented from the list of shortlisted processes. This selection should be based on priority but should not be a business-critical task.

Document Revised Processes

The decision to adopt e-business in a particular process area often leads to changes in the process flow. In order to ensure the process requirements are clear to the developers and the implementation team, it is a good idea for modification to be clearly documented as this will avoid ambiguity. The clearer the process is, the more likely it will be implemented correctly.

Define Success Metrics

This activity is concerned with defining specific success metrics for the e-business initiative. This activity also helps to provide a basis for analysis of the e-business initiative after it has been implemented. Given that the metrics for success will vary from company to company, by conducting this activity, a firm can set the expectation of various stakeholders, but the metrics must be quantifiable metrics that can be easily measured.

Create Project Roadmap

One of the weaknesses identified in most of the case study companies in chapter six was the lack of a formalised e-business roadmap. This activity focuses on documenting a clear plan and roadmap for e-business implementation in a company. This activity should utilise the various shortlists and priorities that have been created as well as constraints identified in previous stages to create a simple roadmap for e-business implementation.

Project Roadmap

Figure 61 Sample Project Roadmap for LTE consulting

Legislation Review

The deployment of e-business in certain sectors might mean the need to comply with some legislation or regulation. This activity is concerned with identifying and reviewing relevant regulations that the deployment of certain e-business systems might result in complying with. As an example, sectors such as finance, insurance and pharmaceuticals have regulations that could affect the deployment of e-business in an organisation.

Technology

Select Proposed e-business System

From the shortlist of systems created in the earlier stage, the e-business systems to be first implemented will be selected. This selection will be based on the processes that have been prioritised and selected in this stage and assessment of technical issues such as compatibility, cost of systems, data storage and processes to be impacted. The constraints and limitations of the system selected should be reviewed thoroughly, and the most appropriate systems for the firm's objectives should be chosen.

Select Proposed Hardware

The deployment of e-business systems often requires hardware such as computers, servers, barcode scanners, printers, and several other gadgets to be purchased. Following on from the initial shortlist of required hardware, and the selected

processes and e-business systems, the prerequisite hardware will be selected. Similar to the selection of e-business systems, careful consideration should be given to issues such as cost and compatibility.

Select Internet Provider

From chapter six, internet connection speed and availability was identified as one of the critical influencing factors affecting adoption of e-business in Nigerian SBEs. Companies must assess and select internet providers and packages before the implementation of e-business because, in Nigeria, the selection of an internet provider might often require the need to test services from multiple providers. In order to select the ideal internet provider, careful consideration should be given to the type of systems deployed, bandwidth and data requirement, expected number of users, speed and reliability of provider, cost, and data limitations of the package. It might also be worthwhile to consider a backup provider.

Plan for Power Backup

Nigeria still has a problem of intermittent supply of power, and as identified in chapter six, various case study firms deployed different strategies to combat this challenge. For a firm implementing an e-business initiative, a careful plan must be put in place for backup of power which could include inverters, generators, a combination of both or other strategies that are relevant to the firm and its use of e-business. Consideration should also be put in place when selecting hardware devices; the devices selected should have long-lasting batteries as this will reduce the impact of a power cut.

Develop Proposed Technology Deployment Timeline
E-business implementation often requires the deployment of multiple technologies in various business processes or the deployment of various software packages. For effective implementation, a technology implementation timeline should be prepared that encompasses the various technology-related tasks that must be performed to ensure the e-business project roadmap is implemented successfully. This task should utilise various shortlists and priorities created in other stages and should consider various technical tasks and sub-tasks that are pre-requisites and requisites for the deployment of technology.

Figure 62 Sample Deployment Plan from ABC Laundries

Formulate Existing Data Migration Plan

For some organisations, the deployment of e-business might require data to be moved from one system to another; thus, it is crucial to examine the impact of these existing data and to assess what migration needs may arise. This task should cover a review of the type of data stored, the various attributes of existing data and a mapping of data required by the new system and how it will be shared across multiple systems. For SBEs without existing IT systems, this task can be ignored.

Figure 63 Sample Data Migration Plan ABC Laundries

7.4   Strategy Implementation

The strategy implementation phase (Figure 64) of the framework is concerned with implementing the strategy that has been set out in the strategy development phase. E-business systems will be implemented in the processes that have been prioritised, and the various e-business systems that have been shortlisted will be developed, purchased and deployed. Given Nigeria's peculiar challenge with power and slow internet connections speeds, the selected power backup and internet solutions will be purchased and deployed in the organisation. The primary focus of this phase is to guide the organisation through a stage-based implementation of e-business while ensuring there is value derived, the success metrics can be achieved, and the goals and objectives remain centre of focus. This phase consists of five stages, which are: Startup, Trial, Expand, Embed and Review, all of which are explained in more detail below.

Figure 64 STEER e-business Strategy Implementation Framework

7.4.1   Startup

This stage, as the name suggests, initialises the strategy implementation phase of the framework and activities such as procurement of systems, reviewing processes, and deployment of power backup solutions are performed. The various pre-

requisites for e-business technology implementation is put in place in the firm, and compulsory training for IT staff and general users of the systems is carried out. Staff members in the organisation should be briefed about the e-business project and how this intends to help the company achieve its core goals. The various activities expected to be performed in this stage are explained in-depth below from a people, process and technology perspective.

People

Select e-business Champion

The selection of an e-business champion is supported by literature (Dubelaar, Sohal and Savic, 2005) and as can be seen from the case studies, the owners of the firms or in the case of OMO Legal, the principal partner was the e-business champion. The primary role of the e-business champion is to create awareness for the systems being deployed, serve as a bridge between the users and the management, and encourage the use of e-business systems in the organisation. When selecting, the firm should select someone who is enthusiastic about e-business technology and understands the benefits the implementation of such systems could offer to the various processes in the firm.

Inform Users Early

Regardless of the e-business systems being implemented, it is essential to inform users early so that that they could input into the implementation process as well as provide early-stage feedback. When customer facing systems are being implemented, it is ideal to conduct user testing with the primary users as well as ensure that the appropriate level of communication to keep users aware of the systems being implemented, is put in place.

Train Staff

The deployment of e-business in organisations often results in the need to train staff on the use of IT or on the new e-business system deployed. This activity is concerned with training various staff members in the organisation to ensure they are capable of operating the systems implemented and that various activities which they often perform manually can still be achieved. The manner of the training will likely

vary from organisation to organisation: for some these training can be completed internally with knowledgeable staff teaching other staff how to use these systems while in other organisations this can be through external training providers.

Table 22 Sample Training Plan at OMO Legal

S/N	Training Item	Training Description
1	Introduction to Computers	This session introduces what computers are, the various types of computers and various components of a computer.
2	Starting a Computer	This session covers booting and shutting down a computer, checking the various connection cables, the accessories connected and the basics of the UPS.
3	Navigating a Computer	This session covers how to navigate a computer using both mouse and keyboard. Basic introduction to the desktop, folders and files is provided.
4	Basic Commands & Keyboard Shortcuts	In this session, the trainee learns about using basic Windows commands that are used daily for work in the business.
5	Working with Files 1	This covers an introduction to files and folders, the various types of files, their extensions and icons are covered.
6	Working with Files 2	This session covers copying files, the folder structure of the computer, Documents and Drives.
7	Basics of the Internet	This session covers an introduction to the internet, what website are, what webpages are, popular websites, understanding the browser.
8	Introduction to Microsoft WORD	This session covers an introduction to Microsoft WORD. The trainee is provided an overview of the application, how it can be used, saving an item and when to use MS Word. Some company word documents and templates are also introduced.
9	Understanding MS Excel	This session introduces MS Excel, how it is used in the company and the various approaches to work with sheets and templates in the firm
10	Case Management System -1	This session provides a basic overview to the case management system. The trainee is introduced to how new cases are created and how customers are created.
11	Case Management System - 2	This session provides the trainees with a more advanced overview of the case management system. It covers viewing active cases in the firm, active case for a client, court dates calendar and tasks waiting to be completed or assigned per case.
12	How to use email	This session covers general introduction to using emails in the firm. The trainee is also provided with a company email.

Inform Stakeholder about Process Change

As discussed above, the deployment of e-business technologies in an organisation might result in process change, and the firm or e-business project team needs to inform the various stakeholders about the changing processes. This will mitigate against the likelihood of errors or data corruption or lack of up to date data, for example, if one of the staff members is still making use of the old process, while the process had changed. The stakeholders that need to be informed might transcend beyond simply staff of the firm, they might include external suppliers or customers of the firm, and by keeping all stakeholders aware, the organisation is well prepared to support the systems implemented.

Process

Process Review and Re-engineering

For an e-business system to be successful, the system implemented must work well with the process in the firm. This activity is concerned with reviewing the process where e-business is being implemented and ensuring that it fits well with the e-business system. If it does not, this activity will involve re-engineering the process and ensuring that the various stakeholders are happy with the re-engineered process.

e-business Project Tracking

This activity involves utilising the e-business project roadmap to track what systems are deployed and that various pre-requisites have been deployed. The deployment of e-business will involve various tasks and sub-tasks to be performed; this activity is primarily concerned with tracking activities and ensuring that impediments are removed, and issues are sorted on time to enable a smooth implementation. For example, the implementation of an e-business system might require the migration of data, decommissioning other systems or integration with an existing system, this activity is concerned with tracking these tasks and ensuring that there is constant progress.

Table 23 Project Tracking Plan at ABC Laundries

Project Item	Deadline	Status
Development & Testing of Invoicing Module	March 2013	Completed
Deployment of Invoicing Module	April 2013	Completed
POS & Thermal Printer Deployment	April 2013	Completed
Staff Training on Inventory Module	April 2013	Completed
Development& Testing of Laundry Status Tracking	May 2014	Completed
Deployment of Laundry Status Tracking	June 2014	Completed
Integration of SMS gateway	January 2014	Completed
Development of Accounts Module	August 2013	Completed
Website Development	July 2014	Completed
Deployment of Accounts Module	September 2013	Completed
Development of Reports Module	December 2014	Completed
Deployment of Biometric Attendance monitor	December 2013	Completed
Development of Inventory Module	October 2014	Completed
Development of Customer Profile Module	January 2015	Completed
Development of Automatic email & SMS reminders	December 2014	Completed
Deployment of Inventory Module	March 2015	In progress
Development of Delivery Schedule	June 2015	Completed
Development of Expense Tacking	January 2015	In progress
Deployment of Customer Profile Module	April 2015	Not started
Deployment of Customer Profile Module	June 2015	Not started
Deployment of Delivery Schedule	August 2015	Not started
Deployment of Expense Tacking	July 2015	Not started

Technology

Select e-business Systems License

This activity is concerned with the selection of the license for the e-business system chosen to be deployed. This will vary based on the type of system being implemented; for example, if it is a cloud-based system, this involves selecting the type of subscription package, taking into consideration its limitations and the impact that it will have on the firm. However, if it is an off the shelf application, careful thought about the number of users required as a minimum and how this will affect the company needs to be put in place and carefully thought through.

Deploy Relevant Hardware

The implementation of e-business technologies in a firm will likely result in the need to purchase various hardware devices such as laptops, Uninterrupted Power Supplies (UPS), switches and several others. This activity is concerned with the

procurement and deployment of this hardware. Since the budgeting of these items have been done in the strategy development phase, this phase is concerned with selecting the provider and deploying the hardware. For some implementations, there might be a need for the setup of a local area network, activities such as cabling, and network management and design might be involved as part of this activity.

Deployment of e-business System

This activity is concerned with the implementation of the e-business system chosen to be deployed. This includes testing it centrally with the IT and e-business project teams, aligning the systems to the companies' processes and receiving early-stage feedback from the main stakeholders of the application. The expectation is that the system deployed is not interfaced in a real business environment but tested to ensure that it works with the organisation and that the various prerequisites and needs for the systems have been put in place.

This activity should also consider the security of the system and ensure that it has been configured correctly. This activity could also include conducting a user acceptance test, and putting in place a framework to be able to support user queries or issues that could impact the business operations.

Deployment of Internet Connection

Most e-business systems rely heavily on the internet to function. Internet connection speed and availability can sometimes be a challenge in Nigeria; the firm needs to identify the provider that best suits their needs in their location, select a plan suitable for the firm, and deploy. From the case studies, most businesses had a backup internet connection(second provider); it might be worthwhile for the firm to purchase a backup so that their operations are not affected by issues of internet availability by one provider.

Deploy Power Backup

Throughout this thesis, the impact of unreliable power supply on Nigerian business has been discussed. Given that e-business systems or IT devices often rely on the availability of power, the firm deploying e-business needs to put in place a backup solution to ensure there is constant power for the various IT and e-business systems

to utilise. These backup solutions are often unique to the organisation based on the specific e-business systems deployed and how the organisation works. Some examples of backup solutions include the use of generators, inverters, use of laptops, UPS and several others.

7.4.2 Trial

This stage of the strategy implementation phase is concerned with exploring the use of e-business systems with one or two business processes to gather feedback and understand how the implementation will affect the organisation. The business processes where e-business systems will be deployed in this stage are based on the priority and roadmap drawn up in in the strategy development phase. By exploring in one or two process areas, the firm can understand how the implementation of e-business fits the organisation and identify if some benefits can be derived while keeping the impact to the business operation and cost minimal. The various activities to be conducted in this stage are explained from a people, process and technology perspective.

People

Obtain User Feedback

With the deployment of new e-business systems, it is essential for staff members of the firm to familiarise themselves with the system and perform existing tasks at an optimal level or an improved efficiency within a short period. This activity enables the e-business project team in the firm to continually obtain feedback from the users of the system as this will help identify what is working and is not working well for the organisation. This feedback could be from customers or staff of the organisation, depending on the type of e-business system that has been deployed, but the feedback must be gotten from all categories of users so that changes could be made to the systems or processes if needed to ensure it is operating optimally.

Provide Technical Support

From the case studies, most of the staff of the businesses studied, had basic level of IT skills and as suggested in their research, Erumi-Esin and Heeks (2015) identified that the level of IT skills in small businesses in Nigeria is often generally low, thus as part of this framework, it is suggested that when an organisation is deploying e-

business systems, there is a need to plan to provide technical support to the staff and general users of the systems. This activity can be performed by internal IT staff in the firm or can be performed by an outsourced IT team. By doing this, the various technical issues raised by the customers can be attended to and day to day operations of the firm can continue without disrupting the quality of service.

Process

Re-Engineer and Review Process

The deployment of e-business in organisations often results in a change of business processes and the need to either realign the system being deployed to the existing processes or change the processes to fit with the system, is often inevitable. This activity is concerned with helping the business to make adjustments to business processes. Although changes might have already been made at earlier stages, should there be a need for changes to the processes or processes re-engineered at the trial stage, this activity enables the implementers to consider the implications this might have on the systems and the organisation.

Technology

Migrate Data

The deployment of an e-business system will often require the migration of data from one type of record-keeping system to another, such as from a manual system or MS Excel to an e-commerce system. This activity is concerned with planning the migration of data, conducting the migration and validating in the new system. Dufrasne *et al.* (2017) suggest a three-stage process to migrating data from one system to another which are – planning, migration and post-migration. By planning the migration of data, the organisation can ensure that the datum is migrated in such a manner that it is not corrupted and adequately represented in the new system being deployed.

Reconfigure and Setup Systems

This activity is concerned with reconfiguring existing systems to work with the new systems deployed or making changes to the setup of new systems installed in the startup stage, such that it works well with the organisation's processes. It is not

uncommon for slight changes to be made in processes after the recent deployment of a system, this activity helps to ensure these various scenarios are taken care of and planned into the implementation workflow of the organisation.

7.4.3 Expand

Following the deployment of e-business in some business processes and a trial run for a defined period, the organisation is thus able to make decisions to expand the deployment of e-business to more business processes. This stage is concerned with evaluating the results of the trial stage, learning from it and making a decision to expand the implementation to more business processes. Depending on the focus of the firm, this might mean moving from deploying e-business within processes internally to deploying e-business on processes that are externally facing. Generally, from the various case studies analysed in chapter six, the trial and expand stages were seen as a recurring feature which contributed to the successful implementation of e-business in these SBEs. The various activities to be performed in this stage from a people, process and technology perspective are described below.

People

Upskill Technical & IT Staff

IT is continuously changing, and as such, the deployment of e-business requires the technical staff of the firm to be well trained to handle various new activities. Given new systems are being deployed, the expectation is to ensure that the IT staff manning these systems are familiar with the workings of these systems and how they fit in with the organisation as a whole.

Obtain User Feedback

Users are key to the success of the deployment of any IT system and constantly receiving feedback from them is of importance to the success of any IT project. In small businesses, it is expected that the e-business champion and the e-business project team are constantly in touch with the various users to accept feedback on the system and are proactively positioned to make relevant changes to ensure the firm's e-business goals and objectives are met.

Train Staff

This task carries on from a similarly named task in the trial stage. As a result of the deployment of new systems at this stage, the expectation is that staff members are trained on how to use these new systems. It also needs to be clear to them how these fit into their processes in the organisation. Although the staff need to know how the systems work and that is primarily the focus of this activity, it is also of equal importance to ensure that staff understand how the systems fit into existing processes.

Manage Resistance to Change

The deployment of e-business in organisations might result in resistance to change by stakeholders who are used to their old ways of working. The implementers of the e-business systems need to ensure that the primary stakeholders of each systems and processes where changes are being made, are carried along early on in the process. The e-business project team also needs to set out a plan and procedure to respond to and manage resistance to change it encounters while the systems are being deployed. This often encompasses, helping them understand how it will make their work easier, provide more efficiency and result for the organisation.

Obtain Management Buy-in

The deployment of e-business in the organisation (particularly SBEs) often requires the buy-in of the management for it to be successful and although the buy-in of the management should have been obtained before reaching this stage, at this stage, the e-business project team should keep the management team updated and in the know of the various processes where e-business systems are being expanded to. In small businesses, the owner or manager is usually the key decision-maker in the organisation and as such, it is important that major changes to processes that are required as a result of the expansion of e-business systems deployment should be clearly communicated along with the associated impact. By doing this, the e-business project team will avoid major disruptions to operations and revenue unknown to the business owners and managers as well as position the project team to be able to adequately respond to issues or internal resistance to change that might result from the expansion of e-business systems.

Process

Document Processes

The deployment of new e-business systems will likely result in the change of various business processes. In this stage, this activity is concerned with documenting changes made to the business processes to ensure that the firm has a record of the processes should changes be further required. Given that various processes will have already been documented at the earlier stages or in the strategy development phase, this activity will involve updating the existing documents with changes made to the processes.

Identify Process Requiring Automation

The business environment is never static, and as such, processes are constantly being created to react to business activities and objectives. Although several processes requiring automation or e-business systems to be deployed in them would have already been identified in the strategy development phase, in this stage, this task is concerned with identifying new processes that have emerged since the initial strategy development.

Review and Prioritise Processes

Business needs will often change from time to time; this activity provides an opportunity for the e-business project team to review their priority areas and validate these with the business objectives. At this stage, given that several systems are being developed, the team should check that their initial priority list has not changed and if it has, update it as well as the project roadmap. The same should be taken into account as well for the functionalities of the processes; the team needs to capture any changes to these processes and review them if necessary, such that the processes work with the new systems being deployed.

Technology

Deploy Requisite Hardware

At the expand stage of the strategy implementation framework, e-business systems deployed in limited business processes are being expanded to cover more business processes, and these new systems might require the deployment of requisite

hardware systems for them to work. It would not be out of place for a firm to invest minimally in hardware systems in the startup and trial stages as a way to keep the cost of deployment low, with the intention to get some initial value from the e-business systems, before significantly more investment in hardware at the expand stage.

This activity is concerned with the procurement and deployment of requisite hardware needed for the e-business systems that will be deployed at this stage. The hardware to be purchased might be specialised systems or regular range computers or servers as required by the e-business systems being deployed.

Reconfigure and Setup System

This activity is concerned with reconfiguring existing IT and e-business systems to work well together. Although it is similar to a task in the trial stage, given the expansion of e-business systems and technologies to new business processes at this stage, the focus is on being able to provide adjustments to the previously deployed systems to ensure it works well with the new processes. For example, the e-business systems deployed in the trial phase might require some changes to enable it to work well with other processes, this activity is concerned with ensuring that changes can happen and that the systems work well together. The new e-business systems being deployed might require data in specific formats that were not put in place in the trial stage for various reasons; this activity provides that information and allows for some synergy.

Migrate Data

One of the core assets of any organisation is its data, and as new systems are being deployed and older ones decommissioned, there lies the need to move data from one system to another. This activity quite similar to the one in the trial phase, is concerned with planning and migrating data from one system or process to another while ensuring that this migration has minimal effect on business operations as well as the quality, confidentiality and integrity of the data.

Deploy New e-business System

In the strategy development phase, several e-business systems will have been prioritised based on the business need, the company's strategy and the e-business strategy. In this stage, the activity is concerned with procuring these systems if not already procured, deploying the systems and testing the systems with the intended users and finally rolling the systems out. Depending on the organisation and their focus, at this stage, the deployment of e-business systems might be to complement existing IT systems as a result, this activity needs to consider some integration of the systems (although not to a great degree).

In the case where the firm is developing bespoke e-business systems, this activity's scope covers the development, deployment, testing and security assessment of the systems to ensure that it meets the need the business set out to achieve.

7.4.4 Embed

This stage is concerned with embedding e-business technologies into the organisation such that most business processes and activities in the organisation make use of e-business systems. In the previous stage (Expand), the systems implemented would have been mainly in isolation with limited integration between process areas. In this stage, the focus is on embedding various e-business systems across most business processes and integrating systems, such that data could be shared between various systems and business processes; thus, allowing for improved performance and improved efficiency in the organisation. In the subsections below, the various activities from a people, process and technology perspective are explained.

People

Upskill Technical & IT Staff

The technical and IT staff of organisations need to constantly be trained and retrained as technological advancements happen from time to time. In this stage, since the firm will be implementing several systems and integrating with existing systems, the technical team needs to upskill such that they are familiar with new systems and technologies. If the systems do require bespoke development, this is also an opportunity for the technical team to look to new technologies that will

eventually make their systems more scalable and resilient. For example, with integrating systems together, the team could upskill to use RESTFUL APIs instead of SOAP-based APIs, which would have been the norm several years ago.

Train Staff

The training of staff is expected to be a constant activity across several stages of this framework because, for an e-business system to be effective, the people who work with the systems must understand how the systems work and feel comfortable to be able to carry out their activities using such system. In their research, Akeel, Wynn and Zhang, (2013) suggest that in order for the deployment of technology in organisations to be efficient, training of staffs using the systems should not be left out of the deployment process and plan. From the case study findings, various approaches were taken by different organisations on training staff to be comfortable with using the systems. In this stage, given that the company will be developing and deploying new systems as well as integrating these systems with existing ones, there is a need to train the staff on the new systems and help them to understand how their existing approach might have changed.

Obtain User Feedback

The number and categories of e-business users in the firm implementing e-business would have increased at this stage; thus, there is a need to obtain feedback from new users as well as understand how the changes or integrations made, have affected existing users.

Process
Standardise Processes

This activity is concerned with standardising the process to ensure all the parties in the organisation are aware of this. Given that this stage is concerned with integrating systems together across various business processes, there is a need to standardise the processes to ensure that all members who work with such processes are aware of what they are, and what changes have been made to them. It needs to be clear what systems to use, to get certain information that are relevant to the organisation's operation.

Document Processes and Process Integration

As in other stages of the framework, this activity is concerned with documenting the processes and ensuring that there is a hard record of it in the organisation. It also involves looking at the various processes and considering what processes could be integrated and what systems will help to achieve this.

Dataflow Diagrams

Dataflow Diagrams are a visual representation of how data flows in an organisation between various systems. It is always a good way to analyse what optimisations can be done and also to identify where redundant data is resident so that the firm can plan for this to be integrated.

Figure 65 Sample Dataflow Diagram

Technology

Assess Technology Compatibility

To integrate systems, the organisation's e-business project team and technical team need to assess the technical compatibility of the systems to be integrated. Questions such as - What technologies are used in each system, what data is stored in the

database and what applications rely on it, what is the underlining technology of the database or storage and do these applications have APIs to support data migration, are some of the considerations that need to be made.

Migrate Data

Data is core to the digitisation strategy of any organisation and specifically, if data is not stored correctly in an optimal way, it might lead to redundancy and perhaps the use of out-dated data to make decisions. The integration and deployment of e-business systems and applications in this stage may require the need to migrate data from one platform to another or perhaps change the way data is stored. This task is similar to other migration activities in other stages, but more concerned about the need to normalise data and to adequately store data in a way that they can be used by middleware or more than one application.

Deploy New Hardware

The deployment of new e-business systems might require the need for new hardware; this task is concerned with the procurement of the new hardware systems to support e-business systems being deployed. Similar to what has been described in other stages, the e-business project team ought to review critically what systems are needed, what the resource limitations are, and what the capacity expected should be in order to procure hardware system accurately.

Deploy New e-Business Systems

This activity involves the deployment of new e-business systems in the organisation with more focus on digitising necessary processes that have been prioritised by the company as well as focusing more on systems that integrate well with other systems that have been deployed.

Integrate Systems

Wynn and Zhang (2008) suggest that when organisations have their systems integrated, the benefits of e-business to an organisation are significantly more. This task is about integrating multiple systems in the organisation across multiple business processes to ensure that key decision-makers in the organisation can get more detailed and robust information to make decisions with less external

manipulation of that data. For example, if a retail outlet with two separate systems for sales and inventory management can integrate their systems, benefit such as stock replenishment automation could be instantly derived without the need to manipulate data.

7.4.5 Review

This stage allows for continued adoption of e-business in the organisation but it mainly provides an opportunity for the firm to review its e-business implementation, review new technologies and review use of e-business in other similar organisations, to identify how the current systems implemented could be improved. In this stage, the focus is on reviewing, improving and optimising existing systems that have been implemented in order to generate increased value for the organisation. The company should gather feedback from the various stakeholders in the organisation, review and reflect on it and identify areas for improvement. The various activities conducted in this stage are discussed in detail below from a people, process and technology perspective.

People

Obtain User Feedback

Simply deploying an e-business system without user feedback will lead to a system deployed that is not suit for purpose. This activity is concerned with obtaining user feedback and ensuring that the e-business project team can understand the various user's and stakeholder's perception of the systems deployed. Collecting user's feedback shows that the organisation values their opinion and indicates that there is a willingness to ensure that the systems work for the users it is intended for.

Process

Review & Improve Processes

This activity refers to the act of reviewing various processes in the organisation with the aim to understand if they are optimal and if they are not, seeking approaches to improve them. While in other stages, this activity will have only been focused on processes that have not been digitised or processes that are not using any e-business system, this task is concerned with reviewing all processes in the organisation and understand how they can be improved. Companies should take a

closer look at processes that were recently changed in earlier stages and compare their previous performance to their current performance to improve them as best as possible.

Update Process Documentation

Process documents need to be kept up to date as it allows a formal record of the various operating procedures in the organisation for the business processes. This activity is concerned with ensuring the process documents are kept up to date and that should changes be made to some processes, the documents are updated.

Technology
Review System Performance

This activity is to review the performance of various software and hardware systems that have been deployed by the organisation. For example, if an organisation has deployed a new server for e-commerce website, it would want to review to be sure that these servers have not been overloaded and that it is well prepared to handle more requests from users. This activity allows the organisation to be able to plan forward for the various systems that have been put in place. If a new application is to be deployed on the same server, they can review what the impact of that will be to ensure there are no disruptions to business as usual.

Assess System Improvement Options

This activity is concerned with reviewing the systems for opportunities for improving them, and this will typically encompass both hardware and software activities.

7.5   Strategy Review

This phase of the framework is concerned with reviewing the implementation strategy with a mind-set of tracking what has gone well and what hasn't. This phase allows an organisation to take a retrospective look at various implementations and apply lessons from them. Contrary to other studies (e.g. Daniel, Wilson and Myers, 2002; Prananto *et al.*, 2004) which suggest that e-business innovation halts when an organisation reaches the transformation stage, this framework suggests that an organisation is constantly innovating and in constant review of its e-business strategy. In this phase, the status of current e-business systems is assessed, cost-

benefit analysis is conducted, and the objectives and goals of the e-business initiative set out at the strategy development phase are reviewed. Given the need to align e-business objectives to business objectives and the understanding that business objectives are not static, should the business objectives and goals change, the e-business goals and objectives will need to be reviewed and changed as well. In the subsections below, the various stages involved in the strategy review phase are discussed.

Figure 66 SCR e-business Review

7.5.1 Status Assessment

This stage is concerned with assessing the current status of the e-business systems implemented. This assessment should be all-encompassing covering key areas such as assessment of technologies used, assessing the capacity of technology resources, gathering user feedback and identifying the impact on processes. The people, process and technology activities at this stage are discussed below.

People

Acquire Staff Feedback

Staff feedback is essential to the improvement and assessment of any e-business implementation, given that they interact with these systems from time to time. In an

organisation reviewing its e-business strategy, feedback sessions should be conducted through one to one meetings or focus groups where a member of the project team interacts with various types of users separately to get their input on how their processes have improved or not improved as well as feedback on the general use of the systems implemented. In certain cases, feedback could also be sought by way of email or survey, especially when a large group of users are involved.

Conduct e-business Project Team Review

This activity focuses on the project team assessing itself and identifying the various activities and interventions they have had to embark upon. This activity provides the team with an opportunity to conduct a retrospective and particularly identify what has gone well, what hasn't and what could be improved upon or, an opportunity to address or respond to issues not addressed in detail. Depending on the change management approach within an organisation, this reflection might involve onboarding a new stakeholder on the project team in order to increase participation from such business area.

Process

Identify Processes Requiring Adjustments

This task is concerned about reviewing the systems deployed to identify processes in need of adjustment. It is not uncommon for processes to need adjustment after implementation of the new systems due to reasons such as task sequence that does not fit how the business works or other system-imposed tasks. Feedback should be sought from primary users of the systems and processes from time to time, and if the organisation has created a culture where the e-business project team is approachable, it will be easy to identify such processes.

Assess Impact on Processes

The deployment of e-business within a specific process area will likely lead to some changes in the way the process is carried out as well as the output of such processes. This task is concerned with assessing such changes for each process area and identifying the positive or negative impact of such change on these processes. Considerations such as – the level of improvement of the process,

comparison of basic metrics before and after, impact on revenue and several others, should be taken into account. The processes being assessed, should not be viewed in isolation, the impact should also be assessed with respect to larger process channels that these processes feed into.

Technology

Assess Technology Suitability and Manageability

The technology industry has always been a fast-moving industry with new and advanced technology being released every few months. This task provides the IT team (or outsourced company) and the e-business project team an opportunity to review the technologies being utilised and identify if newer e-business systems might be more suitable and manageable for some of the things that the company is achieving or wishes to achieve with e-business. This activity is concerned with answering questions such as – Are the technology and systems used suitable? What can we do so that they can be easily managed? Are some of the systems and technologies coming to their end of life?

Assess Systems Performance

The deployment of e-business technologies in organisations sometimes brings about customer growth. The firm reviewing its e-business strategy needs to evaluate the performance of the deployed systems with respect to customer growth and increased demand. Through this activity, the firm is assessing performance issues that have occurred over time; in order to plan to avoid or manage such issues in the future. Results of this activity might mean the business deciding to upgrade the server or other infrastructure to be able to cater to performance demand.

7.5.2 Cost-Benefit Analysis

This stage of the strategy review phase focuses on understanding what benefits have been derived from the initial spend on various e-business technologies and processes. In this stage, firms will be comparing what has been achieved with the success metrics defined in the strategy development phase and trying to understand if the activities and implementations have achieved the expected benefits for the organisations. In the situation where the success metrics have not been met, the activities in this stage will help the firm to understand and identify what has gone

wrong. Activities involved in this stage include identifying and quantifying benefits, reviewing spend on technology and analysing cost benefits. Each one of these activities is explained below from a process and technology perspective.

Process

Identify & Quantify Benefits

This activity focuses on identifying benefits that have been derived by the business from the deployment of e-business and quantifying this in monetary terms. Depending on the systems and processes that have been deployed, the benefits could have impacted revenue, resulted in customer joy or other benefit. It is also important to consider and quantify other indirect benefits that the deployment of e-business has offered to the firm, such as increased market size and increased efficiency.

Analyse Cost Benefit

This activity is mainly concerned with analysing cost and benefits of e-business to the firm quantitatively and deciding on a net value for the initiative. The output from this activity will help the business in understanding options and determining what changes could result in increased net benefit value.

Technology

Review Spend on IT Infrastructure

This activity is concerned with evaluating spend on IT infrastructure to appraise the effectiveness and possible alternatives. It is no surprise that the cost of IT infrastructure is one of the most expensive categories of cost that a company requires to ensure successful e-business deployment. It is in the interest of the business to keep the cost low and ensure that actual spend on IT yields value for the business.

7.5.3 Review Goals and Objectives

This stage is concerned with helping firms review various objectives set out in the strategy development phase and identifying what has been achieved or not achieved as well as adjusting these goals. Not achieving the goals and objectives does not necessarily mean failure of the initiative; it might be that the firm has changed its

focus or strategy since the initial strategy was developed. It is also an opportunity for the project team to review suggestions for improvement from a technology, people and process perspective. The activities involved in this stage are explained below.

Process

Success Metrics Review

In the strategy development phase, an organisation would have set out the various success metrics that it needs to examine if the deployment of e-business, has been successful. This activity is concerned with reviewing those metrics, discussing with various stakeholders, understanding several reasons why the metrics have or have not been met, and if there is a need for it, the metrics could be reviewed either upward or downward.

As indicated in the strategy development phase, it is important for these metrics to be encompassing and quantifiable and should take into account the various people, process and technology dimensions that determine success or failure of the e-business deployment. For organisations implementing e-business for the first time, it is not uncommon for certain success metrics to have not been met, but this activity is particularly concerned with understanding why the metrics have not been achieved. By reviewing and understanding what has gone wrong, the organisation could then take further steps to fix those issues or adjust the success metrics to realistic expectations or to be more in line with the business goals.

Business Goals Review

This activity is concerned with reviewing the business goals outline at the strategy development phase and identifying if those goals are still valid for the business. If they are not, this is an opportunity for the business to formally capture what the current business goals are, and for the new goals to be used in formulating new e-business goals. This task presents an opportunity for the business to take a step back to review existing goals; how far along they have come and decide whether or not to change some of the goals. By conducting regular business goals review, the organisation ensures that it is aware of the changing business environments and the path being towed by the firm.

Review and Adjust e-business Goals

This activity follows on from the one above in that the e-business goals must be aligned with the business goals and should there be a change to the business goals and objectives, the e-business goals and objectives set out will likely need to be adjusted. This activity provides an opportunity for the business to identify and analyse why certain goals have not been met. By conducting this activity, an organisation can be sure its goals and objectives remain in focus.

e-business Project Tracking

In the strategy development phase, an e-business roadmap and technology development timeline was designed. This activity focuses on reviewing both to identify if all technologies and systems planned to be implemented have been implemented, and where they have not, to understand why. The non-implementation of particular systems might be as a result of cost, change in business or e-business goals or several other reasons, but by conducting this review, the e-business project team can keep informed and prioritise new initiatives as necessary.

Technology
e-business Value Analysis

Cost of technology infrastructure is sometimes one of the main deterrents to the adoption of e-business in small businesses. For organisations spending on these systems, there is an increasing need to ensure that there is adequate value derived for each pound spent. This activity is concerned with evaluating the value derived from each e-business system and informing the organisation on what type of systems deliver the most value to the business, such that further investment in similar systems could result in delivering even more value.

7.6   Framework Validation

Following the development of the SAPP-STEER-SCR e-business strategy framework, it was validated through semi-structured interviews with SBE owners and IT professionals who were familiar with e-business and SBEs in Nigeria. As discussed in chapter four, twelve participants were recruited to participate, six were

the owners of the case study companies and the other six were IT professionals (Business Analysts or Project Managers) with at least ten years' relevant experience.

The framework validation focused on four key areas – User-friendliness of the framework, usefulness within the Nigerian SBE sector, strengths and weaknesses, and suggestions for improvement. Appendix VII below shows the questions that were sent to the interviewees while Appendix VIII shows a sample transcript from the interview. The subsections below explain the findings from the interviews.

User-friendliness and understanding of the framework

All the participants were sent the framework and the questions forty-eight hours before the interview to allow enough time for them to review the framework. During the interviews, all the participants indicated that they could understand the framework with little or no explanation. Seven participants indicated that they preferred the second layout (Figure 67) as it was easy to follow and indicated what needed to be done from an implementation perspective. However, the other five participants preferred the first layout (Figure 56), since it was comprehensive and holistic, showing the iterative nature of the framework and the need to move from one phase to another.

Most agreed that the two layouts complemented each other. Those who selected layout one, wanted a high-level overview of the phases and stages of the framework (perhaps without the activities) as this was considered more relevant to business managers and users. Layout two (the vertical layout), shows a roadmap and provides the detail needed for an implementer to review.

One participant, however, did note that layout two (the vertical layout) did give an impression that progress of an organisation through the framework needed to be identified in each phase as opposed to the logical progression from one phase to another. To make this clear, the framework layout was adjusted to include process flow lines from the last stage in each phase to the first stage in another phase (Figure 67).

Usefulness in Nigerian SBEs

The participants were asked to identify what phase and stage of the framework their companies were at. Those without SBEs were asked to identify an SBE in Nigeria they had worked with and use that as a basis to assess the framework. All the participants were able to do this, and in most cases, the companies were in the Implementation phase between the Trial and Expand stages.

"I think we are still in the implementation phase. Within the implementation phase, I think we're still doing a bit of trial leading up to expansion. I think that's basically what we're still doing. Because some processes are not cumbersome, but some of our staff are still trying to get a grip of some of the systems, which is going to take time. So yes, we're still at the implementation phase, trial, leading up to the expansion stage." – Principal Partner OMO Legal.

When asked if they could identify with the People, Process and Technology elements in the framework, the participants indicated that the framework was comprehensive, relevant and reflected industry practices within the context of Nigerian SBEs. They also commented that the people, process and technology elements were representative, and they could align with the activities in the various stages. Ten of the participants were able to briefly discuss how each of people, process and technology elements, related to their company in the current stage. The owner of HGB Stores, however, indicated that at the Trial stage, their focus as an organisation had been more on the technology and people rather than on processes.

"Because we are still at the trial stage, emphasis has been placed more on technology and the people, because we need to let our staff know what it's all about, why we're introducing such technology, the e-business systems to the organisation, the purpose and the advantages it brings". – Owner of HGB Stores

The participants commented that the framework contained all the relevant activities, stages and phases relevant to SBEs in Nigeria. One of the participants indicated the need to reflect "Legislation Review" as one of the activities to be considered. It was

suggested that depending on the industry, the deployment of e-business might warrant the need to review and comply with certain legislation. To address this comment, the framework has been reviewed to include "Legislation review" in the final stage of the development phase.

"Well, in project management we have something we call feasibility and that's just a stage of the project where you look at almost all the same things I can see in the development phase. So, I think all the things I've seen on here are fine and representative of an e-business project. Although referred to in different terminologies from what I am used to, this is fine as terminologies change from organisation to organisation. From my experience, we usually have four stages of a project, but having gone through all this again, all the stages in this framework, are adequate. It is what's under each of the stages that makes it rich. So, I think the stages are fine." — **Participant 3**

"I believe that it has the relevant components required for e-business deployment for small businesses in Nigeria". **- Owner ABC Laundries**

When asked specifically if the framework will be considered useful for SBEs in Nigeria to develop and implement e-business strategy, the responses were quite positive with several participants commenting on the frameworks' robustness, clarity, simplicity and providing clear roadmap.

"It's a fantastic structure here. I think this is really simple and it's just self-explanatory. And it's like a guiding process for everyone from planning strategy implementation, to start up, trial and other stages. I think it's great. I think this will really help and I would definitely recommend this to anyone running small business in Nigeria. This is really good." - Principal partner OMO Legal.

"Considering the purpose of this framework and the way you have put it together, I think it's

really concise and very straightforward. So, I believe it's something that's achievable for small business owners in Nigeria, to be able to adapt this particular framework, to develop e-business in their businesses. So, it's really neat. For the first time I saw something like this, I just felt, okay a common businessman in Nigeria with less than 50 employees, should be able to adapt to this because it's quite straightforward." – Participant 2

"I think it is very useful. I think it breaks it down into little small chunk so that one step, at a day as you are going through one stage, you can pick individual elements within the people process and technology to address. It is very helpful to guide. Many times, in a big organisation, things are already setup. I think more than anywhere else, guides like this are very important and useful in small businesses where you are trying to put structure in place". - Owner KDE Energy

Two participants, though, did indicate that given the detailed nature of the framework, it might be difficult for business owners without technology knowledge and adequate technical support to use to develop and implement e-business strategy. One participant suggested that the framework might be better targeted at 'e-business implementers' with technical knowledge rather than everyday SBE owners, while the other suggested a trimmed-down version of layout one (without the activities) together with a detailed guide, as a revised framework for business owners. On the contrary, four SBE owner participants without IT backgrounds indicated that they were able to relate with the framework and could see how it could be used to help develop strategy and implement e-business in their organisation.

Concerning the usefulness of the framework in other countries and medium-sized businesses, it was agreed that the framework could be used in these settings. One of the IT project managers who had spent years working in Ghana commented on the similarity between Nigeria and Ghana but advised that some adjustments might need to be made in the people and technology elements in the development phase.

Strengths and Weaknesses

Various strengths of the framework were identified. The participants indicated that the framework encompasses all activities that an SBE must consider or act on, in

order to grow and derive value from an e-business implementation. Several comments were also made about the framework's robustness in that it did not simply focus on the implementation phase, but provided detailed activities in the development and review phases, thus allowing for continuous improvement of the business.

"One of the core strengths of the framework, is that it shows you exactly what you need to do." – **Owner GPY Properties**

Another participant commented that *"by providing clear activities in each of the people, process and technology dimensions in all the phases and stages of the framework, the framework stands out and makes it easy to follow."* – **Participant 5**

"I would say the fact that it looks at the best practice from business and from technology, I think those are the strengths. The framework has focused on technology, process and people as main components within the business that need to be delivered on a working e-business solution. And then, also from the perspective of the life cycle of a project and life cycle of a system, the framework looks at the best practice along those life cycles. So, I think that also is a strength of the framework." – **Owner ABC Laundries**

One of the participants suggested that as a result of the several stages and phases in the framework, it might result in a slow implementation of e-business in an organisation. For example, in the final stage of the development phase, securing management buy-in might result in a delay in the implementation. However, following further discussion, it was concluded that if it is a big project, the governance structure put in place by the framework is an advantage.

Another participant (Participant 10) suggested that given the rigorous nature of the framework, it might be difficult for SBEs interested in cutting-corners, a 'quick-win' or struggling with resources, to efficiently utilise the framework. It was concluded that as part of the guideline accompanying the framework, the suggested resource required to implement the framework should be made clear.

Suggestions for Improvements

The framework was generally well-received, though there were a number of suggested improvements to enhance the framework for more effective use by SBEs

- To enable the framework to be easily adopted in other developing countries, it was suggested that the framework could be translated into local languages. For example, in francophone African countries, the framework will need to be translated into French for ease of adoption.

- One participant also suggested adding some more images or icons to the framework, particularly for increased clarity of the activities in various people, process and technology dimensions. This change has now been effected in sections 7.3-7.5 of this thesis.

- To improve accessibility and enhance comprehension of the framework, it was suggested that the framework should include a worksheet and a set of guidelines written specifically for the business user. This is expected to allow them more easily to assess the company's current situation and chart their course through the various stages and phases of the framework. This has been designed and is presented in Appendix IX.

7.7   Summary

This chapter presented an overview of the SAPP-STEER-SCR e-business framework for e-business strategy development and implementation in Nigerian SBEs. The three phases of the framework and their relevant stages were presented, while the various activities and change elements from the People, Process and Technology dimensions were explained.

To address research objective three, a robust, flexible and holistic e-business strategy framework relevant to small businesses in Nigeria was developed. The SAPP-STEER-SCR e-business strategy framework proposes an iterative approach to strategy development, a set of logically linked stages for the implementation, and continuous improvement for companies to stay ahead of the competition.

Prior to the development of the SAPP-STEER-SCR framework, most e-business frameworks focused on one phase of adoption either pre-adoption or adoption. The SAPP-STEER-SCR framework encompasses the various phases of e-business adoption -pre adoption, adoption and post-adoption, thus providing a holistic approach to ensure that the adoption can be easy.

Also, other e-business frameworks have been designed in developed countries and applied to emerging or developing countries, without clear indication or consideration of the local context. This framework has been developed using data collected from a rigorous study of SBEs in Nigeria, and as such, takes into consideration the relevant local contexts. To the best of the knowledge of the researcher, this is the first e-business adoption framework developed to aid adoption of e-business in Nigeria and arguably, in West Africa.

The framework also provided a guideline for easy adoption and implementation. Most of the existing frameworks do not have a guideline to assist business owners to easily adopt the framework as they are either largely theoretical frameworks or developed for implementation by practitioners.

This chapter discussed the methods employed for framework validation and the results of the validation. By using a semi-structured interview approach, twelve experts in e-business and SBEs in Nigeria, made up of six SBE owners and six IT professionals (project managers and business analysts), were recruited as participants to assess and validate the framework. Their perceptions, feedback on the framework and suggestions for improvement were presented. In the next chapter, the conclusion of the research is presented while contribution to knowledge, limitations of the study and future work are discussed.

DEVELOPMENT

Specify Goals & Objectives	Analyse Current Situation	Prioritize Action Areas	Plan strategy Implementation

People
- Get Management Buy-in
- Identify Resource Constraints
- Ensure Knowledge of Processes

- Audit Staff IT Knowledge
- Assessing Internal IT Staff Skills

- Identify Resource Constraints

- Secure Management Buy-in
- Acquire IT Skills
- Create an e-business Project Team
- Select an e-business Champion

Process
- Identify Core Processes
- Identify Underperforming Processes
- Identify Process Constraints
- Review Business Goals & Set Objectives

- Process Review
- Process Documentation

- Shortlist and Prioritise Processes
- Review Mature Processes

- Shortlisted Process Selection
- Document Revised Processes
- Define Success Metrics
- Create Project Roadmap
- Legislation Review

Technology
- Identify Proposed Technology
- Review Competitors Technology
- Identify e-business Availability Constraints
- Estimate Technology Cost

- Review Existing Technology
- Review e-business Availability Constraints

- Shortlist e-business Systems
- Shortlist Proposed Hardware
- Assess Technology Cost

- Select Proposed e-business System
- Select Proposed Hardware
- Select Internet Provider
- Plan for Power Backup
- Develop Proposed Technology Deployment Timeline
- Formulate existing data migration plan

IMPLEMENTATION

Startup	Trial	Expand	Embed	Review

People
- Select e-business Champion
- Inform Users Early
- Train Staff
- Inform Stakeholder about Process Change

- Obtain User Feedback
- Provide Technical Support

- Upskill Technical & IT Staff
- Obtain User Feedback
- Train Staff
- Manage Resistance to Change
- Obtain Management Buy-in

- Upskill Technical & IT Staff
- Train Staff
- Obtain User Feedback

- Obtain User Feedback

Process
- Process Review and Re-Engineering
- E-business Project Tacking

- Re-Engineer and Review Process

- Document Processes
- Identify Process Requiring Automation
- Review and Prioritize processes

- Standardise Processes
- Document Processes and Process Integration
- Dataflow Diagrams

- Review & Improve Processes
- Update Process Documentation

Technology
- Select e-business Systems License
- Deploy Relevant Hardware
- Deployment of e-business System
- Deployment of Internet Connection
- Deploy Power Backup

- Migrate Data
- Reconfigure and Setup Systems

- Deploy Prerequisite Hardware
- Reconfigure and Setup System
- Migrate Data
- Deploy New e-business System

- Assess Technology Compatibility
- Migrate Data
- Deploy New Hardware
- Deploy New e-Business Systems
- Integrate Systems

- Review System Performance
- Assess System Improvement Options

REVIEW

Status Assessment	Cost Benefit Analysis	Review Goals and Objectives

People
- Acquire Staff Feedback
- Conduct e-business Project Team Review

Process
- Identify Processes Requiring Adjustments
- Assess impact on Processes

- Identify & Quantify Benefits
- Analyse Cost Benefit

- Success Metrics Review
- Business Goals Review
- Review and Adjust e-business Goals
- e-business Project Tracking

Technology
- Assess Technology Suitability and Manageability
- Assess Systems Performance

- Review Spend on IT Infrastructure

- e-business Value Analysis

Figure 67 SAPP-STEER-SCR e-business Framework Alternative Layout

Chapter Eight

Conclusion

Chapter Eight Conclusion

8.1   Introduction

This chapter presents the conclusion of the thesis. First, the chapter evaluates how each of the research objectives (set out in chapter one) has been addressed and summarises the core findings that address each of the objectives. For the first objective, the extent of e-business adoption in Nigerian SBEs is explained, using results from the analysis of the survey and multiple case studies. Using results from the thematic analysis and the multi-case analysis, critical influencing factors which affect adoption are presented to address research objective two. Then, the SAPP-STEER-SCR e-business strategy framework, which addresses research objective three, is discussed along with some of the validation assessments.

Next, the chapter presents the contribution this research makes to existing knowledge and literature. Specifically, the contribution of this research to knowledge in e-business strategy development and implementation in a developing countries context is discussed. Prior to this research, there has been a dearth of literature on e-business strategy development for SBEs or SMEs in Nigeria; this research addresses that gap and provides a set of guidelines and an operational framework that these businesses can use to develop and implement an e-business strategy. The research implications for academia and Nigeria are discussed, and the limitations of the study are also presented.

The chapter also discusses future research that could be conducted in this area. The researcher suggests conducting more studies in other developing countries to validate the framework further, the exploration of critical influencing factors in other developing countries like Ghana and Gambia, and the use of the strategic development and implementation framework in medium-sized enterprises. Lastly, the chapter concludes with a summary.

8.2   Research Objective One

Investigate the extent to which Nigerian SBEs are adopting e-business systems and processes.

Nigerian SBEs are utilising e-business in several of their business processes, which range from front-facing client systems like websites, to complex systems for internal

operations such as biometric systems and web portals. This research objective was evaluated using two different approaches, a survey, and a detailed case study analysis.

Firstly, from the survey of 47 SBEs in Lagos, 95.7% of the SBEs made use of some form of IT or e-business system in their organisation. This result accords with findings from Erumi-Esin and Heeks (2015), which also made use of a survey instrument to evaluate e-business adoption among women-owned SMEs in Port Harcourt. This research found that 80.9% of SBEs in Lagos had a website and, in most cases, the website was used for advertising their products and services. As opposed to the suggestion by Raymond and Bergeron (2008) that age of the company is an essential factor in the adoption of e-business, the findings suggest that the age of the company did not affect the adoption of e-business in these SBEs. Of the 47 companies surveyed, all the companies that were less than three years old had a website and made use of e-business.

Secondly, through a case study strategy, data was collected from six SBEs in Lagos using interviews and questionnaires. Analysis of the data collected indicated that Nigerian SBEs deploy e-business when there is a business justification to do so. Specifically, this finding agrees with Afolayan *et al.*, (2015) who suggest that small businesses in developing countries often deploy IT systems based on core needs as a result of their limited resources. However, in the cases studied, e-business was adopted for a wide variety of business processes, including Sales & Marketing, Finance Management, Customer Services, and Procurement & Logistics.

Thirdly, the study suggests that the uptake of digital technologies has had an influence on e-business adoption by SBEs. The prevalence of social media today, as well as the reduced cost of adoption made possible by cloud-based applications, have all had an impact on how e-business is adopted in Nigerian SBEs. In general, Nigerian SBEs are adopting e-business for a wide range of activities, and this is expected to increase as technology advancements continue, and access to the internet improves.

8.3   Research Objective Two

Identify the key issues impacting upon the adoption of e-business technology and processes in Nigerian SBEs.

Eight critical influencing factors impact upon the adoption of e-business technologies and processes in Nigerian SBEs. Using an inductive approach with a case study research strategy, six SBEs in Lagos, Nigeria, were selected, and data was gathered through a questionnaire and semi-structured interviews of the owners of the firms and from key personnel such as IT managers.

The conceptual framework, together with frameworks such as CPIT (Department of Trade and Industry, 2003), and the TOE Framework (Baker, 2012) were used to identify and critically analyse the various influencing factors that came into play in each case study. The in-depth analysis of each case study allowed for the identification of recurring factors that influenced or were influencing adoption in the SBEs. Factors such as owner perspective, internet connection speed, reliable power, ICT skills and cost of adoption, were recurring factors in all the case studies.

A multi-case analysis was also conducted using a combination of thematic analysis and framework analysis, and at the end of this process, eight critical influencing factors that affect the adoption of e-business technologies and processes in Nigerian SBEs were identified. Although some of these factors had been seen in existing IT literature in developed countries, the research confirmed that those factors influenced the adoption of e-business in a developing country such as Nigeria. As such, this research-validated some of those studies.

However, in addition to the general factors influencing e-business adoption, other factors were identified. Particularly, internet connection speed and reliable power were identified as influencing factors that are essential to the adoption or deployment of e-business in Nigeria. In most of the cases studied, these two factors needed to be resolved adequately before adoption, and increased deployment, could proceed.

8.4   Research Objective Three

Develop a framework that can be applied to aid Nigerian SBEs in the development and implementation of an e-business strategy.

By analysing the findings from the case study research, existing maturity models and e-business frameworks, the SAPP-STEER-SCR e-business strategy framework was developed to help SBEs in Nigeria with e-business strategy implementation. The framework sets out activities that must be taken in each phase of adoption to ensure a holistic strategy is implemented, and the organisation can derive value.

An e-business strategy should include strategy development, strategy implementation and strategy review. Each phase of the framework has several stages, and in each stage, a clear plan of action is required for e-business to be successfully implemented. A detailed explanation of each of the stages of the framework and the associated activities was presented in chapter seven.

Simply designing a framework would not ultimately fulfil the objective as the framework needed to be validated. Using semi-structured interviews, twelve participants with experience in IT and SBEs made up of six IT professionals (business analysts or project managers), and owners of the six case study companies (principal partner in the case of OMO Legal) were recruited to evaluate the framework.

The evaluation focused on four key areas - the user-friendliness and ease of understanding of the framework, its appropriateness for Nigerian SBEs, strengths and weaknesses of the framework and suggestions for improvement. Overall, the framework was well received; most of the participants believed that the framework was easy to understand and appropriate for Nigerian SBEs while some of the suggestions for improvement were discussed in chapter seven.

8.5   Contribution to Knowledge

This project contributes to knowledge in several ways. Firstly, this research makes an empirical contribution to knowledge by exploring e-business adoption in SBEs in Nigeria using the case study approach. Although there have been studies which

explore e-commerce and e-business in Nigeria, these studies have focused predominantly on SMEs. In contrast, the SBEs have not been studied in-depth as far as e-business is concerned until now, and insights gained from this research about patterns of adoption, technologies utilised, and strategies used by these types of business are empirically relevant.

Secondly, previous studies have explored e-business adoption in developing countries in pre-adoption, adoption or post-adoption stages in isolation. This research explores e-business adoption in six businesses in all of these stages, thus allowing for the research to explain e-business adoption in SBEs from a multi-faceted viewpoint and not limited to one perspective. By exploring the three stages of adoption in one study, eight factors, which affect the adoption of e-business, have been identified. These findings add to previous knowledge by validating some already identified factors in the existing literature as relevant to SBEs in Nigeria; and by identifying some new factors that apply to Nigerian SBEs.

Thirdly, from the multi-case analysis, this research was able to identify that product-focused SBEs adopted e-business systems for Sales & Marketing first; then progressed to other business areas; while service-based business often first adopt e-business systems for their internal facing processes, before exploring other business processes. This finding provides a basis through which other SBEs could be guided to adopt e-business by first identifying the type of organisation they are. Prior to this, extant literature suggests that SMEs first adopt e-business for client-facing activities; this finding challenges that notion and suggests a more categorised form for determining what to adopt based on the type of company.

Over the years, various e-business adoption frameworks have been developed (Martin and Matlay, 2001; Daniel, Wilson and Myers, 2002; Prananto, McKay and Marshall, 2003; Putra and Hasibuan, 2015), and these frameworks have often been applied to developing countries without changes. As part of this research, a major theoretical contribution that has been achieved is the development and validation of the SAPP-STEER-SCR e-business strategy framework that is designed to help Nigerian SBEs develop and implement e-business strategies. Prior to this research, no e-business framework existed to help Nigerian SBEs in the implementation of e-business strategy developed in the context of Nigeria.

In addition to the framework designed for e-business strategy development and implementation, this research provides guidance for business owners and policymakers and other researchers to develop an e-business strategy. Specifically, the combination of the framework and the guidelines provides a basis for e-business policies for SBEs in Nigeria to be developed by organisations such as SMEDAN and BOI. Notably, the strategy framework could provide a basis from which an organisation such as BOI could provide loans to SBEs for the adoption of IT and e-business.

8.6   Research Implications

This research explored the use and adoption of e-business in Nigeria's small business sector in-depth, provided an explanation of the extent of e-business adoption, identified critical influencing factors that affect adoption, and developed a framework to aid the development and implementation of an e-business strategy. There are a number of implications of this research for academia as well as industry practitioners.

Firstly, the findings and developed framework provide a basis for further research in this field. Before this research, there existed a dearth of research on the extent of e-business use in the small business sector in Nigeria, and, findings from this research could help organisations such as SMEDAN, National Information Technology Development Agency (NITDA) and academic researchers further understand e-business adoption in this sector.

Secondly, the research has identified eight critical factors that affect e-business adoption and usage in the small business sector at the various stages of pre-adoption, adoption and post-adoption. These factors will help small business owners identify what to consider at the different stages of adoption and the implication of these factors for their specific business. Also, the identification of these eight factors through in-depth case study research will mean that policymakers from Nigerian government agencies such as NITDA, SMEDAN and BOI could evaluate and develop policies to address some or all of the factors that inhibit adoption. While factors that affect e-commerce adoption have been studied previously (Faloye,

2014), this research not only validates some of these factors, but also identifies new ones, focusing on the small business sector. The identification of these factors provides a basis for other researchers to explore in other Nigerian states or other developing countries with similar characteristics.

Thirdly, the SAPP-STEER-SCR e-business strategy framework has been developed to aid strategy development and implementation. This twelve-stage framework can be used by small businesses to define their e-business strategy and be used as a tool/guideline to aid strategy implementation and review. This framework could also be used by government agencies such as Lagos Innovate to create awareness and encourage adoption of e-business in the small business sector. Also, the framework could form the basis for other researchers in other developing countries to formulate development and implementation frameworks.

8.7   Limitations

Although this research makes a significant contribution to knowledge and addresses all of the research objectives set out at the beginning of the research, there exist some limitations. Firstly, in order to understand the extent of e-business adoption in Nigerian SBEs, the researcher made use of a survey questionnaire to gather data and help with the selection of case study companies; while some of the results from the survey agree with existing studies on the effect of age and turnover on adoption (Lai *et al.*, 2006), the survey was short, contained limited questions, and the survey sample was limited to Lagos; thus the possible impact of other variables on adoption was not explored through the survey.

Secondly, critics of the case study approach have indicated that one of the limitations of case study research is generalisability (Saunders, Lewis and Thornhill, 2015), and often argue that the mere fact that a few cases indicate certain variables does not mean that the whole population being studied is the same. While this research adopts the suggestion of Yin (2011), and makes use of multiple case studies and triangulation of data as approaches to mitigate against this limitation, it is still regarded a limitation brought upon the research by the method of enquiry selected. Thus, while the findings represent SBEs in Nigeria, and SBEs in other

developing countries similar to Nigeria will arguably yield similar results, the findings cannot be generalised to other developing world contexts, without further research. Generalisation to other developing countries will involve conducting validation studies in those countries, testing and (if appropriate) amending the framework.

Thirdly, qualitative research is often suggested to be subjective (Blaikie, 2007), leading to multiple researchers interpreting data differently. In this research, the data was collected and analysed by the researcher only, and this means that while a rigorous process was followed to reduce subjectivity and ensure that the research was inductive in nature, another researcher might be able to interpret the data collected in different ways.

8.8   Future work

The findings of this research present opportunities for future work and generalisation to a wider audience. This could be a single study in another developing country or perhaps a study that offers cross-sectional data by making use of SBEs in several developing countries. By conducting such research, the impact of factors identified as part of this research on adoption will be explored in a wider context.

E-business strategy development and implementation is rarely researched in developing countries. The SAPP-STEER-SCR e-business strategy framework provides a basis from which e-business strategy development and implementation in other developing countries similar to Nigeria, such as Ghana and Gambia, could be explored. Also, while the research focused specifically on SBEs, there is an opportunity to extend the SAPP-STEER-SCR e-business strategy framework to cater for medium-sized enterprises as well.

8.9   Summary

Throughout this thesis, e-business adoption in Nigerian SBEs has been studied in-depth, and this chapter presented the concluding remarks. The objectives set out at the beginning of the research were evaluated, and for each objective, the relevant findings were discussed. The factors which impact on e-business adoption were

considered, and the SAPP-STEER-SCR framework for e-business strategy development and implementation, which addresses research objective three, was discussed.

The chapter also presented the contributions that this research makes to knowledge. The research contributes to the understanding of e-business adoption in Nigerian SBEs, which has often not been explored in great depth. Critical influencing factors impacting on adoption such as power availability, internet connection and availability, and owner's perspectives, have been identified and provide a set of items to be considered when an organisation is considering e-business deployment.

The notion of e-business adoption is often studied in isolation, and frequently not encompassing pre-adoption and post-adoption. This research explored all the stages of adoption, while providing a strategy development and implementation framework to support Nigerian SBEs in their e-business deployment.

The implications of this research in the wider context beyond academia, were also discussed. As it is already known that small businesses contribute immensely to the GDP of Nigeria, the findings detailed in this thesis provide an initial basis for government policies around e-business adoption in Nigerian SBEs to be drawn up in similar fashion to policies in the UK (Department of Trade and Industry, 2003) and Canada (Jutla, Bodorik and Dhaliwal, 2002) on e-business adoption. The limitations of the study and possible further research directions, including evaluating the framework in a different country, were also explored in the chapter.

Appendix I   Participant Information Sheet

1. Research Project Title

The adoption of e-business technologies and processes in Nigerian SBE's

2. About the Research

You have been invited to take part in this research which seeks to gather information on the level of e-business adoption and information and communications technology (ICT) usage in Small Business Enterprises (SBEs) in Nigeria.

Globally, there has been an increase in the use of e-business and internet technologies for personal and business use. The adoption of such technologies in Nigerian businesses has been sparingly researched. This research seeks to investigate the use of these systems in SBEs in Nigeria.

The information gained from this questionnaire will help the researcher answer research questions that are part of his doctoral thesis at the University of Gloucestershire, UK.

3. Research Aim

This research aims to investigate the adoption of e-business technologies and processes in Nigerian SBE's as well as identify key issues impacting the adoption of e-business in Nigerian SBE's.

4. Participant Selection

You have been chosen to take part in this study because you own a Nigerian business but participating in this research is entirely voluntary. If you choose to participate, you will be required to sign a consent form.

5. Time Required

The questionnaire will take approximately 45 minutes to complete.

6. Data Security and Anonymisation

All data gathered as part of this research will be stored safely using the Universities' One Drive and my personal computer, which is encrypted. Upon analysis, all references to the organisation and individuals will be anonymised; the real names of individuals will not be used, neither in the thesis nor in any related work.

7. Use of Results

The results from this questionnaire will form part of my doctoral thesis at the University of Gloucestershire, UK. Also, the results of this study may be publicly published in conference and peer-reviewed journals.

8. Participation Risk

There are no risks associated with taking part in this study,

9. Contact Information

If you have any queries or questions regarding this questionnaire, please do not hesitate to contact:

Olakunle Olayinka, University of Gloucestershire, UK

Email:

Mobile:

Appendix II   Research Consent Form

Please complete this form to provide consent to take part in the research

Research project title - The adoption of e-business technologies and processes in Nigerian SBE's

☐   The research project information sheet has been provided to me.

☐   I have read and understood the research project information sheet.

☐   I have asked questions about the research project (or been given an opportunity to).

☐   I am taking part in this research voluntarily and have not been forced by my employer or the researcher to take part in this study.

☐   I understand taking part in this study could mean my responses could be quoted in the researcher's thesis or related work.

☐   I agree to take part in the project and understand that taking part in the project will include completing the attached questionnaire.

☐   I understand that I can withdraw from the study at any time; before the data is analysed without reason.

Organisation Name:

Participant Name and Signature:

Position in Organisation:

Date:

Researcher's Details

Olakunle Olayinka, University of Gloucestershire, UK

Email:

Mobile:

Cover Letter

Dear Sir/Ma

SURVEY ON E-BUSINESS ADOPTION IN NIGERIA

I am Olakunle Olayinka, a PhD student at the University of Gloucestershire in the United Kingdom. I would like to invite you to take part in my research which seeks to explore the use and adoption of e-business in Small Business Enterprises in Nigeria.

I have designed this survey questionnaire for small business owners in Nigeria like yourself. The questionnaire is short, contains only seven questions and could be completed in five minutes.

I will be glad if you agree to participate in this study.

Regards
Olakunle Olayinka (PhD Student)
School of Business and Technology
University of Gloucestershire
The Park
Cheltenham GL50 2RH.

Email:
Mobile:

E-business adoption in Nigerian SBEs

This questionnaire seeks to gather information on the adoption of e-business adoption and information and communications technology (ICT) in Small Business Enterprises (SBEs) in Nigeria.

---

1. When was the company established?

☐ Less than 3 years ☐ Less than 5 years ☐ Less than 10 years

2. How many Staff do you have?

☐ 1-10 ☐ Less than 50 ☐ Less than 250

3. Provide information about company current turn over

☐ 0- 500K ☐ 501K - 1M ☐ 1M - 5M

Other specify: _____

4. Does your company make use of information technology and e-business to support core business activities?

☐ Yes ☐ No

Comment:

_____

5. Does the company have a website, and what is it used for in general terms?

☐ Yes ☐ No

Comment:

_____

6. What industry sector do your business operate in?

☐   Financial   ☐   Fashion   ☐ Legal   ☐ Property   ☐ Education & Training

Other, please specify:

_____

7. Will you be willing to be contacted for further study? Please provide contact details

☐   Yes   ☐   No

Comment:

_____

Appendix IV   E-business Adoption in Nigerian SBEs Questionnaire

Cover letter

Dear Sir/Ma

E-BUSINESS ADOPTION QUESTIONNAIRE

As part of my PhD research at the University of Gloucestershire in the United Kingdom, I am conducting a study on the use and adoption of e-business in Small Business Enterprises in Nigeria.

Having indicated for your organisation to be part of a further study on the above research topic, you have been invited to complete the attached questionnaire which seeks to understand how IT and e-business is used in your organisation. The questionnaire has been targeted at owners, managers and IT managers of a few small businesses.

The results of the study will be anonymised and attached with this letter are - a participant information sheet providing more information about the study, a consent form and a copy of the questionnaire.

The questionnaire should take no longer than 45 minutes to complete, and I would be glad if the questionnaire can be returned within three weeks.

Please do not hesitate to get in touch with me should you have any questions about the study.

Thanks for your cooperation.

Regards
Olakunle Olayinka (PhD Student)
School of Business and Technology
University of Gloucestershire
The Park
Cheltenham GL50 2RH.

Section 1: General Information about the company

1. Could you briefly state the company's core business?

2. How many people does the company currently employ?

3. Please provide some information about the company's history. When (and how) was the company founded? The motivation for starting the Business etc.

4. Is the company a family business?

5. What is the present annual turnover of the company?

6. How long have you worked in this company?

7. What are the main departments in your company? (e.g. Sales & Marketing)

8. What are the company's main business objectives?

9. Does the company's use of information technology and e-business adequately support these objectives?
   Yes [X]   No [ ]   Comment:

10. Please provide some background/history regarding the use of computers, systems, networks and websites at the company. (When were systems bought and why? How much was spent? How effective were they and how effective are they now? Who helped you choose and use different systems? When did you start using the Internet and websites? Is investment in systems increasing?)

11. How many Computer systems do you maintain in your organisation?

12. Please provide any other information you feel is relevant

Section 2: Information about e-business usage and ICT in the company

1. How do you make use of e-business and ICT in your organisation today?

2. Could you please list all of the IS systems and software packages in your company?

3. When was the last IT Investment the company made and what was it for?

4. Do you think the investment in IT and e-business systems is adequate to support the growth of the company?

5. What budget does IT have for 2016 and how much of that do you estimate is likely to be spent on IT/IS and e-business development?

6. Are there any further plans for your IT and e-business systems to be more integrated than that of current?

7. Do you think investment in information technology and e-business systems is adequate to support the growth of the company?

8. How much money has the company spent on IT and e-business development so far this year and what has it been spent on?

9. Would you say that the investment in IT and e-business so far have been worthwhile? What have been the main improvements?

10. Are there currently any instances whereby data can only be updated in one particular system or are there real-time or batch updates between all systems? Give details

11. How does the company make use of social media?

Section 3: Information about Company Processes

1. The diagram below provides a possible view of the main business processes in your company. A business process may be seen as a set of activities that cut across the functional and physical divisions of the company. Please make any comments on this top-level process map. Does it adequately represent what goes on in the company? Please add, change or delete?

2. Which of these business processes is entirely manual?

3. Please specify the information systems and or packages used for each of the business processes below

	Information System Classification			
	Specific packaged business	Any systems developed in house in a	Is the software package	Is the software package part

	software for example Xero Accounting? Please specify which software package it is.	programming language or in Microsoft Excel and Access Please specify which type of program it is.	integrated or interfaced to other systems? If so, please specify which software packages	of a central system? For example an ERP system. Please specify package.
Financial Management				
Sales and Marketing				
Customer Services				
Laundry Operations				
Payroll & HR Management				
Stock & Procurement Management				
Collection & Delivery Management				

Appendix V   Sample Questionnaire Response

Section 1: General Information about the company

1. Could you briefly state the company's core business?

    Legal Services

2. How many people does the company currently employ?

    FIFTEEN (15)

3. Please provide some information about the company's history. When (and how) was the company founded? Motivation for starting the Business etc.

    The founding principal partner (now deceased) founded the law firm in 1971, as a sole practitioner. The practice of law was still a relatively scarce profession, hence a renowned and respected calling.
    The founder was also able to convince and encourage two of his children to study law, and become a part of the establishment till date.
    The company has been able to expand to four states in Nigeria with a growing clientele base.

4. Is the company a family business?

    It is predominantly family-owned, with the inclusion of paid and fee earning Associates

5. What is the present annual turnover of the company?

    £80,000

6. How long have you worked in this company?

    Nine (9) years

7. What are the main departments in your company? (e.g. Sales & Marketing)

    Litigation, Intellectual Property, Client Support

8. What are the company's main business objectives?

    Our goal is to provide efficient and qualitative service purely beneficial to the needs of our clients. We appreciate that our clients must operate within increasingly competitive and complex markets; hence we are well positioned to provide efficient and timely services.

9. Does the company's use of information technology and e-business adequately support these objectives?

    Yes [X]   No [ ]   Comment:

Various computer hardware and software's, website, emails, including internet connectivity

10. Please provide some background/history regarding the use of computers, systems, networks and websites at the company. (When were systems bought and why? How much was spent? How effective were they and how effective are they now? Who helped you choose and use different systems? When did you start using the Internet and websites? Is investment in systems increasing?)

The first sets of computers were purchased in the late 90s when the Principal partner realised the need to upgrade the firm as a result of the advancement in technology in the legal profession, and client retention. There was also the need to keep a tab on, and make reference to law precedence (Judicial decisions, law reports, periodicals, Statutues, etc). The introduction of these computers have become a very useful part of the firm's growth and functioning. The choice of computers was made after recommendation by a local computer salesman. New systems were later bought as upgrades to the now old ones, and they were recommended and supplied by agents of one of the major manufacturers.

11. How many Computer systems do you maintain in your organisation?
Ten

12. Please provide any other information you feel is relevant.

Section 2: Information about e-business usage and ICT in the company

12. How do you make use of e-business and ICT in your organisation today?
Emails, VOIP, Payments, Clients database (case management), File sharing.

13. Could you please list all of the IS systems and software packages in your company?

Skype, Case management system, DropBox, website and email, Sage

14. When was the last IT Investment the company made and what was it for?

2017- Internet broadband and networking in all the branches.

15. Do you think the investment in IT and e-business systems is adequate to support the growth of the company?

Investing in the IT of the law firm has helped in so many aspects. Like communications, research, and customer retention.

16. What budget does IT have for 2016 and how much of that do you estimate is likely to be spent on IT/IS and e-business development?

N/A

17. Are there any further plans for your IT and e-business systems to be more integrated than that of current?

Upgrades to having dedicated servers for a more streamlined integration.

18. Do you think investment in information technology and e-business systems is adequate to support the growth of the company?

Yes

19. How much money has the company spent on IT and e-business development so far this year and what has it been spent on?

N/A

20. Would you say that the investment in IT and e-business so far have been worthwhile? What have been the main improvements?

Yes it has been worthwhile. The main improvement has been the ease at which relevant judicial information can be accessed over the internet, Customer data management and the ease of book purchases.

21. Are there currently any instances whereby data can only be updated in one particular system or are there real-time or batch updates between all systems? Give details

Since the completion of the networking of the IT across the offices, it has become easy to do a single update to be immediately updates the rest.

22. How does the company make use of social media?
No emphasis yet at the moment

Section 3: Information about Company Processes

4. The diagram below provides a possible view of the main business processes in your company. A business process may be seen as a set of activities that cut across the functional and physical divisions of the company. Please make any comments on this top-level process map. Does it adequately represent what goes on in the company? Please add, change or delete?

5. Which of these business processes is entirely manual?

Business Development, Admin & HR Management

6. Please specify the information systems and or packages used for each of the business processes below

	Information System Classification			
	Specific packaged business software for example Xero Accounting? Please specify which software package it is.	Any systems developed in house in a programming language or in Microsoft Excel and Access Please specify which type of program it is.	Is the software package integrated or interfaced to other systems? If so, please specify which software packages	Is the software package part of a central system? For example an ERP system. Please specify package.
Financial Management	Sage Accounting	We use Microsoft Excel for several finance-related tasks	No	No
Business Development	Website and Email	Website was outsourced	No	No
Customer & Case Management	Case Management System	Microsoft Access	Email?	Yes
Research & Paralegal	-	We use Microsoft Excel	No	No
Admin & HR Management	-	We use Microsoft Excel	No	No

Cover letter

Dear Sir/Ma

E-BUSINESS ADOPTION IN SBEs INTERVIEW

Following the successful completion and return of the questionnaire by all participants from your firm, you are invited to take part in an interview which seeks to gain more insight on the use and adoption of e-business within your organisation.

This interview forms part of the data collection approaches for my PhD research at the University of Gloucestershire in the United Kingdom, which explores the use and adoption of e-business in Small Business Enterprises in Nigeria.

The interview is expected to take no longer than 50 minutes to complete, and I would be glad if you could confirm the most suitable dates to conduct this interview in July when I would be visiting Nigeria.

Thanks for your consideration and willingness to take part in the study.

Regards

Olakunle Olayinka (PhD Student)

School of Business and Technology

University of Gloucestershire

The Park

Cheltenham GL50 2RH.

Email:

Mobile:

Section 1: Information about e-business adoption motivation

1. What motivated adoption of e-business within the organisation?
2. Was the management team/proprietor largely involved during the initial stages of e-business adoption?

   Yes [X]   No [ ]   Comment:
3. Comment on the management/proprietor's involvement in IT and e-business usage as of today
4. In what way did perceived value and benefit of e-business affect adoption?
5. Please comment on the business owner's IT knowledge and skill
6. Across the industry, are competitors using similar IT and e-business systems?
7. What are some of the customer facing e-business systems your company has? For example, Website, E-commerce site
8. Are customers actively engaged using the e-business systems?

Section 2: Information about e-business challenges

1. List the challenges faced at the initial implementation of e-business in your organisation.
2. List the challenges that were faced by the organisation after initial IT and e-business implementation
3. How did you overcome these challenges?
4. What role did the owner/management of the company play in overcoming these challenges?
5. Currently, what challenges do you face while using IT or e-business in your organisation?
6. Prior to the adoption of e-business, what was the level of IT skills and knowledge of staff in the organisation?
7. Did the company take any measures to improve the level of IT skills of staff?
8. What role did cost play in deterring or helping to decide what systems to purchase?

9. Prior to the adoption of e-business, did the company have clearly defined processes for most of its business process?

Section 3: Information about e-business Implementation

1. What was the motivation behind e-business implementation?
2. Who was responsible for leading the e-business implementation from within the organisation?
3. Were there any push backs to change from within the organisation?
4. Was the implementation of e-business in your organisations phased?
5. Were the staffs trained to become familiar with IT systems?
6. Did the e-business implementation process require the hiring of IT staff?
7. Did you have any customisation on the system, if yes when was this done and were code changes required? Did you have bespoke requirements that the software provider had to prepare specially?
8. Was there a clear strategy on how e-business would transcend to help the organisation achieve its goals?
9. What role did the cost of internet, computer systems or other general costs play in the choices made during e-business implementation?
10. Provide information about current supply of IT in the company

Section 4: Information about future e-business plans and improvements

1. Is there a process for identifying underperforming department or processes?
2. How are decisions around e-business implementation and improvement reached?
3. How does the company ensure that the staff are well trained for IT?
4. What are the objectives and plans for investment in information technology (IT) and information systems (IS) for the next 5 years?
5. Is there a documented IT/e-business roadmap?

6. Currently, what departments share data between each other i.e. does the e-business system allow departments to be integrated?

Appendix VI   Sample Interview Transcript

This appendix presents a sample interview transcript from one of the case study company's. The interviewer's questions are highlighted in yellow for clarity.

Speaker 1:

Okay.

So, thank you for agreeing to take part in this interview, and agreeing for the interview to be recorded. it's basically for me to be able to transcribe it and get some insight from the use of E-business

Speaker 2:

Okay.

Speaker 1:

The first question I wanted to ask is

What motivated the adoption of E-business within, the organization?

I define E-business specifically as the use of internet technologies within the organization, websites, and web applications. Essentially the use of Internet technologies in the organization.

Speaker 2:

Okay.

Well, Kunle thanks.

Thanks for the opportunity to be part of this. I think the great motivation would stem from the fact that, I've been in the IT industry for almost two decades now. So, it would only just be natural to see how the use of technology can help to improve efficiency within the business.

So well, we started, before deploying technology, we needed to understand the process from a ground perspective and then to see how technology can be used to improve efficiency and visibility. The drive again will stem from the fact that I'm very passionate about the internet and how as a network it helps to reduce the cost and complexities of deploying solutions for small and medium businesses like the laundry. So those are the motivations.

Speaker 1:

Okay.

<mark>Was there any sort of financial motivation to it as well?</mark>

<mark>I mean, or something relating to the customer value?</mark>

Speaker 2:

From the customer perspective, we tried to look at how the customer could also leverage this, but we realize that from our customer base, many of them where not necessarily driven by the need to be attended to via technology. So we tried to give read-only access just so that they know the status of their orders and how much they owe. There was not any secured login control panel for them to do anything because they were not driven by that.

Speaker 1:

Okay, Okay.

<mark>And when you mean control panel, you refer to the control panel of the web portal which you mentioned in the initial questionnaire?.</mark>

Speaker 2:

Yes. So, the control panel, we had a web application that was developed, a bespoke application developed for our operations and it essentially helped to coordinate the activities in operations, they allowed for visibility especially for executives on what's going on within the laundry. That aspect was more internal within the business.

The dashboard that was developed was used more for business activities and not necessarily for customer access. So, there was no secure access for a customer to check their status. Even though we built the functionality for it because we believe that, at some point it will become relevant to our operations as we as we grow.

Speaker 1:

Okay. , okay.

So, I'll move on to my next question.

<mark>Was the management team or proprietor largely involved during the initial stages of E-business adoption?</mark>

Speaker 2:

Yes, the management team. As I said, we started by understanding the work, understanding the ground process, meaning that we just looked at the process in its manual form, to understand where automation opportunities were possible and once we go to a point, that we knew that we were dropping the ball, you know, due to increased orders and the demand for turnaround and all. We then made the conscious decision to develop the application, to deploy an internet-driven service essentially. So it was, yes, it was conscious, it was a decision made by the management team led by the proprietor

Speaker 1:

Who, has, we know, who is you?

Speaker 2:

Sorry??

Speaker 1:

I said who is yourself ?

Speaker 2:

Yes, which is me.

Speaker 1:

I think you kind of answered my third question in a way, so you were very involved in terms of the features because you said it's a bespoke application.

So it is yourself as the proprietor that led, identified the features and the processes that were mature enough for development?

Or was it a collaboration with staff and staff providing insights into what they felt needed to be developed?

Speaker 2:

Yes, I would say it's more of a collaboration with staff because, for the successful use of the application, you needed to carry staff along. After all, they would be the users, eventual users. So it was essential, it was a natural progression of once the on-ground process was understood, then we began to map that to the application and it was essentially led by me.

I tried to, create that bridge. I tried to bridge the gap and handhold that process of transiting the staff from their manual stage to the use of the application. So it was, it was collaborative led by myself.

Speaker 1:

<mark>So, although you say it was collaborative, the strategy was still very much a top-down?</mark>

Speaker 2:

Yes, very much top-down because this staff, had to be sold into seeing the value of automation. It wasn't a hard sell though, but still, it wasn't something that was thought of from the bottom.

Speaker 1:

Okay.

<mark>So, in what way did perceived value and benefits of e-business affect the adoption?</mark>

In terms of perceived values,

<mark>Were you thinking about these are the core values and benefits that we will derive from deploying e-business in the organization.</mark>

So, for example, your, I mean, you principally talked about the fact that you automated your processes.

<mark>Is it really because of the perceived value or the value that you expected to get from automating those processes that pushed the adoption?</mark>

<mark>And in what way specifically did, this value, if it did, affect adoption?</mark>

Speaker 2:

When you say adoption, what do you mean? Adoption by who?

Speaker 1:

Adoption by the organization, adoption by the staff as well.

So, the adoption of e-business within your organization.

You said that it was pretty, pretty much a top-down approach.

<mark>So, from your perspective, did the value or perceived benefits of deploying these systems, play a role?</mark>

<mark>And in what way specifically did they play a role in you deciding to go ahead and deploy these systems?</mark>

Speaker 2:

Yes, the perceived value I would say was more from an executive perspective which was that it gave from a touch of a button you know exactly the state of business, you know where ever you were, you know, online and in real-time. So, form an executive perspective that was huge, that was a huge value that could not be done without. It just had to happen and so, it did. That was huge from a staff perspective, I would say the ability to track, the ability to track helped staff especially during, customer service when there were customer issues there was always a way for staff to quickly know the status of an order and to engage that customer accordingly.

That was also one of the main drivers of the application because we had grown and we wanted the business to work in the way that anyone that came into the organization was able to know exactly the status of any order without having to make calls to any staff. We just go into the system and know exactly what ready order was and you engage the customer appropriately. So, I think that helped because it reduced the complexity or technicality of rendering customer service.

Speaker 1:

<mark>This was premeditated before the implementation of the adoption of the system?</mark>

Speaker 2:

Yes. Because as you grew, you could see those challenges already rearing their head and you know that once you have the application those were one of the challenges that were going to be, resolved.

Speaker 1:

Okay.

So, I mean, while you were explaining, you mentioned that the application allowed you to get insights to know where you were.

<mark>Do you mean from a financial perspective or was it from a general operations perspective in terms of several items in the laundry at the time? Or was it a principally financial position?</mark>

Speaker 2:

All of the above. From an operations perspective you knew the numbers that were coming in and you could feel the pulse of the business. You know to grow, to hire more staff, hire more hands, so you

make proactive decisions based on, you know, what was happening even from a remote point of view. From an operations perspective, it helped you to provide that insight and from a financial perspective as well. You saw your revenue dip or you saw revenue grow and you know, day by day, week by week, you already had that. From an on-demand perspective, you knew the financial health of the business because there were reports and all. So, that made me always think of the next step of the business because there was that on-demand delivery of information about the financial health and operations

Speaker 1:

Okay. So, I mean you kind of mentioned this as well in, in some way. I wanted you to comment on the business owners, IT knowledge, and skill. I know that from the questionnaire, I could already gather that you have years of experience. ,

So can you provide a brief comment on your IT knowledge and general skill?

Speaker 2:

So aside from the fact that I'm a serial entrepreneur, which is not IT-related but it helps me to put all of my IT skills into perspective into that entrepreneurial perspective. So from an IT experience point of view, my knowledge, my experience being a pre-sales engineer, for many years, I worked on a lot of things, I was exposed to the procurement process, exposed to pricing, exposed to product design all within, technology and infrastructure and that has shaped and also formed the way I approach building projects, projects that have to do with the building, because I both had a lot of infrastructure experience.

So when I was doing the laundry I came up with the diagram on VISO and I identified all the machines, where they should be because my career started in that way. So, I applied that even while trying to, start the laundry. so that helps. That helped my organization on what I needed to do. My knowledge of pricing also helped in my costing, in coming up with product pricing and all of that, and then I have, experience as well in product development, within the cloud space, web space, and telco. So that's also, allowed me to deploy my skills in product pricing and my strength in project management, allows me to ensure that I don't leave issues unattended to I always ensure that issues are closed.

So to that extent I see everything as. So, in other words, there's a challenge which equals an issue which should be closed, meaning that there are resolutions. Or, the resolution is closed. It's either been solved, or, it could not be solved because of some technical or financial problems, but the issues are closed. And I think that helps. That helps me now, in the way I conduct my, my business as well. So, I think all of those experiences put together, is what I leveraged to bring to bear to the business.

Speaker 1:

Okay.

So I mean across the laundry or within the laundry industry, are your competitors using similar IT and e-business systems.

Speaker 2:

You see, the big ones. Yes. The big laundries deploy technology because they are big and their operations require it. But I would say my peers do not have the proprietors that would lead to the successful delivery of IT, simply because their proprietors are not so inclined. And for me, I think that's where SMEs, distinguish themselves in the market and the strategic deployment of IT, not many know of the cost, the cost-cutting value that technology brings to their business simply because, you know, there's those, that phobia, you know, and, the lack of the knowledge or experience, you know. , so I would say my peers do not deploy technology like the way we did.

Speaker 1:

So what are some of the customer-facing e-business systems your company currently has?

I know that you mention the web portal and it was read-only access but it was not very well used and it wasn't pushed even from within the organization because you are looking at the internal value from the system.

But in terms of the website are you taking all orders online?

I just want to get some insight into some of the customer-facing systems you have in your organization.

Speaker 2:

So we have never really interfaced with the web perspective with the customer. We do not take orders online but it was part of the roadmap for customer service, but there is not deployed yet because we found out that our customer base does not resonate with that mode of engagement yet

Speaker 1:

Okay. But from, from the questionnaire,

I gather that you use Facebook to engage with Customers?

Speaker 2:

Yes, that's from a marketing perspective, to generate awareness and we started getting more customers. We use social media as a tool to get, customers. So from a customer-facing perspective, it was used for just marketing, not operations.

Speaker 1:

Okay.

<mark>And are customers actively engaged in using any e-business systems.</mark>

Because I know that from the questionnaire, you said, you deployed the system where they get text messages when their items are ready for pickup. You use text messages to send them messages about the different offers you have.

So, I mean, how the customers generally engage with the e-business systems. I was just giving those as examples as I may not recall that you mentioned that from the questionnaire.

Speaker 2:

Okay. So in e-business I wouldn't have thought SMS falls under that but like I said from the web perspective, you know, operations and sales did not interface with the customer. From a marketing perspective. Yes. So, the use of Facebook and Twitter, from an SMS perspective we used a lot of bulk SMS for marketing as well for promos, for deals, for awareness, for announcements. We used the bulk SMS

Speaker 1:

<mark>And customer engage very well with this, I mean the messages</mark>

Speaker 2:

Yes, because the potency of SMS is still there because it is a channel that customers always respond to, so we use that a lot for our marketing. And then we also use it for operations to help to get a quick response from customers. Also as a way of getting them aware of the status of their order so that they can come to the shop to pick them up because it gets to a point when the order is too many it begins to clutter the shop. We send out the SMSs as at when due so that customers have the presence of mind to come to pick up their laundry.

Speaker 1:

Okay. So we just completed the first section.

The next section is to find out the challenges that, I mean you had while using E-business. So I just wanted to know when you were initially implementing the e-business systems in the organization,

<mark>What were some of the challenges that you faced?</mark>

Speaker 2:

Yes. Like, any other challenge with technology, there would always be, well in Nigeria, the challenge of power supply. So, in dealing with that. We got an inverter, which is a UPS that lasts longer, much longer. So, we got the inverter for the computer systems, and then because this is a small operation we also needed to deal with the small form factor in devices. So like a printer, our receipt printer was a small thermal printer, which was really nice, small, and very cost-effective and it did its job and then we got tablets because of again, power it was easier to manage the use tablet and to be mobile around the shop.

Well, so we got tablets, it just takes up little or no space within the shop instead of getting a whole desktop and so that was from the systems part of things, from the people perspective we needed to deal with the knowledge bearer the knowledge gap to train and to refresh review the work to ensure that they understood how to use the applications, there were issues of the system. So, we had to, you know, get help, we had to contract our system support so that systems wouldn't fail, and there was Internet access, they shop had, everybody had it but because of the way the system was constructed, there was a lot of metals and I think it reflected all of the wireless signals.

So, you know, we used to struggle with the internet access we had to get different types. We have to get internet access with different providers than we were able to get the sweet spot and resolved that. So, form a people perspective, it was hard to get people, and we had to train them, you know, so that they could use the application,

So the process was existing, so that wasn't, too much of an issue. We already understood the process and it was just its implementation.

Speaker 1:

Okay.

So these were challenges you had in the initial, implementation.

<mark>So, were there challenges that you had slightly, later on, that was different from these challenges</mark>

Speaker 2:

From what perspective? From the deployment perspective?

Speaker 1:

Yes. From the technology as well as from a people's perspective.

<mark>So, were there other challenges that you had after the initial implementation?</mark>

So after, when you implemented it, you had issues with power, you had to train.

But after sort of tackling those challenges were there other, challenges that came up.

Speaker 2:

Well, nothing specific to the deployment or specific to the transition because the transition was done and we were able to transition after the teething problems, which calls for every change, once that was accomplished then the issues that we felt, were business as usual issues. We have long periods of no power supply, breakdown of the system, or the other, but we had support, we had support contracts with vendors that were able to help mitigate long periods of downtime from those incidents.

Speaker 1:

Okay. So, I mean, I think the next question.

<mark>What role did you play in overcoming these challenges?</mark>

I know that obviously from a business perspective, you lived the business, you have made several decisions.

<mark>Generally if you had to just summarize what role did you play?</mark>

So in terms of the training,

<mark>What role did you play, in terms of getting back up power?</mark>

I know that obviously would have cost some money.

<mark>Did you make the decisions? Were they easy to make?</mark>

<mark>Did you have somebody else advice on the decisions?</mark>

Speaker 2:

Yes.

So in the establishment of IT within the business that was my soul remit and I essentially took on all of those roles, roles of the trainer, the role of deploying power backup, the role of deploying the resources, the devices, and the Internet access. It was all funded organically or internally.

Speaker 1:

Okay.

Speaker 2:

They were funded internally, we did not reach outs, for any loans.

Speaker 1:

Wow. Okay. So Yes. Okay.

Speaker 1:

Okay.

Speaker 1:

Yes, I was going to ask.

You might have answered this question and it might not necessarily relate to you.

So I know that we've talked about challenges that you had initially when you said that after implementation, the other challenges you had were typical business as usual challenges,

But currently, are there any sort of challenges that you face concerning the IT and E-business systems you have in the organization?

Speaker 2:

Yes.

Are there any infrastructural problems we faced? Is that the question?

Speaker 1:

Well, so the question, it can be systematic. I mean from the system you implemented.

I mean, <mark>does it work?</mark>

When you deploy systems it might be that while the company is gradually growing and some of the systems might need to be adjusted,

<mark>Do you have challenges like that currently or is everything just working as, as normal and you're just facing the business as usual challenges</mark>

Speaker 2:

Well, so I think we have gotten to the point where everything is working as normal. And like I said, if there are any issues it would be business as usual as issues. Not issues, that's are unexpected, from an application perspective or system perspective, the deployment and operationalization of the IT system have become business, as usual, whereby focusing on core issues such as customer service and quality of laundry and core laundry machinery has become the focus because the flow of your information from a system perspective is already in place. And we are focused on core laundry problems.

Speaker 1:

Okay.

So, before the adoption of the e-business systems within your organization what was the level, because you said you had to do training?

<mark>So what was the level of IT skills and knowledge of the staff in your organization concerning IT before you deployed the system? Before you had to train.</mark>

Speaker 2:

The knowledge of IT was basic in the sense that staff at least were operating their social media accounts, so they were operating it. They have access to the Internet from their phones and they can use their phones and all. So to that extent, you know, they had a basic understanding of how to operate, the internet, which is what was required. You know, basic knowledge of browsing and basic knowledge of, you know, how to use your computer. Okay. That was what was required. And then every other thing, because the application was built in such a way that they didn't need to know much, just data entry. So, the use of the application, it's, created the opportunity for them to learn more about the system. They understood. when certain errors came up, they knew what to do. And, that's because they had learned more.

Speaker 1:

Okay. Excellent.

==So I want to know what role did cost play in determining or helping to decide what systems to purchase?== So, in your case, the web portal for example, was a bespoke system.

==So, what role the costs play in you decide to go for a bespoke system? Or the need to decide in the systems I mean the system to implement==

Speaker 2:

When you say what role did cost play, I'm not clear because if you decide that your business needs something critically you just have to go ahead and get you because you have decided that's what will help to grow the business. So, when you say, what role did cost play, the cost is always is central.

Speaker 1:

With procurement for example, some organizations would compare a lot of systems, and then in comparing the number of systems that will then help.

And, in terms of the budget or what they can afford that would then help them to decide, well we can pay for this particular system or, perhaps we want to use an open-source system or things like that.

So, I think it's all around while in picking up a bespoke application for example.

==How did cost affect your choice of the provider to build the system?==

==How did costing, the financing affect what features you were able to develop?==

I mean, what I can gather from the questionnaire as well was that you did a stage-based deployment implementation.

==So, what role did cost play within all of those?==

I don't know if the question is a lot clearer now.

Speaker 2:

I think, I have an idea. So, as a small business you go for the best minimum, vis-a-vee it's application or vis-a-vee the solution that is to meet. So, the business never had to deploy more than was necessary I mean from a technology perspective we were a small business, if it wasn't free the cost

needed to be small. The cost that we faced were cost that any small business would face if they were looking to the best minimum technology for the solution they want to deploy, so things like open-source were very much in consideration, if it was free then we would deploy it if we had to pay, cost played a significant role, in the IT decision making, in the choice of IT that we used because for every time we decide to deploy a device or app, we looked at it purely in the context of the challenge and there wasn't room for buffer. It was just purely to resolve the issue and the business was always reactive to growth. The business never really put capacity, but it put enough, the business was also monitoring the health of infrastructure and system used in such a way that it would manually improve or deploy more capacity but it never deployed more capacity than it needed because of growth because it wasn't just that funded.

Speaker 1:

Okay. , so this brings me to the last question. I mean, in terms of challenges, you have answered this already in some way.

So did the company have clearly defined processes for most of its business process?

I know that early on during this interview you mentioned that your processes were mature and because of your background in IT.

You have done a lot of processes in VISO, so I don't know if you had them in something to add too to what you already said. In terms of our clearly defined, business processes

Speaker 2:

As I said when we started, we documented our processes before day 1, before lunch. We documented our processes for reference purposes and of course and for engagement with customers as well. And so when they came to the shops, they saw the processes, the procedures, and policies, all of this as it were, so we had a company manual as it were that reflected, you know, business processes, policies and procedures and those where iterated on, you know, obviously a living document. So, we went through stages of changes, which of course led to the birth of application development. You know, which further improved the efficiency within the business. So Yes, we, okay. Yes.

Speaker 1:

Okay. So, we just finished the second section, and the third section, I'm looking at, questions with regards to e-business implementation. And we've kind of talked briefly about them in the very first

section, but there are a few things, I think I will be asking more to get to some more insights so you've probably said that,

You lead most of the e-business initiative within the organization, but, from a change perspective,

<mark>Were there any push backs from within the organization?</mark>

Speaker 2:

Oh well, Yes, the push back not pushback. But more of what usually comes with change that, initial disgruntlement due to knowledge gap. But I think we were lucky at this. I think we're lucky to have excited people, I think there was excitement to transition into the use of technology. I think the staff was elated by the fact that they were able to use technology to improve the way they attended to customers and the way they do their work, so it was something that was more clamoured for that than not. So yes, I think we have, we had that luck Yes.

Speaker 1:

Right. So, you kind of answered that my next question really for me in terms of staff, I mean training staff.

So, you talked about, training staff on the system, they had, some kind of basic knowledge of IT already. <mark>So, it was just training them on the system for them to be familiar with it and for them to do their job with it</mark>?

Speaker 2:

Correct.

Speaker 1:

<mark>Apart from I mean that training, was there some sort of other training that you needed to provide, to them.</mark>

Speaker 2:

And, Yes, apart from learning how the app works and essentially just understanding why the app was done and putting them through the workings of the app. I think that's really about it from, from an IT

perspective, Yes, because I mean, these are people that are operations guys, so at some point when it comes to the core business they're the ones that tell you the tricks of the trade. But, Yes. So, from an IT perspective they were clued on what to do and there are no issues.

Speaker 1:

Okay. So, I mean, the next question wouldn't relate to you as such because you built a bespoke system, but I mean, I would just want to know,

So how did you sort of go around, determining the requirements, for, for the bespoke system?

Speaker 2:

Okay. Determining the requirements for the bespoke system. That was gotten from the fact that like I said, with my exposure in IT I think it helped with that, to be able to identify the gaps, identify the ground process and automate it, essentially, distilled the processing into functional requirements that the app needed to deliver on, so again, that, that was, led by myself based on my experience to be able to document the requirement and engage the IT staff recruited to deliver on those requirements.

Speaker 1:

I know that from the questionnaire you mentioned that the implementation was phased. I mean, it was done in a phased approach.

So, what helped decide as to what needed to go into a particular phase and how many phases, were you to, able to deploy the application by?

Speaker 2:

The project was phased based on painpoints primarily. So, we were running a slim operation and there isn't just any room for excesses, it was a lean operation and we deployed just enough to resolve our challenges because it's always good to understand that IT is not the means to an end. It's just as a support system. And it is always important that as an executive with an IT background, I wouldn't want to base my response to business challenges on the over-deployment of technology.

Speaker 1:

==So it was just based on painpoint at the time that sort of motivated, the specific phase that's the app to be deployed?==

Speaker 2:

Correct. Yes. And there were functionalities that we knew we would benefit from, but it was not key to issue at the time. Okay.

Speaker 1:

So while you say that it was phased and it was the, painpoints that determined. What needed to be done?

==So was there a clear strategy around how e-business would transcend to help the organization achieve its goal?==

==Was there like a strategy==

==Did you have like a one-year strategy or three-month strategy and sort of get it across the organization and it doesn't necessarily have to strictly be from the, web portal or the ERP application?==

I mean, it could be, I mean, across the organization.

Speaker 2:

I don't think IT strategy was documented, it wasn't documented, but as a proprietor, you just got the hunch that certain things would be useful down the line.

Okay. but it was never really made to be, it was never a business-related activity to strategize on the IT delivery over you know, to have an IT delivery road map.

Speaker 1:

Okay. Well you mentioned that earlier on the call that you had a roadmap.

==Was that roadmap strictly just for the web portal?==

Speaker 2:

It was, yes, it was strictly for the web portal, knowing that we had certain management modules that the portal was going to deliver on, and we identified that some did not need to be built from the cost perspective for me, an immediate value. , I mean immediate value perspective.

Speaker 1:

Okay.

So am I right in saying that there was some kind of a roadmap but, it was primarily for the application and it kind of weighed in for the organization on its own by wasn't that it was more of a sort of adhoc, well, this is what we want to do in few months. It wasn't like, well, you've laid out a plan of this is how e-business is going to change the organization and how we do things entirely.

It was just, well these are painpoints at the time in the next few months we should be doing this with respects to the application,

Speaker 2:

Correct. Yes. So, it wasn't the holistic IT strategy roadmap, you know, it was, it was a very informal, more focused on the web app because the web app had modules that we have identified were necessary but had not started to be, to be built. And then from a holistic perspective that wasn't, done, documented. Yes. Okay.

Speaker 1:

So what role did the cost of the Internet, computer systems, or other general costs play on the choices made during the business?

I think we've talked briefly about this but one of the key things, I wanted to touch that we didn't touch on earlier was the cost of the internet. You mentioned power, you had to get back up, and instead of buying desktops you have to buy tablets.

So, I mean in terms of the cost of the Internet, was that a challenge that you have as well.

Did costing play any role with your choice of Internet provider?

Speaker 2:   I would say the cost played a role. I'll just say that we were challenged as I said the building was made up was concrete and steel, this was deflecting a lot of wireless signals. So we had challenges with identifying the right service provider,

We found out that when you do your Internet access, you have a primary and then you have a backup because, internet access is not necessarily stable in Nigeria. So, for business continuity, you always would want second Internet access because it now became core to our operations. When we engage customers, we print out the invoice for them after taking the order, and the invoice was done on the order management module on the web app. So, all of that tied to the Internet being very core in delivering service so from a cost perspective, I don't think it was more of cost. I think it was more of the Internet access that was more stable for us giving the challenges we faced with the kind of building that we were In.

Speaker 1:

So this brings me to the last section of the interview so this is basically about, future plans for the e-business systems and how you can improve your current systems. ,

So I wanted to know,

==Do you have a way or process for identifying under-performing departments or processes within your organization?==

==Essentially, do you have a process for identifying what is not performing and how you want to improve it==?

Speaker 2:

To me, underperforming people or underperforming systems?

Speaker 1:

It could be departments or it could be systems. Obviously, people make up departments. So, yes, it's a combination of both. Really.

Speaker 2:

Yes. I think we use the app. Let me say that the indices we use first would be revenue

Speaker 1:

Okay.

Speaker 2:

So revenue would mean that maybe our quality of services is good. It would mean that, our marketing efforts are yielding fruit. So, if revenue dips then we begin to look at all sorts of reasons why. Is there an event going on, were there public holidays. So we look at the usual suspects. Okay. And when those usual suspects are not there and we then know that it's a red flag, you know, something's happening. That's, is causing that dip. So, we began to look internally, to say, what is the turnaround time of orders coming in and leaving. And we begin to look at order systemic reasons as well even within the economy, are people becoming more DIY conscious and buy their own laundry machines home laundry how does that affect at us?

So, the under-performance, you know, would not necessarily come from IT, you know, it will come from people not doing the jobs, it could come from the economy. It will come from management, management involvement, to unlocking, you know providing solutions to challenges that are within the businesses' control. The under-performance that we noticed and monitored, were largely non IT related, Yes, more of people management involvements and economy

Speaker 1:

Okay.

So is it okay in thinking as you mentioned that so you use your financial position as key indices to determine what exactly is happening and it could then be that, when you start looking at the certain processes, for example, let's say you had a spike in the number of people that brought in their clothes to the laundry and for some reason, the staff couldn't deal with it within the time, if you had seen, for example, a churn, in the number of customers, you see that revenue has dipped, that then helps you to start probing into the systems to provide some kind of insight into the situation.

==So I am thinking that that was what you mean when you said, you use the financial position as an index, to probe into the organization's processes.==

Speaker 2:

Yes. Okay. Financial position yes.

Speaker 1:

Speaker 2:

How are what?

Speaker 1:

Decisions around e-business improvement?

You've kind of mentioned these because of your experience in IT, most of the E-Business initiative kind of comes from you. ,

I just thought you might have some things to add.

I mean centrally you lead, have you had any staff, for example, proposed certain, things that could be done, within the remit of E-business in the organization?

Speaker 2:

Oh, oh, yes. Of course, the delivery is what I would say I led. But the feedback came from everywhere. Come from customers, come from staff, you know, come from the research but delivery was led by myself, but everyone had input on what, like, you know, enhancements of the Web app. that was sustained by feedback from every, from all our stakeholders, including staff and customers.

Speaker 1:

Okay.

All when this feedback gets to you.?

Speaker 2:

I filter it and pass on to the IT staff on what needs to be done.

Speaker 1:

How does the company ensure that staff is well trained for the continuous use of e-business within the organization?

Speaker 2:

Yes.

Yes. So, the use of e-business or IT, technology in the business was not that vast, that required, refresher courses and all that. But anytime we introduced any new IT system, then it was always part of the delivery to train the users. Okay. Right. So, there would always be a trainer approach where the manager of operations is trained who then trains other staff.

Speaker 1:

So what are the objectives and plans for investments in IT, e-business, or information systems for the next five years?

So, have you got like a sort of objectives and plans for investments in IT and e-business systems for the next five years?

Speaker 2:

Yes, the plan to keep IT core to operations. But it would always be on a need basics and based on growth and the numbers, we would always deploy technology, if the challenge we see, can be sub mounted by it, so that's where the proprietor such as myself that is inclined in IT is bold and faithful to such a cause because, depending on the kinds of executives or the kind of background you have as an executive, other things would contend with your deployment of funds to resolve business challenges. But if a business challenge is core and we know that IT can resolve it, then it will be attended to irrespective of funding, but we know other things are core to our business, that needs to be put in place for there to be growth. So IT has not been one of those things since we've transitioned into where we are today, but down the line five years we are looking at growth and from growth being able to attend to more customers using the internet, using the application, going more to receiving payment online, going more into diversifying our customer base to more internet aware customers who we can engage with and can use our web app to more beneficial level for them.

Speaker 1:

And, so I know we talked, on this briefly. ,

So is there a documented IT or e-business roadmap currently?

I know that you mentioned that earlier there was no clear roadmap.

<mark>But as, as of now have you got a roadmap, a documented roadmap?</mark>

Speaker 2:

No, we don't have, we don't have as of now because it's the time, It's the time spent to do that is not core to the business challenges.

Speaker 1:

Okay. So this brings me to my last question for this interview,

<mark>So I mean what departments share data between each other?</mark>

So, I know that the core of the e-business system that you use in the organization, is the web portal or the ERP, and that houses a lot of, modules that relate to your different business processes.

<mark>So perhaps it will just be interesting to know about apart from the ERP, are there other systems that you use and is there some kind of integration with each other?</mark>

So does the ERP integrate with other systems that you use, so for example, in your accounting, just to be specific, your accounting systems? Does the ERP integrate, are their integrations amongst all those systems.

Speaker 2:

Okay. , no, we don't have any integration. The web application was essential, the one application we were using, which had, all of the modules that we need. From a communication perspective, we use Skype, to communicate and we also use team viewer for access to support from a system perspective, if there were system issues, or if there were application issues and, support needed, to remotely support we use team view as well. , from a communication perspective, we use the, as I said, we use Skype to communicate. yes. So those were the apps that we use from a communication perspective. Okay.

Speaker 1:

Okay. All right. Thank you very much for the interview that is all my questions.

<mark>Have you got any questions for me?</mark>

Speaker 2:

No, I don't have any questions for you, just to say that I'm thankful for the opportunity to be part of your research work and I'm hoping that we would see and get insights from the outcome of the research and how it would better contribute to knowledge within that space for Nigeria. I think the interesting parts would be to know, maybe to say, how this applies to the small business space in Nigeria. How would you look to communicate your findings, to small business in Nigeria?

Speaker 1:

Right. Okay. So the idea is I'm doing case studies with several small businesses and the idea is to generate some kind of framework that would help small businesses in Nigeria deploy Internet technology, deploy e-business within their organization, and disseminate this information. So, my thesis would be published and publicly available, the intention as well will be to anonymize the data and do some academic journal publications as part of this research project.

Speaker 2:

How would this be publicly available? Would there be like an effort to make it available to the SME community in Nigeria, are you going to use any channels, communities to propagate your findings or it was going to be a journal and you know, stacked up, ticked off. Are there any plans for a purposeful impact from your study?

Speaker 1:

Principally the first step, is to get my thesis finished published and then publishing some journal articles. The idea would then be that because the journal articles would be mostly publicly available, other researchers looking in the area can draw knowledge from there, subject to further funding. It might be possible to share some of this information, in conferences for small businesses. , but I mean, all of this is kind of subject to further funding

Speaker 2:

Okay. So, thank you very much.

Speaker 1:

All right. Thank you very much for your time.

Speaker 2:

Thank you.

Appendix VII   Framework Validation Questionnaire

Dear Sir/Ma

E-BUSINESS FRAMEWORK VALIDATION RESEARCH

You are invited to take part in this research which seeks to validate an e-business framework developed as part of my PhD research.

For several years, there has been an increase in the use of internet technologies for personal and business use. The adoption of such technologies in Nigeria such business has been sparingly researched.

My research has focused on this topic, and as part of the research, the SAPP-STEER-SCR e-business strategy framework has been developed to help SBEs in Nigeria develop and implement e-business strategy.

To validate this framework will fulfil its purpose; you have been invited to participate in this validation study because of your experience in SBEs in Nigeria and e-business deployment. This study will make use of interviews which will last about twenty minutes. Yourself, along with eleven others, have been invited to participate in the study.

The interview will comply with the ethical standards of the University of Gloucestershire, and although the interviews will be recorded, all the results of the study of the research will be reported anonymously.

I will be glad if you agree to participate in this study.

Regards
Olakunle Olayinka (PhD Student)
School of Business and Technology
University of Gloucestershire
The Park
Cheltenham GL50 2RH.

Framework Validation Consent Form

The purpose of this interview is to gather information for the validation of an e-business strategy framework that has been developed to aid SBEs in Nigeria to develop and implement an e-business strategy. For this research, e-business is defined as the use of internet technologies to enhance business processes.

The information gained from this interview will help the researcher answer research questions that are part of his doctoral thesis at the University of Gloucestershire, UK. All references to the organisation and individuals will be anonymised; the real names of individuals will not be used, neither in the thesis nor in any related work.

The interview will take approximately 20 minutes to complete.

Many thanks for your assistance.

If you have any queries or questions regarding this document, please do not hesitate to contact:

Olakunle Olayinka, University of Gloucestershire, UK

Email:

Mobile:

Name and Signature of Participant -

Organisation –

Role -

Framework Validation Questions for E-Business Strategy in Nigerian Small Business Enterprises (less than 50 staff).

1. Are all the activities in the framework clear to read? Which of the two layouts would you consider most useful?

2. Can you assess your current e-business implementation using this framework? Where is your company within the framework? Which Phase and which Stage?

3. Can you identify with the People, Process and Technology dimension elements within the framework? Can you comment on these elements as regards your company's past and present e-business status?

4. Would you consider this framework useful for SBEs in Nigeria to develop and implement e-business strategy?

5. Do you think the framework contains all the relevant phases, stages and activities for e-business strategy development, implementation and review in SBEs in Nigeria? If no, please explain what could be added.

6. What would you suggest are the strengths of the framework?

7. What would you suggest are the weaknesses of the framework?

8. Do you think the framework could be used in other developing world countries and in bigger companies (e.g. SMEs upto 250 staff)?

9. Do you have any other suggestions or comments?

People ◆ Secure Management Buy-in ◆ Acquire IT Skills ◆ Create e-business Project Team ◆ Select e-business Champion

Process ◆ Shortlisted Process Selection ◆ Document Revised Processes ◆ Define Success Metrics ◆ Create Project Roadmap

Technology ◆ Select Proposed e-business system ◆ Select Proposed Hardware ◆ Select Internet Provider ◆ Plan for Power Backup ◆ Develop Proposed Technology Deployment Timeline ◆ Formulate existing data migration plan

People ◆ Identify Resource Constraints

Process ◆ Shortlist and Prioritise Processes ◆ Review Mature Processes

Technology ◆ Shortlist e-business systems ◆ Shortlist Proposed Hardware ◆ Assess Technology Cost

People ◆ Audit Staff IT Knowledge ◆ Assess Internal IT staff Skills

Process ◆ Process Review ◆ Process Documentation

Technology ◆ Review Existing Technology ◆ Review e-business Availability Constraints

People ◆ Get Management Buy-in ◆ Identify Resource Constraints ◆ Ensure Knowledge of processes ◆ Audit Staff IT Knowledge

Process ◆ Identify Core Processes ◆ Identify Underperforming Processes ◆ Identify Process Constraints ◆ Review business goals

Technology ◆ Review existing Technology ◆ Identify Proposed Technology ◆ Review Competitors Technology ◆ Identify e-business Availability Constraints ◆ Estimate Technology Cost

People ◆ Select e-business champion ◆ Inform Users Early ◆ Train Staff ◆ Inform Stakeholder about Process Change

Process ◆ Process Review and Re-engineering ◆ e-business Project Tacking

Technology ◆ Select e-business systems license ◆ Deploy Relevant Hardware ◆ Deployment of e-business system ◆ Deployment of Internet Connection ◆ Deploy Power Backup

People ◆ Obtain User Feedback ◆ Provide Technical Support

Process ◆ Re-Engineer and Review process

Technology ◆ Migrate Data ◆ Reconfigure and Setup Systems

People ◆ Upskill Technical & IT Staff ◆ Obtain User Feedback ◆ Train Staff ◆ Manage Resistance to Change ◆ Obtain Management Buy-in

Process ◆ Document Processes ◆ Identify Process Requiring Automation ◆ Review and Prioritise processes

Technology ◆ Deploy Prerequisite Hardware ◆ Reconfigure and Setup System ◆ Migrate Data ◆ Deploy New e-business System

People ◆ Upskill Technical & IT Staff ◆ Train Staff ◆ Obtain User Feedback

Process ◆ Standardise Processes ◆ Document Processes and Process Integration ◆ Dataflow Diagrams

Technology ◆ Assess Technology Compatibility ◆ Migrate Data ◆ Deploy New Hardware ◆ Deploy New e-Business Systems ◆ Integrate Systems

People ◆ Obtain User Feedback

Process ◆ Review & Improve Processes ◆ Update Process Documentation

Technology ◆ Review System Performance ◆ Assess System Improvement Options

Process ◆ Success Metrics Review ◆ Business Goals Review ◆ Review and Adjust e-business goals ◆ e-business Project Tracking

Technology ◆ e-business Value Analysis

Process ◆ Identify & Quantify Benefits ◆ Analyse Cost Benefit

Technology ◆ Review Spend on IT Infrastructure

People ◆ Acquire Staff Feedback ◆ Conduct e-business project Team Review

Process ◆ Identify processes requiring Adjustments ◆ Assess impact on Processes

Technology ◆ Assess Technology Suitability and manageability ◆ Assess Systems Performance

Diagram centre labels:

PLAN STRATEGY IMPLEMENTATION
PRIORITSE ACTION AREAS
ANALYSE CURRENT SITUATION
SPECIFY GOALS & OBJECTIVES
E-BUSINESS STRATEGY DEVELOPMENT

STARTUP
TRIAL
EXPAND
EMBED
REVIEW
E-BUSINESS STRATEGY IMPLEMENTATION

REVIEW GOALS & OBJECTIVES
STATUS ASSESSMENT
COST-BENEFIT ANALYSIS
E-BUSINESS STRATEGY REVIEW

DEVELOPMENT

	Specify goals & objectives	Analyse current situation	Prioritize action areas	Plan strategy Implementation
People	• Get Management Buy-in • Identify Resource Constraints • Ensure Knowledge of processes • Audit Staff IT Knowledge	• Audit Staff IT Knowledge • Assessing Internal IT staff Skills	• Identify Resource Constraints	• Secure Management Buy-in • Acquire IT Skills • Create an e-business Project Team • Select an e-business Champion
Process	• Identify Core Processes • Identify Underperforming Processes • Identify Process Constraints • Review business goals & set objectives	• Process Review • Process Documentation	• Shortlist and Prioritise Processes • Review Mature Processes	• Shortlisted Process Selection • Document Revised Processes • Define Success Metrics • Create Project Roadmap
Technology	• Identify Proposed Technology • Review Competitors Technology • Identify e-business Availability Constraints • Estimate Technology Cost	• Review Existing Technology • Review e-business Availability Constraints	• Shortlist e-business systems • Shortlist Proposed Hardware • Assess Technology Cost	• Select Proposed e-business system • Select Proposed Hardware • Select Internet Provider • Plan for Power Backup • Develop Proposed Technology Deployment Timeline • Formulate existing data migration plan

IMPLEMENTATION

	Startup	Trial	Expand	Embed	Review
People	• Select e-business champion • Inform Users Early • Train Staff • Inform Stakeholder about Process Change	• Obtain User Feedback • Provide Technical Support	• Upskill Technical & IT Staff • Obtain User Feedback • Train Staff • Manage Resistance to Change • Obtain Management Buy-in	• Upskill Technical & IT Staff • Train Staff • Obtain User Feedback	• Obtain User Feedback
Process	• Process Review and Re-engineering • e-business Project Tacking	• Re-Engineer and Review process	• Document Processes • Identify Process Requiring Automation • Review and Prioritize processes	• Standardise Processes • Document Processes and Process Integration • Dataflow Diagrams	• Review & Improve Processes • Update Process Documentation
Technology	• Select e-business systems license • Deploy Relevant Hardware • Deployment of e-business system • Deployment of Internet Connection • Deploy Power Backup	• Migrate Data • Reconfigure and Setup Systems	• Deploy Prerequisite Hardware • Reconfigure and Setup System • Migrate Data • Deploy New e-business System	• Assess Technology Compatibility • Migrate Data • Deploy New Hardware • Deploy New e-Business Systems • Integrate Systems	• Review System Performance • Assess System Improvement Options

REVIEW

	Status assessment	Cost Benefit Analysis	Review goals and objectives
People	• Acquire Staff Feedback • Conduct e-business project Team Review		
Process	• Identify processes requiring Adjustments • Assess impact on Processes	• Identify & Quantify Benefits • Analyse Cost Benefit	• Success Metrics Review • Business Goals Review • Review and Adjust e-business goals • e-business Project Tracking
Technology	• Assess Technology Suitability and manageability • Assess Systems Performance	• Review Spend on IT Infrastructure	• e-business Value Analysis

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Stages of the Framework

Strategy Development This phase is concerned with strategic activities that must be carried out prior to the adoption of e-business.	
Specify Goals and Objectives	This stage is primarily concerned with helping small businesses clarify and set e-business goals and objectives.
Analyse Current Situation	This stage focuses on helping businesses analyse their existing technology, process and people capabilities with a mind to determine what changes and investment have to be made in order to implement e-business successfully.
Prioritise Action Areas	this stage focusses on prioritising action areas for the e-business initiative, identifying business processes where e-business systems could be implemented, shortlisting systems and exploring some cost implications
Plan Strategy Implementation	This stage is the final stage of strategy development phase and is concerned with finalising all pre-adoption activities, getting ready everything that needs to be in place for implementation of the e-business strategy and putting together a realistic plan for strategy implementation.
Strategy Implementation The strategy implementation phase of the framework is concerned with implementing the strategy that has been set out in the strategy development phase	
Startup	This stage, as the name suggests, initialises the strategy implementation phase of the framework and activities such as procurement of systems, reviewing processes, and deployment of power backup solutions are performed at this stage.

Trial	This stage of the strategy implementation phase is concerned with exploring the use of e-business systems with one or two business processes with the intention of gathering feedback and understanding how the implementation will affect the organisation
Expand	this stage is concerned with evaluating the results of the trial stage, learning from it and making a decision to expand the implementation to more business processes.
Embed	This stage is concerned with embedding e-business technologies into the organisation such that most business processes and activities in the organisation make use of e-business systems.
Review	This stage allows for continued adoption of e-business in the organisation but it particularly provides an opportunity for the firm to review its e-business implementation, review new technologies and review use of e-business in other similar organisations, so as to identify how the current systems implemented could be improved.
Strategy Review This phase of the framework is concerned with reviewing the implementation strategy with a mind-set of tracking what has gone well and what hasn't.	
Status Assessment	This stage is concerned with assessing the current status of the e-business systems implemented. This assessment should be all-encompassing covering key areas such as assessment of technologies used, assessing the capacity of technology resources, gathering user feedback and identifying the impact on processes.

Cost-Benefit Analysis	This stage of the strategy review phase focuses on understanding what benefits have been derived from initial spend on various e-business technologies and processes.
Review Goals and Objectives	This stage is concerned with helping firms review various objectives set out in the strategy development phase and identifying what has been achieved or not achieved as well as adjusting these goals.

Appendix VIII   Sample Framework Validation Interview Transcript

This appendix presents a sample interview transcript from one of the participants. The interviewer's questions are highlighted in yellow for clarity.

Speaker 1

Thank you for agreeing to take part in this interview. The interview is going to take about 15 to 20 minutes. For some background into the study. For the last four-plus years, I have been researching the adoption of e-business technologies and processes within small business enterprises in Nigeria. I define e-business, specifically as the use of internet technologies and processes to enhance business processes and small business enterprises. I also defined small business enterprises as businesses with less than 50 employees. As you have taken part in this study previously as an owner of a small business enterprise, I am inviting you to the study again to validate the e-business strategy framework that has been developed as part of this research, given your experience as an IT project manager.

So I've got nine questions which I would be asking you. If you look at the document shared with you, page three contains one layout of the framework and page four contains another layout of the framework. Pages five and six provide short of details of each of the stages and phases of the framework.

The framework is an e-business strategy framework designed to help small business enterprises, in the development of a strategy as well as the implementation of a strategy.

Speaker 1

So the first question is, are all the activities in the framework clear to read?

Speaker 2

Yes. They are clear to read.

Speaker 1

Okay. And which of the two layouts would you consider most useful?

Speaker 2 Well from a small business perspective, I would say strategy and implementation. Simply because you want to put in enough time to think about what you want to do.

Speaker 1

So you have two different layouts of the two differently out of the framework. So on page three, there is one layout, and then on page four, there's another layout. So I think that question was referring to which of the two layouts do you think?

Speaker 2

Oh, which of the two layouts. Okay is that the layout you were referring to.

Speaker 1

Yes.

Speaker 2

Okay. I mean I prefer the layout from on page four. Okay. And yeah, I mean I am a tabular person, so I just prefer, I prefer my workflow in tables than in diagram. So perhaps that is the reason, personal thing.

Speaker 1

Okay. So can you assess your current e-business implementation using this framework?

Speaker 2

Yes, I would say that. That is to assess our current, what did you say about that?

Speaker 1

Yeah. So your current e-business implementation, ideally we want to know where your company is within the framework, which phase, and which stage?

Speaker 2

Yeah. Okay. So I would say that, I mean, we deployed it, we deployed technology. We moved to e-business to be able to see how to improve efficiency. So I would say that we're in the implementation stage and you know, between trials into expansion and expand.

Speaker 1

Okay.

Speaker 1

And so moving onto to the next question now.

So can you identify with the people, process, and technology dimension elements within the framework?

Speaker 2

Yes.

Speaker 1

Okay.

==And can you comment on some of these elements as regards your company's past and present e-business skaters?==

Speaker 2

Yes, so when we started, we were purely manual before we now decided to leverage the internet and cloud for better management, for better remote management. So in doing that, you know, we had to look at assessing the business. From you know, based on the stuff that we had, the existing process, and technology that we needed to, to put in place, you know, vis a vie, the challenges within the infrastructure, within Nigeria's infrastructure, capabilities. So, yes, so that, that was, that was, reviewed in other to. You know, deploy the solution that we eventually decided upon. And that included like, you know, scaling up know, people, reviewing, you know, the process, in other to support, reviewing the process. And then, identifying technologies that could support that process and also, react or be resilient to the infrastructural issues that are, that existed, existed within the country.

Speaker 1

Okay, thank you.

==So would you consider this framework useful for small business enterprises in Nigeria to develop and implement an e-business strategy?==

Speaker 2

Sure.

Speaker 1

Okay, so moving onto the next question now.

==So do you think the framework contains all the relevant phases, stages, and activities for e-business, strategy development, implementation, and review in the small business enterprise in Nigeria?==

==And if, no. Can you explain what you think could be added?==

Speaker 2

I believe that it has the relevant components required for e-business deployment for small businesses in Nigeria

Speaker 1

Okay.

<mark>So would you suggest or what would you suggest as the strengths of the framework?</mark>

Speaker 2

I would say the fact that it looks at the best practice from business and from technology, I think those are the strengths. The framework has focused on technology, process and people as main components within the business that need to be delivered on a working e-business solution. And then, also from the perspective of the life cycle of a project and life cycle of a system, the framework looks at the best practice along those life cycles. So, I think that also is a strength of the framework.

Speaker 1

Okay.

<mark>And what would you consider the weaknesses of the framework?</mark>

Speaker 2

It is perhaps a bit tech oriented for the everyday Nigerian small business owner. So they would like, they would need someone who is a tech-savvy, or technical business person or a tech-savvy owner to be able to understand, and assimilate the requirements of the framework. Yeah that is the weakness I see.

Speaker 1

Okay.

<mark>So do you think the framework could be used in other developing world countries and bigger companies? So companies close to or with up to 250 staff?</mark>

Speaker 2

Yes. And like I said, I mean it focuses on, you know, business best practice approach and you know, technology, you know, life cycle framework. So the business yeah the framework would be easily adopted by smaller and large companies.

Speaker 1

<mark>And do you have any other suggestions or comments?</mark>

Speaker 2

Well, not really. Nothing different from what I mentioned in the weaknesses to say that in, in deployments, if the business, does not have like a tech-savvy leadership or department then, you know, in, in delivering the framework, there might be, there might be a need to get guidance from or get guidance from external feedback

Speaker 1

So, would that be in the wording of the framework or would that be the wording of the components?

Speaker 2

It would be in translation of the activities that need to be done in business terms to the business owner because, at the end of the day, the business owner is pretty much the driver of this. The business owner whether tech-savvy or not is the custodian of the success of the migration to need e-business. So there must be that translation to business terms of what the framework would be out to achieve and deliver its benefit. Yes. ,

Speaker 1

Okay. So some kind of additional guideline together with the framework might help or perhaps some kind of workbooks to help. With good translation

Speaker 2

Yes, some kind of every day, business language. You know workbook translation of the framework from the framework to that to that guide. You know, in business terms, for this business owner, what does it mean to me? How am I going to start to access? I'm looking at the process, the people, what does that mean to me if I don't have anybody internally or I don't understand how to do it. Am I contracting it out, if I do, what is the translation in business terms to me in terms of cost, you know in terms of ROI?

So these are all strategies. These are all strategy activities within the framework that, the business owner, you know, that the consultant or the guide would need to be able to simplify in everyday English or financial English or business English to the owner and same as, implementation, same as review, just that mapping of what's in the framework to business English for each of the stages, perhaps that, I mean, that's what I think..

Speaker 1

All right. Thank you very much for taking part in the study and I now stop the recording.

Appendix IX   Framework Guidelines

Introduction to the Guidelines

These guidelines are designed to help small business owners, managers and IT managers to implement an e-business strategy in their organisations. The guidelines consist of seven simple steps to implement an e-business strategy and is based on the SAPP-STEER-SCR e-business strategy framework developed as part of this thesis.

Introduction to the framework

The SAPP-STEER-SCR e-business strategy framework is a framework designed to help small businesses in Nigeria to develop and implement an e-business strategy. The framework consists of three phases – Strategy Development, Implementation and Review, and within each phase, several stages exist.

The framework also uses the People, Process and Technology change dimensions to outline the various activities that should be implemented or carried out within each stage of the framework. The framework is designed to be simple to use and self-guided, but a small business owner or manager will likely require the expertise of an IT manager or staff, to fully implement all the activities described in the framework.

How to use the framework

1. **Establish where you are in the Development-Implementation-Review cycle**

   Given that this framework consists of three phases and companies utilising these guidelines might have already started to implement e-business initiatives in their organisation, it is important to first identify what phase within the framework the company is at. For companies which have not started implementing e-business, the starting phase of the framework is the Development Phase.

2. **Identify which stage or stages match your current situation**

Upon successful identification of the phase that the company is at, the next task is to identify the current stage or the stage that best matches the company's current situation.

By identifying the current stage, the user of these guidelines will be able to identify what activities need to be performed next. In the case where the framework has not been utilised from the inception of the e-business initiative in the company, the ideal approach to determining the current stage is to refer to the definition of each stage (see attached stage and phase definition in Appendix VII, p. 322). The activities within the stage can also be used to further verify the appropriate stage which a company is at.

3. Clarify business goals and e-business objectives

Clarity of the business objectives is essential for the successful implementation of an e-business strategy in a small business. Using the worksheet attached, the user of the guidelines should list the business goals, list the business objectives, identify core process, and identify priority processes where e-business is to be implemented. Although these activities exist within the first phase and first stage of the framework, in the case where an organisation has already started to implement e-business initiatives before referring to these guidelines, some required activities could have been missed.

4. Secure management buy-in

This step is essential since, in small businesses, the owner or managing partners are responsible for making most decisions in the organisation. To ensure successful implementation of e-business within the organisation, the management of the firm needs to be aware of the use of this framework and guidelines, and be committed to its use to allow smooth implementation.

5. Familiarise with the People, Process and Technology elements of the framework

This framework emphasises an equal balance amongst the People, Process and Technology change dimensions that are relevant for e-business implementation in an organisation. Thus, to use this framework, it is crucial for the user of these

guidelines to familiarise with the various People, Process and Technology activities within the framework. It will help to plan and implement e-business appropriately in the organisation.

6. Reflect on the previous two stages

Depending on the phase and stage of the framework that the company is at, it may be worthwhile for the user of these guidelines, to reflect on the previous two stages and identify what People, Process and Technology activities may not have received the required focus. The activities not completed in the previous two stages should be reflected upon, discussed and acted upon, if necessary. This step should be omitted for company's just starting their e-business initiative.

7. Look ahead and plan for the next stage

This step is primarily concerned with identifying the next stage, reflecting on the activities to be performed and planning for when and how they could be performed. Given that this framework consists of logically linked stages, in an iterative nature, it is expected that the user of the framework follows through the framework in a stepwise manner.

Business goals	**Core process identification**
List your organisation's business goals.	List the core processes in the organisation.
E-business objectives	**Priority processes**
List the organisation's e-business objectives. This must be in alignment with the business goals.	List the underperforming or identified priority process that has been selected for e-business implementation.

Appendix X   Themes and Sub-themes

This appendix presents the themes and sub-themes that emerged from the thematic analysis.

Themes	Description	Sub-themes	Example of Codes
Overcoming Barriers	This theme describes approaches utilised to overcome initial barriers.	**Social media**	Instagram, Cheap access to market
		Cloud	Reduced cost of adoption, cloud
		Alternative power	Inverter, Laptops, Solar, Generator, Tablets
		Outsourcing	Technical partner, agency
Responsible for Successful adoption	This theme describes sub-themes responsible for successful adoption	**Mature processes**	Clearly defined processes, Staff Involvement
		Staff Knowledge of IT	Training, Limited IT skills
		Social Media	Social Media, Facebook, Instagram
		Owner Perspective	E-business champion, Top management-buy-in, IT

			Experience, Owner involvement
		Organisational Readiness	Top-down support, Financial position, Availability of technical skills, Adoption in industry
Motivation	This theme describes the motivation for the adoption of e-business	**Perceived Benefit**	Increased growth, Expansion, Improve efficiency
		Customer Demand	Customer Demand
		Competition	Losing business, Revenue loss
Impact of Adoption	This theme describes the implications and impact of adoption on the business	**Resulting Benefits**	Increased revenue, Increased customer Joy/Customer Experience, Internal efficiency – IT eliminated inefficiency, Delivered value to the business
		Increased operational cost	Increased operational cost
		Increased Adoption	Derived Value, A better way to do business, New business

			model/market, More sales, Competition
Failed Systems	This theme describes issues responsible for the failure of e-business systems	**Trust**	Limited usage, Fear
		Process Maturity	Unclear requirements, Unclear processes
		ICT skills	IT knowledge limitation
		Staff involvement	Limited staff Involvement
Challenges	This theme describes challenges faced at adoption	**Investment cost**	Initial cost of adoption, Hardware, Maintenance, Lack of government support
		Infrastructure issues	Power, Internet speed, Internet cost, Internet availability, Regulation
		IT skills limitation	Staff skills, Technical know-how
		IT compatibility	IT compatibility
Future Outlook		**Strategy**	No clear strategy

	This theme describes factors that impacted further investment in e-business	**Limited investment**	Disappointment, Limited benefit received, No loans
Type of Systems	This theme describes the types of systems used in the case study organisations	**Type of system**	CRM, Internet Banking, Job boards, Web portal, cloud-based System, Bulk SMS, Case Management, Website, Online Payment.

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